South Georgian Bay Lake Simcoe Source Protection Region

Agenda

Source Protection Committee Meeting SPC-04-2025

Thursday, December 11, 2025
1:00 – 4:00 pm
To be held virtually by Zoom video conference

Members
Peter Dance, Chair

Municipal
Chris Gerrits, Jeff Hamelin, Katie Thompson, Michelle Flaherty, Michelle Jakobi, Jennifer Best, Tom Bradley

Economic/Development
Colin Elliott, John Hemsted, David Ketcheson, Jessica Neto, Rick Newlove, David Ritchie

Public Sector
Geoff Allen, Bob Duncanson, Stephanie Hobbs, Tom Kurtz, Cate Root, Karen Koornneef

First Nations
Vacant

Liaisons
Karen Kivilahti, Simcoe Muskoka District Health Unit (SMDHU)
Don Goodyear, Lake Simcoe Region Conservation Authority (LSRCA)
Julie Cayley, Severn Sound Environmental Association (SSEA)
Jennifer Vincent, Liaison, Nottawasaga Valley Conservation Authority (NVCA)
Laura Collings, Ministry of the Environment, Conservation and Parks (MECP)

Staff
Bill Thompson, LSRCA
Mystaya Touw, LSRCA
Chloe Zhang, LSRCA
Kathy Hillis, LSRCA (minutes)
Ian Ockenden, NVCA
Sheri Steiginga, NVCA
Melissa Carruthers, SSEA

Guests
Christina Wieder, York Region Public Health Branch
Shelly Cuddy, Durham Region
Jenee Wallace, SMDHU
Emily Goncalves, York Region
Sonya Kleywegt, MECP
Lloyd Lemon, Lloyd Lemon Geoscience Consulting
Bilal Kidwai, Ministry of the Environment and Climate Change

1. **Welcome and Opening Remarks**

2. **Roll Call**

3. **Acknowledgement of Indigenous Territory**

4. **Declaration of Pecuniary Interest and Conflict of Interest**

5. **Approval of the Agenda**

   Pages 1-6

   Recommended: **That** the agenda for the Thursday, December 11, 2025 meeting of the Source Protection Committee be approved as presented.

6. **Adoption of Minutes**

   Pages 7-19

   Recommended: **That** the minutes of the Thursday, October 16, 2025 meeting of the Source Protection Committee be approved as circulated.

7. **Announcements**

   a) Chair

8. **Deputations**

   There are none

9. **Presentations**

   a) A presentation by Sonya Kleywegt, MECP, regarding Per- and Polyfluoroalkyl Substances (PFAS) activities by MECP.

   Recommended: **That** presentation a) regarding Per- and Polyfluoroalkyl Substances (PFAS) activities by MECP be received for information.

   b) A presentation by Lloyd Lemon, Lloyd Lemon Geoscience Consulting, regarding Staff Report SPC2.1 - Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 23, 2025.

   Recommended: **That** presentation b) and Staff Report SPC2.1 regarding Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 23, 2025 be received for information.

c) A presentation by Sheri Steiginga, NVCA, regarding Staff Report SPC2.2 – Source Protection Plan and Assessment Report Update – Technical Report in support of the New Tecumseth (Alliston) S.34 WHPA update.

Recommended: **That** presentation c) and Staff Report SPC2.2 regarding Source Protection Plan and Assessment Report Update – Technical Report in support of the New Tecumseth (Alliston) S.34 WHPA update be received for information; and

Further That the South Georgian Bay - Lake Simcoe Source Protection Committee agree that the proposed amendments to the New Tecumseth chapter of the Assessment Report is advisable.

d) A presentation by Bill Thompson, LSRCA, and Melissa Carruthers, SSEA regarding Staff Report SPC2.3 – Status of Water Quality 'Issues' in the Source Protection Region.

Recommended: **That** presentation d) and Staff Report SPC2.3 regarding Status of Water Quality 'Issues' in the Source Protection Region be received for information; and

Further That staff be directed to use the amendment to the Source Protection Plan currently underway to remove the Issue and Issue Contributing Area associated with Trichloroethylene at the Coldwater drinking water system;

Further That staff be directed to leave all other Issues and Issue Contributing Areas in the Assessment Report unchanged; and

Further That staff be directed to respond to Ministry of the Environment, Conservation and Parks (herein "Ministry") that there is sufficient evidence for delisting of the Coldwater drinking water Issue, but not sufficient evidence for delisting of other Issues in the South Georgian Bay – Lake Simcoe Source Protection Region.

e) A presentation by Bill Thompson, LSRCA, regarding Changes to the Clean Water Act and its Regulations.

Recommended: **That** presentation e) regarding Changes to the Clean Water Act and its Regulations be received for information.

f) A presentation by Bill Thompson, LSRCA, regarding Proposed Conservation Authority Consolidation.

Recommended: **That** presentation f) regarding Proposed Conservation Authority Consolidation be received for information.

10. **Determination of Items Requiring Separate Discussion**

    (Reference Agenda Items on pages 5-6 of the Agenda)

11. **Adoption of Items Not Requiring Separate Discussion**

    Recommended: **That** the recommendations as set forth in the items not requiring separate discussion be approved, and staff be authorized to take all necessary actions to affect those recommendations.

12. **Consideration of Items Requiring Separate Discussion**

13. **Other Business**

14. **Closed Session**

15. **Next Meeting and Adjournment**

    The next meeting of the Source Protection Committee to be scheduled.

Agenda Items

1. **Correspondence**

   There are none

2. **Staff Reports**

   SPC2.1 – Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 23, 2025
   Pages 20-31

   That presentation b) and Staff Report SPC2.1 regarding Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 23, 2025 be received for information.

   SPC2.2 – Source Protection Plan and Assessment Report Update – Technical Report in support of the New Tecumseth (Alliston) S.34 WHPA update
   Pages 32-38

   That presentation c) and Staff Report SPC2.2 regarding Source Protection Plan and Assessment Report Update – Technical Report in support of the New Tecumseth (Alliston) S.34 WHPA update be received for information; and

   Further That the South Georgian Bay - Lake Simcoe Source Protection Committee agree that the proposed amendments to the New Tecumseth chapter of the Assessment Report is advisable.

   SPC2.3 – Status of Water Quality 'Issues' in the Source Protection Region
   Pages 39-52

   That presentation d) and Staff Report SPC2.3 regarding Status of Water Quality 'Issues' in the Source Protection Region be received for information; and

   Further That staff be directed to use the amendment to the Source Protection Plan currently underway to remove the Issue and Issue Contributing Area associated with Trichloroethylene at the Coldwater drinking water system;

Further That staff be directed to leave all other Issues and Issue Contributing Areas in the Assessment Report unchanged; and

Further That staff be directed to respond to Ministry of the Environment, Conservation and Parks (herein "Ministry") that there is sufficient evidence for delisting of the Coldwater drinking water Issue, but not sufficient evidence for delisting of other Issues in the South Georgian Bay – Lake Simcoe Source Protection Region.

Source Protection Committee (SPC)

Minutes of Meeting SPC-03-2025

October 16, 2025

Bill Thompson called the meeting informally to order at 1:05pm.

Members Present:

Peter Dance, Chair

Municipal

Chris Gerrits, Katie Thompson, Michelle Flaherty, Tom Bradley

Economic/Development

Colin Elliott, John Hemsted, David Ketcheson, Jessica Neto, Rick Newlove

Public Sector

Geoff Allen, Bob Duncanson, Stephanie Hobbs, Cate Root

First Nations

Vacant

Liaisons

Jenee Wallace, Simcoe Muskoka District Health Unit (SMDHU)
Don Goodyear, Lake Simcoe Region Conservation Authority (LSRCA)
Julie Cayley, Severn Sound Environmental Association (SSEA)
Ian Ockenden, Liaison, Nottawasaga Valley Conservation Authority (NVCA)

Staff Present

Bill Thompson, LSRCA
Mystaya Touw, LSRCA
Chloe Zhang, LSRCA
Kathy Hillis, LSRCA (minutes)
Sheri Steiginga, NVCA
Melissa Carruthers, SSEA

Guests

Shelly Cuddy, Durham Region
Tavis Nimmo, Durham Region
Gregory Meek, Durham Region
Lloyd Lemon, Lloyd Lemon Geoscience Consulting
Sarah Lavoie-Bernstein, Kawartha CA

Regrets:

Tom Kurtz, Public Sector – Proxy to Stephanie Hobbs
Jennifer Best, Municipal Sector – Proxy to Chris Gerrits
Michelle Jakobi, Municipal Sector – Proxy to Katie Thompson
David Ritchie, Economic/Development – Proxy to John Hemsted
Jeff Hamelin, Municipal Sector
Karen Koornneef, Public Sector

1. Election of Acting Chair

Lynn Dollin's appointment as Chair of the South Georgian Bay – Lake Simcoe Source Protection Region Source Protection Committee expired on August 20, 2025. The position requires an Acting Chair until such time as the Minister of the Environment, Conservation and Parks appoints a Chair, who must be appointed from Members of the Source Protection Committee.

Geoff Allen nominated Peter Dance for the position of Acting Chair. Nominations were called and no further nominations were put forward.

Moved by: David Ketcheson
Seconded by: John Hemstead

SPC-14-25 **Resolved That** the nominations for the position of Acting Chair by closed; and

Further That Peter Dance be appointed Acting Chair of the South Georgian Bay – Lake Simcoe Source Protection Region Source Protection Committee for the period from October 16, 2025, until such time as the Minister of the Environment, Conservation and Parks appoints a Chair. **Carried**

Peter Dance accepted the nomination for the position of Acting Chair.

Acting Chair Peter Dance assumed the Chair at 1:08 pm.

2. Land Acknowledgement

Bill Thompson recited the Acknowledgement of Indigenous Territory.

3. Declaration of Pecuniary Interest and Conflict of Interest

None declared.

4. Approval of Agenda

Moved by: Cate Root
Seconded by: Chris Gerrits

SPC-15-25 **Resolved That** the agenda for the October 16, 2025 meeting of the Source Protection Committee (SPC) be approved as presented. **Carried**

5. Adoption of Minutes

Moved by: Rick Newlove
Seconded by: Bob Duncanson

SPC-16-25 **Resolved That** the minutes of the June 12, 2025 meeting of the Source Protection Committee be approved as circulated. **Carried**

6. Announcements

a) Lynn Dollin's term ended in August. She has advised the Ministry that she is interested in being reappointed. The Minister will get to the appointment in due course.
b) Introduction of Chloe Zhang who is the new Hydrogeologist at Lake Simcoe Region Conservation Authority.
c) Amanda Kellett has taken a change in her career and is no longer able to represent the Economic Sector, so the position is vacant.
d) For those with terms ending at the end of this year, the deadline for applications is October 18th.
e) Bill to circulate material to the Committee from a webinar related to road salt, liability and water quality, led by Burlington Water Watch. They are advocating for similar changes as we are around liability for contractors applying salt.

7. Deputations

There were none.

8. Presentations

a) A presentation by Lloyd Lemon, Lloyd Lemon Geoscience Consulting, regarding Staff Report SPC2.1 - Cannington Drinking Water Supply Nitrate WHPA-ICA and WHPA-E Assessment.

Link to the presentation – Cannington Drinking Water Supply Nitrate WHPA-ICA and WHPA-E Assessment

QUESTIONS AND COMMENTS

Colin Elliott: Was the surface water around well 8 tested?

Lloyd advised it was not tested.

Rick Newlove: Why would the municipality not purchase the adjacent land? Suggested that the municipality could negotiate with the landowner and say that can likely develop it if the municipality gets the other land and fixes the wells. This might be the cheapest route for the municipality to go. With the shallow nature how are they putting basements in; will they blast the rock out?

Shelly advised the landowner wants to develop the lands, so the municipality is trying to lease the land so that the landowner is compensated until he can develop it. Development has been delayed as we are not able to get enough water to this area. Lloyd advised that the soils are very shallow in this area, less than 3m deep; they are saturated with clay and when they excavate these drainage networks through there they are getting most of the top of the rock. This is part of Lloyd's concern about the

sensitivite of this area. In terms of blasting rock out. Lloyd confirmed that the rock is not that high, but it has been artificially drained for years.

Jessica Neto: What is the monitoring well network that is south of this area, and do you have anything lower and more south to see what the concentration of nitrate is from the farms? Will farmers south of this land see the nitrate issue shifted to their land?

Lloyd advised there is a monitoring network around all of the wells that extends well beyond the well fields, but there is definitely some error. This is part of what the municipality is looking at; what can we do with the monitoring well network to help support demonstrating that this has been effective. Lloyd advised that this area is unique as it is a basin, and all of the water from the highland comes up and this creek helps intercept the groundwater flow from the highland. It is obvious when you look at the monitoring results of where things go. The only way for this water to get to there is to go all the way down and come back up.

Colin Elliott: What is the concentration of nitrate in the two new wells that are not online yet? Are these 2 wells not more affected by the sewage systems than agriculture? The farmers are an easy one to blame.

Lloyd indicated the concentration is 4 to 4.5 mg/L. Lloyd responded that they are not likely affected by the local sewage systems, but it is possible.

Chris Gerrits: Why was well 6 decommissioned, and how is the nitrate? How old are wells 6 and 8? Well 6 was abandoned within the pumphouse but the pumphouse is still there. Were the wells not created without the current standards of minimum casing? Is well 6 providing a conduit?

Lloyd advised that well 6 is a GUDI well and the nitrate concentration was part of the problem. Lloyd advised the top of the rock is less than 6m below top of grade. Well 8 age – approximately 1971; well 6 is older. Lloyd confirmed the pumphouse is still the treatment system for wells 4 and 5. Lloyd advised that decomissioned well 6 was propoerly sealed during decomission and there are not concerns around the well casing,

John Hemsted: Well's 9 and 10 are a significant distance away from sewage problems. In the Arena Field well, was there not a DNAPL problem? It would be helpful if you could show the topography of the area.

Lloyd confirmed there has been a DNAPL problem and there are still trace amounts detected but nothing new. Lloyd commented that this is a very significant high ground which is a lot of the reason why they felt they could limit the extent of the ICA to 5 years. Some of these are questions that came back from MECP and is why they set on the 5 year limit.

David Ketcheson: There was a jump in nitrate levels in 2015 at the original and gravel pit wellfields, whereas there was a decreasing trend from 2005 - 2015. Was it figured out why? The downward trend may have resulted from farmers using minimal amounts of fertilizer due to an increase in fertilizer costs and farming practices. Why then did it increase?

Lloyd indicated they have not determined what caused this increase. The assumption is that it has something to do with the lands to the south. The decreasing trend through 2010 occurred in both wellfields. Lloyd indicated that is why the increase is less important than the issues of can we do something about it and will those things work. David Ketcheson responded that if you understand why it is increasing, then you can put policies in place to mitigate it. If you do not know why then you do not know if the policies implemented will be effective or not.

