



Halton-Hamilton  
Source Protection  
Region

September 29, 2017

Corporation of the City of Hamilton  
Corporate Services  
71 Main Street West, 1st Floor  
Hamilton, ON L8P 4Y5

Attention: City Clerk

Sent Via E-mail: [clerk@hamilton.ca](mailto:clerk@hamilton.ca)

**Re: Notice of completion of technical studies to advance source water protection in Greensville and a proposal to amend the Source Protection Plan to incorporate the study findings**

We are writing to notify City of Hamilton Council that the Halton Region and Hamilton Region Source Protection Authorities and the Halton-Hamilton Source Protection Committee are in agreement that an amendment to the combined Source Protection Plan for the Halton Region and Hamilton Region Source Protection Areas is advisable and to seek a Council resolution that endorses the proposed amendment.

The required update stems from recent studies of a proposed new municipal backup well to be brought on-line to provide redundancy for the Greensville municipal well system (subject to a current Municipal Class Environmental Assessment that the City of Hamilton leads). Numerical modelling was undertaken to delineate wellhead protection areas for both quality and quantity threats and a threats assessment was completed.

The wellhead protection area for water quality threats includes residential property uses, a municipal park and a community centre/school undergoing redevelopment. As such, only septic systems have been identified as existing significant threats to the quality of the source water. The Source Protection Committee reviewed the policies that address this threat that are currently in the approved Source Protection Plan and agreed that the policies are still relevant and will not change. Therefore, the key change to the Plan is the figure showing where policies apply for the Greensville municipal well system (see Figure 1 attached).

The City of Hamilton is an implementing body for the following policies that are included in the approved Plan and will be applicable in the new wellhead protection areas:

**T-10-C** In consideration of site plan approval for properties located partially within vulnerable areas where the future establishment of septic systems requiring approval under the *Environmental Protection Act* would be a significant drinking water threat,

- a. where possible, the municipal planning authority shall require the applicants to locate the septic systems outside of the vulnerable areas to ensure they will not be significant drinking water threats.
- b. the municipal planning authority shall document the number of site plan applications reviewed that were denied, those approved with the septic systems located outside of the vulnerable areas, and those approved with the septic systems located within the vulnerable areas and report this information, including the rationale for the decisions made, to the Source Protection Authority by February 1 of each year.

**T-11-C** Where future septic systems requiring approval under the Ontario Building Code would be significant drinking water threats,

- a. the Region of Halton, the Town of Milton and the City of Hamilton shall require through amendments to *Planning Act* tools that future lot sizes be sufficient to accommodate the systems.
- b. the municipal planning authority shall provide copies of their planning documents to the Source Protection Authority when they have been amended to conform with the policy to ensure that future lot sizes are sufficient to accommodate the required private servicing.

**T-13-C** To increase awareness about best practices to protect drinking water sources for existing and future users of septic tanks and holding tanks located within vulnerable areas where their use is or would be a significant drinking water threat,

- a. within two years of the date the Source Protection Plan comes into effect, the City of Hamilton and the Region of Halton, in collaboration with the Source Protection Department of the Conservation Authorities, the Hamilton and Halton Watershed Stewardship Programs, and the Town of Milton are requested to continue and broaden education and outreach programs. The programs should inform landowners about the proper disposal of toxic chemicals, the operation and maintenance of septic systems, water softener discharges, and the benefits of installing effluent filters, performing tank inspections, and having tanks pumped out regularly.
- b. the City of Hamilton and the Region of Halton shall document the nature of any new or continuing education and outreach programs established regarding septic systems, the number of persons contacted, and the location of the participants and report this information to the Source Protection Authority by February 1 of each year.

**T-14-C** In support of the sewage system inspection requirements of the Ontario Building Code specific to vulnerable areas where existing sewage systems are significant drinking water threats,

- a. the Town of Milton and the City of Hamilton shall implement an on-site sewage system maintenance inspection program, as required.
- b. the Town of Milton and the City of Hamilton shall document the number of sewage system maintenance inspections completed, as well as the actions required, if any, and report this information to the Source Protection Authority by February 1 of each year.

