

Annual Report to the South Nation Source Protection Authority

Municipality: City of Ottawa
Reporting Period: January 1, 2023 to December 31, 2023
Report Date: January 31, 2024
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The *Clean Water Act, 2006* requires that Source Protection Plans include monitoring policies for each significant threat policy (as per Subsection 22(2)). The monitoring policies will help to ensure that the Source Protection policies are effective and are being properly implemented.

The Source Protection Plan for the South Nation Source Protection Area became effective on April 1, 2015. The plan includes several policies that detail municipal reporting requirements to the Source Protection Authority. This report addresses reporting requirements as outlined in the table below.

Monitoring Policy	Reporting Requirement	Table
MONITORING-1	Number of Approved Risk Management Plans for Existing Activities	Table 1
MONITORING-1	Number of Approved Risk Management Plans for Future Activities	Table 2
MONITORING-1	Number of Activities Prohibited by the Municipality	Table 3
MONITORING-1	Risk Management Official Reporting	Table 4
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MONITORING-2	Planning Act Policies and Conformance	Table 6
MONITORING-4	Summary of Education and Outreach Programs	Table 7
MONITORING-5	Implementation of Specific Actions directed at Municipalities	Table 8

Reporting Requirements for Policy: MONITORING-1

Policy MONITORING-1
Part IV <i>Clean Water Act, 2006</i> tools (restricted land use, Risk Management Plans and prohibition)
<p>The Risk Management Official shall report annually by February 1st to the Source Protection Authority on significant threat policies that designate an activity for the purpose of Section 58 (Risk Management Plans) or Section 57 (prohibition) of the <i>Clean Water Act, 2006</i>. This report will include the information required in Section 65 of Regulation 287/07 (information on the establishment and enforcement of Risk Management Plans, inspections and abatement measures in addition to descriptions of the administrative, enforcement and compliance results) related to the previous calendar year.</p> <p>Additionally, the Risk Management Official shall inform the Source Protection Authority of the method/procedure used to implement GENERAL-6 (restricted land uses).</p>

Table 1: Number of Approved Risk Management Plans for Existing Activities

Policy	Approved Risk Management Plans for Existing Activities	Qty.
AG-2	Agricultural activities.	-
CHEM-1	Chemical threats.	-
FUEL-1	Fuel oil storage (O.Reg. 213/01).	-
FUEL-2	Liquid fuels (O.Reg. 217/01).	-
PEST-2	Application, storage and handling of pesticide.	-
SALT-2	Storage of road salt and snow.	-
WASTE-3	Waste sites without a prescribed instrument.	-

Table 2: Number of Approved Risk Management Plans for Future Activities

Policy	Approved Risk Management Plans for Future Activities	Qty.
AG-2	Agricultural activities.	-
FUEL-1	Chemical threats.	-
FUEL-2	Fuel oil storage (O.Reg. 213/01).	-
PEST-2	Liquid fuels (O.Reg. 217/01).	-

Table 3: Number of Activities Prohibited by the Municipality

Policy	Activities Prohibited by the Municipality	Qty.
CHEM-2	Chemical threats.	-
FUEL-4	Liquid fuel facilities (O.Reg. 217/01).	-
PEST-3	Commercial storage and handling of pesticides.	-
SALT-3	Storage of salt and snow.	-
WASTE-4	Waste sites without a prescribed instrument.	-

Table 4: Risk Management Official Reporting

Risk Management Official Reporting	Qty.	Details Attached (Y/N)
Risk Management Plans agreed to by the RMO under subsection 56(1) or 58(5) of the Act and the number of plans established by the RMO under subsection 56(6), 58(10) or (12) of the Act	-	N
Risk Management Plans the RMO refused to agree to or to establish under subsection 56(9), 58(15) or (16)	-	N
Orders issued under Part IV of the Act	-	N
Notices given to or by the RMO under subsection 61(2), (7) and (10) of the Act	-	N
Inspections carried out under section 62 of the Act (for the purpose of enforcement)	-	N
Risk assessments submitted under section 60 of the Act	-	N
RMO caused a thing to be done under section 64 of the Act	-	N
Prosecutions and convictions under section 106 of the Act	-	N

RMP NOTE: One previously established RMP for fuel storage (RMP #: RSN-Ottawa-RMP-Fuel-1) was rescinded in 2023 because the owner removed the home heating oil tank and converted to natural gas heating as part of the Ottawa Fuel Tank Incentive Program.

