

Lake Erie Region Source Protection Committee Agenda

> Thursday, July 6, 2017 1:00 pm Auditorium Grand River Conservation Authority 400 Clyde Road, Box 729 Cambridge, ON N1R 5W6

> > Pages

- 1. Call to Order
- 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 April 6, 2017
- 7. Hearing of Delegations
- 8. Presentations
 - a. Protecting Water Quantity in Ontario

Presented by: Eva Ammentorp, Policy Analyst, Land and Water Policy Branch, Ministry of the Environment and Climate Change



9. Correspondence

a. RE: Rehabilitation Activities at an Aggregate Operation

Correspondence from Peter Rider, Risk Management Official, City of Guelph and Dave Belanger, Water Supply Program Manager, City of Guelph to Wendy Wright-Cascaden, Lake Erie Source Protection Region Committee Chair.

10. Reports

a.	SPC-17-07-01 Source Protection Program Update	8
b.	SPC-17-07-02 Progress Report Long Point Region AR and SPP Update	12
C.	SPC-17-07-03 Delhi Water Quality Technical Study	15
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e.	SPC-17-07-05 Progress Report Grand River AR and SPP Update	24
f.	SPC-17-07-06 Airport Water Quality Technical Study	30
g.	SPC-17-07-07 Draft Lake Erie Source Protection Region Annual Report	34
h.	SPC-17-07-08 EBR Comments - Record of Site Condition	36

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

a. Question and Answer Period

13. Closed Meeting

14. Next SPC Meeting

September 7, 2017 at 1:00pm, Grand River Conservation Authority, 400 Clyde Road, Cambridge, ON

15. Adjourn



June 28, 2017

Sent by Email

Ms. Wendy Wright-Cascaden Source Protection Committee Chair Lake Erie Source Protection Region c/o Grand River Conservation Authority 400 Clyde Road Cambridge ON

Dear Wendy:

RE: Rehabilitation Activities at an Aggregate Operation

We are writing to you today to seek resolution of a long-standing agenda item of the Lake Erie Region Source Protection Committee (SPC). In January, 2011, the SPC, through Report No. 11-01-04 directed "staff to apply to the Director to identify the introduction of contaminants during the post extraction phase of aggregate operations within vulnerable areas of the Lake Erie Region as a local threat under Technical Rule 119, and that the activity, circumstance, contaminants, frequency, and method of release be provided to the Director of the Source Protection Programs Branch of the Ministry of the Environment so that hazard ratings for the activity can be established." As result, staff submitted a letter dated February 3, 2011 (see attached) to the Director with the application for the local threat designation.

On July 19, 2011, the Director replied "A decision on the request related to the second local threat (rehabilitation to create a ponded area) has not yet been made. We are presently consulting with other ministries and will provide you with a decision as soon as we have completed those discussions." (see attached) The decision of the Director has remained outstanding since this time. The last response provided to the SPC from the local MOECC Liaison Officer was that the evaluation of the "local threat" will not be completed until the proposed amendments to the Aggregate Resources Act (ARA) are finalized. The AGA Review was conducted by Province's Standing Committee on General Governance. The report of the Standing Committee on the Review was completed in October 2013.

As a result of the ARA Review, proposed changes to the ARA were posted to the Environmental Registry on October 6, 2016. Bill 39 Aggregate Resources and Mining Modernization Act, 2016, outlines the proposed changes to the ARA. From the Environmental Registry, one of the few changes to the ARA with respect to source protection was a provision "allowing the Minister to add conditions to existing sites, without tribunal hearings, to implement a source protection plan under the Clean Water Act." The local threat designation is supportive of this provision.

Since the ARA Review has been completed, changes to the ARA have been proposed, and the Director has had ample time to consult with other Ministries, the City of Guelph believes it is now time to resolve the SPC's request for a local threat designation and to T 519-822-1260 seek a decision from the Director to allow the local threat designation. Therefore, the City TTY 519-826-9771

City Hall 1 Carden St Guelph, ON Canada N1H 3A1

Ms. Wendy Wright Cascaden June 28, 2017 RE: Rehabilitation Activities at an Aggregate Operation Page 2 of 2

of Guelph proposes the following motion be presented to the SPC at its July 6, 2017 meeting:

That the Lake Erie Region Source Protection Committee direct staff to write a letter to the Ministry of the Environment and Climate Change to ask the Ministry to provide the Committee an update at its September meeting on the Committee's request under Technical Rule 119, from February 3, 2011, regarding rehabilitation activities at an aggregate operation within a vulnerable area of a municipal drinking water system that allows ponding of water in light of the amendments to the Aggregate Resources Act and how the Ministry will be responding to the February 3, 2011 request.

We hope the SPC will consider our motion. We are available, at your discretion, to provide additional information on this request.

Respectfully submitted:

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Peter G. Rider, P. Geo., Risk Management Official Engineering and Capital Infrastructure Services, **Source Protection Planning**

Diselanger

Dave Belanger, M.Sc., P.Geo. Water Supply Program Manager Environmental Services, **Water Services**

C: Peter Busatto, Wayne Galliher, Emily Stahl Martin Keller, Source Protection Manager

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February 3, 2011

Ian Smith Director, Source Protection Programs Branch Ontario Ministry of the Environment 14th Floor, 40 St. Clair Avenue West Toronto, Ontario M4V 1M2

<u>Re: Contamination of local drinking water supplies during post-extraction phase of aggregate operations</u>

Dear Mr. Smith:

This is a formal request on behalf of the Lake Erie Region Source Protection Committee, under Technical Rule 119, to include the following local threats in the Updated Assessment Reports for the Long Point Region and Grand River Source Protection Areas:

- 1. <u>rehabilitation activities at an aggregate operation within a vulnerable area of a municipal</u> <u>drinking water system listed in Table 1 in which fill material is placed, and</u>
- rehabilitation activities at an aggregate operation within a vulnerable area of a municipal drinking water system listed in Table 1 that allows ponding of water

On January 13, 2011, the Lake Erie Region Source Protection Committee passed the following resolution:

Res. No. 07-11

THAT the Lake Erie Region Source Protection Committee direct staff to apply to the Director to identify the introduction of contaminants during the post extraction phase of aggregate operations within vulnerable areas of a municipal drinking water supply as a local threat under Technical Rule 119, and

THAT the activity, circumstance, contaminants, frequency, and method of release be provided to the Director of the Source Protection Programs Branch of the Ministry of the Environment so that hazard scores for the activity can be established.