Cate Root: When wells 9 and 10 become active, can well 8 be removed altogether? How often were you monitoring?

Lloyd advised well 8 is still the largest producing well, so the hope is that by changing the patterns and adding wells 9 and 10, there will be a reduction in pumping of water from well 8, which hopefully will change the nitrate levels. Shelly advised monitoring is pretty constant. They are monitoring wells monthly with a real time analyzer that measures hourly.

Jessica Neto: Is there anything to help figure out why there is an increasing trend on both sides of Cannington? Are we just assuming it is from agriculture? It is odd that they are both almost the same.

Lloyd advised that the two things the systems have in common are the amount of agricultural land. There have not been any substantial increases in development or land changes.

Chris Gerrits: It is unusual to have all the wells come online at the same time? Is there consideration for changing how the system operates to draw in better quality of water.

Shelly believes the operation has adjusted so that well 8 does not come on when levels reach 8 mg/L, but the levels are still going up.

Geoff Allen: When all the wells operate at once, is the water from well 8 being diluted?

Lloyd advised it is mixed in the same standpipe. The well water being consumed is still safe, even when well 8 is high.

David Ketcheson: Is climate change an issue?

Lloyd believes David Ketcheson's previous comment about costs of fertilizer is more accurate. Lloyd reviewed precipitation values and there was no correlation between rainfall and nitrate levels.

Peter Dance: Did you try to quantify nitrate sources based on landuses?

Lloyd advised that no mass balance concentration reviews were done. In this area there are very few sewage systems, and the amount per person per day is probably very low compared to amount per tonne of fertilizer being added.

Colin Elliott: What is the nitrate concentration in the drinking water?

Greg advised they did some sampling around town and the average coming out of the standpipe is around 3 to 4 mg/L. The mixing is part of the reason the wells are run all at once rather than sequentially.

Moved by: Jessica Neto
Seconded by: Rick Newlove

SPC-17-25 **Resolved That** presentation a) and Staff Report SPC2.1 regarding the Cannington Drinking Water Supply Nitrate WHPA-ICA and WHPA-E Assessment be received for information. **Carried**

b) A presentation by Bill Thompson, LSRCA, regarding Staff Report SPC2.2 – Policy Options to Address Nitrate Threats in the New WHPA-ICA (Nitrate) in the Community of Cannington.

Link to the presentation – Policy Options to Address Nitrate Threats in the New WHPA-ICA (Nitrate) in the Community of Cannington

QUESTIONS AND COMMENTS

Colin Elliott: Can you give us an idea of the type of farming practices in Cannington? Are the farming practices the same as large, 100-acre farms?

John Hemsted advised it is small parcels due to the topography, with steep changes in topography. Yes, the farming practices are pretty much the same.

David Ketcheson: How much time do we have? We know it took a long time to do risk management plans (RMP), so to complete 953 RMPs, it will likely take years. In four years time how high will the nitrate be, by the time we start implementing the RMPs? In Lafontaine we are seeing positive effects, and how long did this take, which would give us a rough idea of how much time we have? Getting policies implemented in a timely manner will be tough. Was the timing considered with the policy recommendations put forward? If we put an ICA on the lands, would subdivision development be prohibited until the ICA is taken off?

Bill advised it will not be 953 RMPs as some will be septic inspections. The required timeline is 5 years, which will be a push to complete. The risk management official (RMO) can focus on properties with the larger risks. Lafontaine policies came into effect

in 2016, and we are seeing improvements in 10 years, although some changes pre-dated the RMPs. Bill advised that there is a lag in timing. Shelly advised the policy would not prohibit septics, only the WHPA-A, so the landowner can still put septics in, however he would still have to show that background nitrate is below 10, which is it not, so regardless of the source protection policy he would not be permitted to go on septic The landowner is holding off as he is waiting for connection to the sanitary system so he can put more homes in.

Jessica Neto: With the Lafontaine policies put in place, what was the response by the farming community and the effects on their livelihoods?

Melissa advised the Lafontaine and Cannington ones are almost switched in terms of farmers vs residents affected. Their livelihood was not affected as most of the farmers had already changed their practices, so the focus was on record keeping of these changes. It takes a lot more time to develop the RMPs with the agricultural community. Julie advised it was not just focussed on the agricultural community as it was anything that contributed nitrate eg. lawn fertilizer on private and public lands. Working with homeowners on their lands proved more difficult than working with farmers. Bill confirmed that any commercial and residential use of fertilizer would be prohibited.

David Ketcheson: If this does not work, what is the alternative for this community? Sometimes it takes years to implement the alternative and to get through the approvals process. Are you hoping for the best and preparing for the worst - a continued increase in nitrate levels? If it will take a long time, does an alternative need to start being worked on now, just in case?

Shelly advised that the EA for wells 9 and 10 began in 2011 but the process has yet to be completed so they are still not online. As a result Durham is exploring all avenues.

Rick Newlove: How close is municipal drinking water, and can they not tie into this system?

Greg advised Beaverton is the closest community but they do not have capacity to take on Cannington. They are looking at further options for blending some of the water before it gets into the distribution system, before it gets to the first customer, which would give the ability to lower the levels and keep the well online.

Cate Root: If the well was on a hill rather than in a basin would that affect it? If there was a well on the far side, on the top of the hill, what would happen? Is there a sewage system in Cannington or is it all septic?

Lloyd advised the Gravel Pit well is on higher ground, and the Arena Field well is in part of the basin for the Beaver River. The groundwater and bedrock are under pressure, and every time the well is turned on it goes down, which is very concerning. It is a very small part of the entire catch basin. Many studies have been done to locate water, and if you

went to the far side on top of a hill there would not be water. If you drilled down to 15m to look for water in the bedrock there would not be any water. The community has water and there is wastewater services to some subdivisions, but private septics elsewhere.

Melissa advised that Tiny Township levels has gone above 10 mg/L if nitrate, and when this happens they have gone to a blended system. They need to provide notice when this happens so they have to go door-to-door and provide bottled water until the nitrate levels go down.

Rick Newlove: Have you looked at more storage systems so that you pump when the nitrates are low?

Greg advised that to build a larger storage container they would lose chlorine residual, which may cause issues like biofowling from stagnate water.

Jessica Neto: Have you found any relationship for the cyclical nature of the levels?

Lloyd advised that no relationship has been found. Greg confirmed that levels are highest from August throughout the winter, which Lloyd indicated is probably related to recharge.

Moved by: Stephaine Hobbs
Seconded by: Cate Root

SPC-18-25 **Resolved That** presentation b) and Staff Report 2.2 regarding Policy Options to Address Nitrate Threats in the New WHPA-ICA (Nitrate) in the Community of Cannington be received for information; and

Further That policies FERT(ICA)-1 through FERT(ICA)-4 and ASM(ICA)-1 through ASM(ICA)-4 be amended to apply to the Cannington Issue Contributing Area; and

Further That policies FERT(ICA)-1 through FERT(ICA)-4 and ASM(ICA)-1 through ASM(ICA)-4 be further amended to prohibit the application or storage of agricultural source material or commercial fertilizer in the WHPA-E of the Cannington Issue Contributing Area; and

Further That the South Georgian Bay Lake Simcoe Source Protection Committee agree that the proposed amendments to the Source Protection Plan and the Durham Region chapter of the Assessment Report are advisable. **Carried**

c) A presentation by Shelly Cuddy, Durham Region, regarding Staff Report SPC2.3 regarding Source Protection Plan and Assessment Report Update – Technical Report in Support of the Sunderland s.34 WHPA Update.

Link to the presentation – Source Protection Plan and Assessment Report Update – Technical Report in Support of the Sunderland s.34 WHPA Update

QUESTIONS AND COMMENTS

David Ketcheson: Why is it expected that well 4 is not going to sand in like well 3 did?

Shelly advised that well 3 was designed in an emergency and test capacity. It was not designed for long term use. Well 4 is being designed for long term use.

Moved by: John Hemsted
Seconded by: Jessica Neto

SPC-19-25 **Resolved That** presentation c) and Staff Report SPC2.3 regarding Source Protection Plan and Assessment Report Update – Technical Report in Support of the Sunderland s.34 WHPA Update be received for information. **Carried**

d) A presentation by Bill Thompson, LSRCA, regarding Staff Report SPC2.4 – Policy Implications of the Change to Vulnerable Area Mapping at the Sunderland Drinking Water System.

Link to the presentation – Policy Implications of the Change to Vulnerable Area Mapping at the Sunderland Drinking Water System

QUESTIONS AND COMMENTS

Chris Gerrits: At the appropriate time, it would be good to let the Ministry know that amendments like this are not a good use of time. They are an administrative change, but there currently is no mechanism to make these simple changes. Lake Erie SPC has already drafted something highlighting this inefficiency, so perhaps it can be reviewed and a recommendation be brought back at another meeting.

Bill agrees that some amendments are a bookkeeping exercise. Recommendations have been made to the Ministry on ways to streamline. A comment can be included in the cover letter to the Ministry indicating this is not a good use of time.

Moved by: Rick Newlove
Seconded by: Chris Gerrits

SPC-20-25 **Resolved That** presentation d) and Staff Report SPC2.4 regarding Policy Implications of the Change to Vulnerable Area Mapping at the Sunderland Drinking Water System be received for information; and

Further That the South Georgian Bay - Lake Simcoe Source Protection Committee agree that the proposed amendments to the Durham Region chapter of the Assessment Report are advisable. **Carried**

Staff is directed to draft a letter to the Ministry with the Committee's recommendation to streamline housekeeping amendments, and report back to the committee with the draft letter.

Colin Elliott: Advised that he likes these recommendations being brought to the Committee.

Peter Dance indicated there can be two parts of the process. The idea is that staff not go through the time consuming process for these bookkeeping amendments, but will still report to the committee on the changes. Bill to report back on the draft letter.

e) A presentation by Bill Thompson, LSRCA, regarding Staff Report SPC2.5 - Source Protection Plan and Assessment Report Update – Technical Report in Support of the Woods of Manilla s.34 WHPA Update.

Link to the presentation – Source Protection Plan and Assessment Report Update – Technical Report in Support of the Woods of Manilla s.34 WHPA Update

QUESTIONS AND COMMENTS

Peter Dance: Advised he appreciates we are working with a neighbouring source protection authority and not duplicating work. This well change is not trival whereas the previous one was, so this speaks to the challenge in determining an effective process.

Chris Gerrits advised that this is not a replacement well but adding a new well onto a property. Bill advised that this is the headwaters of the aquifer, so a small change can have a significant impact on the change in shape of the WHPA.

Moved by: Geoff Allen
Seconded by: Cate Root

SPC-21-25 **Resolved That** presentation e) and Staff Report SPC2.5 regarding Source Protection Plan and Assessment Report Update – Technical Report in Support of the Woods of Manilla s.34 WHPA Update be received for information; and

Further That the South Georgian Bay - Lake Simcoe Source Protection Committee agree that the proposed amendments to the Kawartha Lakes chapter of the Assessment Report are advisable. **Carried**

f) A presentation by Bill Thompson, LSRCA, regarding Staff Report SPC2.6 - Update on Nitrate in Raw Water at Midhurst Valley Drinking Water System (Springwater Township).

Link to the presentation – Update on Nitrate in Raw Water at Midhurst Valley Drinking Water System (Springwater Township)

QUESTIONS AND COMMENTS

Colin Elliott: The first well is 400 feet, is the 2nd one 400 feet as well? Less than a kilometre to the east there was a chemical spill about 12 years ago, and the people along that road are getting supplied with water as they cannot use their wells. How do they blame it on agriculture at 400 feet? It will not be for long as they are building houses over most of it.

Bill believes it is 400 feet but will get back to Colin to confirm. Bill does not know a lot about that spill so will discuss with Colin offline. Bill did advise that the only thing we are seeing with that well today is nitrate and there are no other contaminants. David Ketcheson will provide a report on this to Bill.

Cate Root: They are treating the water and it is safe. Why can they not treat the Cannington water?

Bill advised they can treat the water, but it is very costly. The Midhurst Valley treatment is new technology, but Durham can look into a similar treatment.

David Ketcheson: In an ideal world, can you do more frequent sampling and see if there is greater variability in the levels?

Bill advised there is an autosampler on the well, but they were having technical issues with it for the first year it was in operation, so the data is messy. The data provided here is more accurate. Springwater samples every minute, and if the highest point of concentration was pulled out for every day it is a really straight line. Bill will circulate the data on this.

Jessica Neto: Are there agricultural operations in this area? Should we see a reduction in nitrate due to the minimal agricultural land use.

Bill advised the amount of agriculture in the area is minimal, as much of this area is developed. Colin Elliott confirmed there are 300 homes. The earliest data Bill has seen for this area is from 2014, and it is about the same as it is today, but is slightly lower so believes we are not seeing active sources of nitrate but instead historical nitrate that will be in the aquitard for some time. Peter Dance added that it takes time for the water to travel to the depth so you will not see a change for some time. Bill confirmed that since we have not seen a change in 11 years, it could be decades before we see a reduction. Ian pointed out there are 2 provincial groundwater wells within the WHPA-D along Snow Valley Road, and there are no nitrate issues there, so where ever the nitrate is coming from it is not from that direction of travel.

Moved by: John Hemsted
Seconded by: Colin Elliott

SPC-22-25 **Resolved That** presentation f) and Staff Report SPC2.6 regarding Update on Nitrate in Raw Water at Midhurst Valley Drinking Water System (Springwater Township) be received for information. **Carried**

g) A presentation by Mystaya Touw, LSRCA, regarding Staff Report SPC2.7 – Update on Stormwater Approvals - EASR.

Link to the presentation – Update on Stormwater Approvals – EASR

QUESTIONS AND COMMENTS

David Ketcheson: On the removal, do we have any RMPs for stormwater in place?

Mystaya advised we do not yet because we were planning to add this policy in the section 36 update so it is not officially in the source protection plan. There are no existing facilities with risk management plans.

Moved by: Rick Newlove
Seconded by: Katie Thompson

SPC-23-25 **Resolved That** presentation g) and Staff Report SPC2.7 regarding Update on Stormwater Approvals - EASR be received for information; and

Further That the policy recommendations to add policy MON-7 and remove and replace policy SEWG(a)-2 be approved. **Carried**

9. Determination of Items Requiring Separate Discussion

No items were identified under items requiring separate discussion.

10. Adoption of Items Not Requiring Separate Discussion

No items were identified under items not requiring separate discussion.

11. Consideration of Items Requiring Separate Discussion

There were no items requiring separate discussion.