**T-17-C** To assist landowners with improvements required under the on-site sewage systems maintenance inspection program implemented where sewage systems are significant threats and in accordance with the Ontario Building Code

- a. the City of Hamilton, the Region of Halton, and the Town of Milton shall consider the creation of a financial assistance program. It is recommended that this program be designed in a manner that allows the work to be completed as required, and the landowner to repay the cost over time.
- b. the City of Hamilton, the Region of Halton, and the Town of Milton shall document their efforts and the results regarding the creation of a municipal financing program to assist landowners and report this information and the number of participants to the Source Protection Authority by February 1 of each year.

The completed water quantity risk assessment concluded that the risk is low that the Greensville municipal well system would not be sustainable into the future and through drought. Therefore, a figure will not be added to the Plan and water quantity policies will not apply.

This letter serves as a notice for the purposes of the *Clean Water Act, 2006* and Ontario Regulation 287/07 made under it. We are seeking City Council's endorsement of the proposed changes to the source protection documents as summarized in the attached table. The changes summarize the findings of the Greensville studies and replace the mapped wellhead protection area in which water quality policies apply.

The timing for finalization of the reports and their submission to the province will coincide with the City's finalization of the Class Environmental Assessment for the Greensville backup well. The original plan, assessment report and explanatory document and the consultant's reports on the two Greensville studies can be reviewed on our website at [protectingwater.ca](http://protectingwater.ca) under Documents and Maps.

We will be consulting with the public on the proposed changes to the documents between mid-October and early December and will join City staff at the Public Information Centre for the Greensville Class EA in November.

Thank you for your ongoing assistance with the Drinking Water Source Protection Program. Please contact me for more information or if you have any questions.

Sincerely,



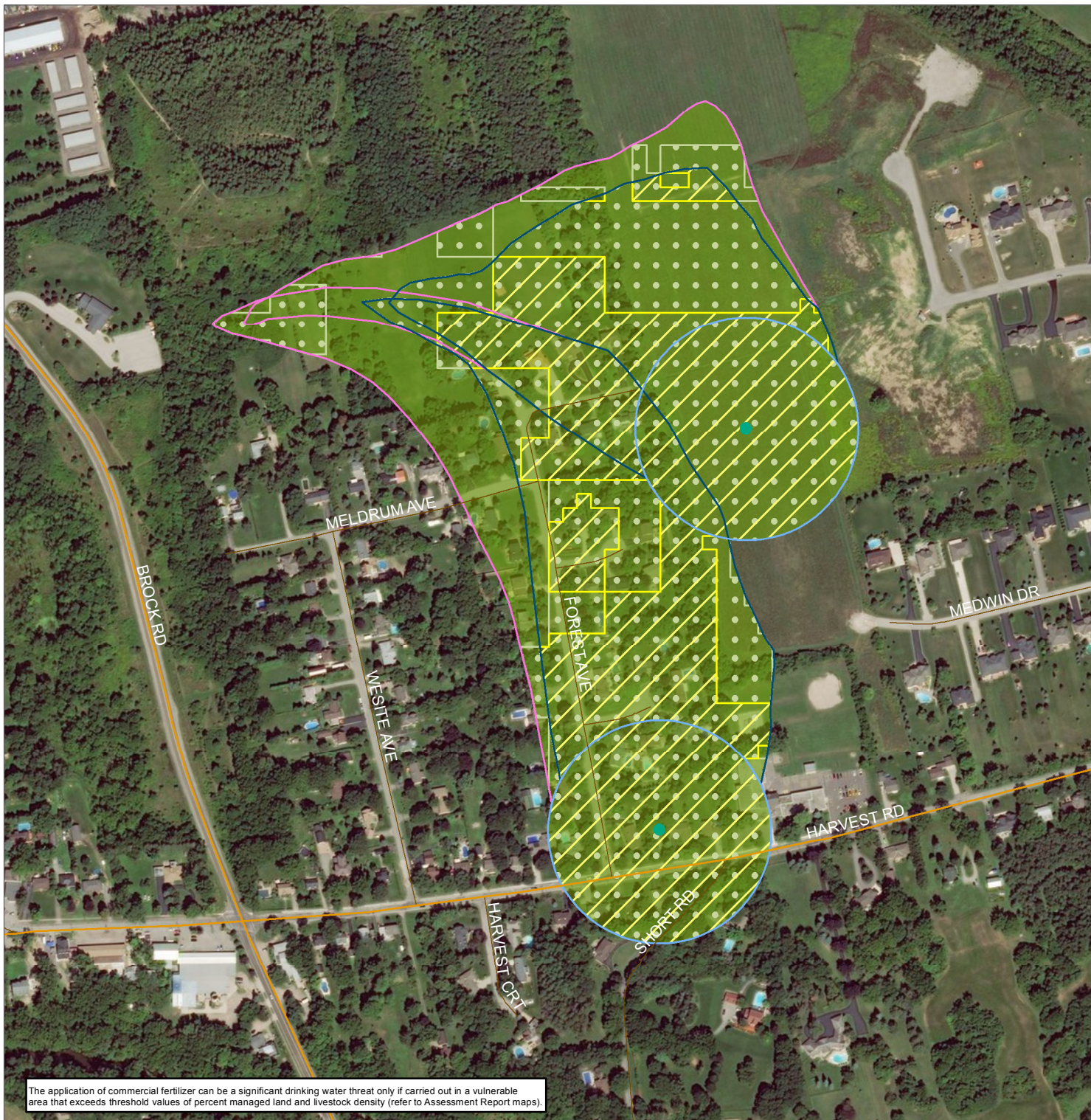
Diane L. Bloomfield, M.Sc., P.Geo.  
Manager, Source Water Protection