Aggregate extraction operations, while continuously active below the water table, typically cause groundwater to flow into the excavations rather than out of or away from the excavations. This process changes in the post-extraction phase when ponded water in the excavation can allow the introduction of contaminants into the groundwater system, potentially impacting drinking water supplies. Likewise, the placement of contaminated fill material can also impact drinking water supplies. The planned post-extraction use is normally outlined in the site plan as part of the licence issued under the Aggregate Resources Act. As stated in the Ministry of Environment's (MOE) letter dated September 2, 2010, the MOE is not prepared to identify excavation below the water table that breaches the confining layer protecting an aquifer as a drinking water threat at this time. Therefore the Lake Erie Region Source Protection Committee is requesting the Director's opinion on the following two proposed local activities:

- <u>1</u> <u>Activity</u>: rehabilitation activities at an aggregate operation within a vulnerable area of a municipal drinking water system listed in Table 1 in which fill material is placed
 - <u>Circumstance</u>: placement of fill material that would be designated as "hauled sewage", "hazardous waste", "liquid industrial waste", "municipal waste", or "petroleum refining waste" under the Ontario Environmental Protection Act
 - Contaminants:LNAPL or DNAPL
petroleum hydrocarbons, including BTEX
organic solvents, including halogenated and non-halogenated
Polycyclic Aromatic Hydrocarbons (PAHs)
Polychlorinated Biphenyls (PCBs)
metals
pesticides
nitrogen compounds (nitrates, nitrites, ammonia, ammonium)
chloride
cyanide
arsenic

Vulnerable Areas: WHPA-A to WHPA-E

- <u>Activity</u>: rehabilitation activities at an aggregate operation within a vulnerable area of a municipal drinking water system listed in Table 1 that allows the ponding of water that may introduce pathogens into an aquifer
 - <u>Circumstance</u>: the discharge of pathogens from the ponded water

<u>Contaminants</u>: pathogens including Cryptosporidium, Giardia, and viruses

Vulnerable Areas: WHPA-A to WHPA-E

Table 1 lists the municipal drinking water systems where the two activities as described above would be currently classified as a local threat. In addition, the local threat would apply in the vulnerable areas of future drinking water systems in the Lake Erie Source Protection Region in which aggregate resources are present or existing systems in which aggregate operations are established.

Table 1: List of Municipalities within the Lake Erie Source Protection Region in which the Local Threat would currently apply

Long Point Source Protection Area				
Norfolk County				
Grand River Source Protection Area				
County of Brant				
City of Guelph				
Region of Waterloo				
City of Hamilton				
Township of Amaranth				

The placement of fill or ponding of water in an aggregate excavation during the post-extraction phase has the potential to adversely affect the quality of water used as a source of drinking water. We believe that the source protection program is incomplete if it cannot address this.

We appreciate your careful consideration of this request. If you need further information in order to consider this request, please contact Martin Keller, Source Protection Program Manager at 519-620-7595 or <u>mkeller@grandriver.ca</u>.

Sincerely,

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Craig Ashbaugh, Chair Lake Erie Region Source Protection Committee

cc: Heather Malcolmson – Manager, Source Protection Planning, MOE Kate Turner - Provincial Liaison, MOE Ministry of the Environment

Source Protection Programs Branch

14th Floor 40 St. Clair Ave. West Toronto ON M4V 1M2 Ministère de l'Environnement

Direction des programmes de protection des sources

14^e étage 40, avenue St. Clair Ouest Toronto (Ontario) M4V 1M2



ENV1174IT-2011-19

July 19, 2011

Mr. Craig Ashbaugh Chair Lake Erie Region Source Protection Committee 400 Clyde Road P.O. Box 729 Cambridge, ON N1R 5



Dear Mr. Ashbaugh:

Thank you for your letter of February 3, 2011, where you requested a Director's opinion regarding the addition of the following activities as local drinking water threats, in vulnerable areas for specific drinking water systems, under Rule 119 of the technical rules:

- rehabilitation activities at an aggregate operation in which fill material is placed, specifically placement of fill material that would be designated as "hauled sewage", "hazardous waste", "liquid industrial waste", "municipal waste", or "petroleum refining waste" under the Ontario Environmental Protection Act, and
- 2. rehabilitation activities at an aggregate operation that allows the ponding of water that may introduce pathogens into an aquifer.

A decision on the request related to the second local threat (rehabilitation to create a ponded area) has not yet been made. We are presently consulting with other ministries and will provide you with a decision as soon as we have completed those discussions.

In accordance with my authority under Rule 119, 120, or 121, I hereby provide the Director's opinions regarding your request for the first local threat:

 Request to add the following local threat: rehabilitation activities at an aggregate operation in which fill material is placed, specifically placement of fill material that would be designated as "hauled sewage", "hazardous waste", "liquid industrial waste", "municipal waste", or "petroleum refining waste" under the Ontario Environmental Protection Act.

It is the opinion of the Director that a hazard rating can not be assigned to this activity under the Clean Water Act thus I hereby deny your request to have this activity added as a local threat. The rationale for this decision is as follows: The placement of fill materials associated with hauled sewage, hazardous waste, liquid industrial waste, municipal waste, or petroleum refining waste under the Ontario Environmental Protection Act is not allowed except under the authority of a Certificate of Approval. Waste disposal as per Part IV of the Environmental Protection Act is already a prescribed drinking water threat and therefore, the activity being proposed is already covered under the tables of drinking water threats. Furthermore, Certificates of Approval for Waste Sites are Prescribed Instruments under the Act. Fill being brought into an aggregate site that meets any of the tests used to define these wastes would be illegal without a Certificate of Approval. The Clean Water Act is not the appropriate tool to use to address illegal activities. Fill being brought into an aggregate site under authority of a Certificate of Approval can be dealt with under the Clean Water Act through the use of a prescribed instrument policy approach in your source protection plan.

Should you wish to discuss this matter further please feel free to contact me at (416) 212-6459.

Sincerely,

Paul Heeney, Director (A) Source Protection Programs Branch Ministry of the Environment

c: Keith Willson, Manager, Source Protection Approvals Marie LeGrow, Manager (A), Source Protection Implementation Heather Malcolmson, Manager, Source Protection Planning Melanie Ward, Group Leader, Source Protection Approvals John Westlake, Supervisor (A), Source Protection Implementation Lisa Ross, Liaison Office, Lake Erie Source Protection Committee

REPORT NO. SPC-17-07-01

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Source Protection Program Update

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-01 – Source Protection Program Update – for information.

REPORT:

SPC Member Selection Process

On May 26, 2017, the Grand River Source Protection Authority appointed Tom Nevills to the SPC as a public interest representative following the recommendation for appointment by the Lake Erie Region Management Committee completing a public application process. Tom Nevills is from East Garafraxa Township and is currently serving on township council for a third term. He was a member of the Grand River Conservation Authority board for eight years, has worked in the food service industry and operated a mixed farm business.

The Ontario Federation of Agriculture (OFA) is leading the process to fill the vacant economic (agricultural) seat and is soliciting interest from the northern part in the Grand River watershed.

Work is ongoing to fill the SPC municipal seat for Wellington, Dufferin, Southgate, and Halton municipalities, led by the Township of Centre Wellington.

Transport Pathway Notifications

Ontario Regulation 287/07 provides a framework for reporting on transport pathways to the SPC described in Section 27 (3):

(3) If a person applies to a municipality for approval of a proposal to engage in an activity in a wellhead protection area or a surface water intake protection zone that may result in the creation of a new transport pathway or the modification of an existing transport pathway, the municipality shall give the source protection authority and the source protection committee notice of the proposal and shall include a description of the proposal, the identity of the person responsible for the proposal and a description of the approvals the person requires to engage in the proposed activity. O. Reg. 246/10, s. 12.

The intent of the notification requirements for transport pathways is to ensure that the SPC and Source Protection Authority (SPA) have the necessary information to determine

whether vulnerability scores need to be adjusted in areas where there are transport pathways.

In response to the requirements, Lake Erie Region developed a transport pathways document to provide municipalities with criteria or thresholds that would trigger the notification requirements and suggested approaches to manage and report on transport pathways.