12. Other Business

a) Peter Dance: Requests that staff come back with respect to the Cannington situation with notes on Education, and for the RMPs - timelines, fairness, priorities, so we understand what that means and understand the resources it is taking and have thought about what it is going to take to make a difference quickly, in the broader context of our discussion earlier on efficiency.

b) Stephanie Hobbs: Has there been any discussion among source protection authority staff or committees on the proposed changes on Regulations for Permits to Take Water (PTTW)? They are making it easier for people to re-enact a previously revoked approval. In the original posting they proposed that when you transfer your property the PTTW would automatically be transferred, yet nobody would know what the new owner was doing, but this part has been removed and is not being included. Bill advised that there

has been discussion, particularly about lapsed permits. There was some discussion, particulary around the point of transferring permits. Through the Environmental Registry of Ontario (ERO) some concerns were flagged at the staff level. Bill was not aware that a decision has been made so he will review it. The legislation has not been enacted yet. If a permit has been revoked you can reapply within a year, but not sure how rigid they are on reissuance. That was the nature of the staff comments as sometimes there is a reason for the revokation, where other times it may be fine. David Ketcheson commented that if we have a WHPA-Q1 or WHPA-Q2 and a permit has been revoked prior to the application for WHPA-Q1 or 2, but on reissuance it may cause issues, which is a problem. The Committee directs staff to review those types of situations that may affect source water policies and report back.

13. Closed Session

None.

14. Next Meeting and Adjournment

Moved by: Jessica Neto
Seconded by: Chris Gerrits

SPC-24-25 **Resolved That** the next meeting of the Source Protection Committee scheduled to be held on Thursday, December 11, 2025 from 1-4 pm virtually via Zoom; and

Further that the October 16, 2025 meeting of the Source Protection Committee be adjourned at 3:40 pm. **Carried**

Source Protection Committee Meeting SPC-04-2025

Staff Report Number: SPC2.1

To: South Georgian Bay Lake Simcoe Source Protection Committee

From: Sheri Steiginga, Source Water Coordinator, Nottawasaga Valley Conservation Authority

Date: December 11, 2025

Subject: Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 23, 2025

Recommendations:

That presentation b) and Staff Report SPC2.1 regarding Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 23, 2025 be received for information.

Purpose of Staff Report:

The purpose of this staff report is to provide an overview of the technical report prepared by Lloyd Lemon Geoscience Consulting to document proposed updates to the wellhead protection areas for the community of Alliston in the Town of New Tecumseth.

Background:

The Town of New Tecumseth contracted the team of R.V. Anderson Associates Limited, International Water Supply Ltd., and GAMAN Consultants Inc. to undertake a groundwater well optimization and expansion study to identify opportunities to gain increased groundwater supply capacity at the Town's existing well sites in 2022.

The Alliston well water supply system currently consists of seven municipal supply wells (Well 1, Well 4, Well 5, Well 6, Well 7, Well 8 & the Hillcrest Well). A summary of the construction of these wells is described in Chapter 14.3 of the Assessment Report for the Town of New Tecumseth.

Since 2022, the RV Anderson team has carried out studies to evaluate the capacity of the existing well systems and to prepare an implementation plan to provide additional service

capacity from the groundwater system to meet future needs of the Town of New Tecumseth. This work included:

- A 72-hour pumping test of Well 1, Well 4, Well 5, Well 6, and Well 8 from October 24 to October 27, 2022 at a combined average pumping rate of 9,523 L/min [899 L/min higher than the combined permitted rate (a temporary Permit-To-Take-Water was obtained to allow this increased taking for hydraulic testing)] (GAMAN Consultants Inc., 2023a).
- A 32-day pumping test of the same wells between July 7 and August 8, 2023, at a combined average pumping rate of 7,784 L/min [840 L/min lower than the combined permitted rate] (GAMAN Consultants Inc., 2023b).

The implementation plan prepared by RV Anderson in 2023 included the following recommendations to increase the firm capacity of the Alliston well water supply system:

1. To increase the permitted capacity of Well 7 to 2,160 m^3/day so as to increase the firm capacity of the system by 196 m^3/day.
2. Construct a new stand-by well adjacent to Well 4 and Well 6 (to be named Well 9) and a new stand-by well adjacent to Well 5 (to be named Well 10) to increase firm capacity of the system by 2,938 m^3/day. See Appendix A.

Subsequent to 2023, the RV Anderson team has carried out the following additional studies:

- Hydraulic Assessment of Well 7 (GAMAN Consultants Inc., 2025a) to provide technical support that the pumping rate on Well 7 could be increased.
- Construction and testing of Well 9 and Well 10 (GAMAN Consultants Inc., 2025b) to document the work to install and test new proposed supply Well 9 and Well 10.
- Hydraulic testing of Well 6 and Well 9 to confirm potential to support a seasonal increase in pumping rates to address a shortcoming in the tested capacity of Well 10.

The locations of the existing and proposed municipal water supply wells for the Alliston well water supply system are shown in Figure 1 (Appendix A).

Representatives of the Nottawasaga Valley Source Protection Authority and the Lake Simcoe Source Protection Authority were consulted in 2023 and identified that the addition of new wells and changes to the pumping rates at Well 7 would require an update to the Assessment Report for the Nottawasaga Valley Source Protection Area (2015 amended to 2024) and the Source Protection Plan for the South Georgian Bay Lake Simcoe Source

Protection Region (2015 amended to 2024) to reflect proposed changes to the Alliston well water supply system.

Updates to Assessment Report:

Lloyd Lemon Geoscience Consulting was subcontracted by RV Anderson (via GAMAN Consultants Inc.) to oversee work to update the technical studies required to update Chapter 14 (New Tecumseth) of the Assessment Report (Nottawasaga Valley Source Protection Authority, 2024) to reflect proposed changes to the Alliston well water supply system. RV Anderson also contracted S.S. Papadopulos and Associates Inc. to provide technical support to construct, calibrate and apply a numerical groundwater flow model to delineate capture zones for the Alliston well water supply system that can be used to update the wellhead protection areas. Technical staff from RV Anderson provided support to Lloyd Lemon Geoscience Consulting in creating the required maps and tables as required by the *Clean Water Act, 2006* as outlined in the Technical Rules: Assessment Report (Ministry of the Environment, Conservation and Parks, 2021).

The two principal elements of the updates to the Assessment Report included: 1) an update to the Vulnerability Assessment to delineate proposed wellhead protection areas and vulnerability scores and demonstrate that these are appropriate, and 2) an update to the enumeration of significant drinking water threats relative to the proposed wellhead protection areas.

S.S. Papadopulos and Associates Inc. prepared “The Analysis of the Alliston Municipal Groundwater Supplies” in 2025 to document work to construct and calibrate a numerical groundwater flow model to update the wellhead protection areas. The original groundwater model used by Golder Associates Limited and Waterloo Hydrogeologic Inc. (2004) was not available. S.S. Papadopulos and Associates Inc. were able to obtain regional hydrostratigraphic surfaces that evolved from the Golder/WHI (2004) surfaces from the Oak Ridges Moraine Groundwater Project. S.S. Papadopulos and Associates Inc. constructed a new 3-dimensional finite-difference numerical groundwater flow model that reflected the model boundaries used in 2004. The aquifer properties were assigned by S.S. Papadopulos and Associates Inc. and then refined through an extensive calibration process to reproduce regional static groundwater elevation data and also groundwater elevation response from the pumping tests performed by GAMAN Consultants Inc. (2023, 2025).

S.S. Papadopulos and Associates Inc. first demonstrated that the updated numerical model could reasonably reproduce the WHPA delineated by Golder/WHI in 2004. While

there were some differences in the outputs, the new model is considered to reasonably reflect the groundwater flow patterns.

The next step in the process was to determine the appropriate pumping rates to be used to delineate the proposed wellhead protection area (WHPA). The 2004 model used an average pumping rate (2001) and also delineated a 10-year time-of-travel zone that is incorporated into the Assessment Report as a WHPA-C1. As per discussions with the Nottawasaga Valley Source Protection Authority, the updated WHPA is to be based on permitted pumping rates and is to delineate the 5-year time-of-travel zone to be included as WHPA-C, consistent with the current Technical Rules. The Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System (Lloyd Lemon Geoscience Consulting, 2025) includes draft illustrations of options for wellhead protection areas based on different pumping rate scenarios.

Figure 2 (Appendix A) illustrates the existing WHPA for the Alliston well water supply system from the approved Assessment Report. Figure 3 illustrates the proposed WHPA based on the permitted pumping rates (adapted from Lloyd Lemon Geoscience Consulting, 2025). The proposed WHPA reflects the combined results of four model scenarios to reflect the maximum capture area for the wells in relation to alternating pumping at the proposed higher seasonal rates at Well 6 and Well 9. The higher seasonal rates are required for a 45-day period to provide the required firm capacity for the Alliston well water supply system.

The regional groundwater vulnerability mapping prepared by GENIVAR (2010b) was used by RV Anderson/Lloyd Lemon Geoscience Consulting to assign vulnerability scores for the updated WHPA. The regional vulnerability of the water supply aquifers beneath most of the proposed WHPA is low, with small areas of medium vulnerability identified on the western margins of the proposed WHPA for Well 1/Hillcrest Well. This is consistent with the current vulnerability as per the Assessment Report. Increases to the groundwater vulnerability due to transport pathways were performed based on water well records identified to intersect the deep aquifer layers. The vulnerability scores were then assigned as per the Technical Rules as per Figure 4 (Appendix A).

An uncertainty rating for the Alliston well water supply system of *High* was assigned by Lloyd Lemon Geoscience Consulting (2025). In this case, the uncertainty rating reflects to the limited data available to describe the subsurface aquifer systems and not the process or the effort undertaken to assess the groundwater vulnerability. A *High* uncertainty rating corresponds to a relatively low degree of confidence that characterization of the subsurface aquifer systems around the municipal water supply wells reflects the actual conditions.

Work to update the Drinking Water Issue Evaluation was not part of the scope of work for this updated Assessment of Drinking Water Threats (Lloyd Lemon Geoscience Consulting, 2025).

The Assessment of Drinking Water Threats was updated by Lloyd Lemon Geoscience Consulting, 2025 in accordance with the requirements of the Technical Rules: Assessment Report (Ministry Environment, Conservation and Parks, 2021). This work included preparing updated mapping of managed lands, livestock density, and impervious surfaces to be used in conjunction with the Table of Drinking Water Threats (Ministry Environment, Conservation and Parks, 2021) to identify activities that are or would be significant drinking water threats. Nottawasaga Valley Source Protection Authority has subsequently updated the submitted mapping of managed lands, livestock density, and impervious surfaces although this did not affect the enumeration of significant drinking water threats.

Implications of Proposed Assessment Report Updates:

The proposed WHPAs for the Alliston drinking water supply are considered to be more conservative than previous as they are now based on the permitted pumping rates (Appendix A – existing Figure 2, proposed Figure 3).

The proposed WHPAs now reflect the WHPA-C as the 5-year time-of-travel zone to replace the 10-year time-of-travel zone (WHPA-C1) in the Assessment Report. Generally, the 5-year time-of-travel zone is within the current WHPA-C1, however there are some areas where the updated WHPA-C extends outside of the existing WHPA-C1.

The risk management official for the Nottawasaga Valley Source Protection Authority provided RV Anderson/Lloyd Lemon Geoscience Consulting with information on the status of significant threat activities identified as per the Assessment Report. Lloyd Lemon Geoscience Consulting identified the following activities that remain to be assessed to confirm the presence of significant drinking water threats in the proposed WHPA (by Well/Wellfield):

Well name	Number of parcels and threat type
Well 1/Hillcrest Well	Four parcels located in Town of New Tecumseth identified for potential Handling and Storage of DNAPLs.
Well 4/Well 6/Well 9	One parcel located in the Town of New Tecumseth identified for potential Handling and Storage of DNAPLs.

Well name	Number of parcels and threat type
Well 5/Well 10	Four parcels identified for potential application of road salt
Well 7	No new activities
Well 8	Nine parcels for potential Handling and Storage of DNAPLs 17 parcels for potential application of road salt. Two parcels for potential private sewage systems.

Summary:

Lloyd Lemon Geoscience Consulting has prepared technical report entitled “Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System” on behalf of the Town of New Tecumseth on October 23, 2025. This report was prepared in compliance with the Technical Rules: Assessment Report.

Technical studies were carried out to obtain additional information documenting the capacity of the Alliston well water system and two new municipal wells (Well 9 and Well 10) have been installed to assist in providing firm capacity. In addition, the Town of New Tecumseth is also requesting an increased pumping rate for Well 7 and increased seasonal pumping rates for Wells 6 and Well 9 to support firm capacity.

The Technical Study documents work to create, calibrate and apply a new 3-dimensional groundwater flow model to delineate capture zones that are proposed as updated wellhead protection areas that reflect the proposed permitted pumping rates. As part of the process, the updated numerical model was first applied to demonstrate the ability of the model to satisfactorily reproduce the existing Approved wellhead protection areas.

There are some differences to the footprint of the updated wellhead protection areas relative to the approved WHPA. In some areas (particularly, Well 1, Hillcrest Well, and Well 8) the proposed WHPA are larger due to use of increased pumping rates. In other areas the proposed WHPA boundaries are shifted slightly and may incorporate some new parcels. The groundwater vulnerability rating is still considered to be low and uniform beneath the majority of the wellhead protection area footprint.

The use of increased pumping rates to delineate the proposed WHPA results in some new parcels being identified as having activities that could be a significant drinking water threat as per the Technical Rules. These parcels have been identified for the risk management official to investigate and take appropriate action (clear that activity is not a drinking water threat, demonstrate that other policies address the threat, or negotiate a risk management plan).

Recommendations:

It Is Therefore Recommended that presentation b) and Staff Report SPC2.1 regarding Updated Assessment of Drinking Water Threats – Alliston Well Water Supply System– Technical Report prepared by Lloyd Lemon Geoscience Consulting on behalf of the Town of New Tecumseth, October 13, 2025 be received for information.

Prepared by:

Sheri Steiginga, Source Water Coordinator, Nottawasaga Valley Conservation Authority

Recommended by:

Bill Thompson, Project Manager, Lake Simcoe Region Conservation Authority

Attachments: 2

Attachment 1

References:

GAMAN Consultants Inc., 2023a. 72-Hour Aquifer Test, Alliston Groundwater Optimization Study, prepared for RV Anderson Associates Limited, July 2023.

GAMAN Consultants Inc., 2023b. 32-Day Aquifer Test, Alliston Groundwater Optimization Study, prepared for RV Anderson Associates Limited, November 2023.

GAMAN Consultants Inc., 2025a. Alliston Well 7 PTTW Evaluation, Alliston Groundwater Optimization Study, prepared for RV Anderson Associates Limited, October 2025.

GAMAN Consultants Inc., 2025b. Construction, Development, and Testing – Alliston Wells 9 & 10, Alliston Groundwater Optimization Study, prepared for RV Anderson Associates Limited, October 2025.

GENIVAR Inc., 2010b. Delineation of Highly Vulnerable Aquifers (HVA)- South Georgian Bay-Lake Simcoe Source Protection Region

Golder Associates Limited and Waterloo Hydrogeologic Incorporated, 2004. South Simcoe Groundwater Study, Appendix J: Town of New Tecumseth Wellhead Protection Area Report, August 2004.