Table 5: Risk Management Office Reporting on Restricted Land Uses

Detail	Qty.
Number of Planning Act or Building Code Act applications screened by the Risk Management Office.	-
Number of notices issued under Section 59 2(a) of the <i>Clean Water Act, 2006</i> .	-
Number of notices issued under Section 59 2(b) of the <i>Clean Water Act, 2006</i> .	-
Description of the method used to implement policy: GENERAL-6	
<p>An interim Section 59 screening procedure is currently being implemented for new <i>Planning Act</i> applications:</p> <ul style="list-style-type: none"> • The location of the activity is verified by the municipal planner. If the activity is within a vulnerable area, the application is forwarded and reviewed by the RMO to determine any proposed activities could pose a significant drinking water threat. If there are none, a clearance e-mail is sent from the RMO to the planner stating that there is no potential for significant threat activities. • If there is potential for a significant drinking water threat associated with the proposed activity, then the RMO consults directly with the proponent to determine if the specific activity (i.e. circumstances) is subject to Section 57 (Prohibition) or Section 58 (Risk Management Plan). <p>Internal screening procedures related to applications under the <i>Planning Act</i> and <i>Building Code Act</i> will be updated through the development and implementation of a by-law and activity screening process related to certain land-use designations. The City has initiated the process of developing a new zoning by-law including implementing new zone provisions to conform to source protection policies. The new by-law and development screening process will be drafted in 2024. Source Protection Regions will be consulted when the by-law is developed.</p>	

Reporting Requirements for Policy: MONITORING-2

Policy MONITORING-2
Planning Act, 1990 policies
<p>The local planning authority shall provide the Source Protection Authority with the following information for the previous calendar year:</p> <ul style="list-style-type: none"> • A copy of the sections of the Official Plan and zoning by-laws which were amended to conform with the Source Protection Plan; • A copy of any approvals made under the Planning Act, 1990 for applications for properties in the designated land uses listed in GENERAL-6 (restricted land use); and • A copy of the permit for approvals made under a change of use by-law, if applicable, for properties in designated land uses listed in GENERAL-6 (restricted land use), when the permit is issued.

Table 6: Planning Act Policies and Conformance

Policy	Detail	Y/N
GENERAL-3	The Municipality has amended sections of the Official Plan or zoning by-laws to conform to the Source Protection Plan.	Y ¹
GENERAL-6	The Municipality has approved applications under the Planning Act, 1990 for properties in areas designated as restricted land uses.	N
SEWG-3	The Municipality has replaced an existing sewage treatment plant. Decisions made by the planning authority under the Planning Act, 1990 conform to the policy.	N
SEWG-3	The Municipality has expanded an existing municipal sewage treatment facility to provide full services to a new or existing development which is partially serviced or a development where on-site septic systems are failing. Decisions made by the planning authority under the Planning Act, 1990 conform to the policy.	N
SEWG-5	The Municipality has established a review process for future development and/or lot creation that considers the protection of municipal source water in relation to future and proposed on-site sewage.	Y ²
SEWG-7	The Municipality has prohibited the future establishment, operation and maintenance of a stormwater management facility with a WHPA-A or IPZ-1 where stormwater discharges would be a significant drinking water threat.	N ³
WASTE-2	The Municipality has prohibited the establishment of future waste disposal sites where they would be a significant drinking water threat.	N ³

Notes:

1. The new Official Plan was adopted by City Council on October 27, 2021 and was approved by the Ministry of Municipal Affairs and Housing on November 4th, 2022. Source protection policies in the OP conform to local Source Protection Plans, see Section 4.9.5 of under the heading, “Implement the policies of the Mississippi-Rideau Source Protection Plan and the Source Protection Plan for the Raisin-South Nation Source Protection Region”. Source protection policies were developed in consultation with the local Source Protection Regions.