Lake Erie Region staff received three transport pathway notices in 2016:

- Guelph-Eramosa Township construction of well, septic and geothermal system
- Puslinch Township construction of well, septic and geothermal system
- Township of Centre Wellington construction of well and geothermal system

Lake Erie Region staff will analyze the information provided in the transport pathway notices to ensure that adjustments are included in the submission of the Updated Grand River Source Protection Plan.

Responses to Wellington County Delegation about the Guelph/Guelph-Eramosa Tier 3 Water Budget Study

The following provides a summary of the discussion and responses to Wellington County's delegation to the Lake Erie Region Source Protection Committee on April 6, 2017. Greater discussion details can be found in the April 6, 2017 meeting minutes.

Remaining Technical Concerns

The County delegation asked the Committee for their support in asking the Province for funding additional studies to address the outstanding concern sooner than through the November 2019 work plan.

The Committee felt that it would be premature to make recommendations on studies to address Wellington County's concerns and that these requests should be considered and prioritized together with other items when developing the November 2019 work plan for updating the Grand River Assessment Report and Source Protection Plan.

Stakeholder Consultation

The County delegation requested that the Committee provide direction to staff and a recommendation to the Province that funding be made available for a comprehensive public and stakeholder consultation process for the next phases of the Tier 3 (RMMEP and policy development).

Staff confirmed that Lake Erie Region is committed to moving forward in a collaborative fashion to protect water for everyone, and that provincial funding has been received through the 2017/18 provincial grant funding agreement for a consultative process for the RMMEP.

Employment Growth

The County delegation asked that the Committee recognize and consider the large size of the WHPA-Q, the conservative assumptions the Tier 3 water budget study is based on, and the

privately serviced employment lands located typically in the County in the policy development process.

Staff confirmed that the Lake Erie Region is committed to an open, transparent and collaborative policy development process that will strive for balancing the needs for protecting municipal drinking water sources with potential impacts from water quantity policies.

Tier 3 Technical Rules

The County delegation voiced concern about the inability to rank the risk of water quantity threats, that a single well not meeting demand determines the risk level for the entire WHPA-Q, and that risk management measures already in place are not considered in the model scenarios. The County delegation asked the Committee to comment on any technical rules changes as part of the provincial consultation and support the County's concern.

Staff confirmed that Lake Erie Region has participated and will comment on proposed changes to any water quantity related technical rules as part of the consultation process and will look into opportunities for municipalities to comment and participate directly.

Model Ownership and Access

The County delegation asked for Committee support that municipalities will have access to the Tier 3 model, that model maintenance is adequately funded, and that model ownership is confirmed in writing.

Lake Erie Region staff confirmed ownership of the Tier 3 model in a letter dated May 1, 2017 (attached). In addition, staff are in discussions with model owners, with support from the Ministry of the Environment and Climate Change (MOECC), to develop a model management framework that will include model access.

Model Management Guidance Manual

The Model Management Guidance Manual, which provides advice on setting up and managing modelling projects, to project close out and data licensing, is undergoing final editing by a technical writer. The guidance manual is focusing on the Tier 3 Water Budget models, but can also be applied to other models. The manual has been developed by the York, Peel, Durham, Toronto and The Conservation Authorities Moraine Coalition (YPDT-CAMC), in conjunction with the CTC and Lake Erie Source Protection Regions. The manual is expected to be released this summer. Locally, discussions are underway with municipalities in the Lake Erie Region to develop a framework for managing the Tier 3 Water Budget models in this region. As a first step, the focus of discussions is on developing a governance framework with model owners.

Prepared by:

llefuldmann

Ilona Feldmann Source Protection Program Assistant

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

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May 1, 2017

Kyle Davis Risk Management Official Wellington Source Water Protection 7444 Wellington Road 21 Elora, ON, N0B 1S0

Dear Mr. Davis,

RE: Confirmation of Guelph/Guelph-Eramosa Tier 3 model ownership.

The Grand River Conservation Authority (GRCA) and the City of Guelph (City) entered into a memorandum of agreement April 9, 2008, with respect to the undertaking of a Tier 3 Water Budget and Water Quantity Risk Assessment.

The agreement provides for the City to retain the ownership of the Tier 3 model. Specifically, the agreement states:

The Municipality shall retain all intellectual property right, title and interest in the Municipal Output written, designed or produced by the Municipality, and shall obtain all intellectual property right, title and interest in the Municipal Output written, designed or produced for the Municipality.

The agreement defines "Municipal Output" as follows:

In this Agreement, "Municipal Output" includes but is not limited to any concepts, products, processes, reports, templates, studies, compilations and collections of data, software, source code and related documentation, and other materials or documentation written, designed, developed, first reduced to practice or produced by or for the Municipality pursuant to or in connection with this Agreement in any medium or format.

I hope that this letter provides the confirmation of ownership you have requested. Please feel free to contact me should you require further clarification or have any questions.

Regards,

Martin Keller Source Protection Program Manager

REPORT NO. SPC-17-07-02

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Progress Report Long Point Region Assessment Report and Source Protection Plan Update

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-02 – Progress Report Long Point Region Assessment Report and Source Protection Plan Update – for information.

REPORT:

In his letter of November 4, 2015 approving the Long Point Region Source Protection Plan, the Minister of the Environment and Climate Change asked for an updated plan to be submitted by December 31, 2016 that included the Tier 3 water budget work and water quantity policies for the Simcoe Tier 3. In June 2016 staff requested an extension of the timeline to submit the updated Long Point Region Source Protection Plan by one year from December 31, 2016 to December 31, 2017, to allow for adequate municipal engagement in the water quantity policy development. Work is on track to submit an updated Long Point Region Source Protection Plan by December 31, 2017 that includes the requested water quantity work as well as updates to wellhead protection areas for existing municipal wells, in line with the timelines and projects in the approved 2017/18 grant funding agreement between the Province and the Grand River Conservation Authority.

WHPA Update studies

Delhi (Norfolk County)

Norfolk County is bringing two new municipal wells into production for the communities of Delhi and Courtland. In March 2016, the Province provided funding to develop new WHPAs for these wells and complete a vulnerability and threats assessment. The contract to complete this work was awarded to Matrix Solutions Inc. and is being managed by GRCA on behalf of Norfolk County. The project is completed as of June, 2017; see report SPC-17-07-03 for details.

Simcoe (Norfolk County)

The focus of this study is to update Simcoe WHPAs to incorporate changes to the municipal wells since WHPAs were last delineated in 2009. This includes:

- Well NW1 (part of the Northwest wellfield) has been decommissioned,
- Cedar Street Well 1A has not been used in three years because of elevated iron concentrations and is planned to be decommissioned,
- Cedar Street Well 2A is pumping at approximately 6-7 L/s which is the maximum capacity for the well. WHPAs for this well were modelled at a rate of 15 L/s.

• A new well (Northeast water supply) has been drilled to help supplement the Northwest wellfield. An Environmental Assessment and 72 hour pumping test has been completed for this well.

WHPAs will be updated using the Long Point Region Tier 3 FEFLOW and local MikeSHE models. This study will be completed in August 2017 for inclusion in the updated Long Point Region Assessment Report.