Ontario Ministry of the Environment, Conservation and Parks, 2021. 2021 Amendments to Technical Rules: Assessment Report - *Clean Water Act, 2006*. December 2021 (EBRO 019-2219) (https://www.ontario.ca/page/2021-technical-rules-under-clean-water-act).

Oak Ridges Moraine Groundwater Program (ORMGP), On-line Data Management System and Toolkit. https://www.oakridges.ca/

R.V. Anderson Associates Limited, 2023. Alliston Groundwater Optimization Study, Implementation Plan, Prepared for Town of New Tecumseth, November 2023.

South Georgian Bay-Lake Simcoe Source Protection Committee, 2015. Approved Assessment Report: Nottawasaga Valley Source Protection Area. (Amended to 2024).

South Georgian Bay-Lake Simcoe Source Protection Committee, 2015. Approved South Georgian Bay Lake Simcoe Source Protection Plan (Amended to 2024).

S.S. Papadopulos & Associates Inc., 2025. Analyses of the Alliston Municipal Groundwater Supplies – Final Report to: R.V. Anderson Associates and GAMAN Consultants Inc. for the Town of New Tecumseth Groundwater Optimization Phase 1.

Attachment 2

Appendix A - Figures

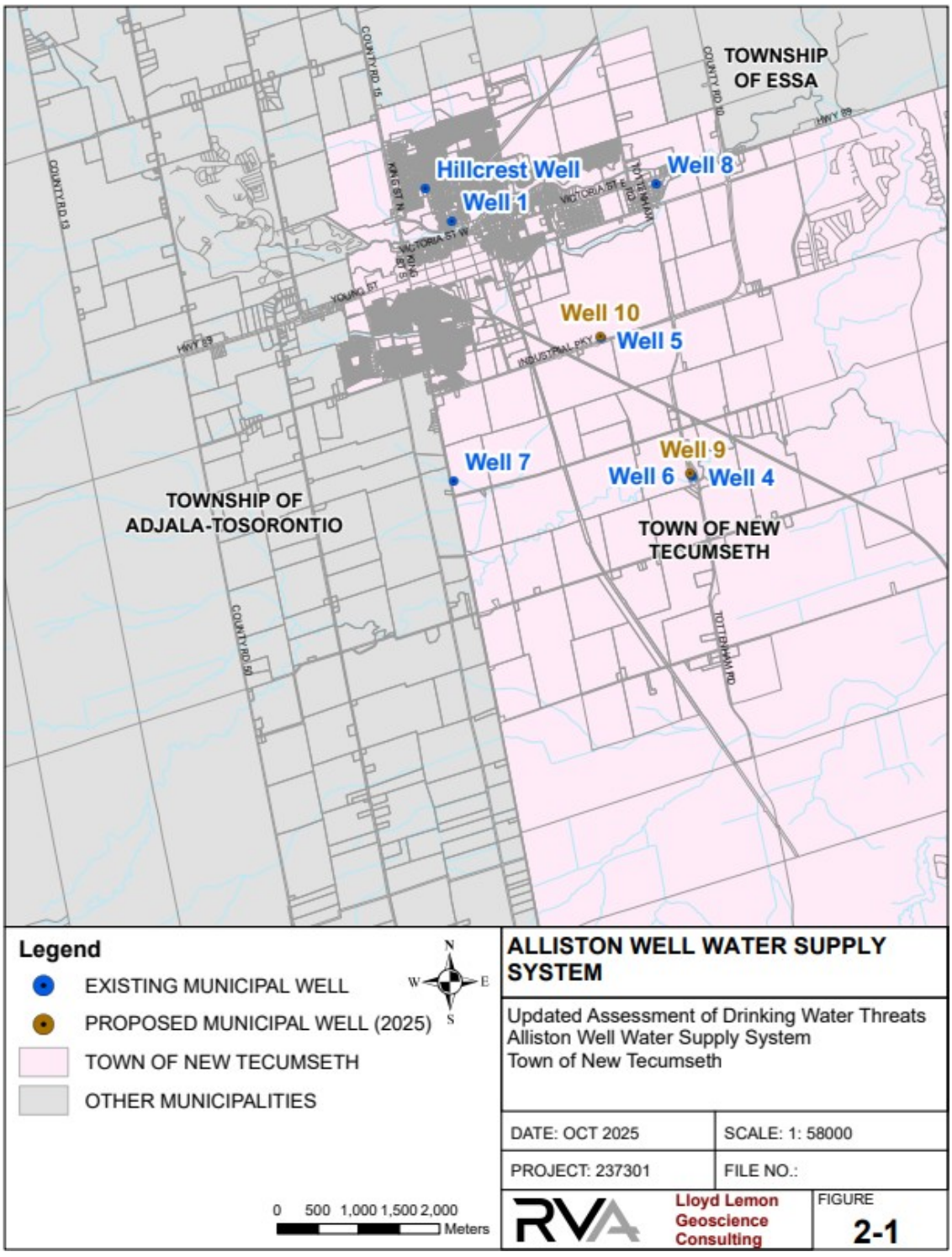

Figure 1 - Existing and proposed municipal wells, Alliston

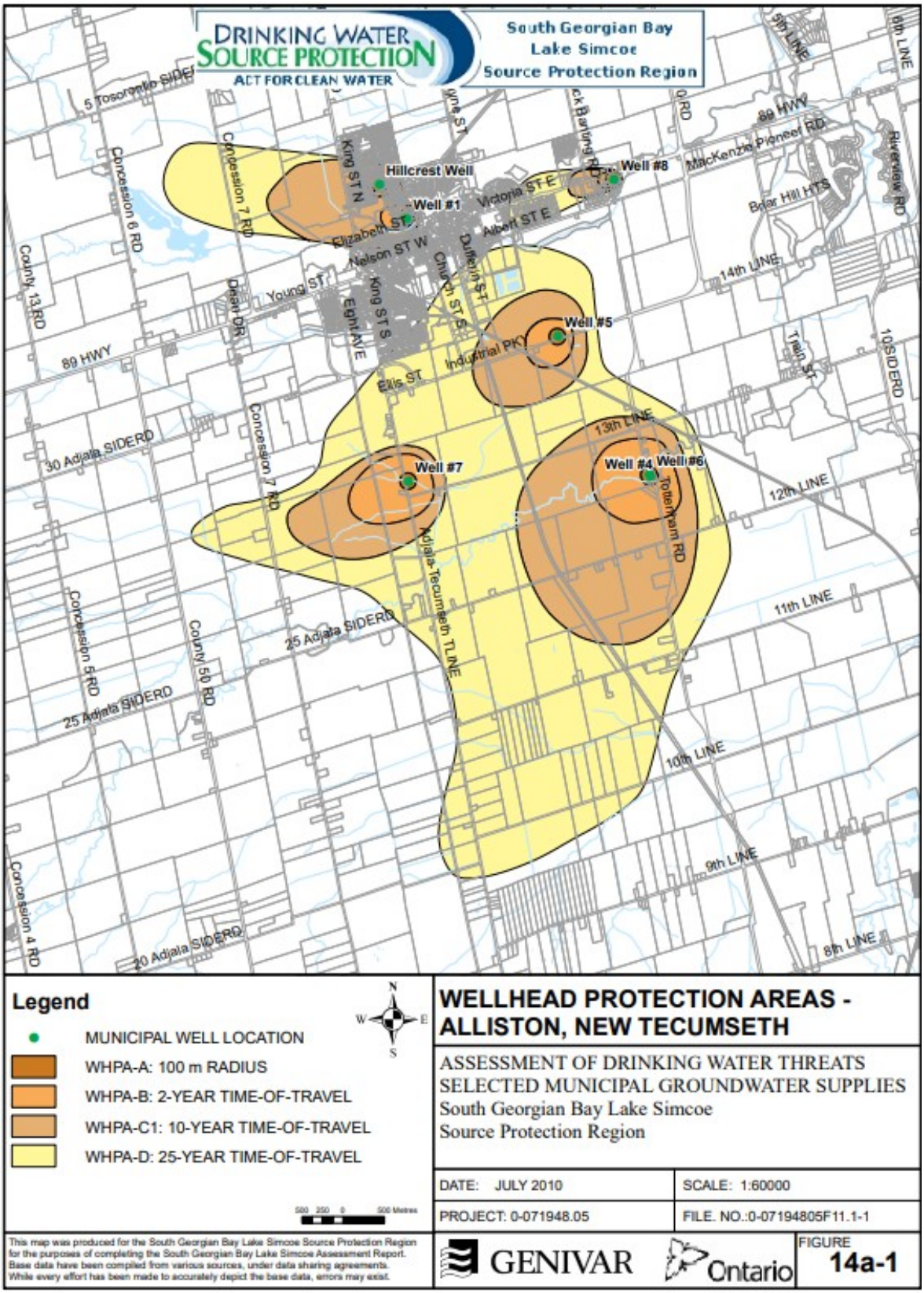

Figure 2 - Existing wellhead protection area, Alliston

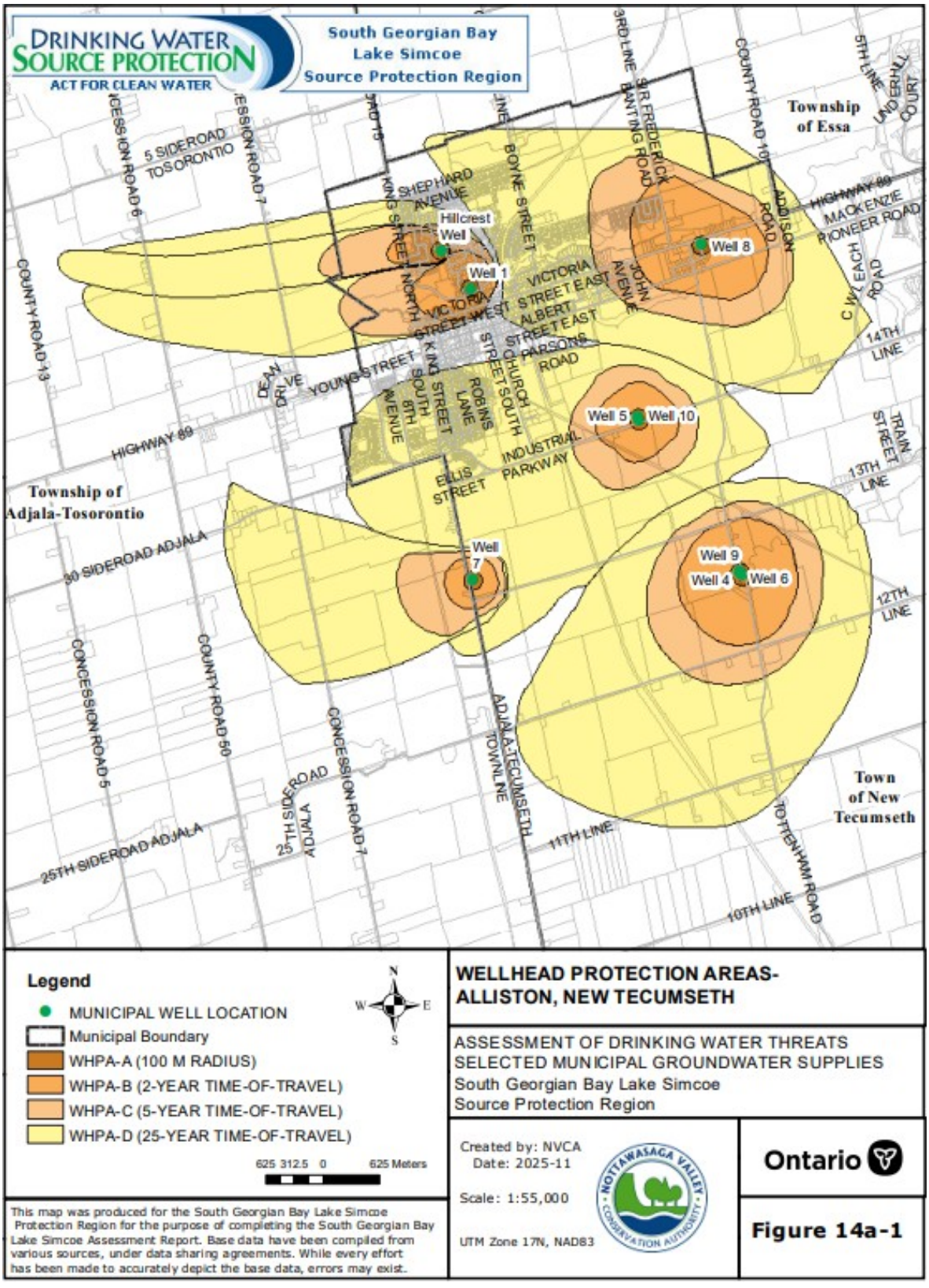

Figure 3 - Proposed wellhead protection area, Alliston

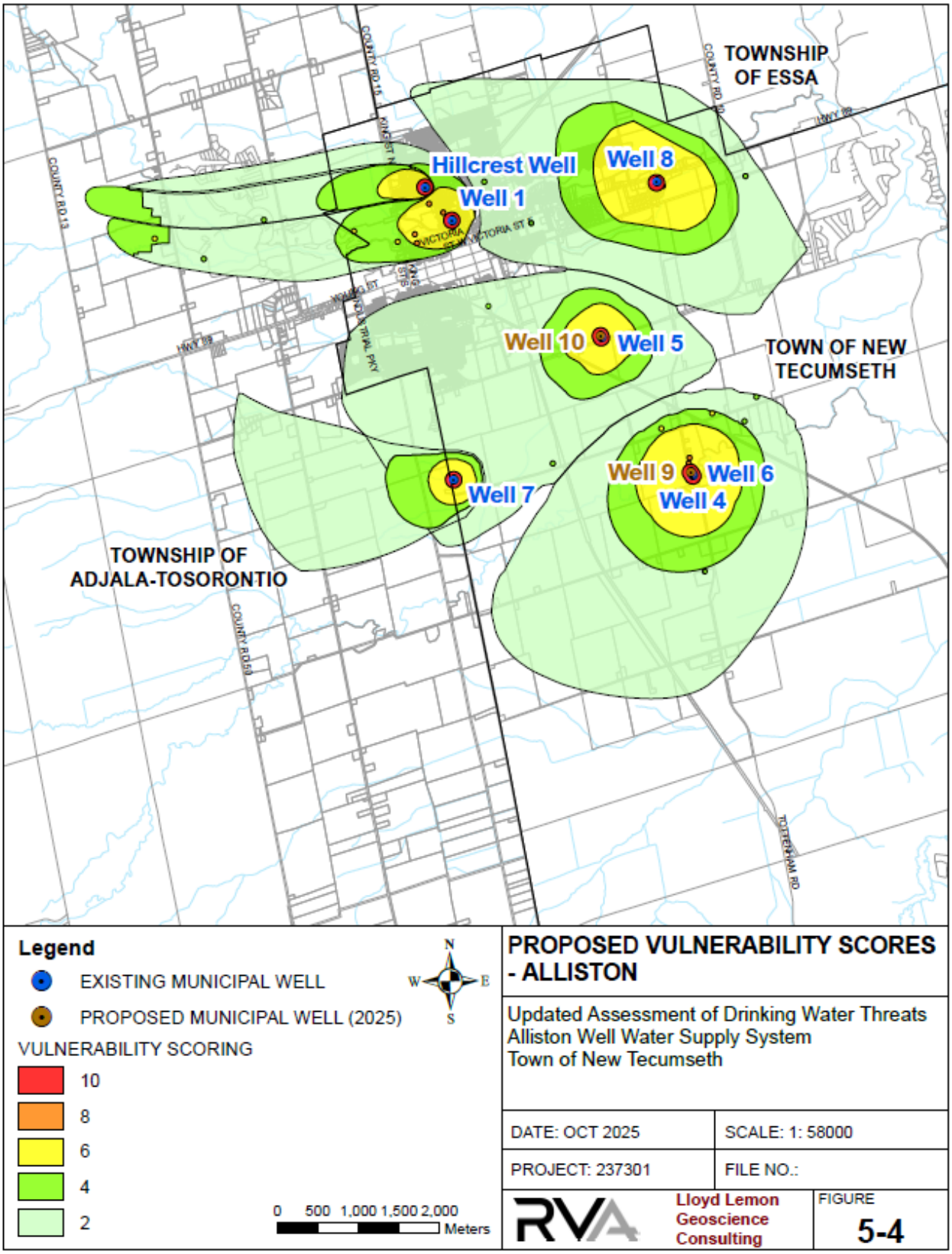

Figure 4 - Proposed Vulnerability Scores

Source Protection Committee Meeting SPC-04-2025

Staff Report Number: SPC2.2

To: South Georgian Bay Lake Simcoe Source Protection Committee

From: Sheri Steiginga, Source Water Coordinator

Date: December 11, 2025

Subject: Source Protection Plan and Assessment Report Update – Technical Report in support of the New Tecumseth (Alliston) S.34 WHPA update.

