Lake Erie Region Source Protection Committee

Agenda

Thursday, September 9, 2021

1:00 pm

GRCA Zoom Virtual Meeting

Link to be distributed via email prior to meeting

Pages

1. Call to Order

   Virtual meeting: by using the microphone and web camera, committee members agree to the recording and livestreaming of the meeting.

2. Roll Call and Certification of Quorum – 17 Members Constitute a Quorum (2/3 of Members plus Chair)

3. Chair's Remarks

4. Review of Agenda

5. Declarations of Pecuniary Interest

6. Minutes of the Previous Meeting

7. Hearing of Delegations

8. Presentations

   a. Outcomes from the Climate Change Vulnerability Assessment Tool for the Elgin Area Primary Water Supply System

      Presented by Brittany Bryans, Research & Process Optimization Engineer, Regional Water, Elgin Area Primary Water Supply System

9. Correspondence

10. Reports

a. SPC-21-06-01 Source Protection Program Update 1

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-01 – Program Update – for information.

b. SPC-21-09-02 Hydrocarbon Pipeline Threat Policy Update 35

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-02 – Liquid Hydrocarbon Pipeline Threat Policy Update – for information, and

THAT the Lake Erie Region Source Protection Committee support Lake Erie Region staff to work with municipalities to continue to develop and finalize draft liquid hydrocarbon pipeline policies.

c. SPC-21-09-03 Guelph-Guelph/Eramosa Water Quantity Policy Development Progress Update 53

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-03– Guelph-Guelph/Eramosa Water Quantity Policy Development Progress Update – for information

d. SPC-21-09-04 Climate Change Vulnerability Assessment Tool 71

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-04 – Climate Change Vulnerability Assessment – Elgin Area Water Supply System – for information.

e. SPC-21-09-05 S.34 Revised Updated Grand River AssessmentReport and Source Protection Plan: Town of Grand Valley 97

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-05 – S.34 Revised Updated “Grand Valley” Grand River Assessment Report and Source Protection Plan – for information;

AND THAT the Lake Erie Region Source Protection Committee releases the revised Updated “Grand Valley” Grand River Assessment Report and Source Protection Plan to the Grand River Source Protection Authority for submission to the Ministry of the Environment, Conservation and Parks, along with the municipal council resolutions received, and the comments as presented in this report.

11. Business Arising from Previous Meetings

a. Lake Erie Region Source Protection Committee request under Technical Rule 119, from February 3, 2011, Re: rehabilitation activities at an aggregate operation within a vulnerable area of a municipal drinking water system that allows ponding of water.

12. Other Business

13. Closed Meeting

14. Next SPC Meeting

December 2, 2021, 1:00pm, virtual meeting

15. Adjourn

THAT the Lake Erie Source Protection Committee meeting of September 9, 2021be adjourned.

Lake Erie Region Source Protection Committee

Report number:	SPC-21-09-01
Date:	September 9, 2021
To:	Lake Erie Region Source Protection Committee
Subject:	Source Protection Program Update

Recommendation:

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-01 – Program Update – for information.

Report:

Lake Erie Region review of recent ministry decisions regarding Ontario's Water Quantity Management Framework

On March 31, 2021 the Ministry of the Environment, Conservation and Parks (MECP) posted a decision on the Environmental Registry of Ontario (ERO 019-1340). Staff are aiming to bring a review and analysis of the revisions to the provincial water quantity management framework to the next SPC meeting on December 2, 2021.

Grand River Source Protection Authority board report regarding regulatory proposal (phase 1) under the Conservation Authorities Act

On June 25, 2021 a report was presented to the Grand River Conservation Authority (GRCA) board regarding Environmental Registry Posting 019-2986: regulatory proposal (phase 1) under the Conservation Authorities Act.

The report included a summary of the proposed regulations that would be made under the Conservation Authorities Act, including services related to the Source Protection Authority responsibilities, to implement changes that were made through Bill 139, 108 and 229. The report also includes GRCA comments on the first phase of the regulations. See Appendix A for the complete GRCA Board report.

Since then, the province has been working on drafting the regulations implementing the proposed changes. Staff anticipate these to be released in early fall. Staff will provide updates to the SPC as new information becomes available that will impact the source protection program.

Update on Phase II changes to the Director's Technical Rules and non-municipal drinking water systems not automatically addressed under the Clean Water Act, 2006 (CWA)

Ministry staff are still awaiting approval from senior management for releasing the final changes to the Director's Technical Rule or the best practices guide on how

to protect non-municipal drinking water systems outside of the CWA. In the interim, Lake Erie Region staff continue to engage municipalities to assess how the proposed technical rules changes could impact them and the work that may need to be done. Municipal discussions have primarily focussed on impervious surface area re-calculations, hydrocarbon pipeline policy revisions, and climate change assessments.

Update on the 2022/23 grant funding application

Initial work has begun in preparation for the 2022/23 fiscal year. Source protection regions, including Lake Erie Region, recently submitted input to Conservation Ontario on the development of eligible activities for next fiscal's provincial funding. Conservation Ontario has compiled and submitted feedback from the source protection regions to the MECP for consideration. Lake Erie Region staff will continue to update the Lake Erie Region Source Protection Committee (SPC) as more information becomes available.

Source Protection Plan Updates

Work on the s.34 Grand River Assessment Report and Source Protection Plan update for the Town of Grand Valley continues. This update incorporates a new well and associated updated Wellhead Protection Area (WHPA) technical assessments, including vulnerability scoring. Public consultation occurred from June 21 to July 20, 2021. Details of the update are presented in report SPC-21-09-05.

Updates in the Town of Shelburne (revised WHPAs as a result of pumping rate increases for production wells #7 and #8) and the addition of a backup well (Rocco Well) for the Membro Well in the City of Guelph's Waterworks Drinking Water System will be combined into a further S.34 Grand River Assessment Report and Source Protection Plan update. Proposed updates are planned to be brought to the December 2, 2021 SPC meeting in anticipation of pre-consultation following the meeting and public consultation in early spring 2022.

The timeline for a future Grand River Assessment Report and Source Protection Plan update incorporation the Guelph-Guelph/Eramosa (GGET) Tier 3 Water Budget study and new water quantity policies for Wellington County, City of Guelph, Region of Waterloo and Halton Region is still to be determined. Progress on the development of water quantity policies is presented in report SPC-21-09-03.

Work to update the Catfish Creek and Kettle Creek assessment reports and source protection plans under s.36 of the CWA is progressing well. The timeline for completion of these updates is dependent upon the finalization and release of the proposed Phase II changes to the Director's Technical Rules and has not been determined yet.

Table 1 provides an overview of the next few SPC meetings and anticipated agenda items for upcoming Grand River Assessment Report and Source Protection Plan updates.

Table 1: SPC meeting outlook

SPC Meeting Date	s.34 "Grand Valley" Grand River Update	s.34 "Melancthon/Guelph" Grand River Update
September 9, 2021	• revised draft updated AR and SPP: receive public consultation comments • release to local SPA for submission to the Ministry	N/A
December 2, 2021	N/A	• technical work and draft updated AR and SPP • release for pre-consultation
December 2021 – January 2022	N/A	Pre-consultation period
March 31, 2022	N/A	• draft updated AR and SPP: receive pre-consultation comments • release for public consultation

Prepared by	**Approved by:**
Ilona Feldmann Source Protection Program Assistant	Martin Keller Source Protection Program Manager

Appendix A: Grand River Conservation Authority board report regarding regulatory proposal (phase 1) under the Conservation Authorities Act

Grand River Conservation Authority

Report number:	GM-06-21-49
Date:	June 25, 2021
To:	Members of the Grand River Conservation Authority
Subject:	Environmental Registry Posting 019-2986: Regulatory proposal (phase1) under the Conservation Authorities Act

Recommendation:

THAT Report Number GM-06-21-49 - Environmental Registry Posting 019-2986: Regulatory proposal (phase1) under the Conservation Authorities Act be received as information,

AND THAT Grand River Conservation Authority Report GM-06-21-49 be submitted to the Province through the Environmental Registry.

Summary:

The Province is consulting on proposed regulations that would be made under the *Conservation Authorities Act* to implement changes that were made through Bill 139, 108 and 229. These regulations are to help protect people and property from the risk of natural hazards, the conservation and management of conservation authority owned lands, their role in drinking water source protection and to improve governance and oversight in conservation authority operations.

Report:

In 2015, the Province initiated a review of the *Conservation Authorities Act*. Since then, Bill 139 (2017), Bill 108 (2019) and Bill 229 (2020) have been passed that included several amendments to the Act. The purpose of these amendments were to provide greater transparency, consistency, accountability and governance for Conservation Authorities. Many of these changes have not yet been proclaimed or are to be further defined through regulations.

After the passing of Bill 229 in December 2020, the Ministry of the Environment, Conservation and Parks (MECP) created a working group that included stakeholders who have an interest in conservation authority governance and operations. These stakeholders included representatives from the municipal, agricultural and development industries, five general managers from amongst the 36 conservation authorities (including GRCA) and members of Conservation Ontario. The purpose of the working group was to provide feedback and advice on updates and development to enabling regulations. The MECP stated that it would be release the regulations in two phases over the first half of 2021.

On May 13, 2021 the MECP posted the phase 1 regulations to the Environmental Registry of Ontario for public comment for 45 days (closing on June 27).

The first phase of regulations included the following:

1) Mandatory programs and services that a conservation authority would be required to provide.
2) A requirement for conservation authorities to enter into agreements with participating municipalities to apply levy dollars for the delivery non-mandatory programs and services.
3) The requirement for a transition plan, which will include an inventory of both mandatory and non-mandatory programs and services, the consultation process with participating municipalities to negotiate agreements for non-mandatory programs and services, timelines to achieve plan milestones and regular reporting on the status of the plan's development and implementation to MECP.
4) Requirement for conservation authorities to establish a community advisory board, that includes members of the public, to provide advice to the Authority.
5) The consolidation of the Conservation Areas regulations made under Section 29 of the *Conservation Authorities Act* into one Minister's regulation. These regulations sets out prohibited activities and activities that require a permit under the Act.

The Ministry of Natural Resources and Forestry (MNRF) will be updating and issuing a public consultation guide regarding proposed updates and changes to the Regulation under section 28 of the *Conservation Authorities Act*. It is anticipated that this document will be released to the public before the end of the summer. A separate Environmental Registry posting will be uploaded and a report with proposed comments will be coming to the Board.

The second phase of proposed regulations will be coming out in the next few months and it will include:

1) Details on municipal levies related to mandatory and non-mandatory programs and services.
2) Standards and requirements for the delivery of non-mandatory programs and services.

Staff have participated in webinars provided by MECP staff on the proposed phase 1 regulations. To gain greater insight, staff have also met with other conservation authorities and Conservation Ontario. The following report provides a brief summary of the regulations and analysis by GRCA staff. Technical and more detailed comments are attached to this report and will be included in the submission to the MECP.

1. Mandatory Programs and Services

In June 2019, the *More Homes, More Choice Act, 2019* amended the *Conservation Authorities Act* to identify the categories of mandatory programs and services which conservation authorities are required to provide where applicable in their specific jurisdictions. The *Protect, Support and Recover from COVID-19 Act (Budget Measures),2020* re-enacted this provision.

These categories of programs and services are related to:

A. Risk of natural hazards.
B. Conservation and management of lands owned or controlled by a conservation authority, including any interests in land registered on title.
C. Conservation authority duties, functions and responsibilities as a Source Protection Authority under the *Clean Water Act, 2006.*
D. Lake Simcoe Region Conservation Authority duties, functions and responsibilitiesunder the *Lake Simcoe Protection Act, 2008.* ***Not***

applicable to GRCA

E. Conservation authority duties, functions and responsibilities under other legislation prescribed by regulation. Proposed to be: ***Not applicable to GRCA***
    i. On-site sewage systems approvals by North Bay-Mattawa ConservationAuthority as prescribed under the *Building Code Act, 1992.*
F. Other programs or services prescribed by the regulation within a year of the endof the transition period. Proposed to be:
    i. Core Watershed-based Resource Management Strategy
    ii. Provincial Water Quality and Quantity Monitoring

These programs and services are mandated by the Province (mandatory) and may be funded by provincial grants and/or conservation authority self-generated revenue (e.g. user fees). Where such revenue sources cannot finance the entire costs of those programs, the costs must be raised through the municipal levy.

A. Risk to Natural Hazards

It is proposed by the MNRF that each conservation authority would be required to implement a program/service to help manage the risk posed by the natural hazards within their jurisdiction, including: flooding erosion, dynamic beaches, hazardous sites as defined in the Provincial Policy Statement (PPS) 2020 and low water/drought as part of Ontario's Low Water response. This program shall be designed to :

- Identify natural hazards;
- Assess risk associated with natural hazards including impacts of climate change;
- Manage risks associated with natural hazards; and
- Promote public awareness of natural hazards.

Managing risks associated with natural hazards may include prevention, protection, mitigation, preparedness and response.

Comments

Overall the scope of this mandatory program/service is comprehensive and very similar to the scope of the GRCA's current program for natural hazards. The GRCA's natural hazard program includes the administration of permits under Section 28, land-use planning input on behalf of the MNRF, flood forecasting and warning, operation and maintenance of flood control infrastructure, ice management services, low water monitoring and communications, management of information (including collection and provision) and communication/public awareness/education.

1. The Province has proposed that the natural hazard mandatory program include land use planning input i.e. Official Plan review using the provincial One Window process. In addition, conservation authorities would provide input to the Province on new or updated floodplain Special Policy Areas (SPAs) and may be involved in *Planning Act* appeals to the Local Planning Appeal Tribunal related to natural hazard policies.

   It's our understanding that the One Window process only occurs with upper or single tier municipalities in our watershed and it would involve providing information to the Ministry of Municipal Affairs and Housing which would co-ordinate and determine conservation authority comments on Official Plan policies and mapping along with input from other provincial ministries.

In order for conservation authorities to effectively implement the identification and management of natural hazards, the review of Local/Lower Tier Official Plans (OP) for natural hazards and input into review of applications for new or amended Two Zone floodplain policy areas should be included in this mandatory program category. The land use Official Plan policies and maps are closely aligned with the conservation authority regulation. The administration of natural hazard permits issued by the GRCA under section 28 and consistent policies and maps are essential for a streamlined review and approval process and to avoid disputes on applications at the permit stage.The review of local official plans is currently included as an eligible activity under MNRF provincial funding arrangements (S. 39 grants) and the province should continue to support this program.

2. At this time it is not clear how conservation authorities would participate in the review of new or amended SPAs and Two-Zone Floodplain Policy Areas as part of this mandatory program. There are many SPAs and Two Zone Policy Areas in the Grand River watershed. In both of these floodplain policy areas, conservation authorities provide expert input on water resource engineering and policies to ensure that the land use planning and conservation authorities consideration of permits in the floodplain are aligned and streamlined. The Province, through the Ontario Flooding Strategy, has initiated some work to update limited sections of the technical guide for natural hazards (2002) and this work includes climate change considerations for flood hazards only. This is a good first step and we encourage the Province to prioritize updating the series of all natural hazard technical guidelines to include modernized technical requirements and information. This should include climate change considerations for all hazards as well as policy implementation guidance to enable the consistent and successful implementation of the natural hazard program.

3. Under the proposed regulation municipal levy would only be available for the operation and maintenance of any water control infrastructure (including soft or hard structures) owned or controlled by the conservation authority that mitigates risk to life and property damage from flooding or supports low flow augmentation. Municipal levy would not apply to water control infrastructure that does not have a demonstrated flood management or flow augmentation role. The implication of the regulation is that only seven of the GRCA's 27 dams would qualify for levy support. Agreements would be required with the benefiting (or participating) municipalities for the 20 dams located throughout the watershed that would not qualify for levy support through this proposed regulation.

   Currently, the Province provides funding support through the Water and Erosion Control Infrastructure (WECI) program. This program provides significant support to the GRCA's maintenance and repair program for our water control infrastructure. We would request that the Province continue to provide this support to the conservation authorities even though municipal levy can be used to support this program. Major repairs to the larges dams could require significant funds. The GRCA has reserves to assist with providing funding support, but municipalities may be required to debenture to cover the costs of major maintenance projects.

B. <u>Management of Conservation Authority owned Lands</u>
The mandatory program and services related to the conservation and management of lands owned or controlled by a conservation authority, including any interest in

land registered on title, relate to conservation authority as the owner of its lands but also to land owned by others where the conservation authority has an 'interest' or right related to that other person's property, granted by the property owner.

Each conservation authority will be required to implement the mandatory programs and services related to the conservation and management of lands owned or controlled by the authority, including any interests in land registered on title, within their jurisdiction.

Land uses, such as provision of recreation opportunities and/or environmental education, on conservation authority owned land are not mandatory programs or services- including the management and maintenance of lands for these purposes.

Comments

There are several new requirements proposed for the management of conservation authorities land. These include development of strategies, management plans and policies related to acquisition, disposition, use, classification and property management. The GRCA owns approximately 48,000 acres within the watershed and the proposed regulation will require management plans for all GRCA owned properties. The Province has indicated that in order to maintain program efficiencies, similar classified properties can be grouped together under one management plan.

It is positive that the Province has recognized the importance of land management and stewardship activities such as forest management, restoration, invasive species management and monitoring etc. as part of the mandatory program. This will ensure these natural areas contribute to a healthy local, regional, watershed and provincial water and natural heritage ecosystem. For example, conservation authority forest management for some woodlands will maintain or improve their natural heritage values and the management of plantations will transition monoculture forests to diverse woodland species and habitats to achieve the natural heritage values identified in the consultation paper.

A gap that will cause some challenges in managing GRCA lands is that this mandatory program/service exclude any support for recreational activities, including our passive land program which provide recreational trails to watershed constituents and visitors from other parts of the province free of charge. The GRCA manages several properties throughout the watershed that provide passive recreational opportunities and whose use is only increasing as populations grow, urban boundaries expand and most recently, increased access due to the pandemic. The majority of the GRCA's passive lands have recreational trails and require the support of maintenance and risk management programs. In order to continue to provide the passive lands program, municipalities may have to enter into an agreement with the GRCA and provide funding to continue with the program or the Authority will have to look for alternative funding, such as user or parking fees to generate funds to properly manage the use of these properties.

The inefficiencies and costs created by having to negotiate multiple agreements or get 100% buy-in to allow non-mandatory activites to be added to municipal levy, implement user fees, collect user fees in remote areas, establish financial tracking mechanisms to distinguish between mandatory versus non-mandatory costs could result in the closure of some properties if the requirements to operate them becomes inpracticable.

Currently, any conservation authority lands that were acquired with the assistance of provincial funding require provincial approval to dispose of them. Revenue generated from these sales are required to go into a land sale reserve that is restricted for use by the Province. With the updated mandatory programs and services regulation, GRCA requests that the province also consider updating its disposition and revenue polices related to the sale of conservation authority lands. In particular, to include the option for conservation authorities to utilize the land sale reserve to support the development and implementation of land management strategies, management plans and other property services. The cost to develop these strategies and plan may be significant and it would provide some relief to supporting this program solely on levy dollars.

C. Services related to Source Protection Authority responsibilities under the Clean Water Act, 2006

Under the Clean Water Act, 2006 conservation authorities are required to exercise and perform the power and duties of a drinking water source protection authority. Each conservation authority therefore would be required to implement programs and services related to those responsibilities as source protection authorities under the Act.

The mandatory programs and services identified under this section are generally consistent with current responsibilities the GRCA has as part of the Lake Erie Source Protection Region. However, the consultation guide includes some potential new responsibilities for source protection authorities, such as completing municipal related land use mapping necessary (e.g., managed lands, impervious surfaces) to determine the risk posed by prescribed drinking water threats, and responding to requests to review proposals in wellhead protection areas and intake protection zones. In Lake Erie Region which includes the Grand River watershed, these tasks are undertaken by the municipality as the drinking water system owner, with support from source protection authority staff where requested.

Currently, the Province provides funding support for this program. This new regulation would enable the Province to shift the program funding to municipal levy.

D. Core Watershed-based Resource Management Strategy and Provincial Water Quality and Quantity Monitoring

The Conservation Authority Act also allows for the prescribing of ‘other’ programs and services not listed in previous mandatory categories. These ‘other’ programs and services must be prescribed within a year after the end of the transition period. Within this year municipalities and conservation authorities are to create an inventory of their programs and services and enter into agreements with municipalities for municipal funding of non-mandatory programs and services through a municipal levy, where applicable.

The Province has proposed to include two additional mandatory programs; core watershed-based resource management strategy and provincial water quality and quantity monitoring.

A core watershed-based resource management strategy will provide an opportunity to develop and improve integrated planning processes with a longer-term perspective for the delivery of the mandatory programs and services that the GRCA must deliver. To capture the value of the broader watershed and resource management perspective, this strategy will be required to document the current state of the relevant resources (principally water resources) within the GRCA’s jurisdiction.

The results of this strategy may inform an adaptive management approach to address the issues or threats that these mandatory programs and service maybe addressing such as mitigating the risk from the impacts of natural hazards.

The Province is also proposing a mandatory program for provincial water quality and quantity monitoring, which all 36 conservation authoritieshave been participating in on a voluntary basis with the Provincial Water Quality Monitoring Network (stream water quality) for over 50 years and in the Provincial Groundwater Network (groundwater levels and chemistry) for over 20 years. The conservation authorities' role would be to install and maintain equipment, collect samples/data, and send samples to the ministry laboratory for chemical analysis.

Comments

The inclusion of a watershed-based Resource Management Strategy that includes the mandatory programs and may include non-mandatory programs is positive. In the Grand River watershed some municipalities and First Nations draw a portion of or all their drinking water supply from the Grand River or one of its tributaries. The GRCA provides programs that provide watershed and local benefits that are important components of improving the health of watersheds and developing the resilience of our communities in light of climate change. These programs contribute to improvements to the ecosystem, improve water quality, and address pressures associated with various land use activities and should be included in a watershed based strategy e.g. Subwatershed Studies, Rural Water Quality Program, waste water optimization, tree planting etc.

The provincial guide only makes reference to the Provincial Water Quality Monitoring Network and the Provincial Groundwater monitoring network. While these networks are important, in additional networks are operated and necessary to manage water. The guide omits reference to the rain, climate, stream gauge and snow course site networks operated by the conservation authority and information shared with the Province. Also it is important that the federal-provincial hydrometric (stream gauge) network be identified in the guide. The federal-provincial stream gauge network includes 22 of the stream gauges operated in the Grand River watershed. Information from these gauges is important for flood forecasting and warning, low water response and reservoir operations programs. Also many water quality analyses could not be completed without the combination of stream flow and water quality information. Operation of some municipal intakes and sewage treatment plants rely on stream flow and water quality information for compliance with certificate of approval (COA's) for these facilities. In addition, the GRCA operates a continuous water quality monitoring network which is important to monitoring water quality trends, calibrating water quality models relied on by municipalities and to specific municipal COA's for certain municipal water facilities.

The *Conservation Authorities Act* includes a provision that additional programs or services may be included if they are prescribed by the Rrovince in a regulation on or before the first anniversary of the proposed transition date of January 1, 2023. (CA Act Section 21.1.2). The consultation paper appears to state that the regulation of the two additional programs identified may occur after the transition period. The Province is encouraged to release any regulations related to these two programs in the near future in order to ensure they are included in upcoming discussions with watershed municipalities and other stakeholders.

It is also required that the Province clarify that the tables provided in the consultation guide of non-mandatory programs/services and corresponding funding mechanisms are examples and not a comprehensive list.

2. Non-Mandatory Programs and Services

The MECP is proposing to create one regulation that would require conservation authorities and participating municipalities to enter into agreements on the use of municipal levies to finance in whole or in part the non-mandatory programs and services. Also, it is proposed that a transition plan for conservation authorities/municipal agreements would be developed and implemented.

Municipal Agreements:

The proposed Agreements and Transition Period regulation could require that the agreements do the following:

- Include a provision that the participating municipality agrees to pay its apportioned levy for the non-mandatory program or service.
- Set out the termination date of the agreement.
- Certain time periods may also be specified for the purposes of reviewing and renewing any such agreements that are reached.
- Include provisions governing early termination and governing notice and resolution of breaches of the agreement.
- Include transparency provisions (e.g., that agreements are available to the public online).

The Ministry is proposing that agreement arrangements between conservation authorities and municipalities could be flexible according to program or service circumstances (i.e. an agreement for a program or service could be with one or more participating municipalities or could be separate agreements per participating municipality including all the conservation authority-determined programs or services that a municipality may agree to fund, etc.). The flexibility is intended to support efficiency, expedite the agreement(s) and be cost effective in any potential legal or accounting fees.

Comments
It is important that MECP ensure this proposed regulation is written at a high level in order to capture the essential principles but that the regulation also maintain the flexibility needed to ensure that conservation authorities and municipalities are able to negotiate effective agreements in a timely manner.

The regulation should not preclude a conservation authority from entering into an agreements for the funding of non-mandatory program and services with non-participating municipalities within the watershed.

The GRCA has a number of adjacent conservation authorities and where possible, efforts will be made to coordinate the negotiations of non-mandatory programs and service agreement with the shared municipalities. This will help with efficiencies of negotiations and increase consistency amongst the conservation authorities with the shared municipalities.

The GRCA will also work with municipalities to consolidate non-mandatory program and services into one agreement, where possible. This will help with the tracking and reporting requirements moving forward once the agreements have been signed.

3. Transition Plan

The Province is proposing to establish a requirement of a transition plan for conservation authorities/municipal agreements to be developed and submitted to the MECP by December 31, 2021. As the plan is implemented quarterly status reports are required to be submitted to the Ministry. Any changes to the transition plan must also be submitted.

The proposed regulation would require each conservation authority to develop and implement a transition plan that includes:

- A workplan and timeline outlining the steps the conservation authority plans to take to develop and enter into agreements with its participating municipalities.
- The preparation of an inventory of all of the authority's programs and services, with clear indication for each program and service which of the three categories it fits into (mandatory programs and services where municipal levy could be used without any agreement; non-mandatory programs and services at the request of a municipality with municipal funding through a MOU; non-mandatory programs and services an authority determines are advisable), and how they are funded (e.g., provincial, federal, municipal funding, municipal levy, and self generated revenue).
- The consultation process with participating municipalities on the inventory.
- A list of any new mandatory programs and services the authority will need to provide to meet the requirements of the mandatory program and services regulation.
- A list of non-mandatory programs and services for which the authority will seek municipal agreement to fund via municipal levies, including estimated amounts requested/required from the participating municipalities to do so.
- A list of non-mandatory programs and services that do not require municipal agreements (if the programs and services are funded by revenue that is not from a municipal levy).
- Steps taken and/or to be taken to enter into these agreements.
- Make the plan available to the public (posted on website)
- New proposed financial structure to be in place for the authority and municipal fiscal year of 2023.