Waterford (Norfolk County)

Waterford WHPAs are being updated using a local MikeSHE model that was developed as a part of the Long Point Region Tier 3 study. The current WHPAs were developed using a groundwater model developed in 2003, and since that time there have been significant updates to the hydrostratigraphy in the area.

This study will be completed in August 2017 for inclusion in the updated Long Point Region Assessment Report.

Water Quantity Tier 3 study

Following the presentation of the results of the risk ranking and threats management strategy study (Risk Management Measures Evaluation Process) for the Simcoe Tier 3 to the Source Protection Committee on December 1, 2016 (see report SPC-16-12-03), staff have been collaboratively working with Norfolk County staff to progress with the water quantity policy development for Simcoe. Details of the policy development process and draft water quantity policy approaches are presented in report SPC-17-07-04.

Timeline for Long Point Region Source Protection Plan update

The following table presents the key milestones for completing the necessary technical and policy work, undertaking the necessary formal public consultation, and submitting the updated Long Point Region Source Protection Plan to the Ministry of the Environment and Climate Change.

Development of water quantity policy approaches	March to June 2017		
Open House in Simcoe to present draft water quantity policy approaches	June 26, 2017		
SPC receives updates on technical studies (Delhi WHPA update) and draft policy approaches for Simcoe	July 6, 2017		
Completion of technical studies to update wellhead protection areas (WHPAs) for Simcoe, Waterford, and Delhi	August 2017		
SPC receives updates on technical studies (Simcoe and Waterford WHPA updates) and draft water quantity policies	September 7, 2017		
SPC receives updated Long Point Region Assessment Report and Source Protection Plan for consideration and release for public	October 5, 2017		

consultation	
Formal public consultation for Updated Long Point Region Assessment Report and Source Protection Plan	October-November 2017
SPC receives revised Updated Long Point Region Assessment Report and Source Protection Plan and public comments for consideration; SPC releases the document to the Long Point Region Source Protection Authority for submission to the Ministry	December 7, 2017

Prepared by:

llefuldmann

Ilona Feldmann Source Protection Program Assistant

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

REPORT NO. SPC-17-07-03

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Delhi Water Quality Technical Study

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-03 – Delhi Water Quality Technical Study - for information.

SUMMARY:

Two new wells have been drilled to provide additional capacity to the Delhi Drinking Water System. Wellhead Protection Areas for the Delhi wells have been updated to reflect the new wells using the most current hydrogeological interpretations of the area through the use of the Long Point Region Tier 3 groundwater flow model. A vulnerability and threats assessment is also being completed as a part of this study. Results will be incorporated into the update to the Long Point Region Assessment Report this fall.

REPORT:

System Overview

The Town of Delhi, which has a population of approximately 4,200 residents, is located 17 km northwest of Simcoe and 22 km southwest of Waterford. The Delhi Drinking Water System provides potable water to the 6,000 residents of both Delhi and the nearby community of Courtland.

The Delhi Drinking Water System sources its water from two groundwater wells (Wells 1 and 2) and a single surface water intake within the Lehman Reservoir. The vast majority (88-90%) of treated water is sourced from the two groundwater wells. All three sources are blended together and distributed within a single system.

To address the need for increased capacity, Norfolk County completed a Schedule B Class Environmental Assessment in March of 2012 for the Delhi Water System. The Class EA process identified the preferred solution as the construction of two new wells at the Delhi Well Field. Municipal wells 3A and 3B were drilled in 2016 with the purpose of providing increased capacity.

Wellhead Protection Areas

The municipal supply aquifer in the Delhi Well Field consists of fine- to coarse-grained sand, which is overlain by approximately 17 m of Wentworth Drift and approximately 18 m of sand and gravel at surface. Previous analyses have shown windows in the drift unit that are interpreted to potentially hydraulically connect the municipal aquifer to the shallow surficial aquifer. This is evidenced by the classification of Wells 1 and 2 as groundwater under the direct influence of surface water (GUDI). The two new municipal supply wells, 3A and 3B, were drilled approximately 250 m to the south of Well 2 into the same shallow production aquifer.

Wellhead protection areas (WHPAs) were first developed for Wells 1 and 2 using a local scale groundwater model developed in the early 2000s. With Wells 3A and 3B now coming into production, WHPAs for the four municipal wells have been updated using the Long Point Region Tier 3 groundwater flow model. This model represents the most recent hydrogeological understanding of the study area and is based upon the most current field data available at the time of the study.

Figure 1 shows the original WHPAs for Wells 1 and 2 in contrast to the new WHPAs generated for the four municipal wells. Differences in WHPA shape are related to different pumping rates used to delineate the WHPAs and differences in hydrostratigraphy between the two models used.



Figure 1: Comparison of 2006 and 2017 Delhi WHPAs

Vulnerability Scoring

Aquifer vulnerability was mapped across Long Point Region using the Surface to Aquifer Advective Time (SAAT) method. In the Delhi area, the municipal aquifer was mapped as highly vulnerable, therefore vulnerability scoring within the capture zones is as follows:

Wellhead Protection Area	Vulnerability Scoring
WHPA-A	10
WHPA-B	10
WHPA-C	8
WHPA-D	6

Table 1: Vulnerability Scoring within Delhi WHPAs

The resulting map with vulnerability scores within the new WHPAs is shown on Figure 2. Since vulnerability across the WHPAs is already high, the presence of preferential pathways does not change the vulnerability scoring.



Figure 2: Vulnerability scoring within Delhi WHPAs

An updated threats assessment and review of issues and conditions is currently being completed within the new WHPAs with a planned completion date of mid-July.

Prepared by:

thym

Sonja Strynatka, P.Geo. Senior Hydrogeologist

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

REPORT NO. SPC-17-07-04

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Draft Water Quantity Policy Approaches for Simcoe (Norfolk County)

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-04 – Draft Water Quantity Policy Approaches for Simcoe (Norfolk County) – for information.

AND THAT the Lake Erie Region Source Protection Committee direct staff to develop draft water quantity policies for Norfolk County.

REPORT:

Risk Management Measures (RMMEP) Recap

The Long Point Region (Simcoe) Tier 3 Risk Management Measures Evaluation Process (RMMEP) was completed in November 2016. This process is used to select and evaluate Water Quantity Risk Management Measures (RMM), using the water budget models developed in the Tier 3 Water Budget and Local Area Risk Assessment (Tier 3 Assessment), to determine what measures can be used to manage the water quantity risks to drinking water sources within the water quantity WHPA-Q. The results of this technical study were presented to the SPC on December 1, 2016 (report SPC 16-12-03) and included a risk ranking and threats management strategy that, together, inform the policy development process.

Optimization of pumping rates for sustainable yields and an increase in supply through the addition of new supply wells were the two RMMs that were most promising in addressing the significant drinking water threat. The evaluation of scenarios that shifted pumping from the Cedar St wells to the Chapel St well showed this optimized pumping regime was not sufficient to reduce the risk levels in all municipal supply wells. The testing of a scenario that transferred pumping to the proposed Northeast wellfield, a new supply currently in an Environmental Assessment planning process, showed that this would create a new and separate water quantity WHPA-Q, which provided support for this option to possibly lower the risk level of the Cedar St and Chapel St WHPA-Q.