Recommendations:

That presentation c) and Staff Report SPC2.2 regarding Source Protection Plan and Assessment Report Update – Technical Report in support of the New Tecumseth (Alliston) S.34 WHPA update be received for information; and

Further That the South Georgian Bay - Lake Simcoe Source Protection Committee agree that the proposed amendments to the New Tecumseth chapter of the Assessment Report is advisable.

Purpose of Staff Report:

The purpose of this Staff Report is to provide an overview of the technical work completed to update the Alliston wellhead protection areas in support of the proposed amendments to the Source Protection Plan and the Township of New Tecumseth Assessment Report chapter.

Background:

The Assessment Report provides the technical foundation to the Source Protection Plan. It evaluates the vulnerability of municipal drinking water systems to contamination and identifies potential significant drinking water threat activities to which policies in the Source Protection Plan will apply.

The Town of New Tecumseth contracted the team of R.V. Anderson Associates Limited, International Water Supply Ltd, and GAMAN Consultants Inc. to undertake a Groundwater Well Optimization and Expansion Study to identify opportunities to gain increased groundwater supply capacity at the Town's existing well sites in 2022. The R.V. Anderson Team carried out extensive testing of the existing municipal water supply wells, and evaluation of future water supply requirements to prepare an Implementation Plan in 2023

that included the following recommendations to increase the firm capacity of the Alliston Well Water Supply System:

1. To increase the permitted capacity of Well 7 to 2,160 m^3/day so as to increase the firm capacity of the system by 196 m^3/day.
2. Construct a new stand-by well adjacent to Well 4 and Well 6 (to be named Well 9) and a new stand-by well adjacent to Well 5 (to be named Well 10) to increase firm capacity of the system by 2,938 m^3/day. See Appendix A.

The existing groundwater supply wells of the Alliston Drinking Water Supply System consists of seven municipal supply wells (Wells No 1,4,5,6,7,8 & Hillcrest Well). Details on the construction of these wells is described in Chapter 14.3 of the Approved Assessment Report for the Town of New Tecumseth.

Issues:

The approval of any new wells and/or changes to pumping rates is provided by the Ministry of Environment, Conservation and Parks through the Permit to Take Water, and Drinking Water Works License and Permit processes. It is the role of the Source Protection Committee and Source Protection Authority to ensure that vulnerable areas identified in the Assessment Report remain appropriate given the addition of new wells or change to pumping rates, and that Significant Drinking Water Threats remain addressed.

A groundwater study to evaluate and update the wellhead protection areas and vulnerability scores was completed by Lloyd Lemon Geoscience Consulting to assess the proposed changes to the Alliston Well Water Supply system. The updated wellhead protection areas (WHPA) for the Alliston Well Water Supply System are shown in Appendix A. The Proposed WHPA delineated for the Alliston Well Water Supply System reflect the regional groundwater flow directions from west to east within the Nottawasaga Valley Watershed. The overall vulnerability for the deep aquifers that supply water to Alliston is considered to be Low. The newly delineated WHPAs, including the two new wells, are overall larger and more far reaching.

Mapping of managed lands, livestock density, and impervious surfaces has been completed by Lloyd Lemon Geoscience Consulting along with threats enumeration to identify activities that are or would be significant drinking water threats.

Due to the proposed change in the WHPAs, additional activities that have the potential to be significant drinking water threats were identified, and shown below.

Well name	Number of parcels and threat type
Well 1/Hillcrest Well	Four parcels located in Town of New Tecumseth identified for potential Handling and Storage of DNAPLs.
Well 4/Well 6/Well 9	One parcel located in the Town of New Tecumseth identified for potential Handling and Storage of DNAPLs.
Well 5/Well 10	Four parcels identified for potential application of road salt
Well 7	No new activities
Well 8	Nine parcels for potential Handling and Storage of DNAPLs 17 parcels for potential application of road salt. Two parcels for potential private sewage systems.

Early engagement comments from the Ministry of the Environment, Conservation and Parks have not yet been received. Any comments will be reviewed and addressed as needed. If comments from the Ministry result in changes to WHPA delineation, these changes will be presented to the Committee before proceeding with any further steps in the approval process. Following review of this amendment by the Source Protection Committee, pre-consultation with implementing bodies, municipal endorsement and public consultation periods are to follow, after which the amendment will be submitted to the Ministry for approval.

Summary:

The *Safe Drinking Water Act* requires Source Protection Authorities to amend Source Protection Plans to ensure vulnerable areas around any such municipal drinking water systems are updated to address proposed changes including the addition of new wells or changes in pumping rates before proposed changes can be implemented. The technical work to delineate the revised wellhead protection areas for the Alliston Drinking Water Supply system, Township of New Tecumseth was completed by R.V. Anderson Associates & Lloyd Lemon Geoscience Consulting in 2025. The supplementary mapping of managed lands, livestock density, and impervious surfaces has been completed by Lloyd Lemon Geoscience Consulting and updated by the Nottawasaga Valley Conservation Authority.

Recommendations:

It Is Therefore Recommended That presentation c) and Staff Report SPC2.2 regarding Source Protection Plan and Assessment Report Update – Technical

Report in support of the New Tecumseth (Alliston) S.34 WHPA update be received for information; and

Further That the South Georgian Bay - Lake Simcoe Source Protection Committee agree that the proposed amendments to the New Tecumseth chapter of the Assessment Report is advisable.

Prepared by:

Sheri Steiginga, Source Water Coordinator, Nottawasaga Valley Conservation Authority

Recommended by:

Bill Thompson, Project Manager, Lake Simcoe Region Conservation Authority

Attachments: 1

Appendix A – WHPA & Well location maps

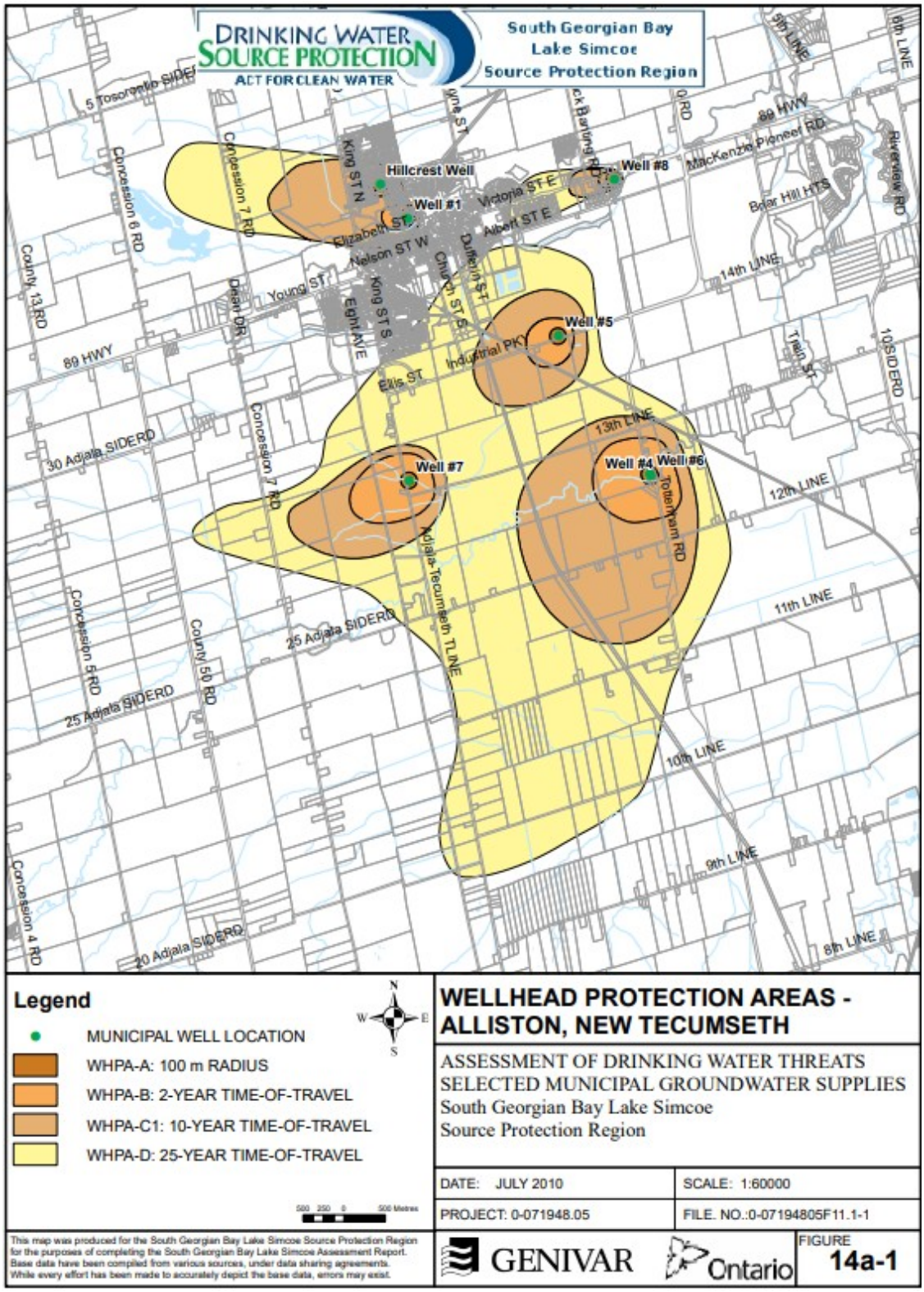

Figure 1. Existing wellhead protection area, Alliston.

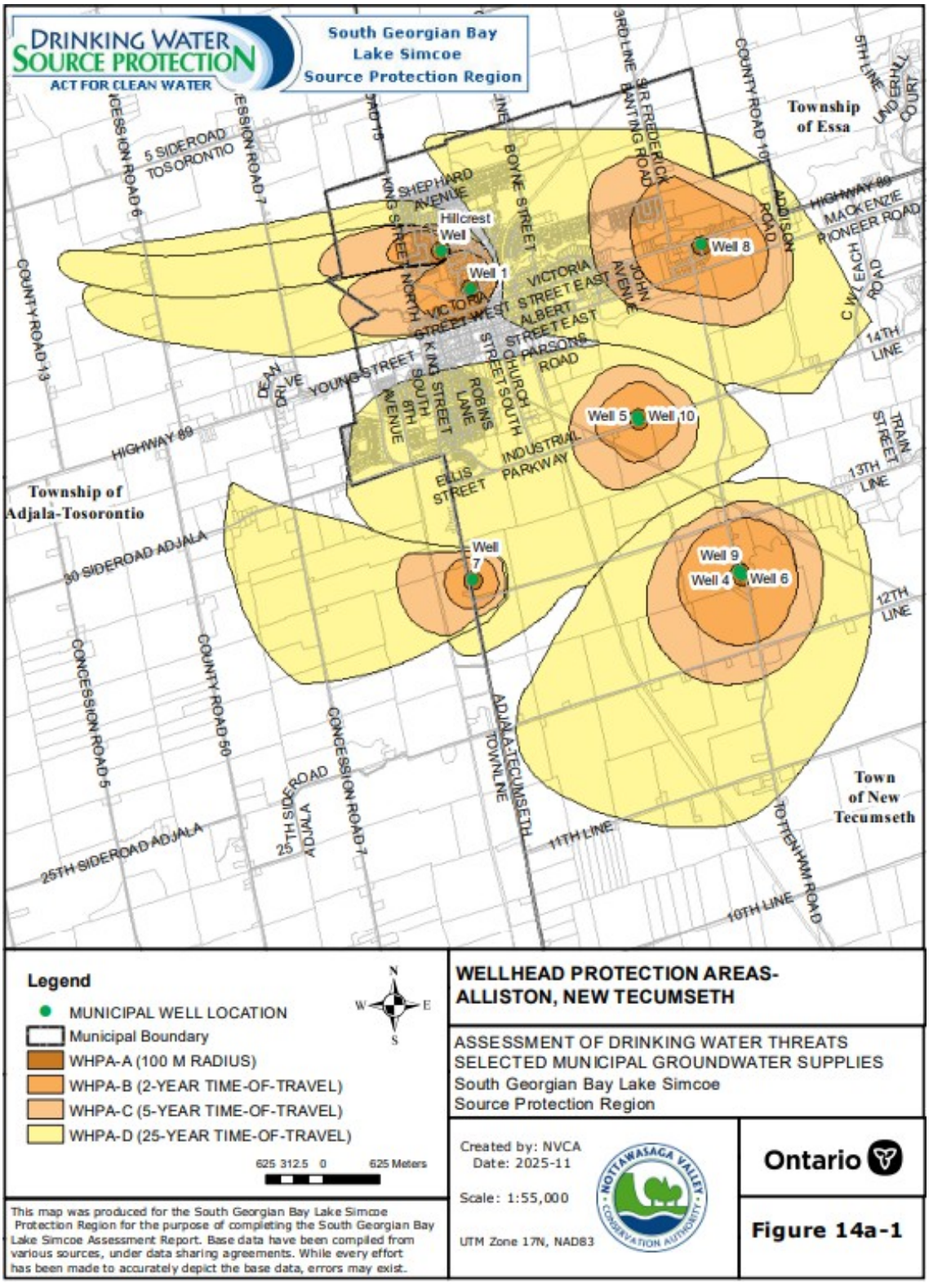

Figure 2. Proposed wellhead protection area, Alliston.