Comments

The GRCA has 21 participating municipalities within the watershed. Along with developing and implementing the transition plan, the MECP is also requiring quarterly reporting on the status of the plan implementation. In order to meet the requirement of having this new financial structure in place for the 2023 budget, municipal agreements will have to be completed in late spring/early summer of 2022 to allow for enough time to complete the GRCA budget process. The timeline the Province has proposed is highly ambitious, but staff will work towards meeting this target. It is appreciated that the MECP is proposing to include the granting of extensions to the regulation through a written request to the Ministry.

In order to meet proposed timelines, the process for proclaiming the regulations must continue to move forward. It is also important that the Province release the Phase 2 consultation document/regulations as it is important for conservation authorities to be able to present the full picture to municipalities when negotiating for non-mandatory program agreements. Finally, the Province muct clearly indicate whether it will continue to support/fund Source Water Protection past March 2022. Source Water Protection

responsibilities will now be identified as a mandatory program and the incorporation of this program into the operational levy would have an impact on the allocation of the levy to other programs.

4. Community Advisory Boards

The Province is proposing to proclaim a section of the *Conservation Authorities Act* that would enable a Lieutenant Governor in Council (LGIC) regulation governing the establishment of advisory boards, including the ability to require conservation authorities to establish one or more advisory boards and prescribing related requirement with respect to composition, functions, powers, duties, activities and procedures.

Comments

Currently, there are several opportunities for the public and other stakeholders to provide comments and input on a variety of topics related to the GRCA. The Province should consider the opportunity for conservation authorities to be exempt from this requirement if they are able to demonstrate that they meet the objectives of this regulation through other committee/public opportunities for engagement.

The operational requirements for the Community Advisory Board will be similar to the administrative and staffing support of the Board of Directors. The financial support for the Community Advisory Board should be considered a mandatory program and service so that it will be supported through the levy.

5. Section 29 Minister's Regulation (CA Landholdings)

Once the new section 29 of the *Conservation Authorities Act* is proclaimed, a Minister's regulation is proposed to consolidate the current individual authority section 29 'Conservation Area' regulations regarding activities on lands owned by conservation authorities into one regulation.

Current section 29 regulations manage activities on all authority owned land including the used by the public of the lands and services available; the prohibition of certain activities; setting fees for access and use of lands including recreation facilities; administrating permits for certain land uses; and protecting against property damage and for public safety.

Comments

Over the past decade, the GRCA has documented increased challenges with the management of it's properties. With the increasing population and urbanization around the GRCA's land holdings, there has been a notable increase in use and misuse. While the majority of GRCA property users are respectful of the space, there has been an increase in unauthorized access, use and property damage. It is requested that the Province consider a working group to discuss the challenges that conservation authorities are dealing with on the increased use/misuse of property and help to facilitate solutions.

With the consolidation of the section 29 regulations to one regulation this will help to improve consistency amongst the 36 conservation authorities.

Conclusion

Increasing transparency and clarity in how conservation authorities levy municipalities for mandatory and non-mandatory programs and services is an important step in ensuring a continuing collaborative working relationship between conservation authorities and municipalities.

GRCA supports the Province's intent to require conservation authorities to incorporate modern transparency standards into their operations. For example, posting transition plans and non-mandatory service agreements for the public (website) and ensuring that municipalities and conservation authorities review agreements for non-mandatory programs and services after a set period of time (6-8 year review period is preferred to provide financial stability to programs and services).

The timelines proposed in the consultation guide about the development and implementation plan are ambitious. The GRCA has 21 participating municipalities that will require agreements for any non-mandatory programs. Every effort will be made to meet the proposed timelines; however, we are pleased to see that exceptions will be considered. To be able to enter into negotiations with municipalities with as much clarify as possible as relates to both classification of programs and phase two regulation guidelines is important to ensuring successful and efficient negotiations. The GRCA has established a Transition Reserve that will assist with the financial costs to developing and implementing the required transition plan.

The Made-in-Ontario Environment Plan includes the following statement about the core role of conservation authorities: Work in collaboration with municipalities and stakeholders to ensure that conservation authorities focus and deliver on their core mandate of protecting people and property from flooding and other natural hazards, and conserving natural resources.

In addition to the core mandate, the GRCA undertakes importance watershed-based programs that provide a wide range of benefits to watershed residents. Conservation Authority programs and services protect water, provide natural spaces and build watershed resilience. This investment helps watershed residents and the province to avoid future costs around challenges such as flood damages, business disruptions and public health issues. The rapidly growing population in the GRCA watershed is relying on clean and sustainable water, breathable air, green spaces, healthy soils, forests, wetlands and a rich mix of wildlife, birds and fish for drinking water, food, fuel, commerce and industry, public health and many other uses. Being in nature restores people and helps them to stay active and healthy.

Financial implications:

At this time, the financial impacts of the new regulations are uncertain.

Other department considerations:

Not applicable

Prepared by:

Samantha Lawson
Chief Administrative Officer

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PART ONE: Programs and Services Delivered by Conservation Authorities			
1. Mandatory Conservation Authority Programs and Services Regulation			
A. Mandatory Programs and Services Related to the Risk of Natural Hazards	5	It is proposed by the Ministry of Natural Resources and Forestry that each conservation authority would be required to implement a program or service to help manage the risk posed by the natural hazards within their jurisdiction, including: flooding, erosion, dynamic beaches, hazardous sites as defined in the Provincial Policy Statement, 2020 (PPS, 2020) and low water/drought as part of Ontario's Low Water response. This program shall be designed to: • identify natural hazards; • assess risks associated with natural hazards including impacts of climate change; • manage risks associated with natural hazards; and • promote public awareness of natural hazards. Managing risks associated with natural hazards may include prevention, protection, mitigation, preparedness and response.	See GRCA Board Report for additional comments on this section.
	6	**Mandatory Programs and Services related to the Risk of Natural Hazards include:** 1. Administration of permits issued under section 28.1 of the Conservation Authorities Act, including associated enforcement activities (sections 28.1 and 28.1.2 once proclaimed). Where appropriate, conservation authority administration of permits may include coordinated involvement in other review or approval processes in accordance with applicable law (e.g. conservation authorities' role in commenting on Environmental Assessment Act, Drainage Act, Aggregate Resources Act, Niagara Escarpment Planning and Development Act proposals.)	It appears that this list of coordinated involvement in other review or approval processes has inadvertently missed the Planning Act and future documents should include this reference. The province should ensure that conservation authorities are able to continue to comment on all natural hazard related planning or development applications. The most transparent and effective method to advise landowners, municipalities and other stakeholders of natural hazards often occurs through conservation authority involvement in other approval processes. GRCA supports this proactive approach to identify natural hazards at the earliest stages of project planning, changes in land use, and other initiatives.
		2. Land-use planning input on behalf of the Ministry of Natural Resources and Forestry related to the Natural Hazards policies of the PPS, 2020 under the Planning Act (excluding policies associated with wildland fires) in accordance with	In addition to the One-Window approach and input and review of floodplain Special Policy Areas (SPAs), early involvement in other planning and technical processes should be included as components of the mandatory program.

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		Provincial One Window Planning Service protocols, including, when appropriate, Planning Act appeals to the Local Planning Appeal Tribunal related to Natural Hazard policies, and input into review of applications for new or amended Special Policy Areas.	In order for conservation authorities to effectively implement the identification and management of natural hazards, the review of Local/Lower Tier Official Plans (OP) for Natural Hazards and input into review of applications for new or amended Two Zone floodplain policy areas should be included as mandatory programs. The review of local OPs is currently included as an eligible activity under MNRF provincial funding arrangements (S. 39 Grants). The province should continue to fund these reviews. The land use Official Plan policies and maps are closely aligned with the conservation authority regulation. The administration of natural hazard permits issued by the GRCA (S. 28 of the Conservation Authorities Act) and consistent policies and maps are essential for a streamlined review and approval process and to avoid disputes on applications at the end of an approval process i.e. permit stage. In many circumstances the Local/lower tier official plans include more detailed natural hazard policies and maps. Early and direct input with municipalities and the public through the local OP review process will ensure issues are addressed before the approval of the local plan. In some areas of the GRCA watershed, SPAs are included in the local/ lower tier Official Plan and the One Window process to review SPAs wouldn't apply in these circumstances e.g. City of Waterloo, City of Cambridge. There are many Two Zone Policy Areas in the Grand River watershed. In both of these floodplain policy areas, conservation authorities provide expert input on water resource engineering and policies to ensure that the land use planning and conservation authorities consideration of permits in the floodplain are aligned and streamlined. The province has outlined the components of the mandatory programs for natural hazards and is proposing that this include assessing risks associated with natural hazards including impact and the potential impact of changing climatic conditions on natural hazards. Natural hazard examples are flooding, erosion, unstable soils etc. We strongly encourage the province to prioritize updating the series of all provincial natural hazard technical guidelines to include modernized technical requirements and information. These updates should include climate change

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			considerations for all hazards as well as policy implementation guidance for SPAs, Safe Access etc. This will enable the consistent and successful implementation of the natural hazard program. Updating the provincial safe access guidelines (2002) is necessary to clarify the flooding depths and velocities that are acceptable for public safety i.e. ingress and egress for people, vehicles and municipal and provincial emergency responders.
	6	3. Flood forecasting and warning in accordance with and, at a minimum, to the extent described by approved provincial standards.	The current provincial document is a guideline. If the province is proposing new standards this should be undertaken through a technical review and consultation process. The provincial Flood Forecasting and Warning Guidelines provide details on the elements of a flood forecasting and warning system. These guidelines are currently being updated by the province. Completion of updated guidelines is important to the provincial flooding strategy and to the implementation of Flood Forecasting and Warning as a core mandatory service. Monitoring should be included with Flood Forecasting and Warning as it is under the low water program. Monitoring programs associated with flood forecasting and warning are needed to deliver this service.
	6	4. Operation and maintenance of: • any water control infrastructure (including soft or hard structures) owned or controlled by the conservation authority that mitigates risk to life and property damage from flooding or supports low flow augmentation; • any erosion control infrastructure owned or controlled by the conservation authority; • the completion of operational and asset management plans; and • infrastructure operations, maintenance, rehabilitation/repair and the undertaking of any associated necessary technical or engineering studies, including dam safety studies and emergency preparedness plans.	Currently the WECI program funds decommissioning of dams. It's requested that funding for decommissioning of dams be continued and apply to all dams operated by a conservation authority. Classification of Water Control infrastructure is recommended. The following three categories are suggested: 1. Purpose built flood control infrastructure with a flood and/or flow augmentation function, 2. Water control infrastructures that provide a level of benefit from a flood, ice management or flow augmentation should be considered for provincial WECI funding provided the above noted benefits can demonstrated or quantified.

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			3. Flood control infrastructure that has no or very little benefit from a flood or flow augmentation function or role. This sort of infrastructure may not be eligible for provincial funding with the exception of funding related to decommissioning of this type of infrastructure. This sort of infrastructure may provide a local amenity to the community or support a local municipal benefit such as fire suppression. Separate MOU agreements are anticipated for this type of infrastructure with the participating municipalities/local municipality. If the conservation authority (CA) owns the lands surrounding the dam and reservoir then it would be included in the land management strategy of the CA under the local CA's land management program. The existing provincial Water and Erosion Control Infrastructure (WECI) committee could assist with analysis of actual funding. The funding allocation model has worked well, and it's expected that an analysis would show the current funding rules are working and purpose-built water control structures receive most of the funding. There are benefits to keeping the current funding rules and guidelines as it creates flexibility. In years where there may be less demand for funding of maintenance of the larger purpose-built infrastructure, there would be flexibility to fund projects for lower priority water control infrastructure. Transition plans should allow time for classification of water control infrastructure into the three categories suggested in the above and allow CA's and municipalities adapt to the new funding model. The Provincial WECI committee could assist with development of a transition plan. It is important to recognize floodplain mapping assists dam owners to create operational and emergency preparedness plans contributing to improved dam safety across the province and management of the flood hazard. The Independent Advisor's Report on Flooding, Doug McNeil's report and The Provincial Flood strategy should be referenced when developing policy and transition plans regarding flood control infrastructure. It's important to respect the

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			intended outcomes of the Provincial Advisor's Report and the Provincial Flood Strategy when considering changes to the WECI program and funding rules.
	6	5. Ice management services (preventative or remedial) as appropriate and as supported by an authority approved ice management plan, including: • development and updating of plans; • control of ice, including potential standby equipment (e.g. icebreaker put in place in advance of ice season to prevent ice formation); and • addressing ice-related erosion.	It is positive to see the importance of ice management recognized. Ice breaker services are typically provided by the Federal government (Coast Guard) in response to a provincial request from the municipalities. The CA role is to advise municipalities when a request for coast guard assistance is prudent and having a clear process in place is a CA responsibility. Revising the wording from icebreaker services to ice management services would provide clarity. The GRCA doesn't provide some of the services listed under ice management e.g. control of ice (blasting), addressing ice-related erosion on private land.
	7	6. Low water monitoring and communications in accordance with and, at a minimum, to the extent described by approved provincial standards.	Low water response was not included in the table of mandatory programs. This is a MNRF led program that CA delivers, the table on page 18 should be amended to include Low Water Response. The current provincial document is a guideline. If the province is proposing new standards this should be undertaken through a technical review and consultation process. A review of the current guidelines is recommended to incorporate the province's new water quantity framework for the permit to take water program with the low water response program. MNRF is the author of the low water response guideline, MECP is responsible for the Permit to Take Water program and the new provincial Water Quantity management framework. When the original low water response program was created there was a Provincial Water Directors Committee. That committee no longer exists but there is a need to integrate approaches to water management across ministries. It's recommended the province consider reconvening the Provincial Water Directors Committee to facilitate cooperation and coordination of approaches to water management across ministries.
	7	7. Collection, provision, and management of information as needed to support the conservation authorities	This section captures many of the aspects needed to cover natural hazards and water management planning. In addition to the items noted other components

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		to: • delineate and map hazard areas; • develop plans and policies to guide appropriate management and use of hazard lands within the conservation authority's jurisdiction, including shorelines and rivers; • study surface water flows and levels (e.g. low/peak flow, water budget, surface/groundwater interactions, flood hazard); • study stream morphology; • study the potential impact of changing climatic conditions on natural hazards; and • study design to mitigate natural hazards.	would be part of this program such as development of new information e.g. engineered flood modelling, public consultation, development of strategies to identify and share natural hazard areas and information. Regulated features that would be included in this list are lakes and wetlands. Engineering or technical models are important tools not only to the hazard program but also to the Source Water and Watershed management programs. Models are needed along with monitoring data to make or recommend decisions with respect to water management. Management and maintenance of models is an important consideration as part of the delivering a hazard management and watershed strategy programs and services.
	7	8. Communications, public awareness and education regarding the risk of natural hazards present within the jurisdiction of the authority to public safety, and to consult on program components as required.	It is important that provincial hazard management technical guidelines are updated to reflect current technology and approaches use to define hazards. The current provincial guidelines need to be updated to reflect current technology and approaches.
B. Mandatory Programs and Services Related to the Management of Conservation Authority Land	7		See GRCA Board report for comments on this section.
	9	5. Management and maintenance of conservation authority owned or controlled lands (based in the management plans) related to: • Land management and stewardship activities related to protecting natural heritage systems/features/values to ensure the property is maintained in accordance with the authority approved management plan for natural heritage management.	GRCA supports inclusion of the development of management plans for GRCA landholdings and land management and stewardship activities such as forest management, restoration, invasive species management and monitoring as part of the mandatory program. This will ensure these natural areas contribute to a healthy local, regional, watershed and provincial water and natural heritage ecosystem. For example, conservation authority forest management for some woodlands will maintain or improve on their natural heritage values and the management of

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		• Employing best management practices to protect and conserve provincially significant conservation lands and natural heritage features as appropriate including environmentally or ecologically sensitive lands (for habitat restoration/rehabilitation, invasive species control, fish and wildlife monitoring). • Monitoring and enforcement actions to ensure the maintenance of the property boundaries and also the land title from encroachments as well as to ensure the ecological integrity of conservation authority owned properties, to address illegal activity, with a goal also of reduction of liability and risk associated with the use of the properties. • Identification, mapping and assessments as appropriate to determine maintenance and repair needs as well as whether changes are required to any management plan.	plantations will transition monoculture forests to diverse woodland species and habitats to achieve the natural heritage values identified in the consultation paper.
C. Mandatory Programs and Services Related to Source Protection Authority Responsibilities under the Clean Water Act, 2006	10	The Province's Clean Water Act, 2006 is part of a multi-barrier approach to ensure safe and sustainable drinking water for Ontarians. We continue to ensure that our drinking water sources are among the best protected in the world through requiring collaborative, watershed-based source protection plans that are locally driven and based in science and focused on prevention. Source protection plans contain a series of locally developed policies that reduce, eliminate or manage the risks of various activities to sources of drinking water. Under the Clean Water Act, 2006 conservation authorities are required to exercise and perform the powers and duties of a drinking water source protection authority. Each conservation authority therefore would be required to implement programs and services related to those responsibilities as source protection authorities under the Clean Water Act, 2006.	See GRCA Board Report for additional comments on this section.
	11	Mandatory Programs and Services for Conservation Authorities related to Source Protection Authority Responsibilities under the Clean Water Act, 2006 are as follows:	The proposal includes some potential new responsibilities for some source protection authorities, such as completing municipal related land use mapping necessary (e.g., managed lands, impervious surfaces) to determine the risk posed by prescribed drinking water threats.

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		2. Preparing amendments to assessment reports and source protection plans (Sections 34, 35 and 36 of the Clean Water Act, 2006)… • Completing related land use mapping necessary (e.g. managed lands, impervious surfaces) to determine the risk posed by various prescribed drinking water threats, new local or provincially-identified threats, and to address changes to the Clean Water Act, 2006, O. Reg. 287/07: General Regulation or Director's Technical Rules made by the Province…	In Lake Erie Region which includes the GRCA, these tasks are undertaken by the municipality as the drinking water system owner, with support from source protection authority staff where requested. The proposed regulation should allow for municipalities or conservation authorities to complete these tasks in accordance with the approved source protection plan policies or by agreement.
	11	3. Implementing source protection plan policies (Sections 38 and 45 of the Clean Water Act, 2006, and section 33 of O. Reg. 287/07)… • Responding to requests to review proposals in wellhead protection areas and intake protection zones to identify the source protection policies that apply and note potential effect(s) of the project on source water where required (such as under the Planning Act, Environmental Assessment Act or associated applications under the Environmental Protection Act and Ontario Water Resources Act).	This section of the proposal includes some potential new responsibilities for some source protection authorities, such as responding to requests to review proposals in wellhead protection areas and intake protection zones. In Lake Erie Region which includes the GRCA, these tasks are undertaken by the municipality as the drinking water system owner, with support from source protection authority staff where requested. The proposed regulation should allow for municipalities or conservation authorities to complete these tasks in accordance with the approved source protection plan policies or by agreement.
F. Mandatory Programs and Services Prescribed in Regulation	16	Introduction: The Conservation Authorities Act also allows for the prescribing of 'other' programs and services not listed in previous mandatory categories. These 'other' programs and services must be prescribed within a year after the end of the transition period. Within this year municipalities and conservation authorities are to create an inventory of their programs and services and enter into agreements for municipal funding of non- mandatory programs and services through a municipal levy, where applicable.	See GRCA Board Report for additional comments on this section.
	16	**1. Core Watershed-based Resource Management Strategy:** A watershed-based resource management strategy can provide a means to develop an improved integrated planning process with a longer-term perspective for the delivery of the mandatory programs and services that all conservation authorities must deliver. The results may inform an adaptive management approach to address the issues or threats	The inclusion of a watershed-based Resource Management Strategy that includes the mandatory programs and can include non-mandatory programs is positive. The GRCA provides programs that provide watershed and local benefits that are important components of improving the health of watersheds developing the resilience of our communities in light of climate change. These programs contribute

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		that these mandatory programs and services may be addressing such as mitigating the risk from the impacts of natural hazards. A successful strategy should also help ensure effective and efficient use of funding, especially of the municipal levy. To capture the value of the broader watershed and resource management perspective that conservation authorities have, the ministry is proposing that each conservation authority be required to develop a core watershed-based resource management strategy that documents the current state of the relevant resources (principally water resources) within their jurisdictions in the context of the mandatory programs and services described in this section of the Guide. The benefit to having a watershed-based resource management strategy is that it can potentially: • Identify changes over time, causal relationships, issues, and stressors for input into a plan of action; • Identify the best, most cost-effective management approach to mitigate the risk or issue; • Propose key or strategic management activities; • Monitor the authority's performance in meeting any key management activities; and • Monitor outcomes of proposed key or strategic management activities. Aspects of watershed-based resource management are already embedded in the proposed mandatory programs and services listed in the above sections of this Guide. Conservation authorities currently undertake much of this work, generally related to natural hazard management, with extensive current monitoring, data collection, management and modelling used to track conditions and with existing technical studies. For example, the mandatory programs and service for the risk of natural hazards requires conservation authorities to undertake watershed-based collection, provision, and management of information as needed, including to study:	to improvements to the ecosystem, improve water quality, and address pressures associated with various land use activities. GRCA supports the inclusion of programs that provide information and benefits beyond municipal boundaries in this Strategy e.g. Subwatershed Studies, Rural Water Quality Program, natural heritage systems, tree planting etc. This is also important as a big picture strategy can help support prioritizing infrastructure funding opportunities to get the best value for taxpayer dollars which is an important outcome of this strategy. This approach aligns well with the current Grand River water management plan. As stated in other comments aspects of the monitoring program have been recognized however there are gaps in the water quantity monitoring identified in the proposal. An important component of implementing a watershed-based resource management strategy is a technical advisory committee. The water managers committee in the Grand River Watershed has been an important and effective committee over several decades and was important to the creation of the GRCA watershed wide water management plan. The water managers committee is composed of municipal, provincial and federal water managers that have a stake or interest in water management in the Grand River watershed and Lake Erie. It's important to recognize the need for technical committees which are separate and distinct from the community advisory committee described in the proposal.

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		• surface water flows and levels (e.g. low/peak flow, water budget, surface / groundwater interactions, flood hazard); • stream morphology; and • the potential impact of changing climatic conditions on natural hazards. The resource management strategy could also be informed by the development of the mandatory authority land acquisition and disposition strategy or policy detailed above. As part of this, an authority may, for example, review information from an existing watershed plan or study for acquiring natural hazard land, or assess municipal plans that delineate natural heritage systems for acquiring heritage features or review Ministry of Natural Resources and Forestry information on wildlife corridors to connect authority owned land with other lands. Another example that may contribute to the strategy are “watershed characterizations” completed for source protection plans under the Clean Water Act, 2006. The Ministry is proposing that the core watershed-based resource management strategy could include the following components: • guiding principles and objectives; • characterization of the current state and management of the natural resources related to the mandatory programs and services, in specific watersheds (if appropriate) or at the authority’s jurisdictional scale; • scope of the strategy; • details of existing technical studies, monitoring frameworks, relevant provincial policy and direction; • analysis and plan of potential actions for more effectively implementing the mandatory programs and services on an integrated basis; and • annual reporting on the accomplishments, outcomes, impacts of the strategy. The strategy would include provisions for review and periodic updating to support the design and implementation of the mandatory programs and services the strategy is intended to support.	

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	18	**Mandatory Programs and Services that would be incorporated in the strategy:**	A review of the Programs and Services will be undertaken over the next few months as the Transition Plan is developed and through MOU discussions. Some examples of areas of clarification are noted below: In addition to the floodplain mapping noted in this chart under municipal roles, the Natural Hazard mapping created by conservation authorities would also be included in the strategy as part of the mandatory program. These maps include all natural hazards e.g. floodplain, erosion, shoreline etc. Comments related to the water quantity monitoring program are noted below. Activities and infrastructure associated with water quantity monitoring is eligible for funding through MNRF grants through the mandatory flood forecasting and warning program.

PROGRAM AND/OR ACTIVITY	CONSERVATION AUTHORITY (CA) ROLE	POTENTIAL FUNDING MECHANISMS
RELATED TO THE RISK OF NATURAL HAZARDS		
Provincial Flood Forecasting and Warning Program	Ministry of Natural Resources and Forestry (MNRF) lead, CA delivers	MNRF Grant, Municipal Levy
Flood and Erosion Control Infrastructure Operation	CA Lead	MNRF Grant, Municipal Levy,
Natural Hazard (floodplain etc.) Mapping For Land Use Planning	Municipal lead, CA delivers	MNRF Grant, Municipal Levy,
S.28 Permitting	CA Lead	Municipal Levy, Permit Fees
PROGRAM AND/OR ACTIVITY	**CONSERVATION AUTHORITY (CA) ROLE**	**POTENTIAL FUNDING MECHANISMS**
Studies and Supporting Natural Hazard Program	CA lead	MNRF Grant, Municipal Levy,
RELATED TO THE CONSERVATION/MANAGEMENT OF AUTHORITY OWNED LANDS		
Land Acquisition Strategy or Policy	CA lead	Municipal Levy, Self-generated revenue
Land Management for the Protection of Natural Heritage	CA Lead	Municipal Levy, Self-generated revenue
"OTHER" MANDATORY PROGRAMS AND SERVICES		

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		Water Quantity and Quality Monitoring — Ministry of the Environment, Conservation and Parks lead, CAs monitoring/data — Municipal Levy	
	19	**Potential Non-Mandatory Extension of the Strategy's Scope** The ministry further recognizes that there is significant variation in the circumstances of individual conservation authorities and the programs and services they offer. Depending on the circumstances of a conservation authority, such a resource management strategy could be extended to cover a broader range of natural resource areas than the core mandate of mandatory programs and services set out in this Guide. Additional non-mandatory resource management components could be included in the strategy and be based in a similar process of resource assessment, technical studies and/or monitoring including using existing information (for example in municipal plans or leveraged from the natural hazard or other mandatory programs), and thus expand the benefit of the strategy's integrated perspective. As noted above, if municipal funding is required to finance (in whole or in part) the development of such additional components, such as non-mandatory resource management components there are two mechanisms: if the non-mandatory program is one being delivered by the authority on behalf of a participating municipality through a MOU, the MOU could be amended accordingly. Similarly, where the component of the strategy is to support a non-mandatory program or service the authority has determined is advisable to further the purposes of the Act, the authority's agreement with participating municipalities can ensure the necessary funding for the strategy to play that role. Funding from others (such as other provincial grant programs, federal government programs, foundations or funding from conservation organizations etc.) could also support	During the consultation period for this posting, officials from the province indicated that the "Potential Non-Mandatory Extension of the Strategy's Scope" tables that outline specific programs and services, roles and funding mechanisms for mandatory, non-mandatory and other advisable programs and services should be considered as a list of example programs or activities, roles and funding option. The province needs to confirm that these are examples.