Copy Carmen Vega, Senior Project Manager, Source Water Protection, City of Hamilton  
Attach. Figure 1 – Greensville Significant Groundwater Threat Areas  
Table - Proposed Edits to the Source Protection Plan, Assessment Reports and Explanatory Document in Accordance with Section 34 of the Clean Water Act



**Figure 11**

**Greensville  
Existing and would be significant groundwater threat areas**



**Legend**

- WHPA Boundary
  - A
  - B
  - C
- GW - Significant Threats - Group 1
- GW - Significant Threats - Group 2
- GW - Significant Threats - Group 3
- Roads
  - Highway
  - Regional
  - Local
- Municipal Well

**Group 1: (WHPA-A-10, WHPA-B-10)**

- Waste Disposal Site - Application of Untreated Septage to Land (Chemical and Pathogen)
- Waste Disposal Site - Mine Tailings (Chemical)
- Waste Disposal Site - Landfarming of Petroleum Refining Waste (Chemical)
- Waste Disposal Site - Landfilling (Hazardous Waste) (Chemical)
- Waste Disposal Site - PCB Waste Storage (Chemical)
- Waste Disposal Site - Storage of Hazardous Waste at Disposal Site (Chemical)
- Waste Disposal Site - Storage of Waste Classes (p),(q),(r),(s),(t),(u) (Chemical)
- Sewage - Discharge from stormwater retention pond (Chemical and Pathogen)
- Sewage - Sanitary Sewers and Related Pipes (Chemical and Pathogen)
- Sewage - Septic System (Chemical and Pathogen)
- Sewage - Septic System Holding Tank (Chemical and Pathogen)
- Sewage - Sewage Treatment Plant Effluent Discharges (Chemical and Pathogen)
- Sewage - Storage of Sewage (Pathogen)
- ASM - Application (Chemical and Pathogen)
- ASM - Handling and Storage (Chemical and Pathogen)
- NASM - Application (Chemical and Pathogen)
- NASM - Handling and Storage (Chemical and Pathogen)
- Commercial Fertilizer - Application (Chemical)
- Commercial Fertilizer - Handling and Storage (Chemical)
- Pesticides - Application (Chemical)
- Pesticides - Handling and Storage (Chemical)
- Road Salt - Application (Chemical)
- Road Salt - Handling and Storage (Chemical)
- Snow - Storage (Chemical)
- Fuel - Handling and Storage (Chemical)
- Organic Solvent - Handling and Storage (Chemical)
- Runoff Management - Aircraft De-icing Chemicals (Chemical)
- Use of land for livestock - Grazing and Pasturing (Chemical and Pathogen)
- Use of land for livestock - Confinement Yard (Chemical and Pathogen)