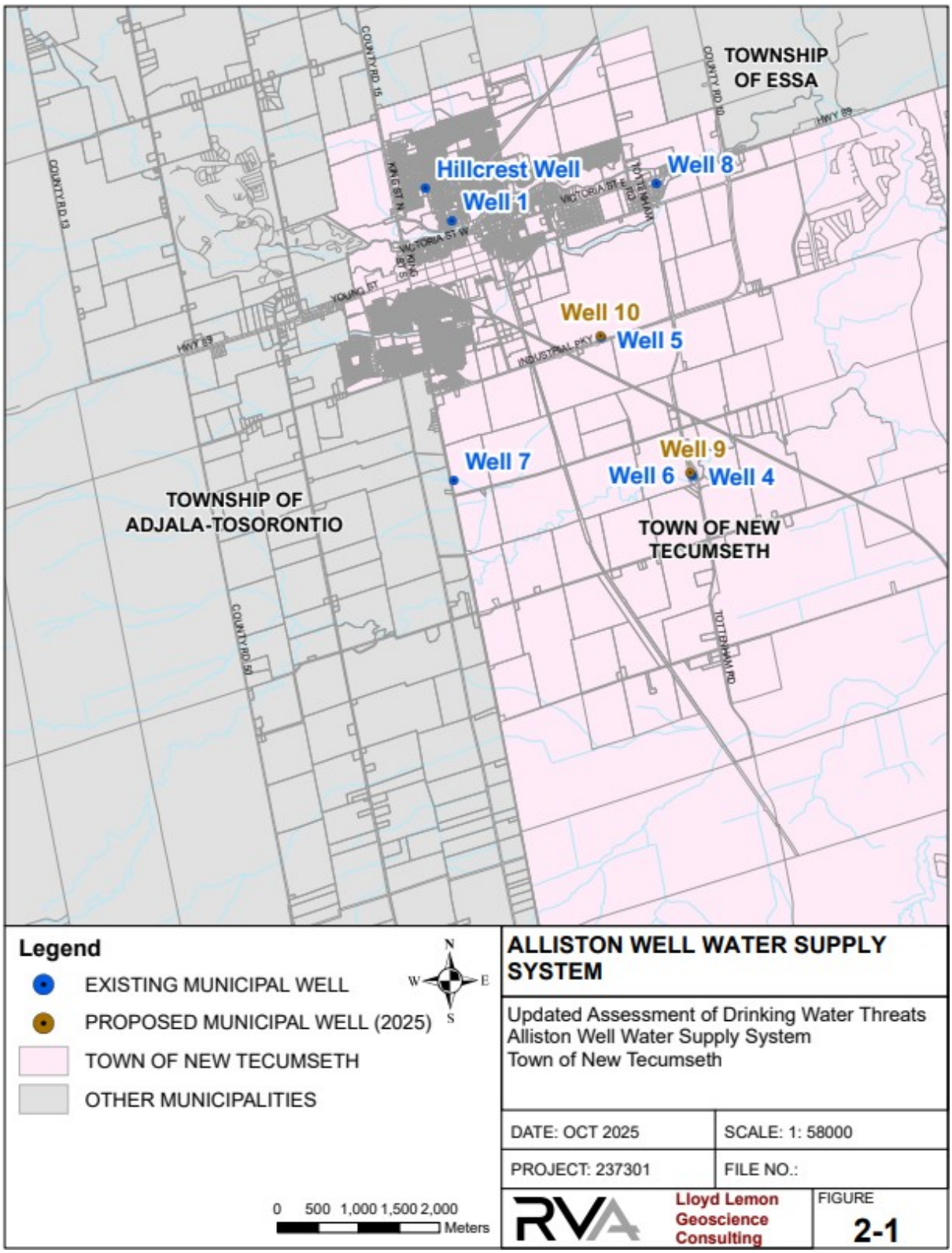

Figure 3. Existing and proposed municipal wells, Alliston

Source Protection Committee Meeting SPC-02-2025

Staff Report Number: SPC2.3

To: South Georgian Bay Lake Simcoe Source Protection Committee

From: Bill Thompson, Manager, Watershed Plans and Strategies, Lake Simcoe Region Conservation Authority; Melissa Carruthers, Manager Source Water Protection – RMO/RMI, Severn Sound Environmental Association

Date: December 11, 2025

Subject: Status of Water Quality 'Issues' in the Source Protection Region

Recommendations:

That presentation d) and Staff Report SPC2.3 regarding Status of Water Quality 'Issues' in the Source Protection Region be received for information; and

Further That staff be directed to use the amendment to the Source Protection Plan currently underway to remove the Issue and Issue Contributing Area associated with Trichloroethylene at the Coldwater drinking water system;

Further That staff be directed to leave all other Issues and Issue Contributing Areas in the Assessment Report unchanged; and

Further That staff be directed to respond to Ministry of the Environment, Conservation and Parks (herein "Ministry") that there is sufficient evidence for delisting of the Coldwater drinking water Issue, but not sufficient evidence for delisting of other Issues in the South Georgian Bay – Lake Simcoe Source Protection Region.

Purpose of Staff Report:

The purpose of this Staff Report is to provide the Committee an overview of the status of drinking water Issues, before responding to the Ministry early engagement questions on that topic.

Background:

The Source Protection Committee and Source Protection staff have been working on an amendment to the Source Protection Plan, as required under Section 36 of the Clean Water Act. The primary intent of this amendment is to ensure challenges in implementing existing policies are addressed, and to bring the Source Protection Plan into conformity with changes to the Province's Technical Rules for the Source Protection program.

A draft of that amendment was endorsed by the Committee on October 10, 2024 and submitted to the Ministry for early engagement, as the first stage of consultation. Comments on the draft were received from the Ministry on February 14, 2025. Comments from Ministry staff included a request for confirmation if any identified water quality 'Issues' had been resolved.

The Technical Rules define an 'Issue' as a situation where a) a contaminant is present at a level that exceeds the Ontario Drinking Water Quality Standards, or b) its concentration is trending upwards, such that it may exceed the Standard at some time. When a source protection committee becomes aware of an Issue, they are to identify the Issue Contributing Area (defined as the area where activities are believed to be contributing to the Issue). Any threat activities in the Issue Contributing Area (ICA) which may cause further impairment is automatically promoted to being a significant drinking water threat, with the end result being that ICAs provide a greater level of control on water quality, more restrictions on landowners, and a greater workload for risk management officials (RMO) and other implementing bodies. While it is believed that this more focused approach is necessary to ensure contamination does not get worse, models have demonstrated that it can take decades for existing contamination to migrate beyond existing wells.

While assessing the status of water quality Issues was not in the original scope of this amendment, it is staff's opinion that a periodic review of their status is wise.

Issues:

Drinking water Issues have been identified at 7 municipal drinking water systems in the Source Protection Region (table 1). Each year, as part of the annual reporting process, we ask municipalities whether these systems are exhibiting an increasing, decreasing, or stable trend in these parameters. A summary of each system is below.

In some cases, water quality data is limited, making it difficult to answer this question. The frequency with which water quality testing is required varies between quarterly for parameters such as disinfection by-products and nitrate, to once every 60 months for organic parameters (increasing to once every three months if a parameter exceeds half the drinking water standard).

Table 1. Water quality Issues in the South Georgian Bay – Lake Simcoe Source Protection Region

Municipality	Drinking water system	Parameter of concern
Barrie	Barrie wells 3A, 11, 12, 14	Sodium (wells 11, 12, 14), chloride (wells 3A, 11, 12, 14)
Durham Region	Cannington	Trichloroethylene (wells MW4, MW8)
Orillia	Orillia wells 1 and 2	Trichloroethylene and Perchloroethylene
Penetanguishene	Robert St well	Trichloroethylene
Severn	Coldwater	Trichloroethylene
Tiny	Georgian Sands	Nitrate
Tiny	Lafontaine	Nitrate

Barrie

Each year, during annual reporting, municipal staff report that the trends in sodium and chloride in municipal wells continues to increase. As such, there is no evidence that this Issue has been resolved.

As part of the amendment to the Plan which these questions pertain to, City staff requested an amendment to policies that apply to salt application and storage within their ICA. The current policy requires the municipality to establish Risk Management Plans in parking lots located in the WHPA-A (wellhead protection area) of the ICA, which was an original request by the City to allow them to manage their workload while focusing on those areas of greatest risk. As those risk management plans (RMP) have now been negotiated, and the increasing trend continues, City staff requested the Committee revise the policies to require them to also establish Risk Management Plans in parking lots larger than 1 ha elsewhere in the ICA. This request also allows the City to manage their workload, while focusing on the greatest remaining risk. The Committee supported this request and amended the associated policies. Those changes to policy remain proposed until this amendment is approved by the Minister.

Durham Region, Cannington

During annual reporting, municipal staff have reported an ongoing decreasing trend in TCE concentration in the Cannington drinking water system (Figure 1).

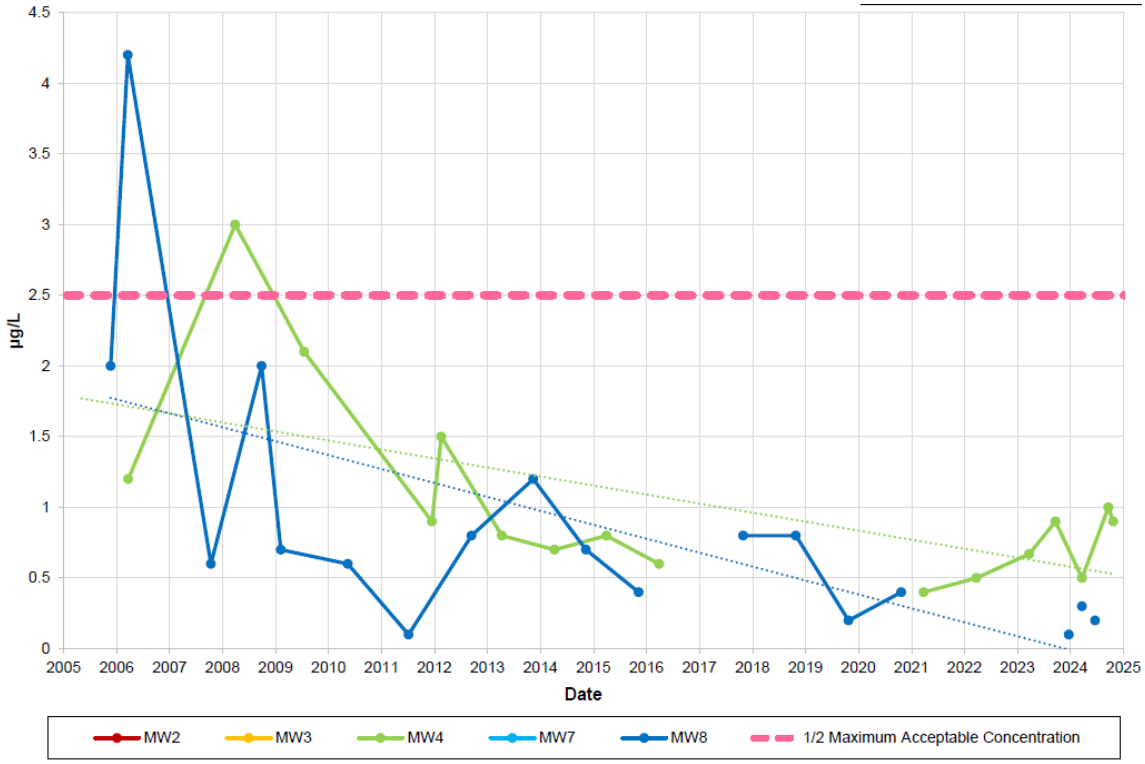

Figure 1. Trichloroethylene (TCE) concentrations in raw water in Cannington drinking water system

While this trend is reassuring, the annual pumping rate in these wells has also decreased since the Issue was identified; this reduced pumping may be the cause of the reduced concentrations, as less TCE may be being pulled into the municipal well. Due to the difficulty in finding sufficient water in this area, the Region needs to continue to rely on the capacity provided by this well, which may include increasing pumping rates in the future. As such, both Regional and Source Protection staff feel that it would be premature to remove this Issue.

Orillia

Data provided by the City of Orillia (Figures 2 and 3) indicate that TCE in Wells 1 and 2 remain above the Ontario Drinking Water Standard, and thus still meet the test of a drinking water Issue as laid out by the Ministry's Technical Rules.