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		the development of non-mandatory resource management monitoring/studies to add into an authority's watershed-based resource management strategy. Funding partners may want to consider whether as part of paying for a non-mandatory program and service the authority would need to include it in the strategy, so as to provide the integrated perspective to the design and implementation of that non- mandatory program or service.	

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<tr><td></td><td>19</td><td>Non-Mandatory Programs and Services on Behalf of a Municipality (examples)
<table>
<tr><th>PROGRAM AND/OR ACTIVITIES</th><th>CONSERVATION AUTHORITY ROLE</th><th>POTENTIAL FUNDING MECHANISMS</th></tr>
<tr><td colspan="3">RELATED TO PRIVATE LAND STEWARDSHIP EXTENSION SERVICES</td></tr>
<tr><td>Restoration and Stewardship (Urban, Rural, Agriculture)</td><td>CA lead/delivery</td><td>Municipal Agreement/MOU Other, (OMAFRA Grants)</td></tr>
<tr><td>Tree Planting and Forest Management</td><td>CA lead/delivery</td><td>Agreement/ MOU</td></tr>
<tr><td>Wetland Enhancement and Restoration</td><td>CA lead/delivery</td><td>Agreement/ MOU</td></tr>
<tr><td>Invasive Species Management</td><td>CA lead/delivery</td><td>Agreement/ MOU, Other</td></tr>
<tr><td colspan="3">ON BEHALF OF A MUNICIPALITY RELATED TO PLANNING, LAND USE</td></tr>
<tr><td>Sub-watershed planning</td><td>Municipal lead, CA delivery</td><td>Municipal MOU</td></tr>
<tr><td>Stormwater Management</td><td>Municipal lead, CA delivery</td><td>Municipal MOU</td></tr>
<tr><td>Development Services (to municipalities)</td><td>Municipal lead, CA delivery</td><td>Municipal MOU</td></tr>
<tr><td>Natural Heritage Mapping</td><td>Municipal lead, CA delivery</td><td>Municipal MOU</td></tr>
<tr><td>Emergency Management Services (EMS) Mapping</td><td>Municipal lead, CA delivery</td><td>Municipal MOU</td></tr>
</table></td><td>This table outlines example or potential programs that may be provided for a municipality through a MOU. It is important to note that some programs listed in these tables may have components related to mandatory programs. For example, subwatershed studies include identification of natural hazards such as floodplains and water quantity control requirements to avoid flooding after development occurs, and ensuring flows are managed to avoid erosion in receiving watercourses.

Emergency Management Services (EMS) Mapping and Municipal Emergency response plans are the responsibly and lead by the municipality. Flood extent mapping and flood zone mapping are components of a Flood Forecasting and Warning system and led by the CA.</td></tr>
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		Non-Mandatory Programs and Services an Authority Determines Are Advisable	

PROGRAM AND/OR ACTIVITIES	CONSERVATION AUTHORITY ROLE	POTENTIAL FUNDING MECHANISMS
AS AN AUTHORITY DETERMINES IS ADVISABLE		
Non-Mandatory Research	CA Lead	Municipal Agreement, Other
Development Services to Landowners and Others	CA Lead	Municipal Agreement, Fees
Ecological Monitoring Outside of Conservation Authority Owned Land	CA Lead	Municipal Agreement, Other
"May do' Roles Under other Provincial Acts (e.g. commenting roles)	CA input Other Ministry mandates	Municipal Agreement, Other – Grants
ON CONSERVATION AUTHORITY OWNED LAND		
Purchase of Land for a CA	CA Lead	Municipal Agreement, Self- generated revenue, Other
Resource Development on CA Owned land (Forest Management, Hydro Generation)	CA Lead	CA Self-generated revenue, Other (Managed Forest Tax Incentive Program)
Land Management on CA Owned Land for Recreation Purposes	CA Lead	CA Self-generated revenue, Other
Land management on CA Owned Land for Education, Training and Cultural Purposes.	CA Lead	CA Self-generated revenue, Other

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	20	**2. Provincial Water Quality and Quantity Monitoring, including:** a. Provincial stream monitoring program b. Provincial groundwater monitoring program At this time, the ministry is proposing mandatory programs and services for conservation authorities related to water quality and groundwater quantity monitoring to be prescribed in this category with the possibility of additional programs and services prescribed later within the timeframe enabled by the Conservation Authorities Act. The ministry is responsible for long term monitoring of water quality of both groundwater and surface water and groundwater levels across the province to understand the state of the environment, to track changes over time, and to have the information available to support work to investigate environmental issues as they arise. The data obtained and analyzed provides scientific support for policy creation and amendment and for environmental assessments and permissions (Environmental Compliance Approvals and Permits to Take Water). All 36 conservation authorities currently participate in the ministry's programs related to monitoring water quality and groundwater quantity on a voluntary basis: with the Provincial Water Quality Monitoring Network (stream water quality) for over 50 years and in the Provincial Groundwater Monitoring Network (groundwater levels and chemistry) for over 20 years. The ministry manages the water monitoring programs by providing technical leadership, coordination, guidance, data administration, laboratory analysis, instrumentation and training to support the conservation authority role in this work. Conservation authorities install and maintain equipment, collect samples/data, and send samples to the ministry laboratory for chemical analysis.	This section is solely focused on the monitoring program MECP delivers with assistance from the conservation authorities (CAs). The monitoring programs delivered by MNRF with assistance of CAs and the monitoring programs delivered by CAs have been omitted. The CAs operate, rain gauge networks, climate monitoring networks (air temperature, wind, solar radiation), snow survey sites, reservoir monitoring gauges and river monitoring gauges. These monitoring networks are needed to support the flood forecasting and warning program to monitor trends over time for watershed management climate and stream flow trending and to support several water management analysis and modeling including water quality modeling and analysis. The MNRF administers the Federal Provincial cost share agreement for hydrometric stations (stream gauge). The annual program budget is approximately 6 million dollars. The stream gauges operated under this agreement are needed to deliver the flood forecasting and warning program, the low water response program, support the dam safety program. In addition, information is needed for model calibration and verification to: administer the permit to take water program, provide information to complement the water quality monitoring programs and to complete water quality analysis and support compliance with MECP certificates of approval issued to water takers and municipal sewage treatment plant operators. It is important the Federal and Provincial cost share agreement be recognized in the proposal. The GRCA also operates a continuous water quality monitoring network which is important to MECP in their review and approval of municipal sewage treatment plant Certificate of Approval process. This network is important to monitor the water quality trends in the river and to calibrate and verify the GRCA's Grand River Simulation Model (GRSM) water quality model used to simulate water quality conditions in the river and used to help answer questions around assimilative capacity of the river and appropriate treatment requirements for municipal sewage treatment plant for MECP and municipalities. While operation and costs associated with this monitoring may fall under non mandatory programs and services it's

Section	Page	ERO Posting CAA Phase 1 Regulatory Proposal Consultation Guide - Text	Attachment to Grand River Conservation Authority Report # GM-06-21-49 – Additional Information and Comments
		Mandatory Programs and Services for Provincial Water Quality and Quantity Monitoring for conservation authorities include: a) Provincial stream monitoring program • Collection of stream water samples and submission to the ministry for water chemistry analysis. • Collection of in-situ water quality data using equipment provided by the ministry including deploying and calibrating equipment, liaising with the ministry on equipment maintenance and repair, and providing the ministry with the data collected. • Collection of additional water samples in areas that participate in the current pesticide monitoring program or may participate in a future parameter specific initiative. • Participation in annual program meetings, regional meetings and training sessions as required. b) Provincial groundwater monitoring program • Groundwater level, precipitation, barometric pressure and soil moisture data downloaded and provided to the ministry. • Collection of groundwater samples and submission to the ministry for water chemistry analysis according to program protocols. • Maintenance and participation in the repair of program wells and associated equipment. • Confirmation that Landowner Agreements between conservation authorities and private landowners are in place for program wells that are on private lands. • Maintenance of groundwater collection sites. • Participation in program committee meetings, regional meetings and training sessions as required. • Participation in the Protocol-for-Actions (Exceedance Protocol) when a program well reports an exceedance of an Ontario Drinking Water Quality Standard. • Participation in the decommissioning or construction of monitoring wells that are part of the program.	important to recognize the integration of these networks to the watershed scale resource management strategy and the importance to the Source Water Protection Program in the Grand River watershed where several municipalities and Six Nations of the Grand River rely on the Grand River as a source of drinking water. Information and analysis supported by this monitoring network leads to cost effective solutions important to the local economy. Future provincial documents related to this section of the proposal should include the full range of monitoring programs.

Section	Page	ERO Posting CAA Phase 1 Regulatory Proposal Consultation Guide - Text	Attachment to Grand River Conservation Authority Report # GM-06-21-49 – Additional Information and Comments
Conservation Authority Costs Not Related to Delivery of Programs and Services	22		See GRCA Board Report for comments on this section.
2. Non-Mandatory Conservation Authority Programs and Services			
A. Regulation for Municipal Agreements and transition period	23	Regulatory authority for agreements for municipal funding of non-mandatory programs and services and the regulatory authority for a transition period/plan to develop the agreements is proposed to be combined into one Minister's regulation - Regulation for Municipal Agreements and Transition Period.	
		Municipal Agreements The un-proclaimed amendments to the Conservation Authorities Act provide requirements for the agreements between conservation authorities and participating municipalities for the use of municipal levies to finance in whole or in part the non- mandatory programs and services that the authority has determined are advisable to further the purposes of the Act. The proposed Agreements and Transition Period regulation could require that the agreements do the following: • Include a provision that the participating municipality agrees to pay its apportioned levy (determined under sections 25 or 27 of the Act in accordance with the regulations) for the non-mandatory program or service. • Set out the termination date of the agreement. o Certain time periods may also be specified for the purposes of reviewing and renewing any such agreements that are reached, such as review by the parties to the agreement at intervals to align with municipal elections and subsequent conservation authority appointments with some consideration to the authority and municipal budget cycles (e.g., 6 months after municipal election).	See GRCA Board Report for additional comments on this section.

Section	Page	ERO Posting CAA Phase 1 Regulatory Proposal Consultation Guide - Text	Attachment to Grand River Conservation Authority Report # GM-06-21-49 – Additional Information and Comments
		• Include provisions governing early termination and governing notice and resolution of breaches of the agreement. • Include transparency provisions (e.g., that agreements are available to the public online). The ministry is proposing that agreement arrangements between conservation authorities and municipalities could be flexible according to program or service circumstances (i.e. an agreement for a program or service could be with one or more participating municipalities or could be separate agreements per participating municipality including all the conservation authority-determined programs or services that a municipality may agree to fund, etc.). The flexibility is intended to support efficiency, expedite the agreement(s) and be cost effective in any potential legal or accounting fees.	
	24	**Transition Plans**	See GRCA Board Report for comments on this section
PART TWO: Governance and Oversight of Conservation Authorities			
1. **Regulation to Require "Community" Advisory Boards**	27		See GRCA Board Report for comments on this section.
PART THREE: Other Regulatory Matters			
1. **Section 29 Minister's Regulation**	29		See GRCA Board Report for comments on this section.

Lake Erie Region Source Protection Committee

Report number:	SPC-21-09-02
Date:	September 9, 2021
To:	Members of the Lake Erie Region Source Protection Committee
Subject:	Liquid Hydrocarbon Pipeline Threat Policy Update

Recommendation:

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-02 – Liquid Hydrocarbon Pipeline Threat Policy Update – for information, and

THAT the Lake Erie Region Source Protection Committee support Lake Erie Region staff to work with municipalities to continue to develop and finalize draft liquid hydrocarbon pipeline policies.

Summary:

In Lake Erie Source Protection Region (LESPR) the establishment and operation of a liquid hydrocarbon pipeline was originally identified as a local threat. Two significant liquid hydrocarbon pipeline drinking water threats were identified in the County of Brant within Wellhead Protection Areas (WHPAs) at the Paris and St. George Wellfields. Lake Erie Region source protection plans have non-legally binding policies to address these threats.

In 2018, the Ministry of the Environment, Conservation and Parks (MECP) revised the Ontario Regulation 287/07 to include "the establishment and operation of a liquid hydrocarbon pipeline" as a prescribed drinking water threat. As a result of these changes, Lake Erie Region staff conducted an analysis of where the new prescribed threat poses a significant, moderate or low drinking water threat. In addition to the already identified significant hydrocarbon pipeline threats, moderate and low hydrocarbon threats were identified in WHPAs, IPZs and HVAs.

Lake Erie Region staff have been working with municipalities most impacted by liquid hydrocarbon pipeline threats to develop a revised set of draft hydrocarbon pipeline policies. As the hydrocarbon pipeline industry is heavily regulated both federally and provincially, the source protection policies are proposed to focus on the need of operation, maintenance and response to emergencies related to pipelines including consideration for drinking water systems that could be impacted and the location of the drinking water system to be identified in emergency planning zones.

Proposed draft hydrocarbon pipeline policies are in Table 1 and Table 2 of Appendix B. The proposed policies would be for significant, moderate and low hydrocarbon pipeline drinking water threats within WHPAs and IPZs. Lake Erie

Region staff will continue to work on developing hydrocarbon pipeline policies with the support of municipalities in Lake Erie Region. A set of refined and municipally supported draft hydrocarbon pipeline policies will be brought to a future Source Protection Committee meeting for inclusion into the four source protection plans in Lake Erie Region.

Report:

Background

During the initial round of source protection planning, liquid hydrocarbon pipelines were not included in regulation as a prescribed drinking water threat. For threats relating to oil pipelines, the Lake Erie Region Source Protection Committee applied to the Director of the Source Protection Programs Branch to consider a request to add this as a local threat. The application was made in February 2011 and the Director approved the conveyance of oil by way of underground pipeline in June 2011 as a local threat in the Grand River, Long Point Region, Catfish Creek and Kettle Creek source protection areas.

Through the local threat initiative, two significant drinking water threats were identified in the Grand River watershed within the County of Brant. They are located in the Paris North and St. George Wellhead Protection Areas (WHPAs).

In July 2018, the "establishment and operation of a liquid hydrocarbon pipeline" was added as a prescribed drinking water threat to General Regulation (O. Reg. 287/07) under the *Clean Water Act* to consistently require the assessment of risk that liquid hydrocarbon pipelines pose to sources of drinking water across all source protection areas.

Lake Erie Region (LER) staff have been working closely with municipalities directly impacted by liquid hydrocarbon pipelines (County of Brant, City of Brantford and Haldimand County) to develop draft policies in light of the establishment and operation of a liquid hydrocarbon pipeline being added as a prescribed threat.

Technical Review of Drinking Water Threat Liquid Hydrocarbon Pipelines

LER staff updated the risk assessment using the threats approach to identify existing pipelines and whether they would be a significant, moderate or low drinking water threat given the new circumstances provided by the province, and determine the vulnerable areas where new pipelines would be a potential significant, moderate or low threat to drinking water sources.

There are multiple companies that transport liquid hydrocarbon products in pipelines through the Lake Erie Source Protection Region. They cross the drinking water vulnerable areas of: WHPAs, intake protection zones (IPZs) and highly vulnerable aquifers (HVAs). Significant groundwater recharge areas (SGRAs) are not considered in water quality risk assessments.

Table 1 below presents a summary of the threats risk assessment of liquid hydrocarbon pipelines in the Lake Erie Region. Map 1 through Map 3 are included in Appendix A. Map 1 shows the locations of the current known liquid

hydrocarbon pipelines in LESPR. Map 2 and Map 3 show liquid hydrocarbon pipelines that cross through WHPAs and IPZs in Lake Erie Region.

Table 1: Summary of Risk Assessments of Liquid Hydrocarbon Pipelines in the Lake Erie Source Protection Region

Risk Level	Vulnerable Area, Vulnerability Score	Existing Pipelines
Significant	• WHPA-B St. George, score 10 • WHPA-B Paris North, score 10	There are two **existing** locations where liquid hydrocarbon pipelines cross over WHPAs in the County of Brant. These threats were confirmed in the first round of planning.
Moderate / Low	• WHPA-B&C St. George, score 8 • WHPA-B&C Paris North, score 8 • WHPA-C St. George, score 6 • WHPA-B, C, D Paris North, score 6 • IPZ-3 Brantford, Dunnville Emergency Intake, Ohsweken, score 5&6 • IPZ-1 Nanticoke, score 5 • HVAs, score 6 (all)	There are multiple **existing** liquid hydrocarbon pipelines that cross WHPAs, IPZs and HVAs. Pipelines cross HVAs in the central region of the Grand River SPA. SGRAs are not considered in the threats assessment per the *Clean Water Act*.

Hydrocarbon Pipeline Regulatory Bodies

There are both federal and provincial bodies that are responsible for assessment and regulation of oil pipelines in Ontario. At a federal level, the Impact Assessment Agency of Canada assesses the impacts of major Canadian projects, including pipelines that transport liquid hydrocarbons. Regulatory responsibilities associated with pipeline and oil and gas transmissions (i.e., transportation) fall under the jurisdiction of the Canada Energy Regulator (the replacement agency for the former National Energy Board). At a provincial level, the Ontario Energy Board is responsible for any pipeline wholly contained within Ontario.

Policies for Liquid Hydrocarbon Pipelines

Current Approved Policies for Liquid Hydrocarbon Pipeline

In January 2011, the Lake Erie Region Source Protection Committee decided not to include policies for low and moderate drinking water threats in the first source protection plans due to having a large scope of mandatory work (Report SPC-11-01-03 Optional Policies for Source Protection Plan). To date, there are no low and moderate drinking water threat policies in Lake Erie Region Source Protection Plans, including for liquid hydrocarbon pipeline threats.

The current Lake Erie Region's source protection plan (SPP) policies for significant liquid hydrocarbon pipeline threats are non-legally binding (Appendix B, Table 1). These policies apply to significant liquid hydrocarbon pipeline threats only, including the pipeline in the WHPA-B of the St. George Wellfield and in the WHPA-B of the Paris North Wellfield (both located in the County of Brant).

Policy Approach for Liquid Hydrocarbon Pipeline

Within Lake Erie Region hydrocarbon pipelines cross the Grand River upstream of several surface water intakes (Dunnville Emergency Intake, Brantford Intake, and Ohsweken Intake). The pipeline crossings are in an area of low vulnerability, therefore no policies are currently applied to these drinking water threats. Although the likelihood of a pipeline rupture is low, the consequences of a rupture could have significant impacts on downstream drinking water intakes. Due to the likely high impacts in case of a hydrocarbon pipeline rupture Lake Erie Region staff recommend that moderate and low policies be developed for both existing and future hydrocarbon pipelines within WHPAs and IPZs.

At this time, staff recommend low and moderate policies for hydrocarbon pipeline threats only, and any low and moderate threat policies for other prescribed drinking water threats would be considered on a case by case basis. Hydrocarbon pipeline policies would not be developed for highly vulnerable areas (HVAs) as the Source Protection Program focuses on municipal drinking water systems.

When developing revised source protection policies for liquid hydrocarbon pipelines the following factors were considered:

- There are limited source protection plan policy tools available for this provincially/federally regulated activity, and the *Clean Water Act* does not include prescribed instruments specific to liquid hydrocarbon pipelines.
- The hydrocarbon pipeline industry is already heavily regulated.
- Strive for policy consistency across source protection regions/areas impacted by liquid hydrocarbon pipelines.

Since the legal effect of both significant and low/moderate threat policies for liquid hydrocarbon pipelines are the same (non-legally binding), staff recommend the same policies for both.

Proposed liquid hydrocarbon pipeline policy approaches for significant, moderate and low drinking water threats are as follows:

1. Modify current approved policy for a new proposed pipeline to ensure the Canada Energy Regulator or Ontario Energy Board notifies the source protection authority and municipality of any new proposed pipeline and that the source protection authority documents any new proposed pipeline in the annual report
2. Managing existing and future liquid hydrocarbon pipelines identified as significant/moderate/low threats by requesting the Canada Energy Regulator, Ontario Energy Board, and TSSA ensure drinking water source protection is included as a risk factor in their regulatory decision making framework
3. Managing existing and future liquid hydrocarbon pipelines identified as significant/moderate/low threats by requesting pipeline owners to use best available source protection information when developing, operating and maintaining liquid hydrocarbon pipelines, including developing and updating emergency planning zones (EPZs).

LER staff are proposing to remove the existing Risk Management Plan (RMP) policy in the County of Brant chapter of the Grand River Source Protection Plan as it would be difficult to negotiate an RMP for a pipeline that spans over many properties and is not owned by the property owner. The County of Brant supports the removal of the RMP policy.

Proposed Draft Liquid Hydrocarbon Pipeline Policies

Proposed draft policies for significant, moderate and low hydrocarbon pipeline drinking water threats are shown in Table 1 and Table 2, Appendix B. Staff at the County of Brant, City of Brantford and Haldimand County have been consulted with and are in support of the proposed hydrocarbon pipeline policies. Lake Erie Region staff will continue to engage with municipalities to develop liquid hydrocarbon pipeline policies.

LER staff recommend that the proposed policies for new (future) pipelines would apply to all municipal chapters in the Lake Erie Region source protection plans. Proposed policies for existing pipelines would apply in the County of Brant and Haldimand County source protection plan chapters.

Next Steps

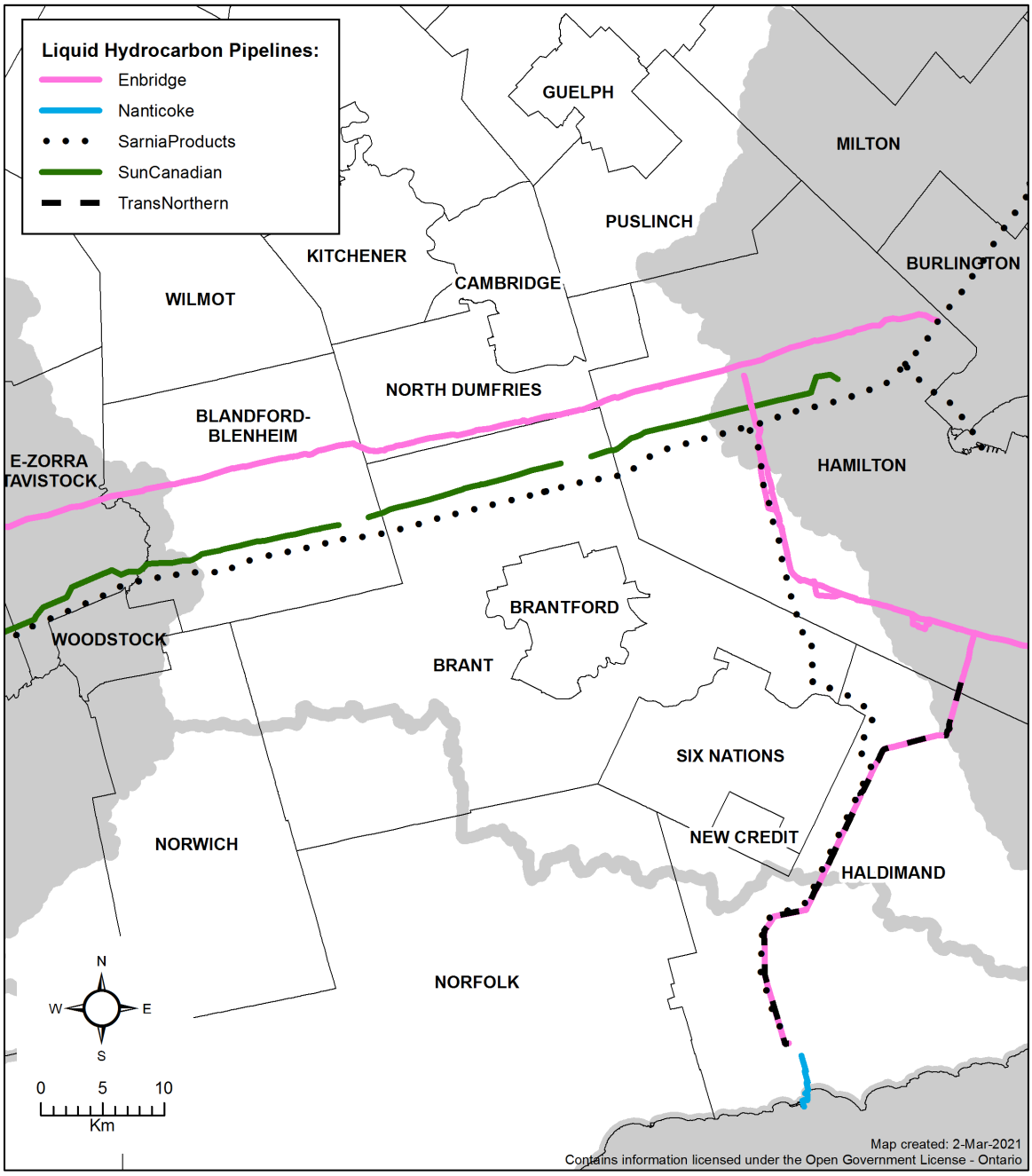
The proposed next steps are:

- Continue to work with municipalities in Lake Erie Region to develop draft liquid hydrocarbon pipeline policies.
- Continue to consult with other Source Protection Regions to strive for policy consistency across source protection regions/areas impacted by liquid hydrocarbon pipelines.
- Bring a set of draft hydrocarbon pipeline policies that municipalities support to a future Source Protection Committee meeting for inclusion into the four source protection plans in Lake Erie Region