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Notes Continued:

The City initiated the process of developing new Zoning By-laws to implement the policies in the new Official Plan, including implementing new zone provisions to conform to source protection policies. New zoning by-laws related to the source protection policy conformity will be drafted in 2024 in consultation with Source Protection Regions.

2. *New Planning Act* and *Building Code Act* applications are reviewed through an internal Section 59 screening process; procedures to be updated following enactment of Section 59 By-Law (in development, to be drafted in 2024).
3. The City has initiated the process of amending zoning by-law provisions to conform to Source Protection Policies. This will include prohibition of sewer works as listed in policy SEW-7 and waste disposal sites as listed in policy WASTE-2 in designated vulnerable areas. Source Protection Regions will be consulted on zoning by-law amendments. Currently, new development applications are screening through an internal Section 59 screening process.

Reporting Requirements for Policy: MONITORING-4

Policy MONITORING-4
Education and Outreach
<p>By February 1st of each year, the Municipality or designate shall report to the Source Protection Authority with a description of the actions/measures they have taken in the previous calendar year to implement the education/outreach program described in the Source Protection Plan.</p> <p>The report shall include an evaluation of the program and suggestions to improve the effectiveness.</p>

Table 7: Summary of Education and Outreach Programs

Education and Outreach Actions/ Measures:	<p>The City of Ottawa developed and maintains Outreach and Education materials including 19 factsheets and a City-hosted Source Protection website with an interactive map; see Ottawa.ca/SourceProtection or Ottawa.ca/protectiondessources. Drinking Water Protection Zones are also included and maintained as a map layer on the City's interactive geoportal (GeoOttawa.ca).</p> <p>The City plans to implement a recurring social media campaign in 2024 to promote program awareness and safe practices to protect our shared drinking water resources.</p>
Evaluation of Program:	<p>The program will be reviewed and evaluated in 2024.</p>
Suggestions for Improvement:	<p>Targeted education campaigns related to new potential drinking water threats based on revised Technical Rules under the <i>Clean Water Act</i>; such as road salt storage and application, snow storage, and stormwater features.</p>

Reporting Requirements for Policy: MONITORING-5

Policy MONITORING-5
Specify Action
Where a policy requires the Municipality to implement a specific action, the Municipality shall report the Source Protection Authority annually by February 1 st on the steps taken to implement this policy.

Table 8: Implementation of Specific Actions directed at Municipalities

Policy	Detail	Y/N
SEWG-1	The Municipality has established and implemented a sewage inspection and maintenance program where sanitary sewers could be a significant threat.	Y ¹
SEWG-1	The Municipality has established a process to ensure that future applicants are aware of the requirements for new sanitary sewers where they are a significant drinking water threat.	Y ²
SEWG-4	The Municipality has established a process to manage existing and future septic systems and septic holding tanks where they would be a significant drinking water threat through the Ontario Building Code Act, 1992 and Ontario Regulation 315/10 (as amended) in accordance with the On-Site Sewage System Maintenance Inspection Program.	Y ³
SEWG-4	The Municipality has established a process to ensure that existing septic systems and septic holding tanks are decommissioned where inspectors determine the need for replacement or when connecting to municipal services.	Y ³
SEWG-4	The Municipality has passed a Mandatory Connection By-law (under the authority of the Municipal Act, 2001) to require connection to municipal sewer services (capacity permitting) where available at the property line in the following situations: failure of a Phase II inspection; the Principal Authority deems the existing system inadequate to service a proposed redevelopment/renovation; or for new development on existing vacant lots of record.	Y ⁴
SEWG-4	The Municipality has established a process to review and consider the potential for municipal servicing within significant threat areas which currently have private services.	Y ⁵
SEWG-4	Shadow Ridge Municipal Well System: The City of Ottawa intends to deepen the Shadow Ridge Municipal Well to the Nepean aquifer to reduce significant threats related to septic systems and septic holding tanks in the Village of Greely. <u>Greely – Shadow Ridge Municipal Well Project Update:</u> The existing municipal supply wells for the Shadow Ridge development in Greely extract water from the overburden sand aquifer. The supply wells have experienced issues related to elevated nitrate levels (approaching, but not exceeding, half of the Maximum Acceptable Concentration for drinking water). The nitrate source is likely anthropogenic due to shallow contamination potentially from private	Y ⁶

