

**TO: Chair and Members of the Source Protection Committee
Meeting #3/24, May 30, 2024**

**FROM: Behnam Doulatyari, Senior Manager, Watershed Plans and
Source Water Protection**

RE: Town of Erin – New Municipal Supply Well

RECOMMENDED RESOLUTION

THAT the Committee is of the opinion that the proposed amendments to the Approved Credit Valley Assessment Report, and the CTC Source Protection Plan, are advisable;

AND THAT staff be directed to incorporate the proposed amendments, to the Approved Credit Valley Assessment Report, and the CTC Source Protection Plan;

AND THAT staff be directed to take the necessary actions to acquire municipal endorsements of the proposed amendments to the Approved Credit Valley Assessment Report, and the CTC Source Protection Plan prior to commencing public consultation;

AND THAT staff be directed to take the necessary actions to proceed with the mandated pre-consultation with impacted stakeholders and public consultation on the Proposed Credit Valley Assessment Report and Proposed CTC Source Protection Plan, in accordance with requirements of the *Clean Water Act*, 2006;

AND THAT staff be directed to re-engage the Committee should any feedback received during the mandated pre-consultation or public consultation periods necessitate significant changes to the proposed amendments;

AND FURTHER THAT staff be directed to take the necessary actions to prepare the final amendments package for the Proposed Credit Valley Assessment Report and Proposed CTC Source Protection Plan, for submission by the Credit Valley Source Protection Authority, to the Ministry of the Environment, Conservation, and Parks.

EXECUTIVE SUMMARY

The Town of Erin has completed technical work required for adding a new well (E9) to their drinking water system. This includes an updated groundwater model, new WHPAs, and threat enumeration according to the 2021 Technical Rules. This report and accompanying presentation

by the Town's consultant are provided to the CTC Source Protection Committee (SPC) to obtain direction for taking the necessary actions to proceed with the mandated pre-consultation with impacted stakeholders and public consultation for the proposed amendments to the Credit Valley Assessment Report and CTC Source Protection Plan (SPP).

Background

Section 34 of the *Clean Water Act, 2006* provides the option for Source Protection Authorities (SPAs), with support from the SPC, to make amendments to a Source Protection Plan (SPP) that cannot wait until a section 36 update and do not qualify as minor administrative amendments under section 51 of O. Reg. 287/07. This is a prescriptive process with extensive stakeholder consultation and a requirement for council endorsement from affected municipalities. Amendments under s.34, are proposed in relation to the technical work described below.

The current drinking water supply for the Town of Erin, Erin Drinking Water System, is sourced from groundwater, supplied through two municipal wells PW E7 and PW E8. A new water supply well was drilled and tested as part of the Corporation of the Town of Erin Urban Centre Water Servicing Municipal Class Environmental Assessment (Class EA) to address water supply and storage requirements to meet existing water demands and future growth projections in the Town. The Class EA was completed in 2020, and a key recommendation emerging from this work was to connect a new water supply well for the community of Erin - Well E9 - to the existing system. This proposed supply well is located north of Sideroad 17 on Wellington County Road 23 (9th Line), within the West Credit River subwatershed in the Credit River Watershed. The primary land use in the area surrounding Well E9 consists of agriculture, rural employment lands and natural areas. **Figure 1** provides an overview of the regional study area for the proposed supply well.

Proposed Amendments

The Credit Valley Assessment Report will be amended to include recent technical work completed for the new Well E9 required under O. Reg. 287/07. This includes the delineation of wellhead protection areas (WHPAs), vulnerability assessment of the landscape and scoring of the WHPAs, and other studies including managed lands, livestock density and impervious surface analyses. Applicable amendments to the SPP will also be undertaken to ensure that the information in both documents correspond accordingly.

The technical work was conducted by Aqua Insight Inc. (2024) and entailed the application of a groundwater model using the FEFLOW code to delineate wellhead protection areas (WHPAs), and to evaluate the aquifer vulnerability within the newly delineated WHPAs. The technical work was undertaken in full compliance with the 2021 Technical Rules.

The main objectives of the groundwater study were to develop and calibrate a groundwater flow model, delineate the capture zones and WHPAs of the proposed municipal supply well, assess

the vulnerability of the source aquifers, and identify the non-point source drinking water threats that have the potential to impact the water quality of the source aquifer.