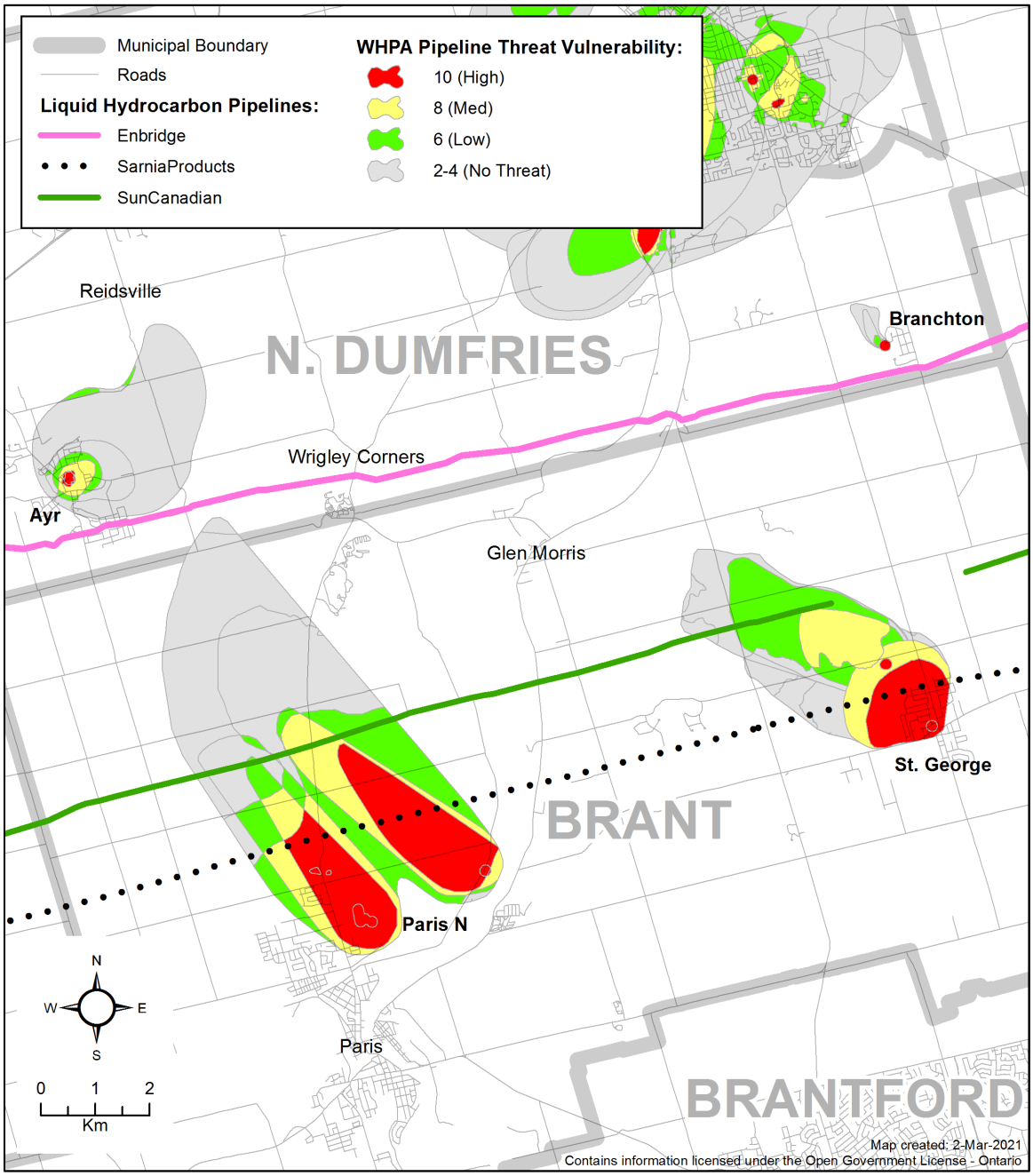
Prepared by	**Approved by:**
Emily Hayman Source Water Hydrogeologist	Martin Keller Source Protection Program Manager

Appendix A: Maps detailing the locations of currently known liquid hydrocarbon pipelines in Lake Erie Source Protection Region and those which cross through WHPAs and IPZs

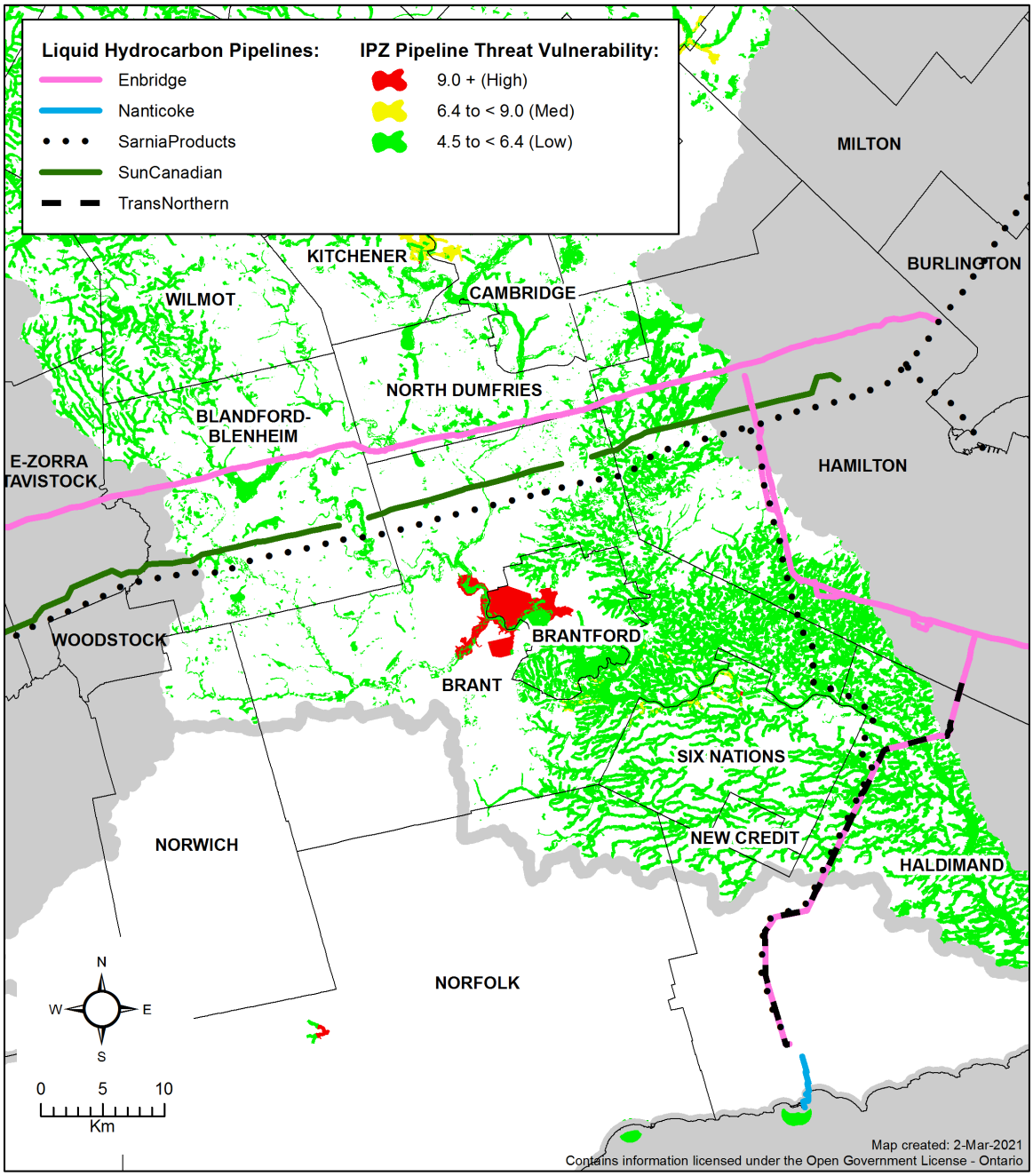
Map 1: Location of the Current Known Liquid Hydrocarbon Pipelines in Lake Erie Source Protection Region



Map 2: Location of the Current Known Liquid Hydrocarbon Pipelines in Wellhead Protection Areas in Lake Erie Region



Map 3: Location of the Current Known Liquid Hydrocarbon Pipelines in Intake Protection Zones in Lake Erie Region



Appendix B: Proposed draft liquid hydrocarbon pipeline policies

Table 1: Significant Drinking Water Threat Policies for Liquid Hydrocarbon Pipelines in Lake Erie Region

Policy Approach	Policy Applicability	Current Approved Policies	Proposed Draft Policies
Ensure Drinking Water Source Protection is considered in decisions by regulators	Existing and/or Future Specify Action WHPA-A v.10 WHPA-B v.10 WHPA-E v.9 IPZ-1 v.9&10 IPZ-2 v.9	N/A	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a significant drinking water threat, the Canada Energy Regulator, Ontario Energy Board, and Technical Standards and Safety Authority (TSSA) should ensure that drinking water source protection is considered as a risk factor in their regulatory decision making framework.
Ensure pipeline owners use best available source protection information	Existing and/or Future Specify Action WHPA-A v.10 WHPA-B v.10 WHPA-E v.9 IPZ-1 v.9&10 IPZ-2 v.9	N/A	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a significant drinking water threat, pipeline owners should ensure that best available source protection information is used such as up to date vulnerable areas in assessment

Policy Approach	Policy Applicability	Current Approved Policies	Proposed Draft Policies
			reports when developing, operating and maintaining liquid hydrocarbon pipelines, including developing and updating emergency planning zones (EPZs).
Ensure Source Protection Authority is notified of new proposed pipelines	Existing and/or Future Specify Action WHPA-A v.10 WHPA-B v.10 WHPA-E v.9 IPZ-1 v.9&10 IPZ-2 v.9	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a significant drinking water threat, the Canada Energy Regulator Ontario Energy Board, and the pipeline proponent are encouraged to provide the Source Protection Authority and the County the location of any new proposed pipeline within the County and/or Source Protection Area. The Source Protection Authority should document in the annual report the number of new pipelines proposed within vulnerable areas if a pipeline has been proposed and/or application has been received.	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a significant drinking water threat, the Canada Energy Regulator Ontario Energy Board, and the pipeline proponent should ensure that the Source Protection Authority and the County are provided the location of any new proposed pipeline. The Source Protection Authority should document in the annual report the number of new pipelines proposed within vulnerable areas if a pipeline has been proposed and/or application has been received.

Policy Approach	Policy Applicability	Current Approved Policies	Proposed Draft Policies
Manage liquid hydrocarbon pipelines through S.58 Risk Management Plans (RMP)	Existing Specify Action WHPA-A v.10 WHPA-B v.10	To reduce the risk to drinking water from the establishment and operation of a liquid hydrocarbon pipeline where the activity would be a significant drinking water threat, this activity shall be designated for the purpose of Section 58 of the Clean Water Act, 2006 and a Risk Management Plan shall be required. The Risk Management Plan may include, but not be limited to, the following: a. Evaluation of existing Spills Prevention Plans/ Spill Contingency Plans; b. An evaluation of communication plans and training protocols with respect to management of a spill; c. Additional measures to reduce the likelihood that a spill or leak would be a risk to drinking water sources; and d. Ensure all applicable provisions of Ontario Regulations O. Reg. 210/01 e. Ensure the protection of drinking water sources by including the following; i. Best Management Practices for spill management; ii. proof of ability to pay for clean-up of potential contamination; and	Remove

Policy Approach	Policy Applicability	Current Approved Policies	Proposed Draft Policies
		iii. the appropriate frequency of inspections.	

Table 2: Moderate and Low Drinking Water Threat Policies for Liquid Hydrocarbon Pipelines in Lake Erie Region

Policy Approach	Policy Applicability	Current Approved Policies	Proposed Draft Policies
Ensure Drinking Water Source Protection is considered in decisions by regulators	Existing and/or Future Specify Action WHPA-B v.6&8 WHPA-C v.6&8 WHPA-D v.6 WHPA-E v.4.5-<9 IPZ-3 v.4.5-<9	N/A	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a moderate or low drinking water threat, the Canada Energy Regulator, Ontario Energy Board, and Technical Standards and Safety Authority (TSSA) should ensure that drinking water source protection is considered as a risk factor in their regulatory decision making framework.
Ensure pipeline owners use best available source protection information	Existing and/or Future Specify Action WHPA-B v.6&8 WHPA-C v.6&8 WHPA-D v.6 WHPA-E v.4.5-<9 IPZ-3 v.4.5-<9	N/A	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a moderate or low drinking water threat, pipeline owners should ensure that best available source protection information is used such as up to date vulnerable areas in assessment reports when developing, operating and maintaining liquid hydrocarbon pipelines,

Policy Approach	Policy Applicability	Current Approved Policies	Proposed Draft Policies
			including developing and updating emergency planning zones (EPZs).
Ensure Source Protection Authority is notified of new proposed pipelines	Existing and/or Future Specify Action WHPA-B v.6&8 WHPA-C v.6&8 WHPA-D v.6 WHPA-E v.4.5-<9 IPZ-3 v.4.5-<9	N/A	To reduce the risks to drinking water from the establishment and operation of a liquid hydrocarbon pipeline within the meaning of O. Reg. 210/01 under the Technical Safety and Standards Act or that is subject to the Canadian Energy Regulator Act, where the activity is or would be a moderate or low drinking water threat, the Canada Energy Regulator Ontario Energy Board, and the pipeline proponent should ensure that the Source Protection Authority and the County are provided the location of any new proposed pipeline. The Source Protection Authority should document in the annual report the number of new pipelines proposed within vulnerable areas if a pipeline has been proposed and/or application has been received.

Lake Erie Region Source Protection Committee

Report number:	**SPC-21-09-03**
Date:	September 9, 2021
To:	Members of the Lake Erie Region Source Protection Committee
Subject:	**Guelph-Guelph/Eramosa Water Quantity Policy Development Progress Update**

Recommendation:

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-03– Guelph-Guelph/Eramosa Water Quantity Policy Development Progress Update – for information.

Summary:

Further progress is being made in developing water quantity policies for the Guelph-Guelph/Eramosa (GGET) Wellhead Protection Area Quantity (WHPA-Q) and Intake Protection Zone Quantity (IPZ-Q).

This report provides further updates and revisions on draft policies that the project team has reached consensus on. An updated table with the draft water quantity policies is attached in Appendix A.

Updates and revisions to draft consensus policies include:

- New draft policies aiming to maintain pre-development recharge as a result of developments to be included in list of policies applicable in IPZ-Q (T20-2 for Halton and T20-3 for Wellington). A complete list of policies applicable in IPZ-Q is attached in Appendix B.
- Minor wording revisions to policy T19-EASR to reflect proper reference to the municipalities and to ensure T19-EASR applies in any WHPA-Q in the County of Wellington.
- Inclusion of a new policy T20-ECA. The policy requires municipalities to consult with the Ministry of the Environment, Conservation and Parks when reviewing developments requiring Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works.
- Clarifying definition of Drinking Water Threat Disclosure Report for the City of Guelph chapter of the Source Protection Plan

Discussions are ongoing at the Project Team level on planning related policies for developments where a Permit To Take Water may be required.

A further meeting between City of Guelph and Ministry staff has been scheduled for September 20, 2021, to continue the discussions about approaches for prescribed instrument policies addressing Permits To Take Water and Aggregate Resources Act approvals.

Further updates on draft policies will be presented to the SPC at the December 2, 2021 committee meeting.

Report:

Further progress is being made in developing water quantity policies for the Guelph-Guelph/Eramosa (GGET) Wellhead Protection Area Quantity (WHPA-Q) and Intake Protection Zone Quantity (IPZ-Q). Draft policies that the Project Team reached consensus on were presented to the Source Protection Committee (SPC) at committee meetings in January 2021 (Report SPC-21-01-03), April 2021 (SPC-21-04-03), and June 2021 (SPC-21-06-02).

This report provides further updates and revisions on draft policies that the project team has reached consensus on. An updated table with the draft water quantity policies is attached in Appendix A for the two prescribed drinking water threats T19 – Consumptive Water Takings, and T20 – Recharge Reduction. Updates and revisions are highlighted.

The list of draft consensus policies applicable to the Intake Protection Zone Quantity (IPZ-Q) is now complete and attached in Appendix B. New draft policies in the list include T20-2 for Halton Region and T20-3 for Wellington. Both policies aim to maintain pre-development recharge as a result of developments. Halton's policy T20-2 requires Best Management Practices (BMP) such as Low Impact Development (LID) for new development and site alterations, and a water balance assessment for site plan and subdivision applications for major developments. Wellington's policy T20-3 requires the update of design standards, e.g., development manuals and design guidelines. While the policies are different, they are consistent in intent and policy outcome to be achieved.

The IPZ-Q covers areas within Wellington County and Halton Region, hence policies applicable to IPZ-Q will only be included in the Wellington County and Halton Region chapters of the Grand River Source Protection Plan.

Other updates and revisions to draft consensus policies in the table in Appendix A include:

- Minor wording revisions to policy T19-EASR to reflect proper reference to the municipalities and to ensure T19-EASR applies in any WHPA-Q in the County of Wellington.
- Inclusion of a new policy T20-ECA. The policy requires municipalities to consult with the Ministry of the Environment, Conservation and Parks when reviewing developments requiring Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works. This policy has been developed based on a similar proposed policy for Permits To Take Water (T19-Growth-7).
- Clarifying definition of Drinking Water Threat Disclosure Report for the City of Guelph chapter of the Source Protection Plan

Discussions are ongoing at the Project Team level on planning related policies for developments where a Permit To Take Water may be required, to ensure that the municipal supply is not adversely impacted by such developments, including the consideration of using the Tier 3 Water Budget model to assess any potential

impacts. Updates are aimed to be provided to the SPC at the December 2, 2021 committee meeting.

The draft policies presented in Appendix A are a work in progress, with some policies still under discussion at the Project Team and/or municipal level. Draft policies may change as further Project Team discussions occur and information is shared among municipalities and comments are received.

A further meeting between City of Guelph and Ministry staff has been scheduled for September 20, 2021, to continue the discussions about approaches for prescribed instrument policies addressing Permits To Take Water and Aggregate Resources Act approvals. Draft prescribed instrument policies will be presented at a future SPC meeting, following discussions and recommendations from the project team.

Prepared by
Martin Keller Source Protection Program Manager

Appendix A: Draft water quantity policies for Guelph-Guelph/Eramosa WHPA-Q

Appendix A - Table 1: DRAFT Consensus Policies T19 Consumptive Water Takings

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T19-Opt-1	Optimization programs for municipal water supply systems: The municipalities evaluate opportunities to optimize systems based on the source protection water quantity technical work, and where appropriate develop, maintain, and enhance water supply system optimization.	existing / future	Specify Action	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, The City of Guelph shall update on a regular basis the Water Supply Master Plan and the Guelph-Guelph/Eramosa Tier 3 Study to secure new municipal water supplies, optimize existing supplies and new water sources and improve demand management intitiatives including the water efficiency strategy.	N/A	N/A
T19-Opt-2	Optimization programs for municipal water supply systems: The municipalities evaluate opportunities to optimize systems based on the source protection water quantity technical work, and where appropriate develop, maintain, and enhance water supply system optimization.	existing / future	Specify Action	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, within the Guelph-Guelph/Eramosa WHPA-Q, Municipalities shall collaborate with the City of Guelph to optimize their water systems based on the results of the Tier 3 Study, and where appropriate develop, maintain, and enhance water supply system optimization programs	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, The City of Guelph shall collaborate with the municipalities in the County of Wellington within the Guelph-Guelph/Eramosa WHPA-Q to optimize water supply systems based on the results of the Guelph-Guelph/Eramosa Tier 3 Study, and where appropriate develop, maintain, and enhance water supply optimization programs.	N/A	N/A
T19-Eff-1/2	Incentive programs for water conservation and efficiency: The municipalities are encouraged to establish, maintain and implement incentive programs for water conservation where funding is available.	Existing / Future	Incentive Programs	Existing policy WC-CW-1.6 The County and/or municipality, in collaboration with other bodies and levels of government wherever possible, may develop and implement incentive programs directed at various significant threat activities and/or condition sites prescribed under the Clean Water Act, 2006, where such programs are deemed necessary and/or appropriate by the County and/or municipality, subject to available funding.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, The City of Guelph shall establish and provide ongoing support to the Water Efficiency Strategy including but not limited to incentives, rebates, education and outreach programs to promote water conservation and demand management for all water users within the City of Guelph.	To ensure that any Consumptive Water Taking or Recharge Reducing Activity within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Regional Municipality of Waterloo shall support any water efficiency education and outreach programs developed by the Township of Centre Wellington and/or City of Guelph to promote water conservation, demand management and use of best management practices to maintain groundwater recharge for private water users within the Region of Waterloo. (ref. policy RW-CW-62)	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat, as prescribed by the Clean Water Act, 2006, Halton Region will establish and/or maintain a water conservation plan that may include incentives, rebates, education and outreach efforts to promote water conservation.
T19-Reuse-1	Guidelines for water re-use systems and technologies: MECP develop water reuse system guidelines for potable and non-potable water use and re-use systems and technologies.	Existing / Future	Specify Action	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat as prescribed by theClean Water Act, 2006, the Ministry of the Environment, Conservation and Parks is requested to develop water reuse system guidelines for potable and non-potable water use and re-use systems and technologies.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks is requested to develop water reuse system guidelines to promote potable and non-potable water reuse and reuse systems and technologies.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks is requested to develop water reuse system guidelines for potable and non-potable water use and re-use systems and technologies.	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat, as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks is requested to develop water re-use system guidelines for potable and non-potable water use and re-use systems and technologies.
T19-Growth-1	Growth targets under Places to Grow Plan: MMAH ensures that assessment and determination of population and employment targets as part of Places to Grow Plan include consideration of Tier 3 water budget results and sustainable water quantities (current and planned municipal water supplies) to support growth	Future	Specify Action	To ensure that any Consumptive Water Taking never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the County in consultation with the Municipalities shall take into consideration water quantity constraints identified through the Tier 3 Study when allocating projected growth as part of a municipal comprehensive review.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, The Ministry of Municipal Affairs and Housing should ensure that assessment and determination of population and employment targets as part of the review and amendment of the Places to Grow Plan include consideration of the Guelph-Guelph/Eramosa Tier 3 Study results and sustainable water quantities for current and future municipal water supplies to support growth targets and that the Ministry of Municipal Affairs and Housing have meaningful consultation with the City of Guelph as part of this review and give due regard to comments	N/A	N/A
T19-Growth-3	Water demand management for new drinking water supply sources: The municipalities engage in municipal water demand management planning when assessing and establishing new drinking water supply sources.	Future	Specify Action	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, within the Guelph-Guelph/Eramosa WHPA-Q, the Municipalities shall collaborate with the City of Guelph on water demand management planning for their respective municipal drinking water systems when identifying future projects with respect to new water supply, assessing and establishing new municipal drinking water sources through engagement in the study processes and consultation through the technical working group.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, The City of Guelph shall collaborate with municipalities in the County of Wellington on water demand management planning for their respective municipal drinking water systems when identifying future projects with respect to new water supply, assessing and establishing new municipal drinking water sources through engagement in the study processes and consultation through the technical working group.	N/A	N/A

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T19-Growth-5	Conditions as part of development approvals: The municipalities shall review and update their Official Plan and include conditions of development approvals to support Tier 3 water budget results, where appropriate.	Future	Specify Action	To ensure that any Consumptive Water Taking never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the CWA, the County in consultation with the Municipalities, when assessing settlement area expansions within a WHPA-Q as part of a municipal comprehensive review or as otherwise provided by the Provincial Growth Plan for the Greater Golden Horseshoe, shall be satisfied that such expansion will not adversely impact the aquifer's ability to meet the municipal water supply requirements for current and planned service capacity. Where appropriate, this assessment shall consider the use of the Tier 3 Model or other equivalent means. The required data-gathering and analysis to demonstrate no adverse impact should be completed through collaboration and coordination among the County, the affected Municipality(ies), the Water Operating Authority, the Grand River Conservation Authority, Province and / or private developers. This policy applies to settlement area expansions where cumulative water taking to service the expansion is greater than 50,000 litres per day.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, The City, when assessing growth through a water supply master plan to support a municipal comprehensive review or as otherwise required under the Planning Act and/or Provincial Growth Plan for the Greater Golden Horseshoe, shall be satisfied that such growth will not adversely impact the aquifer's ability to meet the municipal water supply requirements for current and planned service capacity. This assessment shall use the Tier 3 Model, Tier 3 Study results / recommendations and Water Supply Master Plan results / recommendations or other equivalent means. The required data-gathering and analysis to demonstrate no adverse impact should be completed through collaboration and coordination among the City, County of Wellington municipalities, the Grand River Conservation Authority, and/or the Province of Ontario as appropriate.	N/A	N/A
T19-Growth-6	Water takings in areas of municipal servicing: Municipalities regulate new non-municipal groundwater wells where municipal water services are available, except for construction dewatering, site assessment, and site remediation, or similar water taking activities.	Future	Specify Action	To ensure that any Consumptive Water Taking never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, in the Guelph-Guelph/Eramosa WHPA-Q, where municipal water services are available, the municipalities in the County of Wellington should consider adopting municipal by-laws to manage and/or restrict private water takings.	To ensure that any Consumptive Water Taking within a WHPA-Q never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, the City of Guelph shall enact a by-law under the Municipal Act to regulate new private wells where municipal water services are available.	N/A	N/A
T19-Growth-7	Water takings associated with development applications: Municipalities manage growth and development where a PTTW is required.	Future	Land Use Planning	To ensure that any Consumptive Water Taking never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, Municipalities, when reviewing planning applications for New development requiring a new or amended PTTW for groundwater taking within a WHPA-Q and IPZ-Q, shall consult with the MECP to discuss any necessary approval conditions of the PTTW. Municipalities shall consider the use of holding zone provisions or a community planning permit in order to ensure that a PTTW, if required, is in place prior to the commencement of any development activity.	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the following shall apply: a. The City, when reviewing planning applications for development requiring a new or amended PTTW for groundwater taking within a WHPA-Q, shall consult with the Ministry of the Environment, Conservation and Parks to discuss any necessary approval conditions of the PTTW. b. That the City not permit development within the WHPA-Q where a new or amended PTTW is required for a development that would result in permanent dewatering.	N/A	To ensure an activity that takes water from an aquifer or surface water body without returning the water to the same aquifer or surface water body ceases to be or never becomes a significant drinking water threat, where an increased or new water taking would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the municipal planning authority, when reviewing planning applications for new development requiring a new or amended PTTW for groundwater taking within the WHPA-Q and IPZ-Q, shall consult with the Ministry of the Environment, Conservation and Parks to discuss any necessary approval conditions of the PTTW
T19-Growth-8	Water takings associated with development applications: Municipalities manage growth and development where a PTTW is required.	Future	Specify Action	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks, in consultation with the City of Guelph and the Grand River Conservation Authority, shall use the Tier 3 Model, Tier 3 Study results / recommendations and Water Supply Master Plan results / recommendations in its evaluation of new or expanded municipal takings through the PTTW process and should require the use the Tier 3 Model and Tier 3 Study results / recommendations in Class Environmental Assessment processes, where those new or expanded municipal takings could affect the assigned risk level for the City of Guelph WHPA-Q. For context, this policy is meant to provide support, through the Ministry of the Environment, Conservation and Parks approval and / or review processes to ensure the provision and distribution of municipal water supply to support the City of Guelph population and growth forecasts.	N/A	N/A
T19-Drought-1	City of Guelph drought response plan: City of Guelph develops a drought response plan for the City's municipal supply within three years of the approval of the water quantity policies effective date.	Existing / Future	Specify Action	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, the City of Guelph develop a drought response plan for the City's municipal drinking water supply to mitigate the potential impacts of a longer-term (greater than 3 years) drought. This plan shall be completed within three years of this policy taking effect.	N/A	N/A