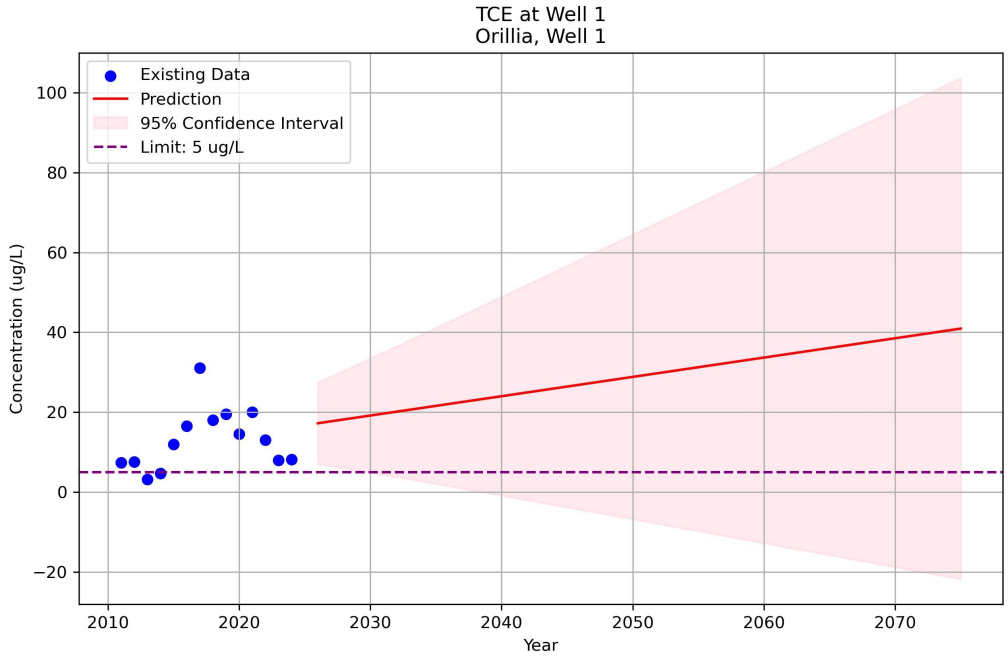

Figure 2. Trichloroethylene (TCE) concentrations in raw water in Well 1 of the Orillia drinking water system

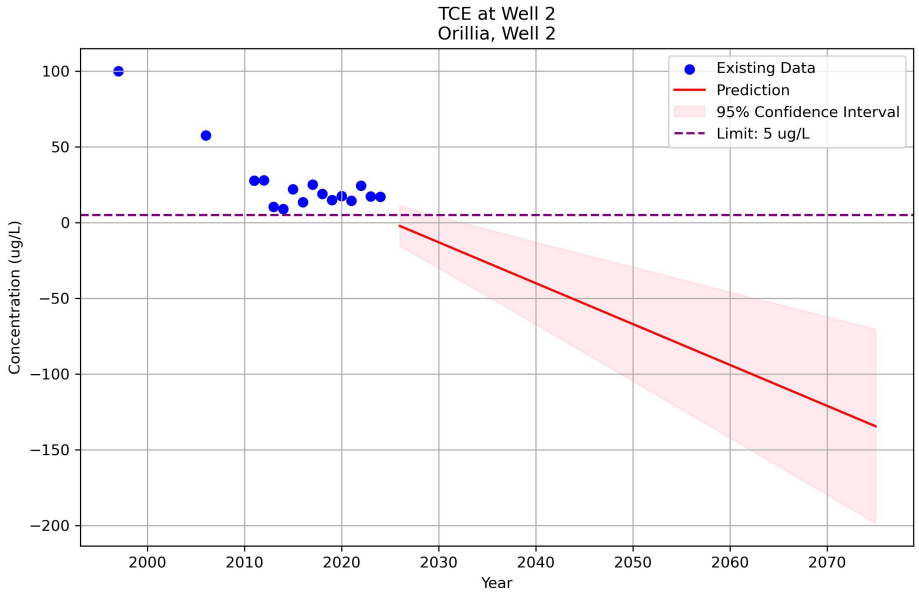

Figure 3. Trichloroethylene (TCE) concentrations in raw water in Well 2 of the Orillia drinking water system

Conversely, concentrations of Perchloroethylene (PCE) in Wells 1 and 2 have decreased below the Drinking Water Standard (Figures 4 and 5). While this might make them eligible for removal as an Issue, the variable nature in the data limits our confidence that trends may not increase again in the near future (as illustrated by the pink confidence intervals on the graph). Further, as the Issue Contributing Area is recommended to stay for TCE, and DNAPL policies would apply throughout the WHPA-A to -C regardless, removing PCE as an Issue would have limited policy implications.

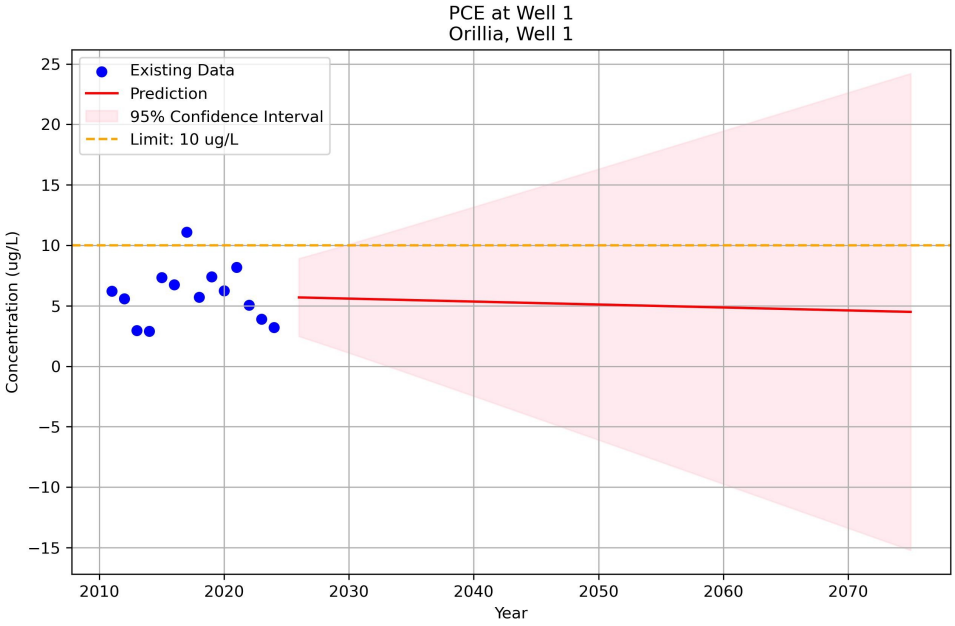

Figure 4. Perchloroethylene (PCE) concentrations in raw water in in Well 1 of the Orillia drinking water system

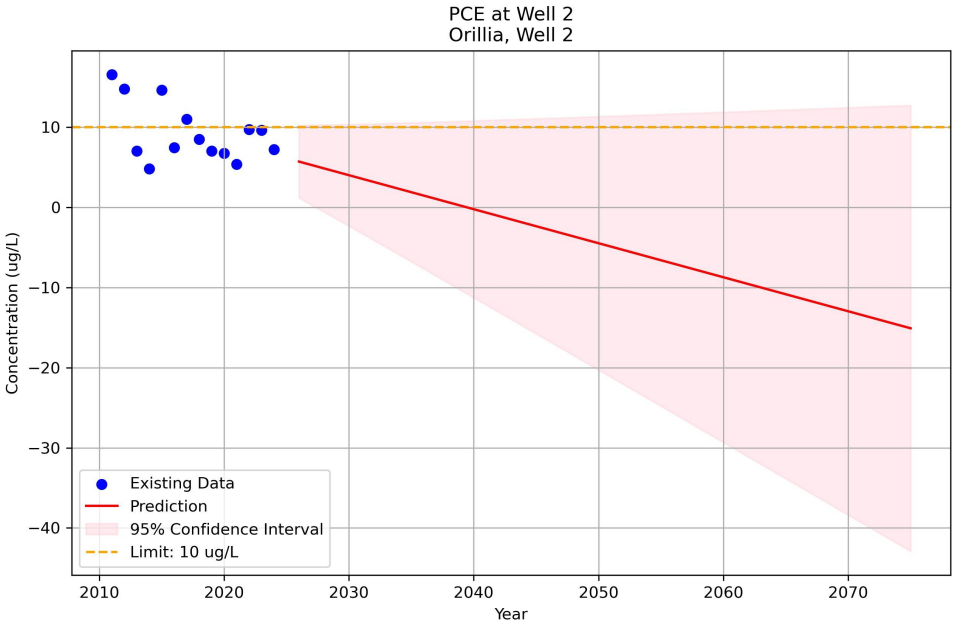

Figure 5. Perchloroethylene (PCE) concentrations in raw water in in Well 2 of the Orillia drinking water system

Penetanguishene

Trichloroethylene from an unknown source has been evident for some years in Penetanguishene's Robert Street well. This well has been out of service for over a decade; however, it is expected to come back into service in the future (with appropriate treatment) as water demand increases and TCE concentration decreases. The municipality continues to test per the frequency required by the *Safe Drinking Water Act*, with the data showing that TCE concentrations remain above the Ontario Drinking Water Standard (Figure 6), and thus that the Issue should remain in place.

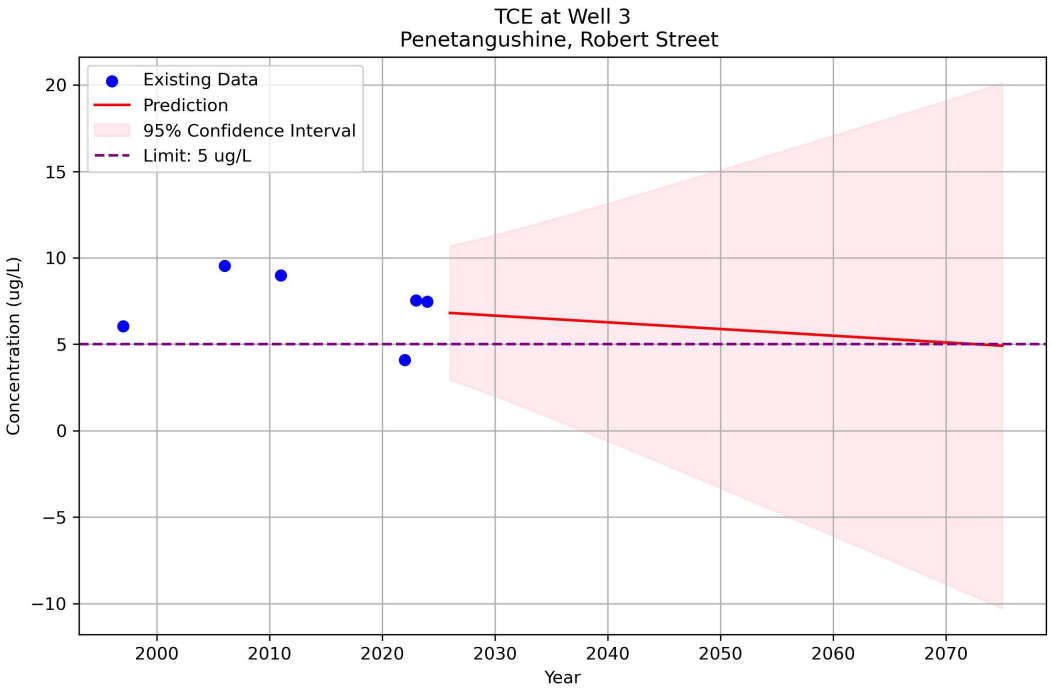

Figure 6. Trichloroethylene (TCE) concentrations in the raw water in Well 3 of the Robert Street drinking water system in the Town of Penetanguishene

Severn

Trichloroethylene has been observed in all three wells at the Coldwater drinking water system in Severn Township (Figures 7, 8, and 9). In recent years, all three wells have exhibited a decrease in TCE concentrations, to the point that they have remained below the Ontario Drinking Water Standard for the past 10 to 15 years. As such, this Issue (and associated Issue Contributing Area) is proposed for delisting.

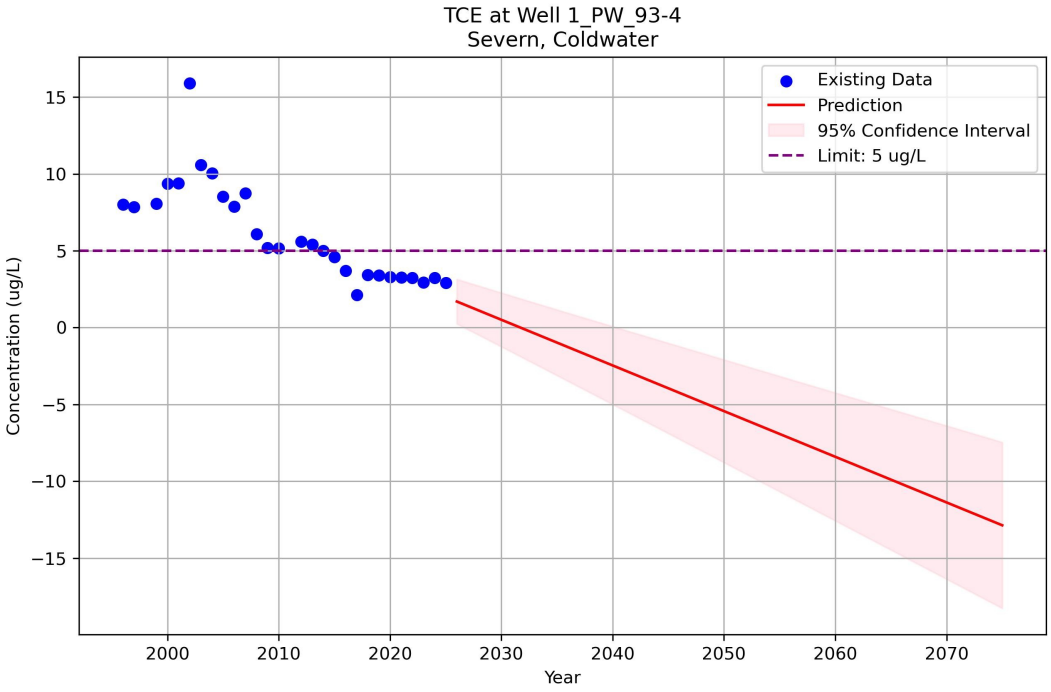

Figure 7. Trichloroethylene (TCE) concentrations in raw water in Well 1 of the Coldwater drinking water system in the Township of Severn

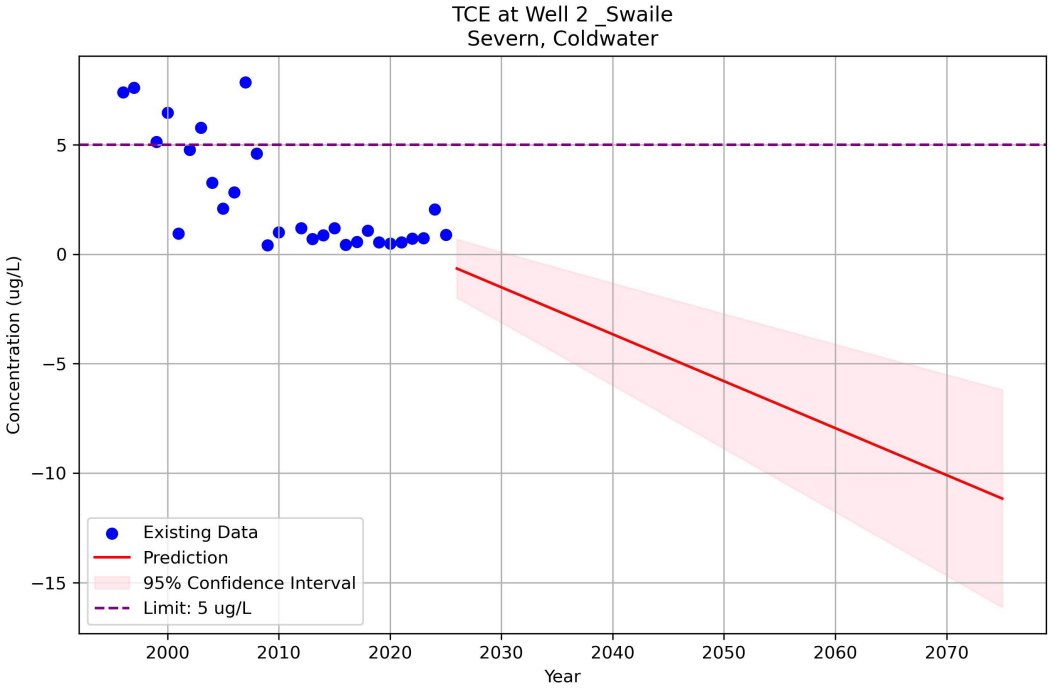

Figure 8. Trichloroethylene (TCE) concentrations in raw water in Well 2 of the Coldwater drinking water system in the Township of Severn