The following steps were undertaken to complete the objectives of the groundwater vulnerability assessment:

- assemble available hydrogeologic data and develop a Conceptual Model of the hydrostratigraphic layers and properties in the Well E9 area, and the areas contributing flow towards the potential municipal supply well.
- refine and update the steady-state calibration in a regional-scale three dimensional numerical groundwater flow model to align with the Conceptual Model.
- apply the updated groundwater flow model to delineate time-of-travel capture zones and WHPAs for Well E9. **Figure 1** shows the WHPAs for the proposed supply well.
- apply the groundwater flow model to assess the relative vulnerability rating of the municipal water supply aquifer (high, moderate, or low) and assign scoring within WHPAs of Well E9.
- assessment of transport pathways, their potential to increase the relative aquifer vulnerability rating, and recommendation of vulnerability score increases as appropriate. **Figure 3** shows the final vulnerability scoring for the proposed supply well.
- complete an issues evaluation for Well E9.
- assess the Managed Lands, Livestock Density, and percentage Impervious Cover within the newly delineated WHPAs of the proposed supply well.

The groundwater flow model developed through this work will be utilized for future source protection initiatives in the Town of Erin. WHPAs for PW E7 and E8, are overlapped by that of E9, so will be updated in 2026/2027 time frame in order to refine their capture zones (per new monitoring and hydrogeological data) and to assess the optimal pumping rates required for sustainable operation of all three wells.

Threat Enumeration

In April / May 2024, the Wellington Source Water Protection Risk Management Inspector completed threats enumeration within the newly delineated WHPAs for well E9. The threats enumeration was conducted using a combination of air photo / GIS desktop interpretation and a visual confirmation from public road right of ways. A total of 16 possible, existing significant drinking water threats on nine discrete parcels were enumerated.

Ten possible significant drinking water threats were enumerated on three agricultural properties in the WHPA-A. One residential septic system was enumerated as a significant drinking water threat within the WHPA-A on a rural residential property. One liquid fuel significant drinking water threat was enumerated for the future municipal well generator. The remaining four possible significant drinking water threats are DNAPLs and located on rural employment lands including industrial and a possible home-based business. It should be noted that during this initial enumeration no contact was made with property owners, therefore, it is possible that some of these enumerated, possible significant drinking water threats are not present. Once

property owners have been notified during the required consultation processes, it is possible that further information may be shared by the property owners leading to updating and / or removing some of the enumerated significant drinking water threats. The results of the threats enumeration is documented in a Wellington Source Water Protection draft memo dated May 2024.

Based on approved CTC SPP policies, the enumerated, existing significant drinking water threats would be managed through a combination of prohibition, risk management plan, septic inspection, education and prescribed instrument policies. The enumerated, existing significant drinking water threats could require up to seven risk management plans (three agricultural and four DNAPL), one septic system inspection and education, three prohibition inspections for manure, three updated prescribed instruments for non-agricultural source material (if present) and updates to the *Safe Drinking Water Act* Drinking Water Licence for the municipal generator. Please note that if some of the agricultural activities are not present or occurring then risk management plans or prescribed instrument updates will not be required.

Section 48 Notice

Under section 3(2) of O. Reg. 205/18, an application for an amendment to a drinking water works permit must be accompanied by a copy of a Notice described in Clause 48 (1.1) (b) of O. Reg. 287/07. The Notice must contain a summary of proposed changes and indicate the Source Protection Authority has confirmed all material necessary to update the CTC Source Protection Plan have been provided. A draft summary of anticipated amendments is provided in Attachment 4, and notice is expected to be issued in early July 2024.

Timelines

The anticipated timelines for the proposed amendments are presented in the table below.

Section 34 Amendment Step	Date
Municipal technical work	Early 2024
SPC meeting	May 30
Early engagement (MECP) commencement	June
Municipal review of draft AR/SPP/ED revisions	July 21
Municipal feedback deadline	Aug 30
Pre-consultation notices/package to implementing bodies	Oct 1
Municipal endorsement deadline	Nov 22
Public consultation	Late 2024
Submission to MECP	Early 2025

Next Steps

Pending endorsement from the CTC SPC, Credit Valley Source Protection Authority staff will prepare the consultation package of all proposed amendments to the Credit Valley Assessment Report, and CTC Source Protection Plan and Explanatory Document. Amendments to all documents will be tracked, and a summary of the proposed amendments will also be created.