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T19-Mon-1	Subwatershed monitoring program: City of Guelph, working with GRCA, establish and undertake and maintain monitoring program within the City to assist in characterization and management of the subwatershed.	Existing / Future	Specify Action	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, the City of Guelph, working with the GRCA, shall establish, undertake and maintain surface water and groundwater monitoring programs to assist in characterization and management of the subwatersheds and to ensure the long-term sustainability of the municipal water supply. Monitoring results shall be provided to the MECP on an annual basis. Where funding is not provided by MECP for this program, the City of Guelph shall develop and fund this program for	N/A	N/A
T19-Mon-2	Collection of water usage data for water takers exempted from PTTW requirements: Where funding is available, Wellington County municipalities consider collecting and assessing water usage data for water takers exempted from PTTW requirements.	Existing / Future	Specify Action	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, where funding is available, the Municipalities collect and assess water usage data from water takers within the Guelph-Guelph/Eramosa WHPA-Q and exempted from the Permit to Take Water (PTTW) requirements, such that the data can be used in updates to the Tier 3 Model.	N/A	N/A	N/A
T19-Prior-1	Prioritization of municipal water use: MECP consider the need to prioritize water uses to guide future water quantity management and recognize drinking water as a high priority use (City of Guelph policy approach).	Future	Specify Action	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the MECP is requested to prioritize municipal water use as a component of future water quantity management.	N/A	N/A
T19-Prior-2	Prioritization of Inspection and Abatement: The Ministry of the Environment, Conservation and Parks (MECP) and Ministry of Natural Resources and Forestry (MNRF) should prioritize inspections and abatement activities related to water quantity for sites with PTTW and/or Aggregate Resources Act (ARA) approvals.	Existing / Future	Specify Action	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) and the Ministry of Natural Resources and Forestry (MNRF) should ensure source protection is included as a risk factor of sites with Permits to Take Water (PTTW) and / or Aggregate Resources Act, 1990 Licenses in WHPA-Q Areas in the ministry local office risk-based inspection planning process and compliance response planning. (ref. policy WC-NB-22.14)	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) and Ministry of Natural Resources and Forestry (MNRF) should ensure source protection is included as a risk factor of Sites with Permits to Take Water (PTTW) and / or Aggregate Resources Act, 1990 Licenses in WHPA-Q Areas in the Guelph District Office risk-based compliance inspection planning process. (ref. policy RW-NB-67)	To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat, as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) and Ministry of Natural Resources and Forestry (MNRF) are requested to prioritize inspections and abatement of these activities for existing Permits to Take Water (PTTW) and/or Aggregate Resources Act (ARA) approvals.
T19-Fund-1	Tier 3 Water Budget model maintenance: MECP to consider providing ongoing funding to the GRCA and the municipalities to maintain and update the Tier 3 water budget model including the climate change assessment, to ensure the long-term sustainability of municipal systems in the City of Guelph and Wellington County municipalities.	Existing / Future	Specify Action	see combined T19/T20 policy	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the City of Guelph requests MECP to provide ongoing funding to maintain and update the Guelph-Guelph/Eramosa Tier 3 Model. Where funding is not provided, the City of Guelph shall fund for its own use the maintainance and updating of the Guelph-Guelph/Eramosa Tier 3 Model, including the climate change assessment model, to ensure the long-term sustainability of municipal water supply systems in the City of Guelph and develop a user pay system for other users of the Guelph-Guelph/Eramosa Tier 3 Model.	N/A	see combined T19/T20 policy
T19-Dewater-6	Managing non-municipal water takings for non-potable purposes where no PTTW is required	Existing / Future	Specify Action	N/A	To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, the City of Guelph ensure that existing and future non-municipal water takings for non-potable purposes, where a PTTW is not required, adhere to the City's outside water by-law to support demand reduction activities during times of water stress.	N/A	N/A

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T19-EASR		Existing / Future	Specify Action	REVISED To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, ~~within the Guelph-Guelph/Eramosa WHPA-Q~~, the Ministry of the Environment, Conservation and Parks should update regulation to provide automatic notification to the Municipalities and the Operating Authority of Environmental Activity and Site Registry (EASR) registrations pertaining to construction dewatering, road construction and pumping tests when an EASR registration is located within a wellhead protection area defined pursuant to the Clean Water Act, 2006.	REVISED To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks should update regulation to provide automatic notification to the City of Guelph and the Operating Authority of Environmental Activity and Site Registry (EASR) registrations pertaining to construction dewatering, road construction and pumping tests when an EASR registration is located within a wellhead protection area defined pursuant to the Clean Water Act, 2006.	REVISED To ensure that any Consumptive Water Taking within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks should update regulation to provide automatic notification to the Regional Municipality of Waterloo and the Operating Authority of Environmental Activity and Site Registry (EASR) registrations pertaining to construction dewatering, road construction and pumping tests when an EASR registration is located within a wellhead protection area defined pursuant to the Clean Water Act, 2006.	REVISED To ensure that any Consumptive Water Taking ceases to be or never becomes a significant drinking water threat, where this activity is or would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks should update regulation to provide automatic notification to Halton Region and the Operating Authority of Environmental Activity and Site Registry (EASR) registrations pertaining to construction dewatering, road construction and pumping tests when an EASR registration is located within a wellhead protection area defined pursuant to the Clean Water Act, 2006.

Appendix A - Table 2: DRAFT Consensus Policies T20 Recharge Reduction

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T20-1	Incentive programs for recharge: The municipalities are encouraged to establish, maintain and implement incentive programs for recharge where funding is available.	Existing / Future	Incentive programs	Existing policy WC-CW-1.6 The County and/or municipality, in collaboration with other bodies and levels of government wherever possible, may develop and implement incentive programs directed at various significant threat activities and/or condition sites prescribed under the Clean Water Act, 2006, where such programs are deemed necessary and/or appropriate by the County and/or municipality, subject to available funding.	To ensure that any Recharge Reducing Activity within the WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system, as prescribed by the Clean Water Act, 2006, the City of Guelph shall encourage storm water rebates for industrial, commercial, institutional and residential customers to promote the ongoing installation and maintenance of Low Impact Development (LID) systems that infiltrate rain water.	N/A	N/A
T20-2	Groundwater recharge maintenance: municipalities maintain or enhance pre-development recharge where appropriate.	Future	Land Use Planning	To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Planning Approval Authority shall, within a WHPA-Q, require that all site plan, subdivision and vacant land condominium applications to facilitate Major Development for new residential, commercial, industrial and institutional uses provide a water balance assessment for the proposed development which addresses each of the following requirements: a. maintain pre-development recharge to the greatest extent feasible through best management practices such as LID, minimizing impervious surfaces, and lot level infiltration; b. where pre-development recharge cannot be maintained on site, implement and maximize off-site recharge enhancement (within the same WHPA-Q) to compensate for any predicted loss of recharge from the development; and c. within a WHPA-Q in a Chloride, Sodium or Nitrate ICA, the water balance assessment must consider water quality when recommending best management practices and address how recharge will be maintained and water quality will be protected including consideration of how water quality will be protected from application and storage of winter maintenance materials including Salt. The Planning Approval Authority shall use its discretion to implement the requirements of this policy to the extent feasible and practicable given the nature of the proposed development, specific circumstances of a site and off-site recharge opportunities.	To ensure that any Recharge Reducing Activity within the WHPA-Q never becomes a significant drinking water threat to the City of Guelph municipal drinking water system, as prescribed by the Clean Water Act, 2006, the City of Guelph shall require that Planning Act applications for development of industrial, commercial, institutional or residential uses within a WHPA-Q maintain pre-development recharge to the greatest extent feasible through best management practices including but not limited to Low Impact Development (LID), minimizing impervious surfaces, or lot level infiltration.	N/A	To ensure that any Recharge Reducting Activity never becomes a significant drinking water threat, where the activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the municipal planning authority shall require: 1. New development and site alteration under the Planning Act to implement best management practices such as Low Impact Development (LID) with the goal to maintain predevelopment recharge. Implementation of best management practices is encouraged, but voluntary, for Agricultural Uses, Agriculture-related Uses, or On-farm Diversified Uses where the total impervious surface does not exceed 10 per cent of the lot. 2. All site plan and subdivision applications to facilitate Major Development for new residential, commercial, industrial and institutional uses provide a water balance assessment for the proposed development to the satisfaction of the Planning Approval Authority, that maintains pre-development recharge to the greatest extent feasible through best management practices such as LID, minimizing impervious surfaces, and lot level infiltration.
T20-2a	Groundwater recharge maintenance: the municipalities maintain or enhance pre-development recharge where appropriate.	Future	Land Use Planning	To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the County, as the Planning Approval Authority, in consultation with the Municipalities, shall only approve settlement area expansions within a WHPA-Q as part of a municipal comprehensive review or as otherwise provided by the Provincial Growth Plan for the Greater Golden Horseshoe, where it can be adequately demonstrated that recharge functions can be maintained or improved on lands designated Significant Groundwater Recharge Areas within a WHPA-Q.	N/A	N/A	N/A
T20-2b	Groundwater recharge maintenance: the municipalities maintain or enhance pre-development recharge where appropriate.	Future	Land Use Planning	To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Planning Approval Authorities within the WHPA-Q shall require that all site plan applications under the Planning Act, to facilitate New development not meeting the Major Development definition for new residential, commercial, industrial and institutional uses, implement best management practices such as Low Impact Development (LID) with the goal to maintain predevelopment recharge. This shall include consideration of how recharge will be maintained and water quality will be protected such as from the application and storage of winter maintenance materials including Salt. Planning Approval Authorities shall also encourage implementation of best management practices for site plan applications related to agricultural uses, agriculture-related uses, or on-farm diversified uses provided that such measures are recognized to be voluntary, where the total impervious surface does not exceed 10 per cent of the lot.	N/A	N/A	N/A

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T20-3	Guidelines for groundwater recharge maintenance: The City of Guelph and Wellington County municipalities are encouraged to develop and update guidelines for maintaining and / or enhancing recharge.	Existing / Future	Specify Action	To ensure that any Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat, where this activity is or would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, Municipalities, where appropriate, shall develop and update design standards (e.g., development manuals, design guidelines) for maintaining and enhancing groundwater recharge. These shall include implementation of Low Impact Development (LID), minimizing impervious surfaces and / or lot level infiltration for the purposes of maintaining recharge function. The design standards shall consider water quality when recommending best management practices and address how recharge will be maintained and water quality will be protected from application and storage of winter maintenance materials including Salt. (ref. policy WC-CW-23.6)	To ensure that any Recharge Reducing Activity within the WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system, as prescribed by the Clean Water Act, 2006, the City of Guelph shall develop and implement standard rates for infiltration and recharge with the objective of maintaining pre-development infiltration rates post development and to sustain the City of Guelph's Natural Heritage and Water Resource Systems.	N/A	N/A
T20-4	Environmental Compliance Approvals (ECA) for stormwater management facilities with LID systems: MECP review and amend, where appropriate, existing and issue new ECAs for stormwater management facilities with Low Impact Development (LID) systems to ensure they include groundwater recharge considerations.	Existing	Prescribed Instrument	To ensure that any Recharge Reducing Activity ceases to be a significant drinking water threat, where this activity is a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks (MECP) shall review and amend, if necessary, Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works to incorporate conditions, where appropriate, to address groundwater recharge considerations. Where appropriate and feasible, the MECP shall encourage the implementation of measures for the maintenance of groundwater recharge functions including LID, minimizing impervious surfaces and lot level infiltration. Where appropriate and feasible, the MECP shall consider establishing approval conditions in the Environmental Compliance Approvals to ensure the proper functioning of groundwater recharge measures including, but not limited to, conditions requiring or related to operations, inspection and maintenance of the Stormwater Management Facilities and/or Sewage Works, groundwater or surface water monitoring related to groundwater recharge, and documentation including manuals and maintenance records. For Stormwater Management Facilities and/or Sewage Works located within a WHPA-Q in a Chloride, Sodium or Nitrate ICA, the MECP shall consider conditions which require best management practices to protect water quality and which address how recharge will be maintained and water quality will be protected from application and storage of winter maintenance materials including Salt.	N/A	N/A	To ensure that any Recharge Reducing Activity ceases to be a significant drinking water threat, where this activity is a significant drinking water threat, as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) shall review and, if necessary, amend Environmental Compliance Approvals for stormwater management facilities with Low Impact Development (LID) systems to ensure that terms and conditions are incorporated that include groundwater recharge considerations.
T20-4a	Environmental Compliance Approvals (ECA) for stormwater management facilities with LID systems: MECP review and amend, where appropriate, existing and issue new ECAs for stormwater management facilities with Low Impact Development (LID) systems to ensure they include groundwater recharge considerations.	Future	Prescribed Instrument	To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Minisry of the Environment, Conservation and Parks (MECP) should, during any pre-submission consultation for Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works, encourage design and implementation measures for the maintenance of groundwater recharge functions including but not limited to Low Impact Development (LID), minimizing impervious surfaces and lot level infiltration. The MECP shall issue Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works that, where appropriate, incorporate conditions that address groundwater recharge considerations. In addition, the MECP, where appropriate, shall consider incorporating conditions in the Environmental Compliance Approvals to ensure the proper functioning of groundwater recharge measures including, but not limited to, conditions requiring or related to operations, inspection and maintenance of the Stormwater Management Facilities and/or Sewage Works, groundwater or surface water monitoring related to groundwater recharge, and documentation including manuals and maintenance records. For Stormwater Management Facilities and/or Sewage Works located within the WHPA-Q in a Chloride, Sodium or Nitrate ICA, the MECP shall consider conditions that require best management practices to protect water quality and that address how recharge will be maintained including consideration from the application and storage of winter	To ensure that any Recharge Reducing Activity within the WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system, as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) should, during any pre-submission consultation for Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works, encourage design and implementation measures for the maintenance of groundwater recharge functions including but not limited to Low Impact Development (LID), minimizing impervious surfaces and lot level infiltration. The MECP shall issue, or amend, Environmental Compliance Approvals for Stormwater Management Facilities and/or Sewage Works that, where appropriate, incorporate conditions that address groundwater recharge considerations. In addition, the MECP, where appropriate, shall consider incorporating conditions in the Environmental Compliance Approvals to ensure the proper functioning of groundwater recharge measures including, but not limited to, conditions requiring or related to operations, inspection and maintenance of the Stormwater Management Facilities and/or Sewage Works, groundwater or surface water monitoring related to groundwater recharge, and documentation including manuals and maintenance records.	N/A	To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat, as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) shall issue Environmental Compliance Approvals for stormwater management facilities with Low Impact Development (LID) systems to ensure that terms and conditions are incorporated that include groundwater recharge considerations.

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T20-8	Web-based resources as part of EnviroGuide platform: The City of Guelph include water quantity and recharge as part of the future development of the EnviroGuide web platform and will include information on how to promote and enhance water quantity and recharge as part of the development approvals process.	Existing / Future	Specify Action	(ref. policy WC-MC-23.2)	To ensure that any Recharge Reducing Activity within the WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system, as prescribed by the Clean Water Act, 2006, the City of Guelph shall include information on how to promote and enhance water quantity by maintaining and improving recharge after occupancy by the resident/business occupant.	N/A	N/A
T20-10	Prioritization of Environmental Compliance Approvals (ECA): The Ministry of the Environment, Conservation and Parks (MECP) should prioritize inspection and abatement activities of stormwater management facilities with Low Impact Development (LID) systems	Existing / Future	Specify Action	To ensure that any Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks should should ensure source protection is included as a risk factor of sites with Stormwater Management Facilities and / or Sewage Works in WHPA-Q Areas in the ministry local office risk-based inspection planning process and compliance response planning. (ref. policy WC-NB-23.7)	N/A	N/A	To ensure that any Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat, as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) shall prioritize inspection and abatement activities of stormwater management facilities with Low Impact Development (LID) systems.
T20-ECA	Managing development requiring an Environmental Compliance Approval for Stormwater Management Facilities or Sewage Works	Future	Specify Action	NEW To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, Municipalities, when reviewing planning applications for New development requiring a new or amended Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations shall consult with the Ministry of the Environment, Conservation and Parks to discuss any necessary approval conditions of the Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works. Municipalities shall consider the use of holding zone provisions or a community planning permit in order to ensure that an Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations, if required, is in place prior to the commencement of any development activity.	NEW To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the City of Guelph, when reviewing planning applications for New development requiring a new or amended Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations shall consult with the Ministry of the Environment, Conservation and Parks to discuss any necessary approval conditions of the Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works. Municipalities shall consider the use of holding zone provisions or a community planning permit in order to ensure that an Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations, if required, is in place prior to the commencement of any development activity.	NEW To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Regional Municipality of Waterloo, when reviewing planning applications for New development requiring a new or amended Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations shall consult with the Ministry of the Environment, Conservation and Parks to discuss any necessary approval conditions of the Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works. Municipalities shall consider the use of holding zone provisions or a community planning permit in order to ensure that an Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations, if required, is in place prior to the commencement of any development activity.	NEW To ensure that any Recharge Reducing Activity never becomes a significant drinking water threat, where this activity would be a significant drinking water threat as prescribed by the Clean Water Act, 2006, Halton Region, when reviewing planning applications for New development requiring a new or amended Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations shall consult with the Ministry of the Environment, Conservation and Parks to discuss any necessary approval conditions of the Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works. Municipalities shall consider the use of holding zone provisions or a community planning permit in order to ensure that an Environmental Compliance Approvals for Stormwater Management Facilities and / or Sewage Works that includes groundwater recharge considerations, if required, is in place prior to the commencement of any development activity.

Appendix A - Table 3: DRAFT Consensus Policies T19 + T20 Consumptive Water Takings and Recharge Reduction

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T19-Growth-2 T20-5	subwatershed studies: Any lead agency completing or updating a subwatershed study should review and incorporate the Tier 3 water budget results, where appropriate, in the development of the subwatershed study's terms of reference and monitoring program.	Future	subwater-shed planning Specify Action	To ensure that any Consumptive Water Taking or Recharge Reducing Activity never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, within the Guelph-Guelph/Eramosa WHPA-Q and / or IPZ-Q, the County shall review, and if necessary, update their Official Plan to ensure that any lead agency (e.g., Conservation Authority, Province, Municipalities) developing or approving a sub-watershed study terms of reference and monitoring program shall review, and where appropriate, incorporate the Guelph-Guelph/Eramosa Tier 3 Study as part of the sub-watershed study in addition to information from watershed planning.	To ensure that any Consumptive Water Taking or Recharge Reducing Activity within a WHPA-Q ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, the designated lead agency (e.g., Conservation Authority, Province, Municipalities) completing or updating a subwatershed plan shall, where appropriate, incorporate the Guelph-Guelph/Eramosa Tier 3 Study results in the development and implementation of the subwatershed plan.	To ensure that any Consumptive Water Taking or Recharge Reducing Activity within a WHPA-Q never becomes a significant drinking water threat as prescribed by the *Clean Water Act*, *2006*, any municpality or conservation authority developing or approving a sub-watershed study terms of reference and monitoring program shall review, and where appropriate, incorporate the Tier 3 Study results as part of the sub-watershed study. (ref. policy RW-CW-64)	To ensure that any Consumptive Water Taking or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, any lead agency (e.g., Conservation Authority, Province, Municipalities) completing or updating a subwatershed study shall review, and where appropriate, incorporate the Tier 3 Study results as part of the subwatershed study.
T19-Coord-1 T20-6	Water Resource Technical Working Group (WRTWG): The municipalities, in collaboration with GRCA and MECP, establish a Water Resource Technical Working Group (WRTWG) to support management of local water resources, which may include establishing a drought response program to support the management of drinking water sources during times of drought, consideration of climate change, encourage monitoring, data sharing and coordination, and support the use, maintenance, and update of the Guelph/Guelph-Eramosa Tier 3 model.	Existing / Future	Collabora-tion Specify Action	To ensure that any Consumptive Water Taking and/or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Municipalities, the County, and the Grand River Conservation Authority shall mutually share information with the City of Guelph, Region of Waterloo, Halton Region, and Ministry of the Environment, Conservation and Parks to collaboratively manage local water resources within the Guelph-Guelph/Eramosa WHPA-Q and IPZ-Q. This may include, but is not limited to establishing a drought response program to support the management of drinking water sources during times of drought, sharing of EASR notifications, consideration of climate change, and encouraging monitoring, data sharing and coordination among the agencies, and support the use, maintenance, and update of the Guelph-Guelph/Eramosa Tier 3 Model, and/or any other topics identified. The Grand River Conservation Authority shall develop, in cooperation with the County, Municipalities, City of Guelph, Region of Waterloo, Halton Region, and the Ministry of the Environment, Conservation and Parks, an information-sharing document that includes roles and expectations of the agencies, requirements for meetings, including frequency, agendas and participants, and for the nature, format and types of information to be mutually shared. The information-sharing document shall be established within one (1) year of this policy taking effect. Consideration should also be given to linking in other groups such as Grand River Water Managers and / or Low Water Response	To ensure that any Consumptive Water Taking and/or any Recharge Reducing Activity within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the City of Guelph and the Grand River Conservation Authority shall mutually share information with the municipalities in the County of Wellington, Ministry of the Environment, Conservation and Parks, Region of Waterloo, and Halton Region to collaboratively manage local water resources within the Guelph-Guelph/Eramosa WHPA-Q and IPZ-Q. This may include, but is not limited to establishing a drought response program to support the management of drinking water sources during times of drought, sharing of EASR notifications, consideration of climate change, and encouraging monitoring, data sharing and coordination among the agencies, and support the use, maintenance, and update of the Guelph-Guelph/Eramosa Tier 3 Model. The Grand River Conservation Authority shall develop, in cooperation with the City of Guelph, municipalities in the County of Wellington, Region of Waterloo, Halton Region, and the Ministry of the Environment, Conservation and Parks, an information-sharing document that includes roles and expectations of the agencies, requirements for meetings, including frequency, agendas and participants, and for the nature, format and types of information to be mutually shared. The information-sharing document shall be established within one (1) year of this policy taking effect. Consideration should also be given to linking in other groups such as Grand River Water Managers and / or Low Water Response Group to this process.	To ensure that any Consumptive Water Taking and/or any Recharge Reducing Activity within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Regional Municipality of Waterloo will collaborate with the City of Guelph, County of Wellington, Grand River Conservation Authority, and Ministry of the Environment, Conservation and Parks, to support management of local water resources and protection of municipal drinking water supply sources, including but not limited to establishing a drought response program, sharing of EASR notifications, consideration of climate change impacts and mitigation, encourage monitoring, data sharing and coordination among the agencies, and support the use, maintenance, and update of the Tier 3 model. (ref. policy RW-CW-63)	To ensure that any Consumptive Water Taking and/or any Recharge Reducing Activity within a WHPA-Q or IPZ-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Halton Region and the Grand River Conservation Authority shall mutually share information with the municipalities in the County of Wellington, City of Guelph, Ministry of the Environment, Conservation and Parks, and Region of Waterloo to collaboratively manage local water resources within the Guelph-Guelph/Eramosa WHPA-Q and IPZ-Q. This may include, but is not limited to establishing a drought response program to support the management of drinking water sources during times of drought, sharing of EASR notifications, consideration of climate change, and encouraging monitoring, data sharing and coordination among the agencies, and support the use, maintenance, and update of the Guelph-Guelph/Eramosa Tier 3 Model. The Grand River Conservation Authority shall develop, in cooperation with Halton Region, the City of Guelph, municipalities in the County of Wellington, Region of Waterloo, and the Ministry of the Environment, Conservation and Parks, an information-sharing document that includes roles and expectations of the agencies, requirements for meetings, including frequency, agendas and participants, and for the nature, format and types of information to be mutually shared. The information-sharing document shall be established within
T19-Coord-1b T20-6	Water Resource Technical Working Group (WRTWG): The municipalities, in collaboration with GRCA and MECP, establish a Water Resource Technical Working Group (WRTWG) to support management of local water resources, which may include establishing a drought response program to support the management of drinking water sources during times of drought, consideration of climate change, encourage monitoring, data sharing and coordination, and support the use, maintenance, and update of the Guelph/Guelph-Eramosa	Existing / Future	Collaboratio n Specify Action	To ensure that any Consumptive Water Taking and/or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks, the City of Guelph, Region of Waterloo, and Region of Halton should mutually share information to collaboratively manage water resources within the Guelph-Guelph/Eramosa WHPA-Q and IPZ-Q. The Ministry of the Environment, Conservation and Parks is requested to participate in regular meetings to support information sharing, as identified in policy T19-Coord-1a.	To ensure that any Consumptive Water Taking and/or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks, the municipaties in the County of Wellington, Region of Waterloo, and Region of Halton should mutually share information to collaboratively manage water resources within the Guelph-Guelph/Eramosa WHPA-Q and IPZ-Q. The Ministry of the Environment, Conservation and Parks is requested to participate in regular meetings to support information sharing, as identified in policy T19-Coord-1a.	N/A	To ensure that any Consumptive Water Taking and/or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the municipaties in the County of Wellington, Region of Waterloo, and City of Guelph should mutually share information to collaboratively manage water resources within the Guelph-Guelph/Eramosa WHPA-Q and IPZ-Q. The Ministry of the Environment, Consevation and Parks is requested to participate in regular meetings to support information sharing, as identified in policy T19-Coord-1a.