Development of Water Quantity Policy Approaches

Existing Legislation

Lake Erie Region staff reviewed existing legislation related to water quantity threats as a first step in the policy development process. There are two prescribed drinking water quantity threats identified by the Ministry of the Environment and Climate Change (MOECC) included in Ontario Regulation 287/07:

- #19 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; and
- #20 An activity that reduces the recharge of an aquifer.

The most significant pieces of existing legislation with regard to consumptive water takings are the *Ontario Water Resources Act (OWRA), 1990* and the *Water Taking and Transfer Regulation* (O. Reg. 387/04). The OWRA is designed to conserve, protect, and manage Ontario's water resources for efficient and sustainable use. O. Reg. 387/04 is intended to ensure fair sharing of water resources and prevent interferences among water users. Permits to take water (PTTW) are generally required for water takings in excess of 50,000 L /day; however they do not allocate water or guarantee a supply of water for any taking event. Municipalities do not necessarily have priority when it comes to water supply; however, future municipal water supplies may be considered in the PTTW application where planned municipal water sources have been identified. As of mid-2017, the Province is reviewing the science and policy tools available to support water management decisions.

Two significant acts that address recharge reduction are the *Planning Act, 1990* and the *Municipal Act, 2001*. At the provincial level, the *Planning Act* requires that the Minister of Municipal Affairs, Ontario Municipal Board and other planning bodies across Ontario have regard to various matters of provincial interest, including but not limited to the protection of ecological systems, conservation and management of natural resources, and the efficient use and conservation of energy and water. The Act provides for and supports the control of land use and development throughout Ontario. Through the Act under the Provincial Policy Statement (PPS), local planning authorities are required to protect, improve or restore the quality and quantity of water and designated hydrologic functions or features; plan efficient and sustainable water use; and use water conservation practices. Municipalities use the PPS to develop their official plans and to guide and inform decisions on other planning matters. Using the Planning Act, municipalities control planning and development through a variety of options.

The *Municipal Act* provides municipalities with broad powers to provide "any service or thing that the municipality considers necessary or desirable for the public" and they have broad powers to pass by-laws concerning the "economic, social and environmental well-being of the municipality" and the "health, safety and well-being of persons" as long as they are in compliance with provincial acts and regulations.

Policy Tool Options

After consideration of existing legislation, an evaluation of the significant drinking water threats with respect to each policy tool was completed to determine the most appropriate tools to use. After review, certain policy tools were identified as potentially more promising and useful in achieving the objectives of the Source Protection Plan. The objectives, for reference, are: a) to ensure existing significant threats cease to be significant, and b) no new significant threats occur.

Consumptive water taking:

• The use of Prescribed Instruments, specifically the PTTW. Existing PTTW could be reviewed and amended by the Province to include source protection terms and conditions. Similarly, new or increased takings subject to the PTTW process could also

include similar source protection terms and conditions. The MOECC could be using the Tier 3 model results, or the model itself, to make PTTW decisions.

- Municipal land use policies could be developed to require the local planning authority to manage new developments by including criteria for approval that ensure the proposed activity does not become a significant drinking water threat. The restrictiveness of the policies may vary depending on existing municipal land use policies and the geographic setting of the vulnerable area(s).
- The specify action tool could address threats through the development of locally-specific policies. For example, policies could focus on ensuring that municipal water management plans and/or water conservation plans are developed or updated, that Tier 3 models are funded on an ongoing basis and Tier 3 information used in making informed decisions and if applicable, new water supplies located.
- Softer tools such as education and outreach and incentive programs could be used to promote source protection policies in general and focus on water conservation specifically. Outreach programs could target property and business owners in the vulnerable area.

Recharge reduction:

- Municipal land use planning policies could be developed to require the local planning authority to manage new developments by including criteria for approval that ensure the proposed activity does not become a significant drinking water threat. Policies could be specific, e.g., directing municipalities to require new development for lands zoned Low Density Residential (excluding subdivisions) or zoned Agricultural to implement best management practices (BMPs) to maintain predevelopment recharge. Alternatively, a policy could be more general in its approach by encouraging the local planning authority to maintain pre-development recharge where appropriate.
- Education and outreach and incentive programs can be used to promote source protection policies in general and focus on promoting BMPs and low impact development (LID) specifically. Outreach programs could target property and business owners in the vulnerable area.
- The specify action tool could address threats through the development of locally-specific policies.

Policy Approaches

The policy development team (staff from Long Point Region Conservation Authority, Norfolk County, Grand River Conservation Authority and MOECC) collaboratively developed draft water quantity policy approaches that best reflected the needs of the County and the municipal resources available while achieving the objectives of the Source Protection Plan (see Table 1).

The Source Protection Committee has the decision making authority regarding the policy approaches to be included in the Long Point Region Source Protection Plan (SPP). With direction from the committee, the policy development team will draft water quantity policies based on the identified policy approaches. Draft water quantity policies will be brought to the committee September 7, 2017 for consideration and direction for inclusion in the SPP. Formal public consultation will be undertaken prior to plan submission (see report SPC-17-06-02 for more detail on the process).

Prepared by:

Defildmann

Ilona Feldmann Source Protection Program Assistant

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

Table 1: Draft water quantity policy approaches for Norfolk County

Policy Approaches						
Consumptive Water Taking						
ΤοοΙ	Intent	Existing and/or Future	Implementing Body	Manage and/or Prohibit		
Prescribed Instrument (PTTW)	Manage existing and new water takings through PTTW Approvals include appropriate terms and conditions to demonstrate that the taking will not adversely impact the aquifer's ability to meet municipal and other water supply requirements	Existing and Future	Ministry	Manage		
Land Use Planning	Manage new development using municipal land use planning Planning authority only provides final approval for new development that requires a PTTW once specified conditions are met	Future	Municipality	Manage		
Education and Outreach	ducation and utreach Implement public education and outreach initiatives related to water consumption Initiatives geared towards property and business owners		Municipality	Manage		
Specify Action	Optimization of existing municipal water supply system Water Supply Master Plan updated using the findings from the Tier 3 to ensure sustainable municipal water supply	Existing	Municipality	Manage		
Specify Action	ecify Action Water Conservation Water conservation plans updated to support the sustainable use of water		Municipality	Manage		
Specify Action	pecify Action Maintenance of Tier 3 water budget model Ministry supports and funds ongoing maintenance of the Tier 3 mode			Manage		

Specify Action	Identifying additional water supplies County is encouraged to consider locating additional water supply	Future	Municipality	Manage		
Specify Action	Prioritization of water Ministry considers prioritization of water uses Simcoe where a taking could impact the municipal water supply	Future	Ministry	Manage		
Specify Action	High Water Use designation Norfolk County High Water Use designation reassessed	Future	Ministry	Manage		
Specify Action	Water Quantity policy implementation Ministry funds municipal capacity to support water management decisions and updates to the Water Supply Master Plan	Future	Ministry	Manage		
Recharge Reduction						
ΤοοΙ	Tool Intent			Manage and/or Prohibit		
Land Use Planning	Maintain recharge County encouraged to maintain pre-development recharge where appropriate	Future	Municipality	Manage		

REPORT NO. SPC-17-07-05

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Progress Report Grand River Assessment Report and Source Protection Plan Update

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-05 – Progress Report Grand River Assessment Report and Source Protection Plan – for information.