Staff will then proceed with the mandated pre-consultation with impacted stakeholders and minimum 35-day public consultation in accordance with section 34 of the *Clean Water Act, 2006*. Following consultation, staff will report back to the SPC on any feedback received if significant changes in the proposed amendments are required, along with recommendations on how to address them.

Following public consultation, the proposed amended documents will be submitted to the Credit Valley Source Protection Authority (CVSPA). The CVSPA is then responsible for submission of the final amendment package to the Minister of the Environment, Conservation, and Parks, which is anticipated in early 2024.

Report prepared by:

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Date: May 23, 2024

Attachments (4)

Attachment 1: Figure 1 Regional Study Area

Attachment 2: Figure 2 WHPAs – proposed future supply Well E9

Attachment 3: Figure 3 Vulnerability Scores - proposed future supply Well E9

Attachment 4: Draft summary of anticipated amendments to the Credit Valley Assessment Report and CTC Source Protection Plan for Proposed Future Supply Well E9, Town of Erin

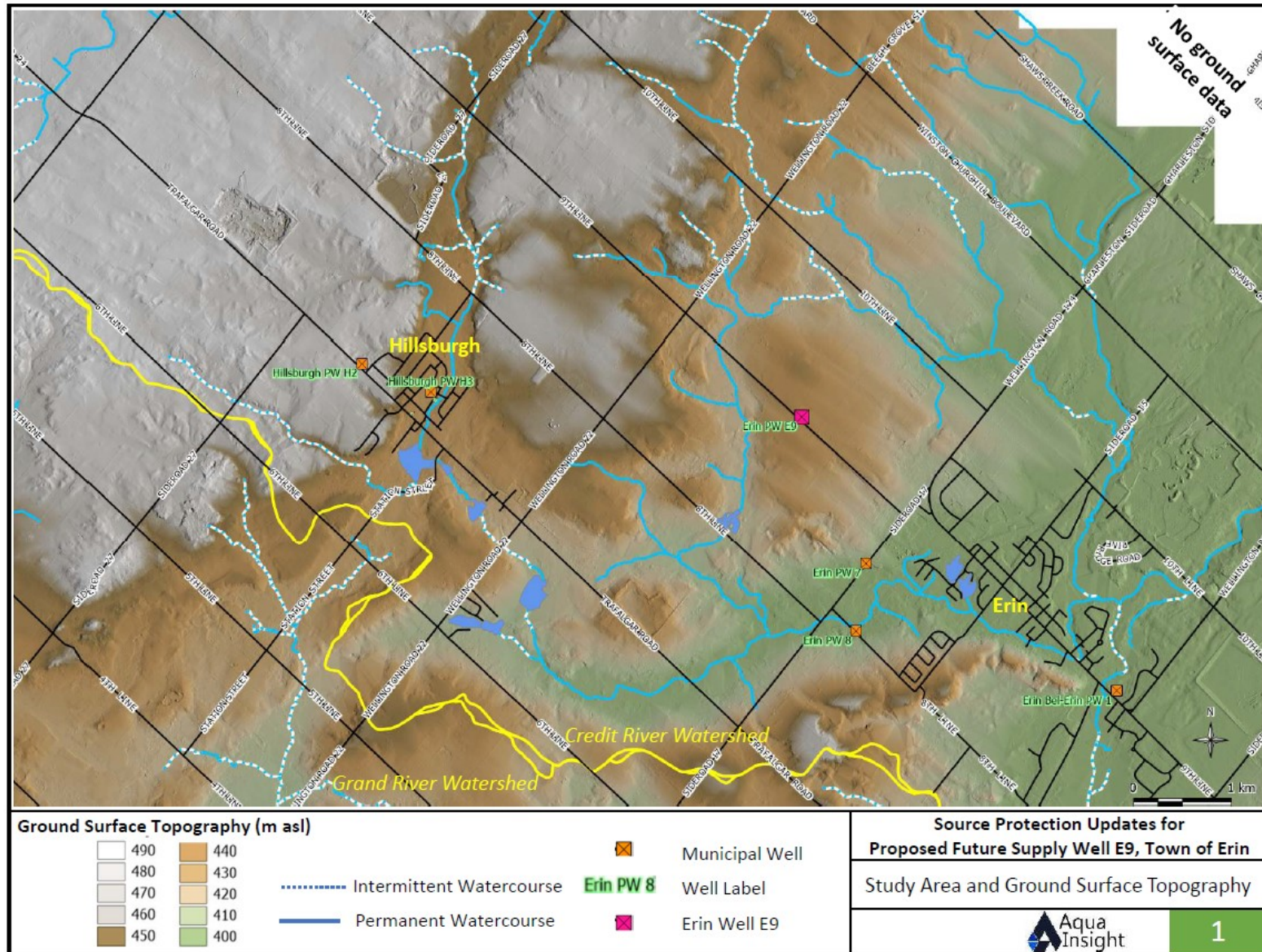


FIGURE 1 REGIONAL STUDY AREA (FROM AQUA INSIGHT INC. 2024 SOURCE PROTECTION UPDATES FOR PROPOSED FUTURE SUPPLY WELL 9, TOWN OF ERIN, ONTARIO)