Policy Approach	Policy Approach Reference	Existing / Future	Tool	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
T19-E&O-1 T20-7	Education and outreach initiatives: The municipalities implement and maintain public education and outreach initiatives to promote recharge. Where possible, these education and outreach initiatives should be coordinated.	Existing / Future	Education & Outreach	To ensure that any Consumptive Water Taking or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Municipalities shall implement and maintain public education and outreach initiatives regarding water conservation and the use of best management practices that reduce the impact on groundwater recharge. Where possible, these education and outreach initiatives will be coordinated with other Municipalities. (ref. policy WC-CW-21.4)	To ensure that any Consumptive Water Taking or Recharge Reducing Activity within a WHPA-Q, ceases to be or never becomes a significant drinking water threat to the City of Guelph municipal drinking water system as prescribed by the Clean Water Act, 2006, the City of Guelph shall, in collaboration with the municipalities in the County of Wellington, implement and maintain public education and outreach initiatives regarding water conservation and efficiency, and maintaining and improving recharge during the development approval process and after occupancy by the homeowner. The education program shall encourage the use of best management practices that reduce the impact on groundwater.	To ensure that any Consumptive Water Taking or Recharge Reducing Activity within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Regional Municipality of Waterloo shall support any water efficiency education and outreach programs developed by the Township of Centre Wellington and/or City of Guelph to promote water conservation and demand management and use of best management practices that reduce the impact on groundwater recharge for private water users within the Region of Waterloo. (ref. policy RW-CW-62)	To ensure that any Consumptive Water Taking or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, Halton Region will establish and/or maintain education and outreach efforts to promote water conservation. Where possible, these education and outreach initiatives will be coordinated with adjacent municipalities.
T19-Mon-3 T20-9	Long-term monitoring of shallow groundwater and surface water systems: Collaboratively develop and maintain long-term monitoring programs of shallow groundwater and surface water systems to assess potential surface water impacts from water takings, where funding is available. Monitoring agencies report to Water Resource Technical Working Group (WRTWG) on a regular basis.	Existing / Future	Monitoring	To ensure that any Consumptive Water Taking or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) and the Grand River Conservation Authority (GRCA) in collaboration with the Municipalities and the City of Guelph, develop, maintain and implement a long-term monitoring program of shallow groundwater and surface water systems to assess potential surface water impacts from water takings and recharge reductions, where funding is available. All proposed monitoring programs and results will be regularly reported to the Water Resource Technical Working Group.	To ensure that any Consumptive Water Taking or Recharge Reducing Activity within a WHPA-Q ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the MECP and GRCA, in collaboration with the City of Guelph and the municipalities in the County of Wellington, are encouraged to develop and maintain long-term monitoring program of shallow groundwater and surface water systems to assess potential surface water impacts from water takings and recharge reductions and to assess and manage the impact on surface water, where funding is available. Agencies are requested to report to Water Resource Technical Working Group (WRTWG) on a regular basis on the monitoring results.	N/A	To ensure that any Consumptive Water Taking or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) and the Grand River Conservation Authority (GRCA), in consultation with the the City of Guelph and other municipalities develop and maintain a long-term monitoring program of shallow groundwater and surface water systems to assess potential surface water impacts from water takings and/or data gaps/recommendations from the Guelph-Guelph/Eramosa Tier 3 Study, where funding is available. All proposed monitoring programs and results will be regularly reported to the Water Resource Technical Working Group and other municipalities.
T19-Fund 1 T20	Tier 3 Water Budget model maintenance: MECP to consider providing ongoing funding to the GRCA and the municipalities to maintain and update the Tier 3 water budget model including the climate change assessment, to ensure the long-term sustainability of municipal systems in the City of Guelph and Wellington County municipalities.	Existing / Future	Specify Action	To ensure that any Consumptive Water Taking or Recharge Reducing Activityceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of the Environment, Conservation and Parks should consider providing ongoing funding to the Grand River Conservation Authority and the Municipalities to maintain and update the following: a. Tier 3 Models; b. Tier 3 climate change assessment models; c. updates to Tier 3 Studies; and d. long-term monitoring programs of groundwater and surface water systems to assess potential impacts from Consumptive Water Takings and / or Recharge Reducing Activities. (ref. policy WC-CW-21.5)	see policy T19-Fund-1	N/A	To ensure that any Consumptive Water Taking or Recharge Reducing Activity ceases to be or never becomes a significant drinking water threat as prescribed by the Clean Water Act, 2006, the Ministry of Environment, Conservation and Parks (MECP) provide ongoing funding to the Grand River Conservation Authority and the municipalities within the WHPA-Q and IPZ-Q for the following: a. to maintain and update the Tier 3 Models; b. climate change assessment; and c. long-term monitoring program of shallow groundwater and surface waters systems to assess potential surface water impacts from water takings.
T19-Fund-2	Tier 3 Water Budget model maintenance: MECP to consider providing funding to the GRCA and municipalities for long-term monitoring programs of shallow groundwater and surface water systems to assess potential surface water impacts from water takings.	Existing / Future	Specify Action	see policy T19-Fund 1	N/A	N/A	see policy T19-Fund 1
T19-Fund-3	Climate change assessment model: MECP to consider providing funding for the Water Resources Technical Working Group (WRTWG) to develop and coordinate climate change assessment model.	Existing / Future	Specify Action	see policy T19-Fund 1	N/A	N/A	see policy T19-Fund 1

Appendix A - Table 4: DRAFT Definitions

Term	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
County	**County** - means the Corporation of the County of Wellington	N/A	N/A	N/A
Consumptive Water Taking	**Consumptive Water Taking** - means an activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Water Act, 2006.	**Consumptive Water Taking** - means an activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Water Act, 2006.	**Consumptive Water Taking** - means an activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Water Act, 2006.	**Consumptive Water Taking** - means an activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Water Act, 2006.
Drinking Water Threat Disclosure Report	**Drinking Water Threat Disclosure Report** – means a report required pursuant to the County of Wellington Official Plan which discloses whether or not any of prescribed drinking water threats identified in section 1.1 of Ontario Regulation 287/07 pursuant to the Clean Water Act are expected to occur on a property that is the subject of a development application or as a condition of site plan control for the development, redevelopment or site alteration of non-residential uses within a Wellhead Protection Area, Intake Protection Zone or Issue Contributing Area as may be required pursuant of the official plans of the County and other Municipalities	REVISED as defined in the Wellington chapter of the Source Protection Plan	N/A	N/A
Existing	**Existing –** except where otherwise indicated in this Plan, existing means: a. A use, activity, building or structure at a location in a vulnerable area that is in compliance with all applicable regulations on the effective date of this Source Protection Plan, or at some point prior to the effective date of the Source Protection Plan with a demonstrated intent to continue; or b. An expansion of an existing use or activity, which may include a new building or structure to service the existing use or activity, where the expansion reduces the risk of contaminating drinking water; or c. The expansion, replacement or alteration of an existing building or structure associated with a significant drinking water threat that does not increase the risk of contaminating drinking water; or d. The conversion of an existing use to a similar use, provided it is demonstrated that the conversion will reduce the risk of contaminating drinking water.	as per existing definition in Source Protection Plan chapter	as per existing definition in Source Protection Plan chapter	as per existing definition in Source Protection Plan chapter
Major Development	**Major Development** – means development consisting of: a. the creation of four or more lots; b. the construction of a building or buildings with a ground floor area of 500 m² or more; or c. the establishment of a Major Recreational Use.	N/A	N/A	**Major Development**: means development consisting of, (a) the creation of four or more lots, (b) the construction of a building or buildings with a ground floor area of 500 m² or more, or (c) the establishment of a major recreational use
Major Recreational Use	**Major Recreational Use** – means a recreational use that requires large-scale modification of terrain, vegetation or both and usually also requires large-scale buildings or structures, including but not limited to the following: golf courses; serviced playing fields; serviced campgrounds; and ski hills. (Source: Greenbelt Plan)	N/A	N/A	**Major Recreational Use** – means a recreational use that requires large-scale modification of terrain, vegetation or both and usually also requires large-scale buildings or structures, including but not limited to the following: golf courses; serviced playing fields; serviced campgrounds; and ski hills. (Source: Greenbelt Plan)
Municipalities	**Municipality(ies)** – means one or more of the seven lower tier Municipalities located within the County, consisting of the Township of Guelph-Eramosa, Township of Centre Wellington, Town of Erin, Township of Mapleton, Township of Puslinch, Town of Minto, and the Township of Wellington North Planning Approval Authority(ies) - means an approval authority, or approval authorities, pursuant to the Planning Act, RSO 1990, c. P.13, as amended (the "Planning Act").	N/A	N/A	N/A
Municipal Supply	**Municipal Supply** – means a municipal drinking water system pursuant to the Safe Drinking Water Act, 2002, s 2	**Municipal Supply** – means a municipal drinking water system pursuant to the Safe Drinking Water Act, 2002, s 2	**Municipal Supply** – means a municipal drinking water system pursuant to the Safe Drinking Water Act, 2002, s 2	**Municipal Supply** – means a municipal drinking water system pursuant to the Safe Drinking Water Act, 2002, s 2
New or Future	**New or Future** – means not existing, as defined herein.	as per existing definition in Source Protection Plan chapter	as per existing definition in Source Protection Plan chapter	as per existing definition in Source Protection Plan chapter

Term	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
Operating Autority	**Operating Authority** - means, in respect of a drinking water system, the person or entity that is given responsibility by the owner for the operation, management, maintenance or alteration of the system (Safe Drinking Water Act, 2002)	**Operating Authority** - means, in respect of a drinking water system, the person or entity that is given responsibility by the owner for the operation, management, maintenance or alteration of the system (Safe Drinking Water Act, 2002)	**Operating Authority** - means, in respect of a drinking water system, the person or entity that is given responsibility by the owner for the operation, management, maintenance or alteration of the system (Safe Drinking Water Act, 2002)	**Operating Authority** - means, in respect of a drinking water system, the person or entity that is given responsibility by the owner for the operation, management, maintenance or alteration of the system (Safe Drinking Water Act, 2002)
Planning Approval Autority(ies)	**Planning Approval Authority(ies)** - means an approval authority, or approval authorities, pursuant to the Planning Act, RSO 1990, c. P.13, as amended (the "Planning Act").	**Planning Approval Authority(ies)** - means an approval authority, or approval authorities, pursuant to the Planning Act, RSO 1990, c. P.13, as amended (the "Planning Act").	**Planning Approval Authority(ies)** - means an approval authority, or approval authorities, pursuant to the Planning Act, RSO 1990, c. P.13, as amended (the "Planning Act").	**Planning Approval Authority(ies)** - means an approval authority, or approval authorities, pursuant to the Planning Act, RSO 1990, c. P.13, as amended (the "Planning Act").
Recharge Reducing Activity	**Recharge Reducing Activity** – means an activity that reduces the recharge of an aquifer, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Drinking Water Act, 2006.	**Recharge Reducing Activity** – means an activity that reduces the recharge of an aquifer, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Drinking Water Act, 2006.	**Recharge Reducing Activity** – means an activity that reduces the recharge of an aquifer, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Drinking Water Act, 2006.	**Recharge Reducing Activity** – means an activity that reduces the recharge of an aquifer, an activity prescribed as a drinking water threat pursuant to Regulation 287/07 under the Clean Drinking Water Act, 2006.
Sewage Works	**Sewage Works** - means any works for the collection, transmission, treatment and disposal of sewage or any part of such works, pursuant to the Ontario Water Resources Act RSO 1990, s. 1, as amended.	**Sewage Works** - means any works for the collection, transmission, treatment and disposal of sewage or any part of such works, pursuant to the Ontario Water Resources Act RSO 1990, s. 1, as amended.	**Sewage Works** - means any works for the collection, transmission, treatment and disposal of sewage or any part of such works, pursuant to the Ontario Water Resources Act RSO 1990, s. 1, as amended.	**Sewage Works** - means any works for the collection, transmission, treatment and disposal of sewage or any part of such works, pursuant to the Ontario Water Resources Act RSO 1990, s. 1, as amended.
Stormwater Management Facility(ies)	**Stormwater Management Facility(ies)** – means one or more of the following measures constructed to collect, control, infiltrate and / or discharge stormwater run-off and / or groundwater. • Stormwater management ponds (i.e. wet ponds) • Dry or retention ponds • Constructed wetlands • Low impact development measures including, but not limited to, infiltration galleries / basins, soak away pits, pervious pipe (subsurface) and/or permeable pavement • Infiltration trenches (open to surface) including but not limited to swales, vegetated strips • Lot level infiltration measures used to infiltrate storm run-off from Salt Application Areas. • Measures used to increase groundwater recharge through enhanced infiltration, e.g. measures used to infiltrate roof run-off and groundwater from foundation drains or sumps.	**Stormwater Management Facility(ies)** – means one or more of the following measures constructed to collect, control, infiltrate and / or discharge stormwater run-off and / or groundwater. • Stormwater management ponds (i.e. wet ponds) • Dry or retention ponds • Constructed wetlands • Low impact development measures including, but not limited to, infiltration galleries / basins, soak away pits, pervious pipe (subsurface) and/or permeable pavement • Infiltration trenches (open to surface) including but not limited to swales, vegetated strips • Lot level infiltration measures used to infiltrate storm run-off from Salt Application Areas. • Measures used to increase groundwater recharge through enhanced infiltration, e.g. measures used to infiltrate roof run-off and groundwater from foundation drains or sumps.	**Stormwater Management Facility(ies)** – means one or more of the following measures constructed to collect, control, infiltrate and / or discharge stormwater run-off and / or groundwater. • Stormwater management ponds (i.e. wet ponds) • Dry or retention ponds • Constructed wetlands • Low impact development measures including, but not limited to, infiltration galleries / basins, soak away pits, pervious pipe (subsurface) and/or permeable pavement • Infiltration trenches (open to surface) including but not limited to swales, vegetated strips • Lot level infiltration measures used to infiltrate storm run-off from Salt Application Areas. • Measures used to increase groundwater recharge through enhanced infiltration, e.g. measures used to infiltrate roof run-off and groundwater from foundation drains or sumps.	**Stormwater Management Facility(ies)** – means one or more of the following measures constructed to collect, control, infiltrate and / or discharge stormwater run-off and / or groundwater. • Stormwater management ponds (i.e. wet ponds) • Dry or retention ponds • Constructed wetlands • Low impact development measures including, but not limited to, infiltration galleries / basins, soak away pits, pervious pipe (subsurface) and/or permeable pavement • Infiltration trenches (open to surface) including but not limited to swales, vegetated strips • Lot level infiltration measures used to infiltrate storm run-off from Salt Application Areas. • Measures used to increase groundwater recharge through enhanced infiltration, e.g. measures used to infiltrate roof run-off and groundwater from foundation drains or sumps.
Tier 3 Study	**Tier 3 Study** – means one or more of the component reports, memorandums and / or data that together form the official record for an accepted Tier 3 Water Budget and Risk Assessment as referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended. This includes, but is not limited to, reports on physical characterization, model development, risk assessment, uncertainty analyses, risk management measures evaluation processes, threats management strategies, climate change assessment, peer review, municipal peer review and any supporting documents / memorandums.	**Tier 3 Study** – means one or more of the component reports, memorandums and / or data that together form the official record for an accepted Tier 3 Water Budget and Risk Assessment as referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended. This includes, but is not limited to, reports on physical characterization, model development, risk assessment, uncertainty analyses, risk management measures evaluation processes, threats management strategies, climate change assessment, peer review, municipal peer review and any supporting documents / memorandums.	**Tier 3 Study** – means one or more of the component reports, memorandums and / or data that together form the official record for an accepted Tier 3 Water Budget and Risk Assessment as referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended. This includes, but is not limited to, reports on physical characterization, model development, risk assessment, uncertainty analyses, risk management measures evaluation processes, threats management strategies, climate change assessment, peer review, municipal peer review and any supporting documents / memorandums.	**Tier 3 Study** – means one or more of the component reports, memorandums and / or data that together form the official record for an accepted Tier 3 Water Budget and Risk Assessment as referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended. This includes, but is not limited to, reports on physical characterization, model development, risk assessment, uncertainty analyses, risk management measures evaluation processes, threats management strategies, climate change assessment, peer review, municipal peer review and any supporting documents / memorandums.
Tier 3 Model	**Tier 3 Model** – means a computer-based representation of the physical system. Groundwater flow is then calculated within the model using complex mathematical calculations. The calibrated groundwater flow model is used to calculate portions of the water budget and to evaluate the Risk Assessment Scenarios referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended.	**Tier 3 Model** – means a computer-based representation of the physical system. Groundwater flow is then calculated within the model using complex mathematical calculations. The calibrated groundwater flow model is used to calculate portions of the water budget and to evaluate the Risk Assessment Scenarios referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended.	**Tier 3 Model** – means a computer-based representation of the physical system. Groundwater flow is then calculated within the model using complex mathematical calculations. The calibrated groundwater flow model is used to calculate portions of the water budget and to evaluate the Risk Assessment Scenarios referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended.	**Tier 3 Model** – means a computer-based representation of the physical system. Groundwater flow is then calculated within the model using complex mathematical calculations. The calibrated groundwater flow model is used to calculate portions of the water budget and to evaluate the Risk Assessment Scenarios referenced in the Grand River Assessment Report and completed in accordance with the Director's Technical Rules, as amended.

Term	Draft Policy Text Wellington	Draft Policy Text Guelph	Draft Policy Text Waterloo Region	Draft Policy Text Halton Region
Water Supply Master Plan	**Water Supply Master Plan** – means a long-range plan, for a Municipality, which integrates water supply infrastructure requirements for Existing and Future land use with environmental assessment principles and is prepared in accordance with the Municipal Class Environmental Assessment process (Source: Municipal Engineers Association, October 2000 as amended).	**Water Supply Master Plan** – means a long-range plan, for a Municipality, which integrates water supply infrastructure requirements for Existing and Future land use with environmental assessment principles and is prepared in accordance with the Municipal Class Environmental Assessment process (Source: Municipal Engineers Association, October 2000 as amended).	**Water Supply Master Plan** – means a long-range plan, for a Municipality, which integrates water supply infrastructure requirements for Existing and Future land use with environmental assessment principles and is prepared in accordance with the Municipal Class Environmental Assessment process (Source: Municipal Engineers Association, October 2000 as amended).	**Water Supply Master Plan** – means a long-range plan, for a Municipality, which integrates water supply infrastructure requirements for Existing and Future land use with environmental assessment principles and is prepared in accordance with the Municipal Class Environmental Assessment process (Source: Municipal Engineers Association, October 2000 as amended).

Appendix B: List of draft consensus water quantity policies for Guelph-Guelph/Eramosa IPZ-Q

Appendix B - Draft Consensus water quantity policies for Guelph-Guelph/Eramosa IPZ-Q

T19 Consumptive Water Taking

Wellington County	Halton Region
T19-Eff-1/2	T19-Eff-1/2
T19-Reuse-1	T19-Reuse-1
T19-Growth-1	N/A
T19-Growth-7	T19-Growth-7
T19-Prior-2	T19-Prior-2
T19-EASR	T19-EASR

T20 Recharge Reduction

Wellington County	Halton Region
T20-1	N/A
N/A	T20-2
T20-3	N/A
T20-4/4a	T20-4/4a
T20-10	T20-10
T20-ECA	T20-ECA

T19/T20 Consumptive Water Taking / Recharge Reduction

Wellington County	Halton Region
T19-Growth-2 / T20-5	T19-Growth-2 / T20-5
T19-Coord-1 / T20-6	T19-Coord-1 / T20-6
T19-E&O / T20-7	T19-E&O / T20-7
T19-Mon-3 / T20-9	T19-Mon-3 / T20-9
T19-Fund 1, 2, 3 / T20	T19-Fund 1, 2, 3 / T20

Lake Erie Region Source Protection Committee

Report number:	SPC-21-09-04
Date:	September 9, 2021
To:	Members of the Lake Erie Source Protection Committee
Subject:	Climate Change Vulnerability Assessment – Elgin Area Water Supply System

Recommendation:

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-04 – Climate Change Vulnerability Assessment – Elgin Area Water Supply System – for information.

Summary:

In light of the proposed changes to the Director's Technical Rules to incorporate climate change in source water quality risk assessments, a climate change vulnerability assessment tool was developed by Conservation Ontario. The tool is being considered within the Lake Erie Source Protection Region and possible assessment report and source protection plan implications will be assessed as part of Section 36 planned amendments.

Lake Erie Region staff have engaged municipalities in the Catfish Creek and Kettle Creek Source Protection Areas to assess their interest in completing a climate change vulnerability assessment on their drinking water system. Drinking Water Systems in Catfish Creek and Kettle Creek are currently being addressed as Section 36 amendments to the assessment report and plan are under way. Region staff will engage with municipalities within Grand River and Long Point Region Source Protection Areas in the future to discuss their consideration of using the climate change vulnerability assessment tool.

The climate change vulnerability assessment tool is one of the first of its kind in the Province of Ontario, and its main purpose is to provide science-based guidance to municipalities, source protection authorities, and source protection committees on how to conduct a climate change vulnerability assessment for drinking water source quality. In the context of the assessment tool, climate change vulnerability of source water refers to any drinking water source that will likely be adversely affected by local climate change impacts both now and in the future.

The results of the assessment tool can be used to help inform discussions around protection, operations, management and adaptation actions at both the municipal and watershed scales. They may serve to further encourage and enhance climate change risk management of drinking water system infrastructure and support local climate change strategies or Climate Action Plans.

Within Kettle Creek Source Protection Area, a climate change vulnerability assessment has been completed for the Elgin Area Water Supply System intake. This report discusses the climate change vulnerability assessment tool, results of the assessment for the Elgin Area Water Supply System intake, and high-level proposed recommendations to reduce the impacts of climate change on the Elgin Area Water Supply System. This report focuses on impacts on water quality, and notes implications to infrastructure and related municipal assets related to improving the adaptive capacity of the Elgin Area Water Supply System.

The water treatment plant for the Elgin Area Water Supply System is located in the Municipality of Central Elgin in Elgin County with one surface water intake located in Lake Erie. Water quality concerns for this water system include high sodium levels in the spring, periodic low oxygen levels and harmful algal blooms within Lake Erie.

The overall assessment results show a low climate change vulnerability rating for the Elgin Area intake. Impacts on source water quality can be expected due to climate change; however, with the high adaptive capacity of the Elgin Area Water Supply System, climate change impacts on the source water quality may be reduced.

As next steps, Lake Erie staff, together with Elgin Area Water Supply System staff, will evaluate policy gaps and consider the development of further Source Protection Plan polices to reduce the potential impact of climate change on Elgin Area Water Supply System. Additionally, the Kettle Creek Source Protection assessment report will be updated with information from the Elgin Area Water Supply System climate change vulnerability assessment as part of a Section 36 update.

Report:

Background

Proposed changes to the Director's Technical Rules, under the *Clean Water Act,* include the consideration of climate change in source water quality risk assessments. A climate change vulnerability assessment tool, developed by Conservation Ontario in 2018, is being considered in the Lake Erie Source Protection Region and can provide municipalities, source protection authorities, and the Lake Erie Region Source Protection Committee with a practical and consistent approach to assess drinking water sources/systems for considerations of local climate change impacts.

Lake Erie Region staff have engaged municipalities in the Catfish Creek and Kettle Creek Source Protection Areas to assess their interest in completing a climate change vulnerability assessment on their drinking water system using the tool developed by Conservation Ontario. A climate change vulnerability assessment has been completed for the Elgin Area Water Supply System intake, located in the Kettle Creek watershed.

At this time, the other municipalities/drinking water systems within Catfish Creek and Kettle Creek Source Protection Areas will not be completing a climate change vulnerability assessment due to other priorities. Municipalities within

Grand River and Long Point Region SPAs will be contacted by Lake Erie Region staff in the future for their consideration on using the climate change vulnerability assessment tool.

Potential Impact of Climate Change on Drinking Water Systems

Climate change is expected to influence Ontario's surface water and groundwater systems. Impacts may result from changes in precipitation patterns and freeze-thaw cycles, increasing air and water temperatures, the frequency and intensity of extreme weather events, and the intensity, frequency and duration of drought periods, potentially affecting water quantity as well as quality.

Climate change, when coupled with other drivers such as poor land use practices and population growth can exacerbate existing risks to water resources and drinking water systems.

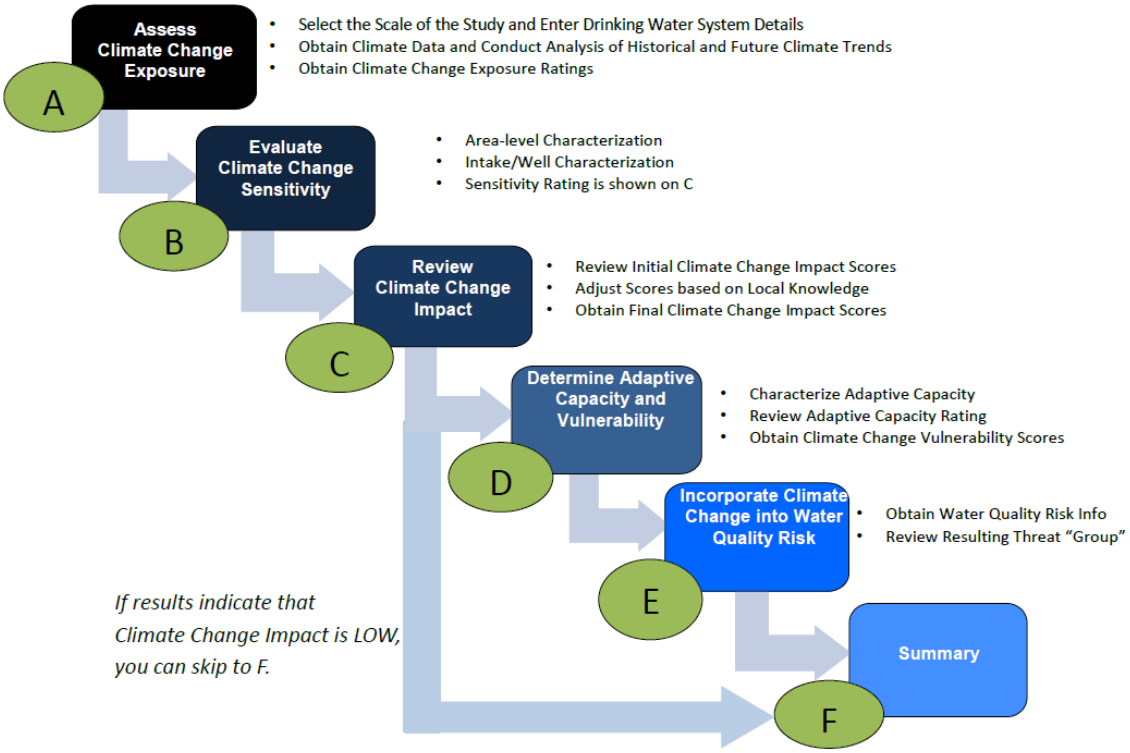
It is important to better incorporate climate change considerations into drinking water source protection planning and management, to identify and reduce the potential impacts of climate change on sources of drinking water. Potential impacts from climate change on source water quantity is included in water quantity risk assessments (Tier 3 Water Budgets), under the Drinking Water Source Protection Program. To assess climate change impacts on water quality, a climate change vulnerability assessment tool has been developed by Conservation Ontario for surface water and groundwater source quality, along with an accompanying guidance document.

Overview of the Climate Change Vulnerability Assessment Tool

The assessment tool provides a practical and consistent approach to assess the climate change vulnerability of drinking water source quality, and to highlight areas where measures may be needed to further protect source water quality. The approach encourages the user to leverage local expertise to identify climate change vulnerabilities that are specific to the area surrounding the drinking water system.

The assessment tool is Microsoft Excel-based and contains a series of linked worksheets that assess climate change exposure, evaluate climate change sensitivity at the intake/well system scales, assess the adaptive capacity and climate change vulnerability of the area and intake/well system, and incorporate the climate change vulnerability rating into existing drinking water quality threat risk assessments. Figure 1 illustrates an overview of the tool.

Figure 1 – Overview of the Assessment Tool



The results of the assessment tool can be used to help inform discussions around protection, management and adaptation actions at both the municipal and watershed scales. They may serve to further encourage climate change risk management of drinking water system infrastructure and support local climate change strategies or Climate Action Plans.

Conducting climate change vulnerability assessments is important for adaptation and mitigation planning. Climate change vulnerability assessments can help evaluate the current and predicted state of a system (e.g., a community or source protection area) and help identify which components (e.g., population groups or intakes/wells) may be most susceptible to changing climate conditions. Vulnerability assessments can also help to explain the cumulative effects of the interactions between potential climate change impacts and existing stressors.