REPORT:

On November 26, 2015, the Minister of the Environment and Climate Change approved the Grand River Source Protection Plan. In his approval letter, the Minister asked for Tier 3 water budgets to be completed as soon as possible, and an updated plan submitted no later than December 31, 2017. Through the 2017/18 grant funding agreement between the Province and the Grand River Conservation Authority, funding has been provided to complete technical work by March 31, 2018.

Many technical projects are on track, as outlined below, and two larger Tier 3 studies need additional time to be completed. Projected timeframes for these studies are still to be determined as the studies progress. Once the technical studies are complete, the Grand River Assessment Report and Source Protection Plan will need to be updated. In some cases source protection plan policies will need to be developed (water quantity) or revised (water quality). Staff currently assume that all updates will be bundled into one package that will be submitted to the MOECC following a formal public consultation process. Lake Erie Region staff will return to the Source Protection Committee with progress reports and updated timelines as needed.

Technical Studies

St. George (Brant County) / Lynden (City of Hamilton)

Both the communities of St. George and Lynden are drilling new municipal supply wells to meet capacity needs. Funding was received from the Province in March 2016 to complete a Wellhead Protection Area (WHPA) and vulnerability study for the new St. George wellfield. This project will be completed in the fall 2017 for inclusion in the Grand River Assessment report prior to public consultation and submission to the MOECC. The GRCA is managing the St. George portion of the project on behalf of Brant County.

The City of Hamilton is developing a new municipal well for the community of Lynden and is planning to delineate WHPAs and complete a vulnerability/threats assessment this year. As Lynden is in close proximity to St. George, the GRCA is working jointly with the City to develop a groundwater model that will cover both communities and develop WHPAs for the two

communities in one project. The City of Hamilton is funding the Lynden portion of the project. This joint project reduces overlap and duplication of technical effort, as well as overall project costs. A project start-up meeting was held in early February 2017. After a delay earlier this spring to clarify with the County potentially parallel work being undertaken in St. George, the project has started up again, with a planned completion date of December 2017.

Airport System (Brant County)

A new supply well is being brought on-line for the Airport system in Brant County (located to the west of Brantford). EarthFX was retained in 2016 to complete WHPAs and a vulnerability assessment for the system using the Whitemans Tier 3 groundwater model. The study was completed in June 2017; see report SPC-17-07-06 for details.

Dundalk (Township of Southgate)

This study, managed by GRCA on behalf of the Township of Southgate, is to develop WHPAs, and complete a vulnerability and threats analysis for a new well as a part of the Dundalk drinking water system. The project was postponed to the 2017/18 fiscal year as a result of staff commitments for GRCA plan review and Tier 3 priorities. Funding has been received for 2017/18 and the work will begin in late summer 2017 with an expected completion date of March 2018.

<u>Guelph-Eramosa (Hamilton Drive, Rockwood), Bethel (Brant County), and Bright (Oxford County)</u>

Provincial funding was received to update quality-related WHPAs and vulnerability assessments for municipal wells located in Tier 3 study areas. The objective is to provide continuity in the models used to delineate both quality and quantity WHPAs. Tier 3 models represent the best currently available data, whereas some of the older quality WHPAs were mapped based on now outdated geological interpretations. These studies will commence in the fall 2017 with an expected completion date of March 2018.

Whitemans Creek Tier 3

In 2014, EarthFX Inc. commenced the Whitemans Creek Tier 3 Water Budget project to consider risks to the municipal water supplies in the Village of Bright and the Town of Paris Bethel well field. Peer Review of the calibrated numerical model was completed in February 2017. Additional model validation was completed during the first phase of the risk assessment. There was a delay in completing the risk assessment while allocated future pumping rates were confirmed for the well fields. A preliminary report on the risk assessment results is now anticipated in September 2017 with the final round of peer review scheduled for early fall 2017. Completion of this project is anticipated by the end of the year (December 2017).

Region of Waterloo Tier 3

The technical work for the Region of Waterloo Tier 3 is complete, and the resulting risk level is low. Details were presented to the SPC on April 6, 2017 (report SPC 17-04-03). No water quantity policies need to be developed as a result of the low risk level. The Region of Waterloo has been updating the wellhead protection areas using the Tier 3 model, and will be updating the threats assessment given considerable changes to the capture zones. This work is expected to be completed by March 2018. Additional work includes updates to the Grand River

Assessment Report and the Region will also be revising source protection plan policies based on the new protection areas particularly those for ICAs and will assess whether changes are warranted.

Guelph-Guelph/Eramosa Tier 3

Following the completion of the Guelph-Guelph/Eramosa Tier 3 Water Quantity Risk Assessment (WQRA), presented to the SPC on April 6, 2017 (see report SPC 17-04-04), an additional technical study (called Risk Management Measures Evaluation Process) must be undertaken. This technical study, produced by a consultant (Matrix Solutions Inc.) has two components. As a first step, the existing water takings are evaluated and the takings with the greatest impact on municipal supplies are determined – this is the risk ranking. As a second step, effective risk management measures (e.g., optimized pumping, water loss management, water conservation) are explored by running a number of modelling scenarios and are captured in a threats management strategy. The results of this technical study will inform the water quantity policy development process. Lastly, the Grand River Assessment Report and Source Protection Plan will be updated and following a formal public consultation process the revised assessment report and source protection plan, together with all other updates, will be submitted to the MOECC for review and approval. Figure 1 depicts the steps in the completion of a Tier 3 water budget study.



Figure 1: Steps in the completion of a Tier 3 water budget study

Discussions between staff, partner municipalities and the MOECC to develop a terms of reference for the technical study (RMMEP) are ongoing, and staff hope that the study can be commenced this summer. Staff expect it to be difficult for the technical components to be

completed by March 2018. Currently, the anticipated completion is expected in July 2018, with the policy development and revisions to the assessment report and plan following. Projected timeframes for this study still needs to be determined as the study progresses.

Centre Wellington Tier 3

The Centre Wellington Scoped Tier 3 study began in August 2016 to assess potential risks to the Fergus-Elora drinking water system. The project is being managed by the GRCA on behalf of the Township of Centre Wellington.

The study is being completed in coordination with the Township's Growth Management Strategy and Long Term Water Supply Master Plan, which was approved by Township council to begin mid-2017.

Matrix Solutions was retained to complete the study, and have recently completed the draft physical characterization report for the study area. New geologic information required reinterpretation and revisions of the physical characterization. A peer review meeting was held on June 26, 2017 where Matrix presented the physical characterization report. Matrix will address received peer review and municipal comments by mid-August 2017.

In addition to the peer review team, a Community Liaison Group (CLG) was established for the study to provide a forum to discuss the project with local stakeholders and residents as it progresses. The second meeting with the CLG will be held in September 2017 to present the results of the physical characterization report. Comments will also be received from the CLG for consideration by the project team.

The next phase after the completion of the characterization report is the development of the numerical model. The third stage is the completion of the water quantity risk assessment. It is uncertain whether the water quantity risk assessment can be completed by March 2018. Additional geologic complexities, integration between the Township's growth management strategy, the Water Supply Master Plan and the Tier 3 study, and the discussions with the CLG will likely require additional time.

Information about the Centre Wellington study including background reports, a document of Frequently Asked Questions, and the Terms of Reference for the Community Liaison Group is available at <u>www.sourcewater.ca/CW-Scoped-Tier3</u>.

Table 1 below provides a summary of the status of the Tier 3 water budget studies and peer review in the Grand River watershed.

