



BURNSIDE

**Drinking Water Threats Disclosure  
Report and Salt Management Plan**

**Mattamy (Erin) Limited and 2779181  
Ontario Inc.  
Erin, Ontario**



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## **Drinking Water Threats Disclosure Report and Salt Management Plan**

**Mattamy (Erin) Limited and 2779181  
Ontario Inc.  
Erin, Ontario**

**R.J. Burnside & Associates Limited  
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**June 2022  
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0	Yes	Yes	Kyle Davis, Risk Management Official, Town of Erin
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0	Yes	Yes	Tom Baskerville, 2779181 Ontario Inc.

### Record of Revisions

Revision	Date	Description
-	June 23, 2022	Submission to Mattamy (Erin) Limited and 2779181 Ontario Inc.

### R.J. Burnside & Associates Limited

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Drinking Water Threats Disclosure Report and Salt Management Plan  
June 2022

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## 1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by Mattamy (Erin) Limited and 2779181 Ontario Inc. to prepare a Drinking Water Threats Disclosure Report and Salt Management Plan for a proposed development located on adjacent properties at 5552 Eighth Line and 5520 Eighth Line in the Town of Erin (herein referred to as the subject lands) (Figure 1). The proposed development will include residential lands and associated infrastructure, two stormwater management ponds, a park and a sewage pumping station. The development will be based on municipal servicing for water and sewage. This report has been prepared to meet the requirements of policy Section 4.9.5.4 of the Wellington County Official Plan (OP).

### 1.1 Identification of Vulnerable Areas

The subject lands are located in the CTC Source Protection Region. A review of the Credit Valley SPA Assessment Report (CTC, 2018) indicates that the subject lands are located within the wellhead protection area for Erin PW8 of the Town of Erin's Water Supply system. The location of the subject lands and the Wellhead Protection Areas for Erin PW8 are shown in Figure 2.

Erin Well 8 is located on Eighth Line east of the subject lands. The WHPA-A (100 m radius) for the well extends into the subject lands. Vulnerability scores within the subject lands range from 10 (in WHPA-A and WHPA-B) to 2 (in WHPA-D) (Figure 2).

A review of the Ministry of the Environment Conservation and Parks (MECP) Source Protection Atlas indicates that the subject lands are also located within a significant groundwater recharge area (SGRA) and an area of highly vulnerable aquifers (HVA) as shown on Figure 3.

## 2.0 Threat Identification

Section 4.9.5.4 of the Wellington County Official Plan requires that any potential drinking water threat activities pursuant to the Clean Water Act be identified. There are 22 prescribed drinking water threats identified in the Technical Rules: Assessment Report (Clean Water Act, 2006). The listed threats include:

1. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
2. The establishment, operation, or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.
3. The application of agricultural source material to land.

4. The storage of agricultural source material.
5. The management of agricultural source material to land.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid.
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.
19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.
22. Establishment and operation of a liquid hydrocarbon pipeline.

In addition to the 22 prescribed drinking water threats in the Clean Water Act, Section 4.9.5.4 of the Official Plan requires the disclosure of the following activities:

- Chemical, fuel or waste storage and handling.
- Sanitary sewage and stormwater management.
- Winter maintenance activities including road salt application, road salt storage and snow storage.

- Fertilizer application and landscape maintenance activities.

### **3.0 Threat Assessment**

The Threat Disclosure Report has been completed based on the proposed composite plan (Korsiak, June 2022) outlined on Figure 4 and provided in Appendix A. The design concept shows that within the development, residential land use is proposed along with two stormwater management blocks and a sewage pumping station. Threats associated to residential lands include stormwater management, sewage and winter maintenance activities. The locations of the various threats are illustrated in Figure 4.

#### **3.1 Stormwater Management**

Stormwater management ponds are significant threats within an area with a vulnerability score of 10. Based on the composite plan (Korsiak, June 2022), the proposed stormwater management ponds for the development will be located within a WHPA-B with a vulnerability score of 8 (see Figure 4). A small portion of the SWM block for SWM Pond 2 along Eighth Line is within the WHPA-A (vulnerability of 10); however, the SWM Pond itself is outside of the WHPA. The emergency spillway for SWM Pond 2 will be located within the WHPA-A (DSEL, 2022). This facility will only be used in the event of a blockage or a storm greater than the 100-year design horizon (DSEL 2022). In this case, water will discharge into the Eighth Line ROW and be directed to the West Credit River which is the natural surface water outlet in the area.