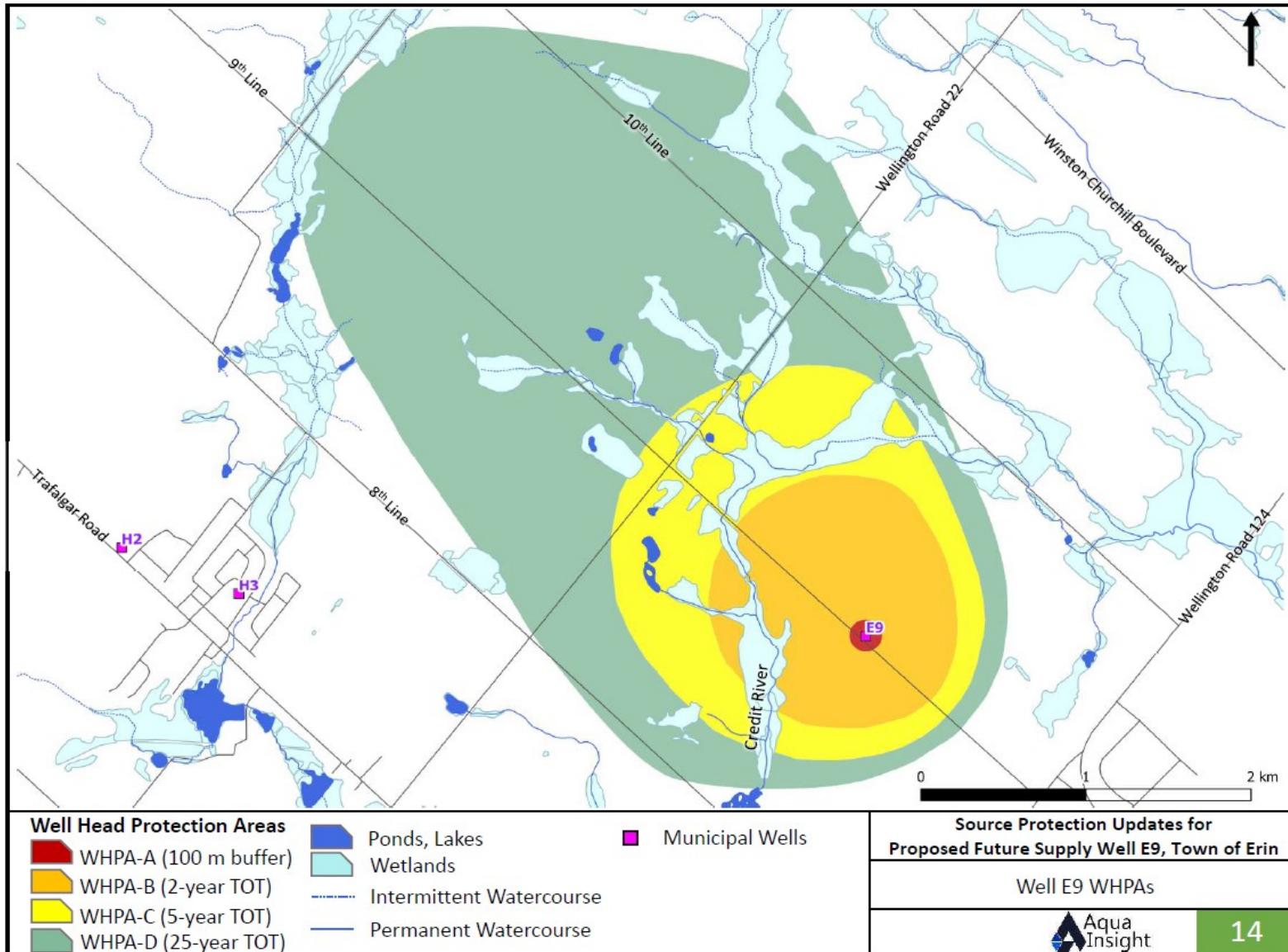


FIGURE 2 PROPOSED WELL 9 WHPAs (FROM AQUA INSIGHT INC. 2024 SOURCE PROTECTION UPDATES FOR PROPOSED FUTURE SUPPLY WELL 9, TOWN OF ERIN, ONTARIO)