Prepared by:

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Ilona Feldmann Source Protection Program Assistant

Prepared by:

Stephanie Shifflett, P.Eng. Water Resources Engineer

Prepared by:

day

Sonja Strynatka, P.Geo. Senior Hydrogeologist

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

Table 1: Water Budget Report and Peer Review Status

Tier 3 Project	Study Started	Conceptual Model		Numeric Model		Risk Assessment		RMMEP	Expected Completion
		Report	Peer Review	Report	Peer Review	Report	Peer Review		
Guelph	Oct-07	Jul-11	Yes	Aug-11	Yes	Apr-17	Yes	Underway	July-18
Rockwood & Hamilton Drive (included in Guelph study)	May-13	Jul-11	Yes	Aug-11	Yes	Apr-17	Yes	Underway	July-18
Whitemans Creek (Paris-Bethel, Bright)	Jul-14	Sep-15	Yes	Nov-16	Yes	Dec-17	TBD	TBD	Mar-18
Centre Wellington (Fergus-Elora)	Oct-16	Jun-17	Jun-17	Nov-17	Jan-17	TBD	TBD	TBD	TBD

REPORT NO. SPC-17-07-06

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Update on Airport System (Brant County) WHPA and Vulnerability Assessment

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-06 – Airport Water Quality Technical Study - for information.

SUMMARY:

The Airport municipal system supplies groundwater to the County of Brant via two wells. One well has been in use since it was drilled in 1967 and in 2014 a second well was drilled to provide additional capacity. With the new well now in place, a study was completed to update wellhead protection areas (WHPAs) for the system. The recently completed Whitemans Tier 3 groundwater flow model was used to develop WHPAs for the Airport wells. A vulnerability and transport pathway assessment has also been completed as a part of this study. Results of this project will be incorporated into the updated Grand River Assessment Report.

REPORT:

System Overview

Airport wellfield is one of six groundwater systems that supply water to communities within the County of Brant. Until recently, the water supply system consisted of one municipal well (W1), a pump house, and a single cell reservoir, all located at 9 Airport Road south of the Brantford Municipal Airport.

A second well (W2) was added in 2014 with the intention of providing increased capacity for future demand and fire protection, and to provide redundancy during well servicing or rehabilitation.

W1 and W2 are permitted to operate at a maximum rate of 27.3 L/s and 30.8 L/s for a maximum wellfield capacity of 58.1 L/s.

A recent municipal class environmental assessment (EA) indicated that the existing average and maximum day demands on the system are 3.0 and 8.3 L/s, respectively. The EA also states that the ultimate development plan for the area will require a maximum daily supply of 62.5 L/s. Aquifer testing suggests that the municipal aquifer has the potential to sustainably meet these requirements.

W1, which was drilled in 1967, is screened in an unconfined sand and gravel aquifer which corresponds to the Sand Plain/Outwash Aquifer in the Whitemans hydrostratigraphic model. Although the well is screened in an unconfined aquifer, it is not considered to be groundwater

under direct influence of surface water (GUDI).

W2 was drilled in 2014 and is located approximately 18.6 m west of W1. The well is screened across the same aquifer unit as W1 and is therefore assumed to be non-GUDI similar to W1.

Wellhead Protection Areas

WHPAs were last delineated for the Airport well W1 in 2010. With the addition of W2 and the recent completion of the Whitemans Tier 3 groundwater flow model, which is based on more recent geological interpretations, a study to develop new WHPAs for W1 and W2 began in 2016.

Given W1 and W2's close proximity to each other (18.6 m), a single WHPA was delineated for both wells using a combined pumping rate of 46.4 L/s. This rate is representative of 80% of the combined maximum permitted rates for the 2 wells. WHPAs based on the specified time-of-travel zones (2, 5, and 25 years) were delineated using backwards particle tracking.

Figure 1 shows the new WHPAs in comparison to the previous WHPAs from 2010. Both old and new WHPAs track in the same direction indicating flow in the overburden to be directed towards the Grand River. Differences in the WHPAs are primarily attributable to hydrostratigraphic differences between the 2010 groundwater flow model and the Whitemans Tier 3 model, and the pumping rates used to delineate the capture zones.



Figure 1: Comparison of 2010 and 2017 WHPAs

Vulnerability Assessment

Groundwater vulnerability was assessed using the surface-to-well advective time (SWAT)

method to delineate zones of low, medium, and high vulnerability. Vulnerable areas are mapped by tracking particles forward in the model, and then classified based on the actual travel times of these particles from the surface to the well:

- Areas of high vulnerability are those areas with travel times less than 5 years;
- Areas of medium vulnerability are those areas with travel times greater than or equal to 5 years, but less than or equal to 25 years; and
- Areas of low vulnerability are those areas with travel times greater than 25 years.

Transport Pathways

An analysis of potential transport pathways to the municipal aquifer within the WHPAs was completed with a focus on constructed pathways that could reduce travel times in the saturated zone. These potentially include:

- Wells that may leak or have been improperly abandoned
- Pits and quarries that breach the upper confining unit
- Lakes in connection with the municipal aquifer system
- Landfills located in former pits or quarries that may breach the upper confining unit, or
- Other deep excavations

A review of domestic wells within the WHPAs resulted in a total of 38 wells (or equivalent dug out ponds) identified within WHPAs A through D. Of these 38 wells, 18 were classified as high risk wells as they likely do not meet the current MOECC well construction standards and may be in connection with the aquifer using for municipal supply.

There are also two active aggregate operations and one historical operation that lie at least partially within the delineated WHPAs. Three ponds associated with aggregate extraction are within the WHPAs, 700m to the southwest of the municipal wellfield. One of these ponds is associated with an active operation, while the other two are linked to historical operations. The nature of the surficial geology, which consists of largely sand and gravel, is such that the ponds are likely in good hydraulic connection with the municipal supply aquifer and therefore represent an increased level of risk for contamination of the municipal aquifer. Given that the aggregate operations and ponds are already located within a time-of-travel zone that is considered highly vulnerable, their presence does not change the vulnerability index within their footprint.

Vulnerability Scoring

Vulnerability scoring is based on the intersection of the WHPA times-of-travel and the SWAT high/medium/low classifications and adjusted for the presence of transport pathways. The resulting scoring is shown on Figure 2. The scoring is also presented below in Table 1.

Wellhead Protection Area	Vulnerability Scoring		
WHPA-A	10		
WHPA-B	10		
WHPA-C	8		
WHPA-D	6 and 4		

Table 1: Vulnerability scoring within Airport WHPAs



Figure 2: Vulnerability Scoring for the Brant County Airport Wells

Next Steps

The existing threats assessment will be incorporated with the new WHPAs for inclusion in the Grand River Assessment Report. Through previous assessments there are no water quality issues identified for the Airport wells.

Prepared by:

Super

Sonja Strynatka, P.Geo. Senior Hydrogeologist

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

REPORT NO. SPC-17-07-07

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: Draft Lake Erie Source Protection Region Annual Report

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee receives report SPC-17-07-07 – Draft Lake Erie Source Protection Region Annual Report - for information.