**Group 2: (WHPA-A-10, WHPA-B-10, WHPA-B-8, WHPA-C-8)**

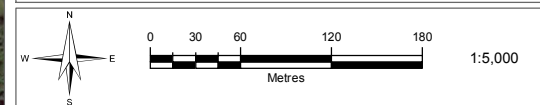
- Waste Disposal Site - Landfilling - Municipal Waste (Chemical)
- Waste Disposal Site - Landfilling - Solid Non Hazardous Industrial or Commercial (Chemical)
- Waste Disposal Site - Liquid Industrial Waste Injection Into Wells (Chemical)
- Sewage - Storage of Sewage (Chemical)

**Group 3: (WHPA-A, WHPA-B, WHPA-C)**

- DNAPL - Handling and Storage
- GW: Groundwater
- WHPA-A-10: Wellhead Protection Area A - Vulnerability Score of 10

Reference: Prescribed threat circumstances as listed in the Ministry of the Environment Table of Drinking Water Threats (2009)

Date: August 2017  
Projection: UTM NAD 83 Zone 17



The application of commercial fertilizer can be a significant drinking water threat only if carried out in a vulnerable area that exceeds threshold values of percent managed land and livestock density (refer to Assessment Report maps).



Proposed Edits to the Source Protection Plan, Assessment Reports and Explanatory Document in Accordance with Section 34 of the Clean Water Act

Document	Page #	Section	Edit	Wording/Details
Plan	6	2.4 Effective Date and Plan Amendments	Deleted placeholder for Greensville Tier 3 study	Removed - As documented in the Hamilton Region Assessment Report, a Tier 3 water budget and water quantity risk assessment is underway for the Greensville municipal well. Upon study completion, the Assessment Report and Source Protection Plan will be amended to include the findings of this study.
Plan	Figure 11		replaced Greensville threat area map with new map showing both wells	
Plan	72	Appendix B.2 Consultation Assessment Reports	updated to include 2017 consultation on Greensville studies and changes to Hamilton AR	The City of Hamilton initiated a Class EA process to establish a backup well for their Greensville municipal well supply with completion scheduled for early 2018. Assessments of vulnerability and sustainability for the new well's source water were completed in concert with updates to the mapping of the existing well's protection areas due to cumulative impacts. The findings of the studies, new mapping and subsequent policy discussion were brought into the Assessment Report for the Hamilton Region Source Protection Area and this Plan under section 34 of the Clean Water Act. Personalized letters were sent to each landowner within the newly mapped vulnerable areas, the technical reports were released on the source protection website ( <a href="http://www.protectingwater.ca">www.protectingwater.ca</a> ) and a public meeting held on July 11, 2017 provided an opportunity for the public to review and discuss the results of the studies. Also at this time, the Assessment Reports were corrected for small typographical errors and missing words under section 51 of the Act. The Assessment Reports dated September 2017 are used to support this Plan and are included in Appendix A.
Plan	73	Appendix B.2 Consultation Plan	updated to reflect proposed changes to Plan	Upon completion of the technical assessments of the City of Hamilton's Greensville municipal well for vulnerability and sustainability, the study findings and new wellhead protection area mapping were added to the Assessment Report for the Hamilton Region Source Protection Area and the vulnerability mapping to this Source Protection Plan. Proposed edits were discussed by the Source Protection Committee and released for public consultation in the fall 2017. Policies are unchanged.
Hamilton AR	entire document		changed reference from one Greensville well to two and clarified that previous studies were for FDG01 and new well is FDG02	text changed from well to either wells, well system or well field
Hamilton AR and Explanatory Document	entire document		removed reference to future Greensville Tier 3 study	

**Proposed Edits to the Source Protection Plan, Assessment Reports and Explanatory Document in Accordance with Section 34 of the Clean Water Act**