Background on the Elgin Area Water System

The Elgin Area Water System is a large municipal drinking water system that is located in the Municipality of Central Elgin in Elgin County, along the north shore of Lake Erie approximately 2 km east of Port Stanley. The Elgin Area Water System has a single intake located in Lake Erie. The intake crib is located 1,200 m offshore and 7.9 m below the Low Water Datum for Lake Erie. The Elgin Area Water System services part of the City of London's water demand as well as municipalities in Elgin County including City of St. Thomas, Municipalities of Bayham, Central Elgin, and Dutton Dunwich, Townships of Malahide and Southwold, and Town of Aylmer. Current water quality concerns at the Elgin Area Water System intake include:

- Elevated sodium in raw water during the late-winter/spring, which may be associated with spring melt runoff events carrying winter road salt.
- Low levels in oxygen are periodically experienced in the raw water, which may be associated with thermal inversion events of the lake water. Low levels of oxygen in raw water can often result in treatment and/or taste/odour issues.
- Harmful Algal Blooms - typically non detectable results for microcyctin-LR, or infrequently at barely detectable levels, the long-term implications of blue-green cyanobacteria and harmful algal blooms in the Lake Erie basin suggest that the issue of harmful algal blooms will be a long-standing issue for all water systems using Lake Erie as their source water.

As part of the ongoing Elgin Area Water System monitoring program the issues mentioned above are continually assessed.

Results from the Climate Change Vulnerability Assessment Tool – Elgin Area Water System

Worksheet A – Climate Change Exposure

The purpose of worksheet A is to determine the climate change exposure rating based on historical and future climate trends. Exposure refers to the degree to which an area, intake or well is exposed to climate variation, which is primarily a function of geography. Climate parameters are considered on a seasonal and/or annual basis and include minimum/maximum air temperature, precipitation, heavy precipitation, very hot days, frost-free period, freeze-thaw cycles, maximum length of dry spell, rainfall and snowfall.

An assessment of climate trends using historical and future climate data was completed for the Kettle Creek watershed. Climate data was acquired from Environment and Climate Change Canada and the Climate Atlas of Canada.

Results of the trend analysis are an overall climate exposure rating of high for all seasons and annually. During the spring and winter months, the climate parameters driving the high exposure rating are minimum/maximum air temperature, precipitation and heavy precipitation. During the summer and fall months, the climate parameters driving the high exposure rating are minimum and maximum air temperature. On an annual basis the climate parameters driving the high climate exposure rating are minimum/maximum air temperature, precipitation, heavy precipitation, very hot days and the frost-free season.

Worksheet B – Area and Intake Sensitivity

The purpose of worksheet B is to describe attributes relevant to the drinking water system at the area and intake scale to determine their sensitivity to changing climate conditions. Sensitivity refers to the degree to which a system is affected by climatic and non-climatic stressors. Sensitivity scores associated to the intake scale is considered twice as important as the area scale.

An assessment of the area level sensitivity was completed for the Kettle Creek Source Protection Area. Examples of area-level attributes that are evaluated in

this worksheet include the size of the area, general information of current and future populations the drinking water system serves, current and future land uses (e.g., built-up area, agricultural land, areas drained by storm sewers, etc.), and historical issues with flooding, contamination, or drought events in the past. The weighted attributes are used in worksheet C to calculate the final climate change impact score.

An assessment of the intake sensitivity was completed for the Elgin Area Water System intake. Examples of intake attributes include the depth below water level, distance from shoreline, percent of intake protection zone (IPZ) on land, slope of land in IPZ, and soil permeability. These characteristics are important to document, as they can help determine the sensitivity of source water quality, which in turn may increase or decrease the system's vulnerability to climate change conditions in the future. Like the area level sensitivity, the weighted attributes are used in worksheet C to calculate the final climate change impact score.

Approximately three quarters of assessed area-level attributes and around half of the intake-level attributes were found to be highly sensitive to climate change.

Worksheet C – Evaluating Climate Change Impact at the area and Intake Scales

The purpose of worksheet C is to review the climate change impact scores and rating at the study area and intake scale. Potential climate change impact is any impact that may occur given projections of changing climate conditions, without any consideration of the system's adaptive capacity. It is a product of exposure and sensitivity.

The results from worksheet A (climate change exposure rating) and worksheet B (climate change sensitivity rating) are used to calculate the climate change impact score. The final climate change impact score for the Elgin Area Water System intake is 6.9/9 or a qualitative impact rating of high. A high rating suggests that the quality of the drinking water source will be affected by climate change, and existing source protection plan policies may not be sufficient to protect it.

Worksheet D – Determining Climate Change Adaptive Capacity and Climate Change Vulnerability

The purpose of worksheet D is to determine the climate change vulnerability rating for the intake as a function of adaptive capacity, exposure and sensitivity. Adaptive capacity is the ability of a system to adjust to climate change (including climate variability and extremes) in order to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.

The adaptive capacity calculated for the Elgin Area Water System intake is 82% or high adaptive capacity. A higher percentage of adaptive capacity score implies more adaptive capacity (i.e. greater ability to address impacts from climate change). The high adaptive capacity at the Elgin Area Water System intake can be attributed to the ability of the system to accommodate decreased raw water quality, existing redundancy with the Lake Huron Water Supply System (intake)

and having existing municipal policies and management procedures in place. For example, Safe Operating Procedures are available for addressing impacts of climate change such as contamination of raw water, obstruction of intake, and responding to algal blooms.

In the context of the assessment tool, climate change vulnerability of source water refers to any drinking water source that will likely be adversely affected by local climate change impacts now and in the future.

The assessment tool determines an overall climate change vulnerability score based on the overall climate change impact and adaptive capacity scores from worksheet C and D. The climate change vulnerability score for the intake or well is calculated using the following equation:

$$Climate\ Change\ Vulnerability = \frac{Potential\ Impact\ (i.e.\ Exposure\ \times\ Sensitivity)}{Adaptive\ Capacity}$$

The resulting climate change vulnerability rating for the Elgin Area Water System intake is low. With a low vulnerability rating, impacts on source water quality can be expected due to climate change; however, with the high adaptive capacity of the Elgin Area Water System, climate change impacts on the source water quality may be reduced. Suitable adaptation and mitigation options can be explored for planning purposes.

Worksheet E – Incorporating Climate Change Vulnerability of the Intake into Existing Source Protection Water Quality Risk Approach

The purpose of worksheet E is to characterize existing threat activities based on the climate change vulnerability rating and to help users determine whether possible actions are needed to address anticipated local climate change impacts on water quality threats.

Elgin Area Water System has one existing significant drinking water threat, the handling and storage of fuel (diesel fuel tanks for backup generators at the water treatment plant). The suggested action through the climate change vulnerability assessment tool for this drinking water threats is to determine if additional actions are needed to account for any climate change impacts. This threat has been addressed through a Risk Management Plan (RMP).

Discussion of Results of the Climate Change Vulnerability Assessment Tool – Elgin Area Water System Intake

Central Elgin staff completed an analysis of the attributes that contributed to increasing the overall climate change impact score. The analysis included how the attribute affects the Elgin Area Water System, recommended actions on how to reduce the effects of climate change on the intake, and the overall estimated climate change vulnerability score change if those recommended actions are put in place. The full analysis is included in Appendix A and is discussed at a high level in this report with an emphasis on proposed recommendations made by Elgin Area Water System staff.

Area Level Sensitivity of the Kettle Creek Source Protection Area

Approximately three quarters of assessed area-level attributes were found to be highly sensitive to climate change. The main contributing attributes are relative changes in area of agricultural fields as a percent of Kettle Creek SPA, and stormwater system capacity.

Changes in the relative percent of agricultural fields could change agricultural nutrient, pathogen, and pesticide loadings. Since the future percentage of the Kettle Creek SPA as agricultural fields is over 50%, it is considered to be a high sensitivity attribute. A preliminary recommendation to reduce the overall climate change vulnerability score is the consideration of Source Protection Plan policies related to agricultural land use activities, such as the application of agricultural source material to land and the application of pesticide to land, for areas within the SPA to limit agricultural nutrient, pathogen, and pesticide loadings to help reduce the impact on the Elgin Area Water System.

Intake Sensitivity of the Elgin Area Water System Intake

Around half of the Elgin Area Water System intake-level attributes were found to be highly sensitive to climate change. The main contributing attributes are the number of intakes and identified threats to water quality.

Currently, the Elgin Area Water System has only one intake, which increases the sensitivity. Threats to water quality that were identified include contamination of raw water (chemical spill, biological spill), long term impacts of climate change and adverse weather/seasonal fluctuations (cliff erosion, flooding), and sudden changes to raw water (turbidity, pH, temperature, organics). The Elgin Area Water System owner may conduct further analysis as recommended in the 2020 Elgin Area Water System Master Water Plan.

Proposed Recommendations to Decrease the Impact of Climate Change on Elgin Area Water System Intake

The final climate change impact score for the Elgin Area Water System intake is 6.9/9 or a qualitative impact rating of high. The attributes that contribute to the high rating are:

- the potential for increased contaminant loadings due to percent of agricultural fields,
- the existence of flood plains and potential for flooding to impact properties and infrastructure,
- the potential for increased vulnerability due to intake type and number and,
- the potential for water quality issues to worsen with increased water quality threats.

Proposed recommendations to help reduce the impact of climate change on the attributes identified in this climate change vulnerability assessment are detailed in Appendix A and summarized below. High level proposed recommendations include:

- Low Impact Development (LID) practices and Green Infrastructure,
- an investment in properly sized conveyance pipes to ensure that the stormwater system has the capacity to handle future storms, and
- a Climate Change Assessment Study be conducted to review rainfall intensity-duration-frequency (IDF) curves for the watershed and assess potential water quality impacts on source water.

Proposed Recommendations to Increase Adaptive Capacity of the Elgin Area Water System Intake

The adaptive capacity of the Elgin Area Water System intake is high. The attributes that could be addressed to support an increase in adaptive capacity are an increase in use of municipal surface water systems due to anticipated population growth and an increase in stormwater system capacity. Proposed recommendations to address these attributes include:

- an On-site Storage Capacity Study be conducted to determine if an increase in storage is necessary to meet future water demands due to population growth; and
- an investment made in properly sized conveyance pipes to ensure that the stormwater system has the capacity to handle future storms.

Source Water Protection and Recommendations from the Climate Change Vulnerability Assessment at Elgin Area Water System Intake

Elgin Area Water System staff recommend for the Lake Erie Region Source Protection Committee to review Source Protection Plan policies related to agricultural land use activities, such as the application of agricultural source material to land and the application of pesticide to land. Source Protection Plan policies could be considered for areas within the SPA to limit agricultural nutrient, pathogen, and pesticide loadings to help reduce the impact on the Elgin Area Water System.

Lake Erie Region staff will consider this recommendation and work with Elgin Area Water System staff to identify policy gaps related to agricultural land use. Where policy gaps are identified, source protection polices may be developed.

Conclusions

The result of the climate change vulnerability assessment tool completed by Elgin Area Water System staff on the intake show an overall low climate change vulnerability rating. This result is the combination of high climate change exposure rating for all seasons and annually, driven by minimum/maximum air temperature, precipitation and heavy precipitation, high area (Kettle Creek watershed) level sensitivity and intake (Elgin Area Water System intake) level sensitivity, and high adaptive capacity, i.e., greater ability to address impacts from climate change.

To reduce some of the climate change impacts, Elgin Area Water System staff have proposed recommendations to improve the adaptive capacity against

climate change impacts. These include evaluating stormwater system capacity to handle future storms and review of Source Protection Plan policies related to agricultural land use activities).

Next Steps

Next steps for Lake Erie Region Source Protection Committee and staff include:

- Review of Source Protection Plan policies and identification of policy gaps related to agricultural land use and consideration of policy revisions to reduce the impact of climate change on Elgin Area Water System.
- Update the Kettle Creek Source Protection assessment report with information from the Elgin Area Water System climate change vulnerability assessment as part of a Section 36 update.
- Reach out to municipalities with drinking water systems in the Long Point Region and Grand River Source Protection Areas to determine if they are interested in completing a climate change vulnerability assessment.

Prepared by	**Approved by:**
Emily Hayman Source Water Hydrogeologist	Martin Keller Source Protection Program Manager

Appendix A: Recommendations: Elgin Area Water System Intake – Climate Change Vulnerability Assessment Tool for Drinking Water Source Quality

Appendix A – Table 1: Analysis of area level sensitivity that contributed to increasing the overall climate impact score

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
7b - Future percentage of the Kettle Creek Source Protection Area to municipal planning horizon as agricultural fields	Changes in the relative percentage of agricultural fields could change agricultural nutrient, pathogen, and pesticide loadings. Over 50% is considered higher sensitivity, under 25% is considered lower sensitivity. Since the future percentage of the Kettle Creek SPA as agricultural fields is over 50%, it is considered to be a high sensitivity attribute.	It is recommended that Source Protection Plan policies related to agricultural land use activities, such as the application of agricultural source material to land and the application of pesticide to land, be considered for areas within the SPA to limit agricultural nutrient, pathogen, and pesticide loadings to help reduce the impact on the Elgin Area Primary Intake.	Lake Erie Region Source Protection Committee	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.7/9 (75%); High Change in score: Decrease in Climate Change Impact Score by 2%	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.7/9 (30%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 1%
9b. Stormwater system capacity	In the Central Elgin Stormwater Detailed Asset Management Plan (2021), it states that there is a "demand for properly sized conveyance pipes to handle increased storm severity." The current design of the stormwater system influences the ability of the system to convey increased flows. If the system cannot handle	It is recommended that an investment is made in properly sized conveyance pipes to ensure that the stormwater system has the capacity to handle future storms.	Municipality of Central Elgin	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.9/9 (77%); High Change in score: No Change	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.6/3 (87%); High Change in score: Increase in	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.6/9 (29%); Low Change in score: Decrease in

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
	future storms then it has a higher sensitivity; if the system can handle future storms it has a lower sensitivity. Currently, the stormwater system does not have the capacity to handle future storms which increases the sensitivity.				Adaptive Capacity Score by 5%	Overall Climate Change Vulnerability Score by 2%

Notes on attribute 7b: Although the percentage of area is not less than 25%, to determine how this attribute affects each score, the current (attribute 6b) and future (attribute 7b) percentage as agricultural fields was adjusted to be less than 25%. This assumes that implementing policies related to agricultural land use activities would help to reduce this sensitivity.

Table 2: Analysis of intake sensitivity that contributed to increasing the overall climate impact score

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
2. Number of intakes	The potential to shut one intake down but have another available for use will factor into the sensitivity of the system. A system with one intake only is considered higher sensitivity, a system with two or more intakes is consider lower sensitivity. Currently, the EAPWSS has only one intake which increases the sensitivity.	It is recommended that a Secondary Intake Study be conducted to determine the feasibility of constructing a secondary intake for the EAPWSS. This study was recommended in the 2015 Water Quality Plan and is supported by the Climate Change Vulnerability Assessment Tool investigation. If the study supports the decision for a secondary intake, the overall climate change vulnerability score will change as follows:	Elgin Area Primary Water Supply System	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.3/9 (70%); High Change in score: Decrease in Climate Change Impact Score by 7%	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.6/9 (29%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 2%
16b. Were threats to water quality identified?	Threats to water quality that were identified include contamination of raw water (chemical spill, biological spill), long terms impacts of climate change and adverse weather/seasonal fluctuations (cliff erosion, flooding), sudden changes to raw	It is recommended that a Climate Change Assessment Study be conducted to review rainfall intensity-duration-frequency (IDF) curves for the watershed and assess potential water quality impacts on source water.	Elgin Area Primary Water Supply System	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.7/9 (75%); High	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.7/9 (30%); Low

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
	water (turbidity, pH, temperature, organics), and HABs. These threats may be exacerbated under climate change and therefore if threats were identified it is considered higher sensitivity and if threats were not identified it is considered lower sensitivity.	This study was recommended in the 2020 Elgin Area PWSS Master Water Plan. If the results from the study indicate that potential water quality impacts will not significantly affect the source water, the overall climate change vulnerability score will change as shown in the following columns.		Change in score: Decrease in Climate Change Impact Score by 2%	Change in score: No Change	Change in score: Decrease in Overall Climate Change Vulnerability Score by 1%

Notes on attribute 16b: If the study determined that threats to water quality were not significant, this attribute would be changed to record as "No".

Table 3: Analysis of climate change impact (area level) that contributed to increasing the overall climate impact score

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
1. Potential for increased contaminant loadings due to size of the area	Climate change could increase the transport of contaminants or cause more dilution. Contaminant loadings are influenced by the size of the area of study. Although the size of the area of study cannot be changed, methods such as Low Impact Development (LID) can be implemented to reduce the potential for increased contaminant loading. LID practices can effectively remove nutrients, pathogens, and metals from runoff and can reduce the volume and intensity of stormwater flows. Additionally, managing/controlling stormwater at the source is more effective and can help to improve the overall quality of the stormwater discharging into Lake Erie.	It is recommended that Low Impact Development (LID) practices and Green Infrastructure, such as rain gardens, infiltration trenches, and permeable pavement be implemented throughout the watershed, specifically in areas where high runoff rates are present, to reduce contaminant loadings.	Municipalities within the SPA	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.7/9 (75%); High Change in score: Decrease in Climate Change Impact Score by 2%	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.7/9 (30%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 1%

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
3. Potential for increased contaminant loadings due to percent of agricultural fields	More agricultural fields could mean increased loading of contaminants to waterbodies due to longer growing season or increased precipitation. Since agricultural fields make up a large percentage of the Kettle Creek SPA, there is a greater risk of contaminant loadings entering the water. Methods such as Low Impact Development (LID) can be implemented to reduce the potential for increased contaminant loading. LID practices can effectively remove nutrients, pathogens, and metals from runoff and can reduce the volume and intensity of stormwater flows. Additionally, managing/controlling stormwater at the source is more effective and can help to improve the overall quality of the stormwater discharging into Lake Erie.	It is recommended that Low Impact Development (LID) practices and Green Infrastructure, such as rain gardens, infiltration trenches, and grass swales be implemented downstream of agricultural fields, specifically in areas located near the intake, to reduce contaminant loadings.	Municipalities within the SPA	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.7/9 (75%); High Change in score: Decrease in Climate Change Impact Score by 2%	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.7/9 (30%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 1%

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
5. Existence of flood plains and potential for flooding to impact properties and infrastructure	"Flooding could increase the release of contaminants and degrade runoff water quality. Possible flood control measures that could be used include stormwater systems with adequate capacity, Low Impact Development (LID) practices, and reduction of impervious surfaces.	1. It is recommended that an investment is made in properly sized conveyance pipes to ensure that the stormwater system has the capacity to handle future storms. 2. It is recommended that Low Impact Development (LID) practices and Green Infrastructure, such as rain gardens, infiltration trenches, and permeable pavement be implemented throughout the watershed, specifically in areas where high runoff rates are present, to reduce flooding potential and to reduce contaminant loadings. 3. It is recommended that the number of impervious surfaces be limited to reduce flooding potential. When planning applications, such as plans for	1. Municipality of Central Elgin 2. Municipalities within the SPA 3. Kettle Creek Conservation Authority and Municipalities within the SPA	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.1/9 (68%); High Change in score: Decrease in Climate Change Impact Score by 9%	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.5/9 (28%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 3%

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
		subdivisions, are submitted by the municipalities to the KCCA, pervious surfaces, such as permeable pavement, should be considered as an alternative to asphalt for applications relating to roads and parking.				

Notes on attribute 1: To determine how this attribute affects each score, the impact score for the annual time period was adjusted from 9 (High impact score) to 1 (Low impact score). For this attribute, the adjusted scores represent the ""best-case scenario""; essentially, this score represents the highest change in score achievable if actions related to this attribute are taken.

Notes on attribute 3: To determine how this attribute affects each score, the impact score for each time period (spring, summer, fall, winter, and annual) was adjusted from 9 (High impact score) to 1 (Low impact score). For this attribute, the adjusted scores represent the ""best-case scenario""; essentially, this score represents the highest change in score achievable if actions related to this attribute are taken.

Notes on attribute 5: To determine how this attribute affects each score, the impact score for each time period (spring, summer, fall, winter, and annual) was adjusted from 9 (High impact score) to 1 (Low impact score). For this attribute, the adjusted scores represent the "best-case scenario"; essentially, this score represents the highest change in score achievable if actions related to this attribute are taken.

Table 4: Analysis of climate change impact (intake) that contributed to increasing the overall climate impact score

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
1. Potential for increased vulnerability due to intake type and number	A system with only one intake would be more vulnerable than a system with more than one intake. Currently, the EAPWSS has only one intake which makes it more vulnerable.	It is recommended that a Secondary Intake Study be conducted to determine the feasibility of constructing a secondary intake for the EAPWSS. This study was recommended in the 2015 Water Quality Plan and is supported by the Climate Change Vulnerability Assessment Tool investigation. If the study supports the decision for a secondary intake, the overall climate change vulnerability score will change as shown in the following columns.	Elgin Area Primary Water Supply System	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.3/9 (70%); High Change in score: Decrease in Climate Change Impact Score by 7%	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.6/9 (29%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 2%
5. Potential for water quality issues to worsen	Existing water quality issues could be exacerbated or reduced by climate change. In addition, intakes that have experienced poor water quality due to local	It is recommended that a Climate Change Assessment Study be conducted to review rainfall intensity-duration-frequency (IDF) curves for the	Elgin Area Primary Water Supply System	Initial score: 6.9/9 (77%); High Adjusted score with recommendations	Initial score: 2.5/3 (82%); High Adjusted score with recommendations	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
	conditions may have greater vulnerability in the future.	watershed and assess potential water quality impacts on source water. This study was recommended in the 2020 Elgin Area PWSS Master Water Plan. If the results from the study indicate that potential water quality impacts will not significantly affect the source water, the overall climate change vulnerability score will change as shown in the following columns.		applied: 6.1/9 (68%); High Change in score: Decrease in Climate Change Impact Score by 9%	applied: 2.5/3 (82%); High Change in score: No Change	applied: 2.5/9 (28%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 3%
8. Water quality threats identified through a DWQMS risk assessment	A risk assessment may provide insight into possible threats to water quality resulting from a changing climate. Threats to water quality that were identified include contamination of raw water (chemical spill, biological spill), long terms impacts of climate change and adverse weather/seasonal fluctuations (cliff erosion, flooding), sudden	It is recommended that a Climate Change Assessment Study be conducted to review rainfall intensity-duration-frequency (IDF) curves for the watershed and assess potential water quality impacts on source water. This study was recommended in the 2020	Elgin Area Primary Water Supply System	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.6/9 (74%); High Change in score: Decrease in Climate Change	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.5/3 (82%); High Change in score: No Change	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.7/9 (30%); Low Change in score: Decrease in Overall Climate

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
	changes to raw water (turbidity, pH, temperature, organics), and HABs.	Elgin Area PWSS Master Water Plan. If the results from the study indicate that potential water quality impacts will not significantly affect the source water, the overall climate change vulnerability score will change as shown in the following columns.		Impact Score by 3%		Change Vulnerability Score by 1%

Notes on attribute 5: To determine how this attribute affects each score, the impact score for each time period (spring, summer, fall, winter, and annual) was adjusted from 9 (High impact score) to 1 (Low impact score). For this attribute, the adjusted scores represent the "best-case scenario"; essentially, this score represents the highest change in score achievable if actions related to this attribute are taken.

Notes on attribute 8: To determine how this attribute affects each score, the impact score for each time period (spring, summer, fall, winter, and annual) was adjusted from 9 (High impact score) to 1 (Low impact score). For this attribute, the adjusted scores represent the "best-case scenario"; essentially, this score represents the highest change in score achievable if actions related to this attribute are taken.

Table 5: Analysis of adaptive capacity that contributed to increasing the overall climate impact score

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
1. Increase in use of municipal surface water systems due to anticipated population growth	Greater demand for municipal surface water systems due to population growth can increase stress on these systems or lead to system expansion, which in turn lowers the adaptive capacity. From the 2020 Elgin Area PWSS Master Water Plan Update it was determined that, based on medium population growth, the population served by the system will increase from 138,000 (2020) to 166,000 by 2038.	It is recommended that an On-site Storage Capacity Study be conducted to determine if an increase in storage is necessary to meet future water demands due to population growth. This study was recommended in the 2015 Water Quality Facility Plan and is supported by the Climate Change Vulnerability Assessment Tool investigation.	Elgin Area Primary Water Supply System	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.9/9 (77%); High Change in score: No Change	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.6/3 (87%); High Change in score: Increase in Adaptive Capacity Score by 5%	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.6/9 (29%); Low Change in score: Decrease in Overall Climate Change Vulnerability Score by 2%
2. Stormwater system capacity	In the Central Elgin Stormwater Detailed Asset Management Plan (2021), it stated that there is a "demand for properly sized conveyance pipes to handle increased storm severity." The current design of the stormwater system influences the ability of the system to convey increased flows. If the system cannot handle	It is recommended that an investment is made in properly sized conveyance pipes to ensure that the stormwater system has the capacity to handle future storms.	Municipality of Central Elgin	Initial score: 6.9/9 (77%); High Adjusted score with recommendations applied: 6.9/9 (77%); High Change in score: No Change	Initial score: 2.5/3 (82%); High Adjusted score with recommendations applied: 2.6/3 (87%); High Change in score: Increase in Adaptive	Initial score: 2.8/9 (31%); Low Adjusted score with recommendations applied: 2.6/9 (29%); Low Change in score: Decrease in Overall Climate

Attribute	How does this attribute affect the intake	Recommendation	Lead	Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
	future storms, then it has a lower adaptive capacity. Currently, the stormwater system does not have the capacity to handle future storms which lowers the adaptability.				Capacity Score by 5%	Change Vulnerability Score by 2%

Notes on attribute 1: Since this attribute is automatically populated based on the current and future population using surface water systems, the future population was changed to record as "not changing" to determine how the score would change.

Table 6: If all recommendation from above are implemented, the climate change impact score, adaptive capacity score, and the overall climate change vulnerability score will change as presented in the table.

Climate change impact score	Adaptive capacity score	Overall climate change vulnerability score
Initial score: 6.9/9 (77%); High	Initial score: 2.5/3 (82%); High	Initial score: 2.8/9 (31%); Low
Adjusted score with recommendations applied: 3.6/9 (40%); Medium	Adjusted score with recommendations applied: 2.8/9 (93%); High	Adjusted score with recommendations applied: 1.3/9 (14%) Low
Change in score: Decrease in Climate Change Impact Score by 33%	Change in score: Increase in Adaptive Capacity Score by 11%	Change in score: Decrease in Overall Climate Change Vulnerability Score by 17%

Additional notes: The adjusted scores represent the "best-case scenario"; essentially, this score represents the highest change in score achievable if actions related to the attributes listed above are taken.