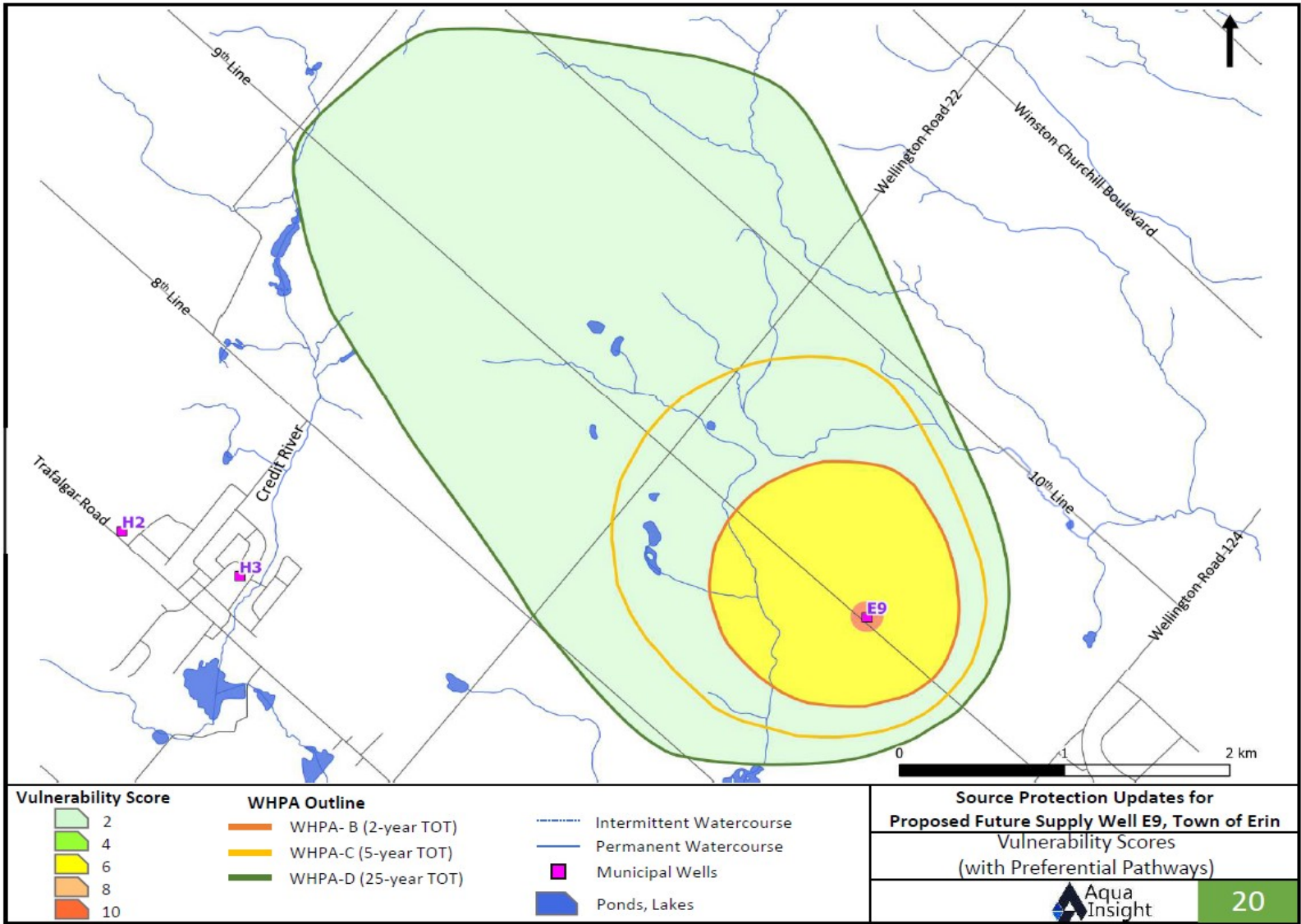


FIGURE 3 PROPOSED WELL 9 WHPA VULNERABILITY SCORING (FROM AQUA INSIGHT INC. 2024 SOURCE PROTECTION UPDATES FOR PROPOSED FUTURE SUPPLY WELL 9, TOWN OF ERIN, ONTARIO)

Draft summary of anticipated amendments to the Credit Valley Assessment Report and CTC Source Protection Plan for Proposed Future Supply Well E9, Town of Erin

Scope of Work:

1. Source Protection updates to support a Class EA:
 - new supplementary source of drinking water supply referred to as Well E9 in the Town of Erin.
2. Develop and calibrate a groundwater flow model, delineate the capture zones and wellhead protection areas, assess the vulnerability of the municipal supply aquifers, and identify the non-point source drinking water threats, per 2021 Technical Rules (TRs), for Well E9.
3. Assess the ability of transport pathways to increase the relative aquifer vulnerability rating and assign vulnerability scores within the new wellhead protection areas.
4. Calculate Managed Lands, Livestock Density, and percentage Impervious Cover within the newly delineated wellhead protection areas, per 2021 TRs.
5. Threats enumeration in the newly delineated wellhead protection areas, per 2021 TRs.

No.	Section or Figure	Brief Description of Anticipated Amendment	Estimated Timing to Submit Proposed Amendment to Ministry of the Environment, Conservation, and Parks
Credit Valley Assessment Report			
1.	Preface	Update map to include the new production Well E9 in the Town of Erin.	Early 2025
2.	Chapter 2	Update text, maps, and tables to reflect the new production Well E9 in the Town of Erin.	Early 2025