	<p>septic systems, agricultural nutrient application (manure or chemical fertilizer) and storage of non-agricultural source material (i.e. compost) within the existing wellhead protection area.</p> <p>The Raisin-South Nation Source Protection Plan includes a policy which recommends that the City of Ottawa explore the opportunity to deepen the Shadow Ridge Municipal Well to the Nepean Aquifer to reduce the significant threats related to septic systems and septic system holding tanks in the Village of Greely (Policy SEWG-4c), as such the City has committed to exploring the option.</p> <p>The City of Ottawa initiated the Nepean Aquifer Study in December 2016 to investigate the potential to deepen the Shadow Ridge Municipal well system to the Nepean Aquifer and gain information about the hydrogeologic properties of the Nepean Aquifer within Greely. Study results indicated that the Nepean Aquifer is a viable and prolific groundwater source and project deliverables were used to support the new municipal well system design. In 2019, the City acquired land to construct the new municipal wells for Shadow Ridge, adjacent to the existing pumping station and municipal water treatment and distribution facility.</p> <p>The City moved forward with drilling two 250mm diameter, 150m deep production wells. The first production well was completed in January 2023 and the second production well was completed in April 2023. Aquifer testing (pump tests) were completed in May 2023. Test results identified that the two wells are sufficient to support the yield and a third well was not needed. Data from the aquifer testing is currently being analyzed to support decision-making related to the future water supply for the Shadow Ridge subdivision, including detailed design and an assessment of pump station modifications and upgrades needed to treat the deeper aquifer groundwater supply, should the City move forward.</p> <p>Results from the pump tests are also used to support the source protection technical work, which includes the delineation of a new Wellhead Protection Area (WHPA) for the deeper wells using 3D numerical groundwater modelling. Source protection technical studies commenced in August 2023 with a project initiation meeting with the Technical Advisory Team. Background information, a conceptual model and numerical model development were discussed with the Technical Advisory team several series of meetings and memos during Q4 2023. Preliminary model results will be presented in winter 2024, and it is anticipated the source protection technical work will be completed in the first half of 2024.</p>	
GENERAL-8	The Municipality has reviewed and updated sewer-use by-laws to place limits on waste discharges where sewage, organic solvents, and/or dense non-aqueous phase liquids (DNAPLs) could be a significant threat.	Y ⁶
GENERAL-7	The Municipality has established a process to review and provide notice (under Section 27 (3) and (4) of O.Reg. 287/07 under the Clean Water Act) when transport pathways are created or modified.	Y ^{2,6}
GENERAL-7	The Municipality has established a procedure to review new earth energy systems within Wellhead Protection Areas (WHPAs) to ensure they do not endanger the municipal drinking water source.	N ⁶

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GENERAL-9	The Municipality has updated their Emergency Response Plans for areas which include a Wellhead Protection Area or an Intake Protection Zone along a transportation corridor (railways, highways s defined in Subsection 1(1) of the Highway Traffic Act, 1990, St. Lawrence Seaway and the Ottawa River).	N ⁶
GENERAL-11	The Municipality has installed road signs along Municipal roads – where municipal arterial roads are located within Wellhead Protection Areas with a vulnerability score of 10 and/or and Intake Protection Zone or Wellhead Protection Area E with a vulnerability score of 8 or higher.	N ⁶

Notes:

1. Sanitary sewer inspection and maintenance program:
 - Vars: there is no sanitary sewer infrastructure within the Vars WHPA.
 - Greely-Shadow Ridge: The required procedure for the sanitary sewer inspection and maintenance program identified in source protection plan policy SEWG-1 is not feasible for the existing sewer infrastructure at Shadow Ridge due to the small diameter (not large enough for CCTV inspection). The City is considering potential options to fulfil the policy intent to regularly inspect sanitary sewers for potential leaks within the WHPA-10; City staff will consult with the Source Protection Region in 2024 with possible options.