Lake Erie Region Source Protection Committee

Report number:	SPC-21-09-05
Date:	September 9, 2021
To:	Lake Erie Region Source Protection Committee
Subject:	S.34 Revised Updated Grand River Assessment Report and Source Protection Plan: Town of Grand Valley

Recommendation:

THAT the Lake Erie Region Source Protection Committee receives report SPC-21-09-05 – S.34 Revised Updated "Grand Valley" Grand River Assessment Report and Source Protection Plan – for information;

AND THAT the Lake Erie Region Source Protection Committee releases the revised Updated "Grand Valley" Grand River Assessment Report and Source Protection Plan to the Grand River Source Protection Authority for submission to the Ministry of the Environment, Conservation and Parks, along with the municipal council resolutions received, and the comments as presented in this report.

Report:

Work under s.34 of the Clean Water Act, 2006 (CWA) to update the Grand River Assessment Report and Source Protection Plan has been completed for proposed water quality updates that affect the Town of Grand Valley.

Since the June 17, 2021 SPC meeting, a formal public consultation period was held from June 21 to July 20, 2021. All comments received, along with additional proposed revisions, are presented in the revised Updated Grand River Assessment Report and Source Protection Plan for consideration by the SPC and release to the Grand River Source Protection Authority for submission to the Ministry of the Environment, Conservation and Parks (MECP).

Pre-consultation and Public Consultation Process

As part of the s.34 update process, municipalities and ministries affected by the proposed amendments were notified of the proposed changes and the opportunity for pre-consultation. Pre-consultation comments were received from the MECP (See report SPC-21-06-03).

The public consultation period began on June 21 and ended on July 20, 2021. As per O. Reg. 287/07 section 50(2), persons with properties affected by the proposed changes in the Town of Grand Valley were sent a notification letter highlighting the updates and public consultation process. Due to the ongoing COVID-19 pandemic, Lake Erie Region posted public consultation material, including a slide deck, on Lake Erie Region's website. The slide deck focussed on technical study results for the updated municipal water supply system.

Section 34 of the CWA requires that source protection authorities obtain a municipal council resolution from each municipality affected by the amendments. Municipal Council resolutions in support of the amendments to the revised Updated Grand River Assessment Report and Source Protection Plan were received from Dufferin County and the Town of Grand Valley.

Lake Erie Region received public consultation comments on the assessment report and the source protection plan (Appendix A, Tables 1 and 2). None of the comments received address the amendments proposed in the assessment report or the source protection plan:

- Table 1: Revised Updated Grand River Assessment Report – Public consultation comments received not related to the amendments proposed in this update
- Table 2: Revised Updated Grand River Source Protection Plan – Public consultation comments received not related to the amendments proposed in this update

Revisions to the Grand River Assessment Report

The revised Updated Grand River Assessment Report primarily includes updates to municipal and non-municipal sections. See report SPC-21-06-03, Table 1 for high-level changes within each section. The table also references the SPC report which contains more detailed information.

Revisions to the Grand River Source Protection Plan

The revised Updated Grand River Source Protection Plan includes a minor revision to an administrative policy and a new “transition” policy. The proposed revisions were presented to the SPC at the June 17, 2021 meeting.

The revised Updated Grand River Assessment Report and Source Protection Plan are available in their entirety on the September 9, 2021 eScribe meeting site.

Submission Comments

The Source Protection Program under the CWA is designed with continuous improvements in mind and will require updates to the source protection plan and assessment report when new information, changes to municipal supply infrastructure and advanced technologies become available. The submission of the revised Updated Grand River Assessment Report and Source Protection Plan for the Grand River Source Protection Area marks the fifth s.34 update completed in accordance with the updated Ontario Regulation 205/18, which came into force on July 1, 2018 where a new or changed municipal drinking water system within as source protection area requires a Minister approved assessment report and source protection plan before drinking water can be distributed to the public.

The following list includes ongoing work and comments staff recommend should be submitted to the MECP together with the revised updated assessment report and plan, pre-consultation and public consultation comments, and municipal resolutions:

Ongoing Work:

- Guelph-Guelph/Eramosa water quantity policy development
- Proposed items identified in the Grand River S.36 Workplan, such as:
    - Addressing Technical Rule changes
    - Assessing environmental monitoring data
    - Updating assessment report as a result of further municipal drinking water system infrastructure changes, e.g., new wells or intakes
    - Policy review and revisions to address gaps and/or implementation challenges
    - Update to Tier 3 groundwater models
    - Re-modeling of existing vulnerable areas based on new and updated information
    - Transport pathway identification and review

Comments:

- Need for long-term, multi-year sustainable provincial funding for conservation authorities for continued program oversight and support to ensure successful implementation of the Source Protection Plans and to meet the mandatory legal responsibilities of conservation authorities on an ongoing basis.
- Need for simple and easy to administer future program processes, e.g., annual progress reporting and plan update processes, to not burden conservation authorities with complex and resource intensive processes and reporting requirements.
- Need for provincial funding and support for maintenance of scientific technical tools, e.g., surface water and groundwater models, including Tier 3 models.

Timeline for Grand River Source Protection Plan update

Table 1 presents key milestones for completing the necessary technical and policy work, undertaking the necessary formal public consultation, and submitting the revised Updated Grand River Source Protection Plan to the MECP. Next step in the update process is for the committee to consider the revised updated plan, assessment report and consultation comments and release the documents to the Grand River Source Protection Authority for submission to the MECP.

Table 1: Key milestones for the revised updated Grand River Assessment Report and Source Protection Plan

Activity	Date	Complete
Completion of technical study for new Grand Valley Water Supply System WHPA	March, 2021	Yes
Municipal and Ministry pre-consultation on draft updates made to the Grand River Assessment Report and Source Protection Plan	April 6 – May 11, 2021	Yes

Activity	Date	Complete
SPC receives draft Updated Grand River Assessment Report and Source Protection Plan for consideration and release for public consultation	June 17, 2021	Yes
Council resolutions in support of the amendments to the draft Updated Grand River Assessment Report and Source Protection Plan	April – June, 2021	Yes
Letter notification for properties affected by changes to the draft Updated Grand River Assessment Report and Source Protection Plan	Mid-June 2021	Yes
Formal public consultation for draft Updated Grand River Assessment Report and Source Protection Plan	June 21 – July 20, 2021	Yes
SPC receives draft Updated Grand River Assessment Report and Source Protection Plan and public consultation comments for consideration; SPC releases the document to the Grand River Source Protection Authority	September 9, 2021	No
Grand River Source Protection Authority receives revised Updated Grand River Assessment Report and Source Protection Plan to for submission to the MECP.	September 24, 2021	No

Prepared by	**Approved by:**
Ilona Feldmann Source Protection Program Assistant	Martin Keller Source Protection Program Manager

Appendix A: Public consultation comments

Table 1: Revised Updated Grand River Assessment Report – Public consultation comments received not related to the amendments proposed in this update

Number	Comment Source	AR Section	Comment	How Comment is Addressed
1	Public member	S24, State of Climate Change Research in the Lake Erie Source Protection Region	The State of Climate Change chapter is completely out of date with references to 2005 and up to 2010 information. It is now 2021 and much has changed. Groundwater must be protected and aggregates must be reigned in given the effects of removing so much of what filters groundwater, Climate change is having disastrous effects, happening much faster than predicted and in different ways. The heat dome and wildfires are examples not anticipated in 2010. This needs an update! We are only to comment on the updates but this update is missing!	Lake Erie Source Protection Region staff acknowledge that the Climate Change chapter needs updating. This will be considered in a future update to the Grand River Source Protection Plan. Work that has been done includes the completion of water quantity climate change assessments for the Guelph-Guelph/Eramosa Tier 3 and Centre Wellington Tier 3 studies. The studies concluded that climate change may not pose an additional threat to the quantity of the Centre Wellington and Guelph-Guelph/Eramosa municipal water supply wells due to predicted increase in groundwater recharge. The Global Climate Models and hydrologic model that were applied in these studies suggest that groundwater recharge rates will increase over time. Assessing impacts to the quantity of municipal water supply is an ongoing continual improvement process that will be updated as new information comes available. The Ministry of the Environment, Conservation and Parks is proposing changes to the Source Water Protection Director's Technical Rules regarding how climate change impact assessments are documented in the assessment report. Lake Erie Source Protection Region and local municipalities will consider the proposed changes once finalized and possible assessment report and source protection plan implications.

Number	Comment Source	AR Section	Comment	How Comment is Addressed
2	Public Member	S24, State of Climate Change Research in the Lake Erie Source Protection Region; and S26, Conclusions	Pages 24-3 and 26-5, please update the information on Centre Wellington's Tier 3. It is not scoped; it is not ongoing; the climate study is done.	Staff propose that references to the Centre Wellington 'Scoped' Tier 3 be revised with 'scoped' removed from pages 24-3 and 24-4. Text will be updated to reflect the current status of the completed Centre Wellington Tier 3 in Section 26.
3	Public Member	S26, Conclusions	Page 26-10 concerning Centre Wellington states, "All of the wells are constructed in the Gasport bedrock formation and are protected by the Eramosa Member which functions as an aquitard in this area." This sentence is not correct and this information was changed in the last round of Source Water Protection updates as of June 14, 2021. Please see the correction that was made with a revision in Section 22, which now states, "The Eramosa Formation is largely absent throughout the Study Area." and correct this sentence on page 26-10 accordingly. As explained now in chapter 22, in Centre Wellington the wells are protected by the Lower Guelph formation which functions as the aquitard in this area.	Staff propose to remove the following text on page 26-10: "All of the wells are constructed in the Gasport bedrock formation and are protected by the Eramosa Member which functions as an aquitard in this area", from page 26-10.
4	Public Member	S24, State of Climate Change Research in the Lake Erie Source Protection Region	Section 24, Climate Change. I note that there are no references in this Section that are less than ten years old with most references pre-2005. Regarding climate impact research, changes are ramping up sooner than anyone thought, and many predictions from ten years	Lake Erie Source Protection Region staff acknowledge that the Climate Change chapter needs updating. This will be considered in a future update to the Grand River Source Protection Plan.

Number	Comment Source	AR Section	Comment	How Comment is Addressed
			ago have now not only come true, but have been exceeded. Therefore, this Section 24 appears to be in need of updating with more current information. I realize that the Source Water Protection documents concern municipal wells. However, it would seem that what is also needed is source water protection for the whole watershed. The headwater area of the Grand River around Dundalk some decades ago was marsh lands, which have subsequently for the most part dried up (drained by agricultural tile drainage?). It is unfortunate that there appear to be no protocols for special protection for these headwater areas as reservoirs of regional forests, wetlands, wildlife, and water quality and quantity. For resilience against climate changes of wetter springs but hotter and drier summers, these headwater areas could be important for protecting both surface and groundwater levels over the summers.	The Ministry of the Environment, Conservation and Parks is proposing changes to the Source Water Protection Director's Technical Rules regarding how climate change impact assessments are documented in the assessment report. Lake Erie Source Protection Region and local municipalities will consider the proposed changes once finalized and possible assessment report and source protection plan implications. The provincial government has scoped the Clean Water Act, 2006 (CWA) to protect water sources that supply municipal residential drinking water systems. The Grand River Conservation Authority (GRCA) is responsible for managing land and water resources within the Grand River watershed. Through the administration of Ontario Regulation 150/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation), permission from the GRCA is required to develop in river or stream valleys, wetlands, shorelines or hazardous lands; alter a river, creek, stream or watercourse; or interfere with a wetland. This regulation allows the GRCA to prevent or restrict development in areas where the control of flooding, erosion, dynamic beaches, pollution or the conservation of land may be affected. Tile drainage activities do not require approvals form the GRCA; however, GRCA would not permit wetlands to be tiled as this would be considered interference to a wetland.

Number	Comment Source	AR Section	Comment	How Comment is Addressed
5	Public Member	General	With respect to the rationale/goals, considering the key points: Clean Water Act (Act) passed in 2006 to implement recommendations from the Walkerton Report Goal of Source Protection is to protect current and future sources of municipal drinking water from potential contamination and depletion Source Protection is the first barrier in a multi-barrier approach WHY has it taken 15 years to talk about this source protection when it is meant to be the FIRST barrier?! I really hope we are not too late in water protection.... there have been threats like the mega quarry that required the public to rally and protest because it appeared our government couldn't or wouldn't... and yet government is supposed to be there to oversee the greater good, to carry out actions for public protection. And in Guelph, my home city, we continue to live in the shadow of water taking applications - Nestle sold out (again - was this because we the people did our protesting?? where was the government in all this??) and now it feels like we have a new "enemy" preying on our water source. All water protection is important. Because all water in the environment is connected. Regarding: Zones based on time-of-travel:	As a result of the Walkerton tragedy in 2000, the Ontario government set up the Walkerton Inquiry under Justice Dennis O'Connor. He issued a two-volume report with 121 recommendations to prevent a similar event from happening again. The report recommended the creation of science- watershed-based plans to protect existing and future sources of municipal drinking water from contamination and over use. Source water protection is the first barrier of the multi-barrier approach to providing clean and abundant municipal water supplies. The Clean Water Act, 2006, (CWA) is one of a series of legislations and regulations that together provide the safety net for providing clean municipal drinking water. The CWA ensures communities protect their drinking water supplies through prevention - by developing collaborative, watershed-based source protection plans that are locally driven and based on science. Since 2005, municipalities and conservation authorities have been undertaking studies to delineate areas around municipal drinking water sources that are most vulnerable to contamination and overuse. Within these vulnerable areas, technical studies have identified historical, existing and possible future land use activities that are or could pose a threat to municipal water sources. The first Draft Grand River Assessment Report was completed and made available for public consultation in 2010. Several

Number	Comment Source	AR Section	Comment	How Comment is Addressed
			100-metre zone, 2-year, 5-year and 25-year time of travel I would argue that there should be a longer time and larger zone than 25 years.... Southwestern Ontario communities depend on groundwater supplies. We don't want to run pipelines from the Great Lakes if this can be avoided. In a region as densely populated as SW Ontario, and considering the Indigenous rule of seven generations, I suggest that we also look at the impacts 100-150 years time of travel. Regarding drinking water threat activity: While I understand that this document is about Lake Erie Source Protection, I hope there is cross-government, cross-agency consultation and cooperation. When reference is made to "the Ministry", I presume this is the Ministry of the Environment, but many of the recommendations /actions affect agriculture management and must be consistent with what the Ministry of Agriculture, Food and Rural Affairs mandates. In Table 1.1, I do appreciate the list of representative from the many stakeholders - this is a good start! "Guelph is one of the largest cities in Canada to almost exclusively depend on groundwater for its potable water supply."	rounds of consultation and revisions followed until it was approved by the Ministry of the Environment in 2012. Since that time, the Assessment Report and Source Protection Plan has been revised, updated and approved a number of times to incorporate new information made available over the years. The Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) regulates aggregate operations, including overseeing the rules governing aggregate management, issues licenses, permits and changes to existing approvals. The Ministry of the Environment Conservation and Parks (MECP) regulates the Permits to Take Water (PTTW) process. Together, these ministries are responsible for assessing and addressing cumulative impacts to municipal drinking water sources from water taking activities and aggregate operations that could affect the availability of municipal source water. The role of source protection plan policies is to ensure that Source Water Protection is considered in the decisions that are under the jurisdiction of the ministries. Under the Clean Water Act, 2006, the Technical Rules (2017), developed by the Ministry of the Environment, Conservation and Parks (MECP), set out how wellhead protection areas are delineated. Technical Rule 47 defines Wellhead Protection Areas as of four zones that are based on the time it takes for groundwater to travel from the water table surface to the municipal well. The zones are defined as follows:

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			"a population of approximately 135,000 (2017)" - much of this region is slated as "Places to Grow" - and it is my understanding that Guelph will soon be a city of 200,000. Have such factors been considered in this plan? as water-taking increases, the groundwater may not be as underground for as long as usual, and thus the times for threat to drinking water may also be reduced. This plan should consider the targets for populations consuming from the watershed within the next 25 years.... these plans are already in place and widely available. The proposed policy needs to be sufficiently robust to deal with populations in 2050.	WHPA-A: 100 m radius around the municipal well WHPA-B: Time of travel to the municipal well is 2 years or less WHPA-C: Time of travel to the municipal well is equal to or less than 5 years and greater than 2 years WHPA-D: Time of travel to the municipal well is equal to or less than 25 years and greater than 5 years. Policies in Lake Erie Regions Source Protection Plans are directed to various ministries e.g., Ontario Ministry of the Environment, Conservation and Parks (MECP), the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), and Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). The development of the Source Protection Plans in Lake Erie Region is led by the Lake Erie Region Source Protection Committee. It is a multi-stakeholder committee with members representing those with a stake in drinking water issues: residents, municipalities, farmers, businesses, industries and others. Source Protection Committees are working in partnership with municipalities, Conservation Authorities, water users, property owners, ministries, and other stakeholders to facilitate the update of local, science based source protection plans and ensure they are fair, practical and implementable. The Guelph-Guelph/Eramosa Township Tier 3 Water Budget and Local Area Risk Assessment (GGET Tier 3 Study) included an assessment of permitted water takings (PTTW) and evaluated the ability of the City's and Guelph/Eramosa

Number	Comment Source	AR Section	Comment	How Comment is Addressed
				Township's water supply to meet current and future needs considering development and population growth, and prolonged drought. The Tier 3 Study and water quantity policies will be included in a future Source Protection Plan update.
6	Public Member	S1, Introduction	Page 1-3 includes the following factors: "Source water protection Adequate treatment Secure distribution system Monitoring and warning systems Well thought-out responses to adverse conditions" I suggest an additional factor: the rate of demand and volume replenishment in water-taking. As the area's population grows, and as water-taking plants (e.g., water bottling plant in Aberfoyle), all of the above factors will be impacted by the RATE and VOLUME of water taking. This is missing in this report's assessment.	The protection of municipal drinking water supplies through the Clean Water Act, 2006 is one piece of a much broader environmental protection framework in Ontario. Water resources in Ontario are protected directly and indirectly through the federal and provincial governments, municipalities, conservation authorities and public health units. These agencies are responsible for protecting and improving water quality, water quantity and aquatic habitats, providing land use planning and development rules to ensure that water resources are not negatively affected, providing flood management and responses to low water availability, and many others. The first factor "source water protection" under the Clean Water Act, 2006 aims to protect both the quality and quantity of municipal water supplies. Consumptive water takings (permitted) and recharge reducing activities are evaluated in Water Budget and Risk Assessments. The Grand River Tier 2 Water Quantity Stress Assessment (2009) identified stresses related to water takings on a watershed level. More detailed Tier 3 Local Area Water Budget and Risk Assessment (Tier 3 Studies) have been undertaken for municipal drinking water systems within the City of Guelph-Guelph/Eramosa Township

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				(GGET), the Region of Waterloo, County of Brant (Bethel), Oxford County (Bright), and the Township of Centre Wellington. The GGET Tier 3 Water Budget and Local Area Risk Assessment (GGET Tier 3 Study) included an assessment of permitted water takings (PTTW) and evaluated the ability of the City's and Guelph/Eramosa Township's water supply to meet current and future needs considering development and population growth, and prolonged drought. The Tier 3 study and water quantity policies will be included in a future Source Protection Plan update. The MECP is responsible for issuing Permits To Take Water (PTTW). Individual PTTW are subject to posting on the Environmental Registry of Ontario (ERO). On April 1, 2021 the Province of Ontario rescinded the water bottle moratorium and the interim technical guidance and replaced it with the Ontario Water Quantity Framework. Further details can be found at the Environmental Registry of Ontario. This includes a requirement for municipal council support for any new or expanded consumptive water taking for water bottling purposes above 379,000L/day or more.
7	Public Member	S24, State of Climate Change Research in the Lake Erie Source Protection Region	Page 24-3 acknowledges "There is uncertainty regarding the net quantitative and temporal impacts to the Grand River water budget as precipitation, evapotranspiration, runoff, recharge and water use rates change." This is in the section about Climate Change - but the population growth impact is equally	Water quantity climate change assessments have been completed for the Guelph-Guelph/Eramosa (GGET) Tier 3 and Centre Wellington Tier 3 studies. The studies concluded that climate change may not pose an additional threat to the quantity of the Centre Wellington and Guelph-Guelph/Eramosa municipal water supply wells due to

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			critical and the rate of change in population and climate could very well have double impacts by 2050. Please include this in the assessment! Furthermore - why is there no inclusion of private industry water-taking in this report? All of the municipal wells are assessed - but, as an example, surely Aberfoyle's water-taking and impact on watershed is equally important compared to the other 20-odd wells in Guelph? Chapter 2-3 of the Explanatory Document notes a discussion paper about the Guelph situation with industrial water-taking: "The discussion paper presents promising policy tools that could be used to protect water quantity sources." I really hope this is taken into account!	predicted increase in groundwater recharge. The Global Climate Models and hydrologic model that were applied in these studies suggest that groundwater recharge rates will increase over time. Assessing impacts to the quantity of municipal water supply is an ongoing continual improvement process that will be updated as new information comes available. The Ministry of the Environment, Conservation and Parks is proposing changes to the Source Water Protection Director's Technical Rules regarding how climate change impact assessments are documented in the assessment report. Lake Erie Source Protection Region and local municipalities will consider the proposed changes once finalized and possible assessment report and source protection plan implications. The GGET Tier 3 Water Budget and Local Area Risk Assessment (GGET Tier 3 Study) included an assessment of permitted water takings (PTTW) and evaluated the ability of the City's and Guelph/Eramosa Township's water supply to meet current and future needs considering development and population growth, and prolonged drought. The Tier 3 study and water quantity policies will be included in a future Source Protection Plan update.
8	Public Member on Behalf of	S24, State of Climate Change Research in the	Statement re Source Water Protection Update, Chapter 24, Climate Change We would like to recognize the importance and the depth of information in the update relative to possible	Lake Erie Source Protection Region staff acknowledge that the Climate Change chapter needs to be updated. Water quantity climate change assessments have been completed for the Guelph-Guelph/Eramosa Tier 3 and Centre

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	Save our Water	Lake Erie Source Protection Region	impacts of climate change. The update had a very thorough review of scientific information up to 2010. However, we note that very much more information is available now in 2021 including major international reports on the possible effects of climate change. Climate change modelling has also been refined to consider more specific locations as well. Much more information is now available and should be included in the update. The major challenges to water supplies caused by climate extremes and variations are now widely recognized. The frequency, magnitude, and timing of extremes is now the subject of much research and consideration. Following the extreme heat domes in parts of Canada and elsewhere there is concern amongst climate scientists that current models will need to be updated to reflect changing patterns of atmospheric wind flows. Unexpected extremes in regions not previously thought to be vulnerable to such impacts are becoming more common. As a result we believe there should be at least an additional sentence included tin the update, saying something like, “More information on the effects of climate changes, and variations in extreme short term changes and impacts on droughts and floods, is rapidly accumulating, and new information will need to be	Wellington Tier 3 studies. The studies concluded that climate change may not pose an additional threat to the quantity of the Centre Wellington and Guelph-Guelph/Eramosa municipal water supply wells due to predicted increase in groundwater recharge. The Global Climate Models and hydrologic model that were applied in these studies suggest that groundwater recharge rates will increase over time. Assessing impacts to the quantity of municipal water supply is an ongoing continual improvement process that will be updated as new information comes available. The Ministry of the Environment, Conservation and Parks is proposing changes to the Source Water Protection Director’s Technical Rules regarding how climate change impact assessments are documented in the assessment report. Lake Erie Source Protection Region and local municipalities will consider the proposed changes once finalized and possible assessment report and source protection plan implications.

Number	Comment Source	AR Section	Comment	How Comment is Addressed
			incorporated into risk management plans quickly as it becomes available."	

Table 2: Revised Updated Grand River Source Protection Plan – Public consultation comments received not related to the amendments proposed in this update

Number	Comment Source	SPP Section	Comment	How Comment is Addressed
1	Public Member	General	It is a serious concern there is not enough water supply to support normal household activities in Guelph. That's the kind of activity which is considered normal in an urban centre such as watering gardens, washing cars, adequate water pressure when showering. We had water restrictions, the earliest I can remember, in the spring of this year. The water pressure is low where I live in west Guelph. Population and development in Guelph cannot continue when citizens face water restrictions. This is unacceptable to have such restrictions and low water pressure while there is a mammoth push for development.	The Provincial Growth Plan lays out the management plan for future growth in Ontario. Municipal Official Plans, the Growth Plan and the development of future Source Protection Plan water quantity policies are all separate provincial / local processes. Although separate, the processes do inform each other. Decisions under municipal Official Plans must conform to the Provincial Growth Plan and the approved Source Protection Plans. Similarly, Source Protection Plan water quantity policies will take into consideration projected growth targets in municipal Official Plans and the results of local water budget technical studies. A water budget study for the City of Guelph and Guelph/Eramosa area has been undertaken. Water quantity policies are currently under development to ensure that there is sufficient municipal supply of drinking water.

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				Decisions regarding water use restrictions are under the jurisdiction of municipalities as the drinking water system owners.
2	Public Member	General	I guess I am quite astounded that this is a question that you are asking is about water. Our entire area is based on groundwater for survival. I am not targeting Grand Valley. I am targeting our entire area of Ontario, whether it be Guelph proper, Guelph / Eramosa and all known parts beyond. What does it take to realize that water is limited? What does it take to reduce building / reconstruction / new proposals to stop the madness? Cities, towns, townships and whomever else needs to wake up and realize that we all exist on groundwater and it is very precious and it should be protected at all costs. Enough with Survey.	Source water protection is the first barrier of the multi-barrier approach to providing clean and abundant municipal water supplies. The Clean Water Act, 2006, (CWA) is one of a series of legislations and regulations that together provide the safety net for providing clean municipal drinking water. The CWA ensures communities protect their drinking water supplies through prevention - by developing collaborative, watershed-based source protection plans that are locally driven and based on science. Under the Ontario Water Resources Act, 1990 (OWRA) and O. Reg. 387/04, large water takings in Ontario (50,000L or more of water per day), are generally required to have a Permit To Take Water (PTTW). The PTTW program is under the jurisdiction of the Ministry of the Environment, Conservation and Parks (MECP). The information generated through the Source Water Protection Program will help to inform decisions on PTTW applications. The PTTW program is Ontario's primary tool to ensure water takings are sustainable and that the source protection water budget technical study results are being considered in water taking management decisions. A water budget study for the City of Guelph and Guelph/Eramosa area has been undertaken. Water quantity policies are currently under

Number	Comment Source	SPP Section	Comment	How Comment is Addressed
				development to ensure that there is sufficient municipal supply of drinking water. More broadly, water is managed through a variety of federal, provincial and local legislation, policies and programs, including but not limited to: the Great Lakes Water Quality Agreement, OWRA, CWA, Safe Drinking Water Act, 1990, Planning Act, 1990, and Environmental Protection Act, 1990.