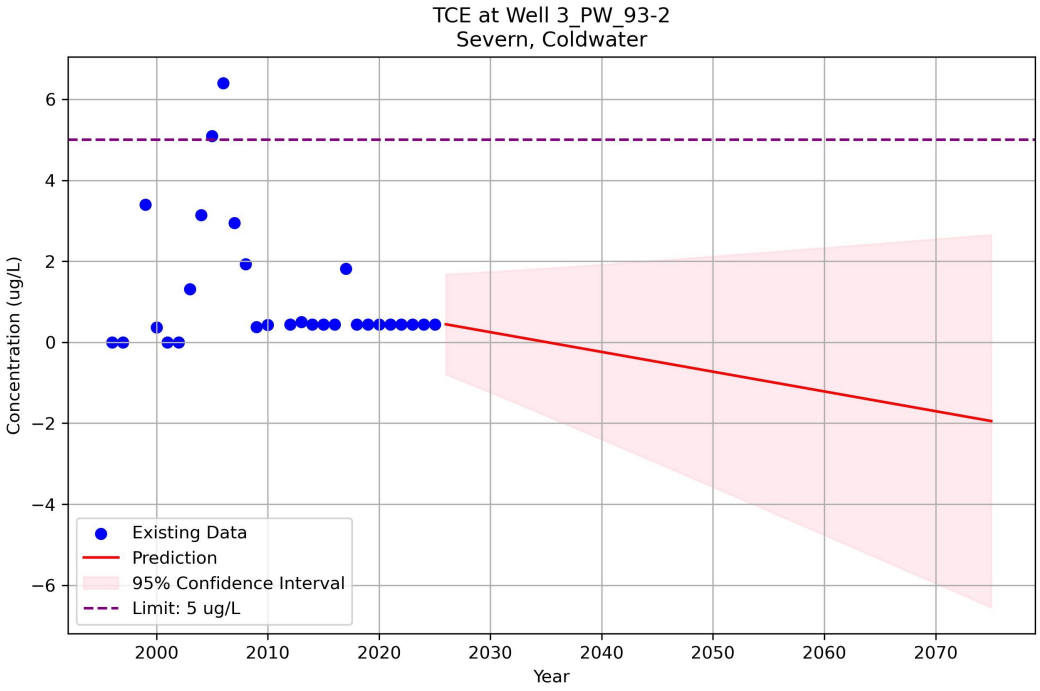

Figure 9. Trichloroethylene (TCE) concentrations in raw water in Well 3 of the Coldwater drinking water system in the Township of Severn

Tiny (Lafontaine and Georgian Sands)

Both of the neighbouring Lafontaine and Georgian Sands drinking water systems in Tiny Township have elevated nitrate levels. Trends are variable in both systems (Figures 10, 11, 12, and 13), resulting in the municipality reporting increases some years, decreases others, and 'no trend' yet others. In the most recent years, nitrate concentrations in the Lafontaine system have been stable to decreasing, and those in the Georgian Sands have been stable to increasing.

The municipality has been managing water quality in these systems, in part, by mixing the two. The systems are currently operated as one system known as the Lafontaine system, which makes assessment of the overall trend and associated Issue complex.

Nitrate in the historical Lafontaine drinking water system (i.e., well 23) has been exhibiting a decreasing trend in recent years (Figure 10). This positive outcome may be the result of risk management measures introduced under the Source Protection Plan since 2015, or may be the result of changes in farming practices that predate the Source Protection Plan. Despite this general decrease in concentrations however, the municipality still experiences spikes in nitrate, which obligate them to release water advisories. As such,

the municipality is of the opinion that delisting the Issue associated with well 23 may be premature. Source Protection Authority staff concur with this opinion, and recommend that the Issue stay in place, and that municipal data continue to be monitored until such a time that delisting appears to be appropriate.

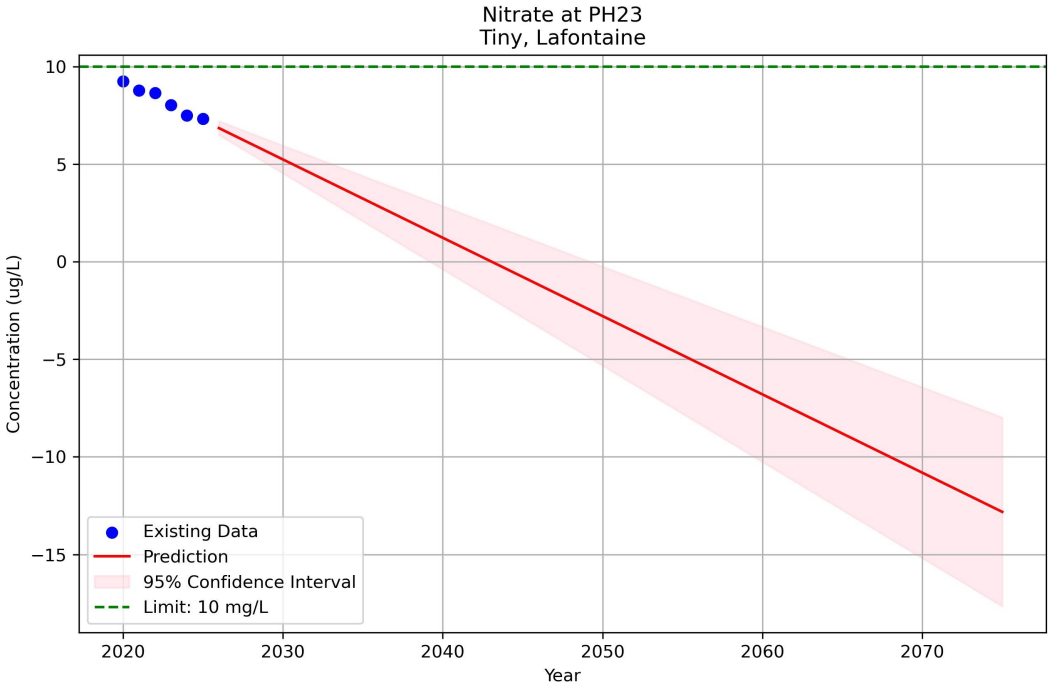

Figure 10. Nitrate concentrations in raw water at pump house 23 of the Lafontaine drinking water system in the Township of Tiny

Nitrate concentrations in what historically had been called the Georgian Sands drinking water system (i.e., wells 1, 2 and 14) remain at lower concentrations than at well 23, but an increasing trend continues to be observed, particularly at well 2 (Figures 11, 12, and 13). It is interesting to note that well 23 is approximately 25 years away from well 2 (in term of groundwater travel time). As such, the increasing trend at well 2 may, in part, be due to a plume of nitrate-rich groundwater traveling downgradient towards Georgian Bay. Given this increasing trend, it is staff's opinion that the Issue should remain in place for the historic Georgian Sands drinking water system.

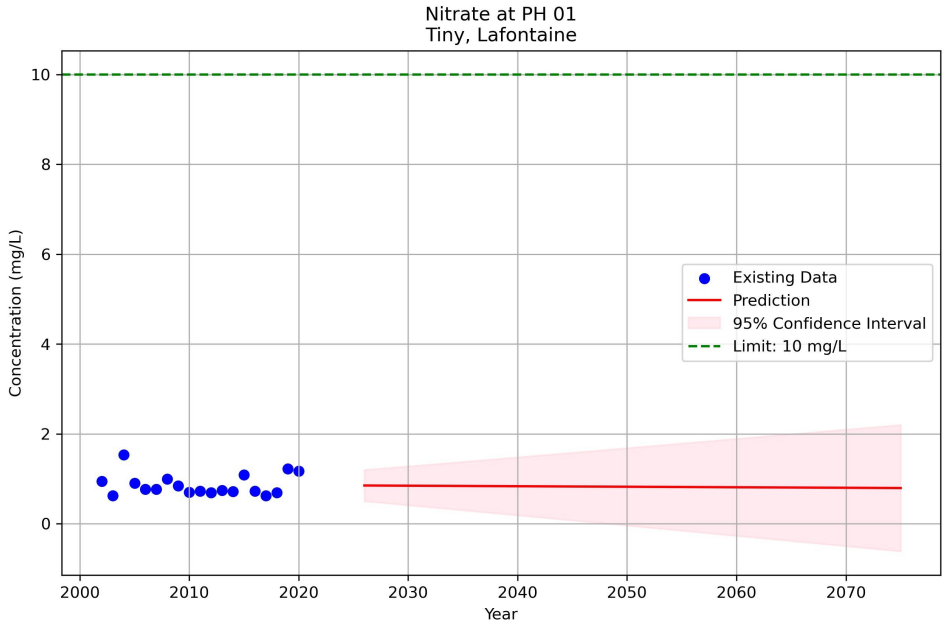

Figure 11. Nitrate concentrations in raw water at pump house 1 of the Lafontaine drinking water system in the Township of Tiny

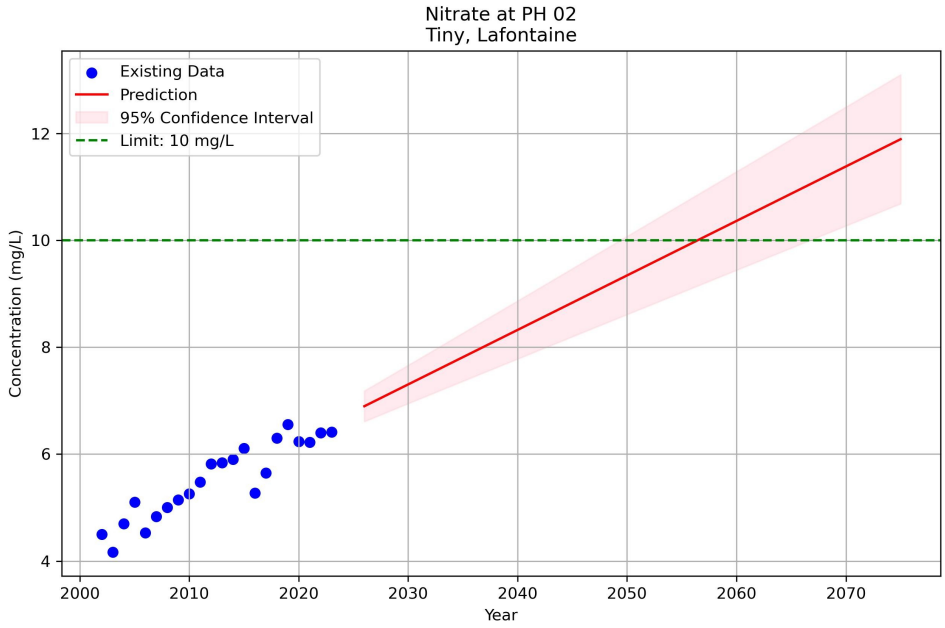

Figure 12. Nitrate concentrations in raw water at pump house 2 of the Lafontaine drinking water system in the Township of Tiny

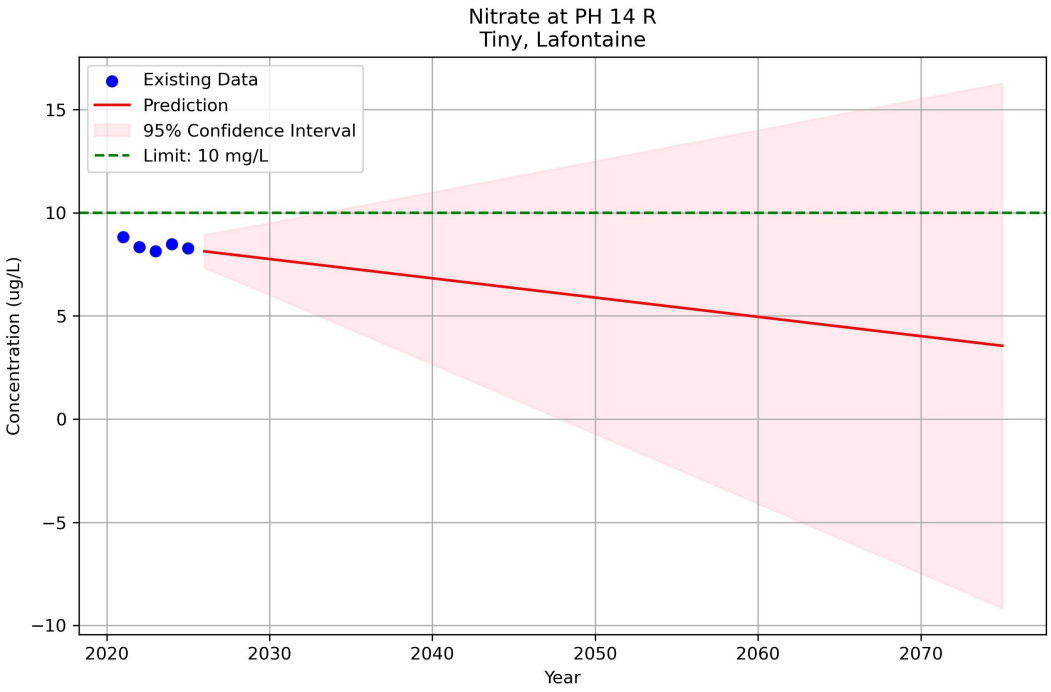

Figure 13. Nitrate concentrations in raw water at pump house 14 of the Lafontaine drinking water system in the Township of Tiny

Summary:

Drinking water issues have been identified at 7 municipal drinking water systems in the South Georgian Bay – Lake Simcoe Source Protection Region. Decreases in contaminant levels at the Coldwater drinking water system (in Severn Township) have been sufficient for the delisting of its Issue and associated Issue Contributing Area. Similar decreasing trends have been observed at the Cannington drinking water system (Durham Region) and the Lafontaine drinking water system (Tiny Township), however in both cases both municipal and Source Protection staff feel that delisting those Issues would be premature and that removing an Issue will effectively remove the policies that are providing the additional protection of the source contaminant which may reverse any positive decreasing trend of the specific contaminant. The remainder of the systems unfortunately continue to exhibit contaminant concentrations that remain above their respective Drinking Water Standard, or continue to trend upwards, and thus still meet the test of an Issue under the Ministry's Technical Rules.

Recommendations:

It Is Therefore Recommended That presentation d) and Staff Report SPC2.3 regarding Status of Water Quality 'Issues' in the Source Protection Region be received for information; and

Further That staff be directed to use the amendment to the Source Protection Plan currently underway to remove the Issue and Issue Contributing Area associated with Trichloroethylene at the Coldwater drinking water system;

Further That staff be directed to leave all other Issues and Issue Contributing Areas in the Assessment Report unchanged; and

Further That staff be directed to respond to Ministry of the Environment, Conservation and Parks (herein "Ministry") that there is sufficient evidence for delisting of the Coldwater drinking water Issue, but not sufficient evidence for delisting of other Issues in the South Georgian Bay – Lake Simcoe Source Protection Region.

Prepared by:

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