2. New development applications are screened through internal Section 59 screening process. Internal screening procedures related to applications under the *Planning Act* and *Building Code Act* will be updated through the development and implementation of a by-law to screen out activities within certain land-use designations that have no potential for significant drinking water threats; by-law to be drafted in 2024 in consultation with the Source Protection Region.

3. Sewage inspection and maintenance program managed by the Ottawa Septic System Office.

4. The Sewer Connection By-Law is currently under review at the City, a new clause related to mandatory connection within areas identified in the Source Protection Plan has been included. The program has been delayed, but the update is expected to be complete by 2024. The update includes the following:

The City shall require connection to the Public Sewage Works in areas where the on-site sewage system is a significant drinking water threat as described in the Clean Water Act, as amended, and associated Technical Rules, as amended, (capacity permitting) where services are available at the property line in the following situations:

 - (1) where an existing system has failed a Phase II Maintenance Inspection and/or an order has been issued to replace or do significant upgrades; or
 - (2) when the Principle Authority has deemed an existing system inadequate to service a proposed redevelopment or renovation; or
 - (3) for new development or existing vacant lots of record.

5.
 - a) Greely-Shadow Ridge well system: The City does not intend, within the Official Plan horizon, to extend municipal services to the entire Village of Greely. The Shadow Ridge municipal wells provide water to residences within the Shadow Ridge subdivision. The Shadow Ridge municipal wells are planned to be deepened into a bedrock formation (commonly called the “Nepean Aquifer”) that has a greater degree of isolation and would result in greater protection from surficial activities.

 - b) The Village of Vars well system: There are no leaching beds within the significant threat area, but there is a holding tank (pumped approximately two times per year) servicing the treatment plant building. The holding tank falls under the City’s On-Site Sewage System Maintenance Inspection Program, managed by the Ottawa Septic System Office. The closest sanitary sewer is more than 25 km from the Vars water treatment plant.

6. This is a non-legally binding policy

Annual Report to the Raisin South Nation Source Protection Region

Policy SEWG-4: Existing and Future on-site Sewage Systems (septic systems)

Municipality: City of Ottawa

Reporting Period: January 1, 2023 to December 13, 2023

Report Date: January 31, 2024

Prepared By: Tessa Di Iorio, Risk Management Official, City of Ottawa

The *Clean Water Act, 2006* requires that Source Protection Plans include monitoring policies for each significant threat policy (as per Subsection 22(2)). The monitoring policies will help to ensure that the Source Protection policies are effective and are being properly implemented.

The Source Protection Plan for the Raisin Region Source Protection Area became effective on April 1, 2015. The plan includes several policies that detail municipal reporting requirements to the Source Protection Authority. This report addresses reporting requirements of the previous calendar year specific to policy SEWG-4 in the Plan:

Policy SEWG-4

Existing and future on-site sewage systems (septic systems)

- a. When the Source Protection Plan takes effect, the Municipality shall manage existing and future septic systems and septic system holding tanks where they would be a significant drinking water threat through the *Ontario Building Code Act, 1992* and Ontario Regulation 315/10 (as amended) in accordance with the On-Site Sewage System Maintenance Inspections Program (MMAH, 2011, as updated).

The Municipality shall also ensure that existing septic systems and septic system holding tanks are decommissioned where inspectors determine the need for replacement or when connecting to municipal services. This would require the tank to be pumped out and collapsed/backfilled. The leaching bed can degrade naturally.

- b. Where existing or future septic systems or septic system holding tanks are or would be a significant threat (including large septic systems >10,000 L/day) the Municipality shall, within one year of the Plan taking effect, require connection to municipal sewer services (capacity permitting) by passing a Mandatory Connection By-law (under the authority of the *Municipal Act, 2001*) where services are available at the property line in the following situations:

- Failure of a Phase II inspection;
- Principal Authority deems the existing system inadequate to service a proposed redevelopment/renovation; or
- For new development on existing vacant lots of record.

The Municipality shall also explore the potential of municipal servicing within the significant threat areas which currently have private services.