<b>Document</b>	<b>Page #</b>	<b>Section</b>	<b>Edit</b>	<b>Wording/Details</b>
Hamilton AR	i	Executive Summary	added risk summary for water quantity and removed DNAPL as potential threat from water quality summary	<p>Future risks to groundwater quantity: Based on the findings of the stress assessment, an assessment of the risks from overuse, drought and reduced recharge on the Greenville municipal wells was completed. The risk of having water quantity issues is low.</p> <p>Existing activities that could cause an issue at the wells are associated with sewage systems.</p>
Hamilton AR	76, 80	4.5.1 Municipal Water Supply Systems	Tables 4.3 and 4.5 updated with known information and may need additional edits for well system with additional well before reports are submitted to province	Depth of existing well changed from 22 to 12.2 m, PTTW # changed, number of users changed and new well information added based on Greenville Tier 3 study
Hamilton AR	84	5 Water Budget and Water Quantity Risk Assessment	Tier 3 assessment reference changed and reference to new Earthfx report added	<p>Following completion of these assessments, the City of Hamilton proposed to add a backup well to the Greenville municipal system to provide a better level of service to the 36 homes serviced by the municipal well supply. Earthfx was retained by Conservation Halton to update the numerical model to include the proposed new well. A full discussion of the updated Tier 3 water budget and water quantity risk assessment is provided in the report: "Tier 3 Water Budget and Local Area Risk Assessment for the Greenville Groundwater Municipal System. Updated Risk Assessment Report," prepared by Earthfx and dated July 3, 2017.</p> <p>All technical reports are available on the Halton-Hamilton Source Protection website at <a href="http://www.protectingwater.ca">www.protectingwater.ca</a> under Documents and Maps/Assessment Reports/Technical Reports.</p>
Hamilton AR	110-118	5.5 - 5.7 Tier 3 Water Budget and Local Area Risk Assessment and Limitations	added Tier 3 write-up based on Kelo study write-up in the Halton Region AR	
Hamilton AR	135	6.2.2. Significant Groundwater Recharge Areas	A reassessment of the SGRAs is required by the Technical Rules, however, MNRF has indicated it isn't necessary	The Technical Rules also require that the identification of significant groundwater recharge areas within the study area delineated during a Tier 3 water budget and water quantity risk assessment (see Section 5) be reassessed. To keep the relative nature of the assessment across the entire Area, without emphasis in the small Tier 3 study area, the delineated significant recharge areas were not refined.
Hamilton AR	135-143	6.2.3 Wellhead Protection Areas	added the reassessment of the WHPA for water quality for the two Greenville wells	

Proposed Edits to the Source Protection Plan, Assessment Reports and Explanatory Document in Accordance with Section 34 of the Clean Water Act

Document	Page #	Section	Edit	Wording/Details
Hamilton AR	165	7.4.1 Water Quality Threats Assessment	Paragraph added about Greenville threats and the threat count in Table 7.1 was updated	The wellhead protection areas for the Greenville municipal well system include residential properties, a school and a park. Based on current practices, the only identified existing significant threat to the quality of the source water is the operation of septic systems. Small residential septic systems are considered a pathogen threat, while the larger school septic system could also be a chemical threat. These significant threats are possible in a portion of the wellhead protection area (see section 7.5) and properties may be within or partially within these areas. As such, the location of the septic system on each property partially within the significant threat areas must be verified.
Hamilton AR	166	7.4.2 Water quantity threats assessment	add text about the water quantity threat assessment for the Greenville supply	The Technical Rules require an assessment of drinking water threats when a risk level of significant or moderate is assigned to a municipal water supply. As discussed in Section 5.6.4, Earthfx Incorporated assigned a risk level of low to the Greenville well supply and, therefore, no water quantity threat activities are identified.
Hamilton AR		7.5 Potential Threat Areas	text, figures and Table 7.3 changed to include Greenville threat area mapping and where threats are possible	
Hamilton AR	174 and Table 8.2	8.3 Summary of Water Quantity Stresses and Risks	added the risk assessment result	This assessment found that the Greenville well supply has low risk of not sustaining the quantity of water demanded.  Therefore, Table 8.2 summarizes the possible existing significant threats to the Greenville municipal water supply from ongoing activities.
Hamilton AR	181	9. References	Add reference to Schroeter et al 2000 re methodology	
Hamilton AR	265-272	Appendix D	Technical Bulletin: Provincial Tables of Circumstances removed  Tier 3 Water Budget and Water Quantity Risk Assessment added	Added well constraint graphs, permits to take water list and figure, Tier 3 scenarios
Hamilton AR	Figures		All figures that show the water quality WHPAs are revised to show the new WHPAs for the two wells and figures for the water quantity WHPAs have been added	