REPORT:

Background

In accordance with Ontario Regulation 287/07 s.52, all four Lake Erie Region Source Protection Authorities (Grand River, Long Point Region, Kettle and Catfish Creek) are required to submit an Annual Progress Report to the Director by May 1 in the year following the year to which the report applies. Both the MOECC's Annual Progress Reporting Supplemental Form and the eight-page Source Protection Annual Progress Report are to be submitted as they are considered "prescribed forms" under O. Reg. 287/07 s.52(5). Reporting requirements for the Lake Erie Region to the Province will start in May 2018 for Kettle Creek and Catfish Creek and May 2019 for Long Point Region and Grand River.

Lake Erie Region will also produce four Lake Erie Source Protection Region Annuals Reports (formerly referred to as "reports cards") to compliment the provincially-required annual progress reports. The purpose of the Lake Erie Region annual reports is to provide a snapshot of the program's progress in all four watersheds. The report will be a primarily visual document written for the public, the Lake Erie Region Source Protection Committee (SPC) and local stakeholders. A selection of annual reporting results referred to as "indicator reportables" will be displayed in a framework that mirrors seven of the Ministry of the Environment and Climate Change's (MOECC) annual progress reporting short and medium-term program outcomes. The indicator reportables are derived from legislated annual reporting requirements and Lake Erie Region's source protection plan monitoring policy requirements.

Draft Kettle Creek Annual Report

Lake Erie Region staff have reviewed Kettle Creek's annual reporting results and completed the first draft of the Kettle Creek Annual Report – Catfish Creek, Long Point Region and Grand River results will be reviewed by the end of the summer.

The draft Kettle Creek Annual Report – copies of which will be available at the July 6 meeting - is still very much in the development phase. Lake Erie Region staff have been working with the Implementation Working Group (IWG) over the last few months to develop the content and structure of the report and will continue to do so in the coming months as we refine and finalize the annual report.

Refinements may include:

- additional context to better understand results
- large detailed watershed map with municipal wells and intakes
- additional reportables
- preamble before report assessment to provide greater context

It is anticipated that the final draft Kettle Creek Annual Report will be completed in the fall 2017.

Lake Erie Region staff are also planning to develop a separate supporting document for each annual report. The document will detail the method of evaluation used to assess the program's progress and include the provincial Annual Progress Reporting Supplemental Form. The supporting document will be brought to the committee along with the final draft Kettle Creek Annual Report. Moving forward, Lake Erie Source Protection Region Annual Reports and supporting documents will likely be completed in May of each year, in conjunction with the reporting deadline to the MOECC.

Although there are many revisions still to be made, Lake Erie Region staff are interested in initial impressions from SPC members of the Draft Kettle Creek Annual Report – what does the report tell you about the source protection program in the Kettle Creek watershed? Insight gained from the SPC and the IWG will help progress and shape the development of the annual reports.

Prepared by:

le fuldemann

Ilona Feldmann Source Protection Program Assistant

Approved by:

Martin Keller, M. Sc. Source Protection Program Manager

REPORT NO. SPC-17-07-08

DATE: July 6, 2017

TO: Members of the Lake Erie Region Source Protection Committee

SUBJECT: EBR Registry Number 013-0299 Excess Soil Management Regulatory Proposal

RECOMMENDATION:

THAT the Lake Erie Region Source Protection Committee direct staff to submit a letter to the Ministry of the Environment and Climate Change with respect to EBR Registry Number 013-0299 Excess Soil Management Regulatory Proposal in support of staff comments sent June 23, 2017 to include source protection matters in Ontario Regulation 153/04.

REPORT:

The Ministry of the Environment and Climate Change (MOECC) is proposing regulation to manage excess soil from construction or development sites. As part of the proposal, the MOECC is also proposing amendments to Ontario Regulation 153/04 (Record of Site Condition) to make excess soil management on brownfield properties consistent with and complementary to the proposed excess soil management requirements. MOECC is also proposing other amendments that would help to reduce burden and enhance clarity of O. Reg. 153. The EBR commenting period ended June 23, 2017.

Lake Erie Source Protection Region staff have coordinated staff level comments with the Region of Waterloo, City of Guelph and Wellington Source Water Protection, and have submitted those on June 23, 2017 to meet the commenting deadline. The comments letter is attached.

The purpose of the comments is to ensure source protection vulnerable areas and drinking water sources including wells and intakes are being considered when completing environmental assessments as part of a Record of Site Condition. Specifically, the requested minor amendments to O. Reg. 153 include adding "source protection vulnerable area" to the definition section, and adding new requirements to include source protection matters in the phase one and two environmental assessment as part of the Record of Site Conditions.

Prepared and approved by:

Martin Keller, M. Sc. Source Protection Program Manager

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June 23, 2017

Ministry of the Environment and Climate Change Climate Change and Environmental Policy Division Land and Water Policy Branch 40 St. Clair Avenue West, Floor 10 Toronto ON M4V 1M2

ATTN: Sanjay Coelho, Senior Policy Analyst

RE: EBR Registry Number 013-0299 Excess Soil Management Regulatory Proposal

Dear Sanjay,

Lake Erie Source Protection Region staff provide the following comments on the current EBR proposal listed above. We are submitting these comments now to meet the submission deadline. The comments will be presented to the Lake Erie Source Protection Committee at their meeting on July 6, 2017 and any committee comments will be submitted at that time.

This proposal is an important opportunity to enhance source water protection in the province of Ontario, and to better align the Environmental Protection Act legislation with the Clean Water Act. We ask for the following minor amendments to Regulation 153/04 – Record of Site Condition, in addition to those listed in the EBR proposal.

Requested Additions to Regulation 153/04, Definitions

• Add "source water protection vulnerable area" means vulnerable areas as defined by the Ontario Clean Water Act, 2006

Requested Additions to Regulation 153/04, Table 1 of Schedule D

- Add new subsection to 4 (Records Review) under (c) 'Physical Setting Sources' to include the subheading "Source Water Protection Vulnerable Areas and Drinking Water Wells/Intakes" and include the following minimum requirements: Describe any source water protection vulnerable areas in the phase one study area, and the associated drinking water wells or intakes.
- Add new requirement to 6 (Site Reconnaissance) under (b) 'Specific Observations at Phase One Property' to include the following minimum requirements: Provide a listing and general description of any Risk Management Plans registered to the phase one property under the local Source Protection Plan as per the Clean Water Act.
- Add new requirement to 7 (Review and Evaluation of Information) under (iv) 'Phase One Conceptual Site Model' to include the following minimum requirements: Identify and locate any source water protection vulnerable areas located in whole or in part on the phase 1 study area.

Requested Additions to Regulation 153, Table 1 of Schedule E

- Add new requirement to 3 (Background Information) under (i) 'Physical Setting' to include the following minimum requirements: Provide a description of any source water protection vulnerable areas within the phase one study area, and the associated drinking water wells or intakes".
- Add new requirement to 6 (Review and Evaluation) under (i) 'Geology' to include the following minimum requirements: Where the phase two property is located within a source water protection vulnerable area, provide an analysis of each aquifer and aquitard with respect to the drinking water source as described in the local Source Protection Plan per the Clean Water Act.

Thank you for the opportunity to comment on this EBR proposal.

Sincerely,

Martin Keller, Source Protection Program Manager Grand River Conservation Authority

Cc:

Wendy Wright-Cascaden, Chair, Lake Erie Region Source Protection Committee Beth Forrest, Liaison, Source Protection Programs Branch, MOECC