- c. It is strongly recommended that the City of Ottawa explore the opportunity to deepen the Shadow Ridge Municipal Well to the Nepean aquifer to reduce the significant threats related to septic systems and septic system holding tanks in the Village of Greely within one year of the Plan taking effect.

Note: Additional policies apply. See: *MONITORING-3* and *MONITORING-5*.

Policy	Question	Answer/Comments
SEWG-4	Current total overall number of on-site sewage systems that are assessed as significant drinking water threat activities and that are required to be inspected every five years in accordance with the Ontario Building Code.	124 private septic systems (Greely) 1 holding tank (Vars)
	Of those requiring inspections, how many inspections of on-site sewage systems were due to be carried out in this reporting period? If not applicable or no inspections of on-site sewage systems were due to be carried out in this reporting period because they were already inspected earlier within the inspection cycle or will be inspected in a future year within the cycle, then please enter "0" and state either explanation in the comment column.	124 private septic systems (Greely)
	How many on-site sewage system inspections were completed in this reporting period?	0
	How many of the inspected on-site sewage systems required minor maintenance work in this reporting period?	0
	How many of the inspected on-site sewage systems required major maintenance work (e.g., tank replacement, etc.) in this reporting period?	0
	How many of the inspected on-site sewage systems required no maintenance work?	0
	For those on-site sewage systems that were not inspected in this reporting period but should have been inspected, and are now out of compliance, please indicate why they were not all inspected from among the identified reasons.	<input type="checkbox"/> landowner refused entry, compliance order being sought <input type="checkbox"/> inspections delayed/postponed due to COVID-19 restrictions <input type="checkbox"/> vulnerable area changed and on-site sewage system(s) no longer a threat activity <input checked="" type="checkbox"/> other. Please specify: See notes below**

**No new septic inspections were completed in 2023.

- There is one septic holding tank within the Vars WHPA, which was inspected in 2020, it is due for the next inspection 2025.
- There are 124 private on-site septic systems within the Greely, Shadow Ridge WHPA. 102 systems were included in an initial round of inspections that took place between 2016 and 2018; all 102 systems are due for a second inspection.
- 22 private septic systems were never inspected due to non-responsive or non-compliant landowners. The next step would be enforcement (i.e., using powers of entry for inspections, issuing compliance orders, etc.), however this is not a preferred option.

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- With consideration of the new planned deeper well system in Greely, it was discussed with the Source Protection Region and decided to put the septic inspection program in Greely on hold since many of the properties would likely be eliminated as threats for the new well system since the WHPA is likely to change significantly with decreased vulnerability due to the new well being located in a deeper, more protected aquifer.
- The City will re-initiate the septic inspection program in Greely after the source protection technical studies are complete for the new Greely supply wells; the wellhead protection study is anticipated to be complete by spring 2024.

Below is a summary table of the initial septic system inspections completed within Ottawa; no second inspection have been completed:

Drinking Water System Name	Number of on-site sewage systems that are SDWT and require 5y inspection under OBC	Number of Inspections (first inspections only)						
		2016	2017	2018	2019	2020	2021	Outstanding (never inspected)
Greely Shadow Ridge	124	66	32	4	0	0	0	22
Vars	1	0	0	0	0	1	0	0

Note on funding for the septic inspections:

- In response to public concern over the expense of the required septic inspections in Greely, the Ward Councillor provided funding for the initial inspection program in Greely (124 septic systems). All inspections to date have been paid by the City.
- There is a septic holding tank at the drinking water system facility at Vars. The City pays for the inspection since it owns the drinking water system and the septic holding tank.

Note about septic holding tanks in the Greely Shadow Ridge subdivision:

- The Greely Shadow Ridge subdivision is serviced with municipal water and sewer, however the sewage systems is not typical. Each residence has a privately-owned septic holding tank, which drains by gravity to a municipal settling chamber, effluent then moves by forcemain to a peat bed system. There are 172 holding tanks within the WHPA (10) for the Greely municipal wells; the holding tanks are pumped annually, and visible structures and pipes are inspected annually. The system is managed under an Environmental Compliance Approval through the MECP.