3.	Chapter 4	Update text, maps, and tables to reflect the new production Well E9 in the Town of Erin, as well as updated transport pathways methodology and assessment.	Early 2025
4.	Chapter 5	Update text, maps, and tables to reflect the new production Well E9 in the Town of Erin, including updated Wellhead Protection Area (WHPA) delineation, scoring, and mapping.	Early 2025
5.	Chapter 6	Update text and tables to account for changes in the number of significant drinking water quality and quantity threats and the total number of parcels with significant drinking water threats.	Early 2025
6.	Chapter 7	Update References to include the foundation report: "Source Protection Updates for Proposed Future Supply Well E9, Town of Erin, Ontario".	Early 2025

No.	Section or Figure	Brief Description of Anticipated Amendment	Estimated Timing to Submit Proposed Amendment to Ministry of the Environment, Conservation, and Parks
7.	Appendices	Update appropriate figures and text to include new well E9 in the Town of Erin and references to the foundation report.	Early 2025
CTC Source Protection Plan			
1.	Figure 2-2	Update map of CTC SPR (WHPAs)	Early 2025
2.	s.2.1	Number of active supply wells update	Early 2025
3.	s.5.1.10	Discussion of consultation of amendments	Early 2025
4.	Table 6-1	Update well counts for Town of Erin	Early 2025
6.	s.8.3	Summarize amendments made	Early 2025
7.	Maps 1.5	Update significant groundwater quality threat areas (WHPAs, vulnerability scores)	Early 2025
8.	Maps 2.5	Update significant DNAPL threat areas (WHPAs)	Early 2025
9.	S.4.1.2	Include description of updates to assessment reports	Early 2025
10.	S.5.1	Include description of consultation on amendments	Early 2025