Also traversing the WHPA-A are a stormwater sewer and SWM Pond 2 outfall pipe within Eighth Line and a clean water pipe that conveys water from the NHS south of SWM Pond 2 to the pond feature located within the retained lands. The water will be discharged within WHPA-A; however, as this is clean water from a natural feature that is being directed to another natural feature, it is not considered to be a drinking water threat. Details on the stormwater servicing plans are included in the FSR (DSEL, 2022).

#### **3.2 Sewage**

The development will be serviced with municipal sanitary sewers. Based on the FSR (DSEL, 2022) there are currently two options being considered for sewage conveyance on the subject lands. Both options require that a sanitary sewer traverses the WHPA-A to connect to the proposed municipal trunk sewer along the Elora Cataract Trail. One of the options includes a sewage pumping station along Eighth Line located within a WHPA-B with vulnerability score of 8.

#### **3.3 Chemicals**

Chemicals of concern for source protection include but are not limited to paints, stains, enamels, other coatings, degreasers, oils, solvents, automotive or machinery fluids,



cutting fluids, adhesives. There is generally an acknowledgement within the source protection plan that chemicals of concern may be utilized by individual homeowners, but the level of threat presented by chemicals within residential settings is regarded as insignificant and commercial or industrial levels of use are the main concern.

There are no commercial or industrial land uses proposed for the development. Any chemicals present would be in residential quantities and not subject to enforcement considerations.

### **3.4 Fuel**

The handling and storage of fuel is considered to be a significant threat in areas where the vulnerability score is 10. Fuel stored within vehicles and other machinery in a residential setting are not generally considered as threats. It is noted also that the area associated with the vulnerability score of 10 does not extend unto the development area. Additionally, we expect that there will be no fuel storage within areas of a vulnerability of 10 during the construction phase as the areas of vulnerability score 10 are outside of the proposed development footprint and within land retained by the former owner or are owned by others.

### **3.5 Waste**

Storage and handling of waste will be limited to domestic waste collection and local recycling or composting programs. These waste products will be part of a formal collection system and as such are not anticipated to present drinking water threats. Small quantities of waste, that are not collected but generated within a residential setting are not considered as threats due to the small quantities.

### **3.6 Winter Maintenance**

It is assumed that road salt application will occur on roads, sidewalks and driveways during the winter months. After construction and assumption of the roads by the Town, the Town of Erin will assume responsibility of winter maintenance of the roads and a municipal wide salt management strategy would apply. Maintenance of driveways and sidewalks would be the individual residential property owner's responsibility.

Snow ploughed from roads and sidewalks will be stored at curbside and on boulevards as per the municipal and industry standards.

### **3.7 Landscape Maintenance**

Landscape maintenance will be assumed by the individual homeowners. Maintenance of the park will be the responsibility of the Town once assumed.

### 3.8 Water Quantity Threats

There are two types of water quantity threats that are recognized by the Clean Water Act (2006):

- an activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body; and
- an activity that reduces the recharge of an aquifer.

The subject lands are not located within a WHPA-Q1 or WHPA-Q2 where water quantity threats under the Clean Water Act may be identified.

The proposed development will be serviced with municipal water. Potential reduction of groundwater recharge as a result of the addition of pavement and buildings (impermeable surfaces) will be addressed in a water balance assessment submitted in a separate report as part of site plan approval.

### 3.9 Preferential Pathways

Preferential pathways (or transport pathways) may increase the vulnerability of the aquifer by providing a conduit for contaminants to bypass the natural protection of the aquifer. Potential anthropogenic transport pathways include existing, unused or abandoned water wells, vertical geothermal systems, underground infrastructure (parking garages, maintenance tunnels etc.), removal of large portions of overburden (gravel pits, fill removal), construction deep pilings, sewers and septic systems.

Prior to or during construction, all inactive wells within the development footprint will be located and properly decommissioned by a licensed water well contractor according to Ontario Regulation 903.

The construction of buried services below the water table has the potential to capture and redirect groundwater flow through more permeable fill materials typically placed in the base of excavated trenches. To mitigate this effect, services that are installed below the water table should be constructed to prevent redirection of groundwater flow. This will involve the use of anti-seepage collars or clay plugs which surround the pipes to provide barriers to flow and prevent groundwater flow along granular bedding material and erosion of the backfill materials. These services are typically installed 3 m to 5 m below grade. Near the municipal well the overburden is thinner, but the vulnerability is already high. Further away from the well the overburden above the municipal aquifer thickens and any servicing would be well above the municipal aquifer.

Infiltration galleries are proposed within the development as part of the Low Impact Development (LID) strategy to support groundwater recharge. The infiltration galleries will be located outside of areas with a vulnerability of 10 and will not extend to the

groundwater table. The infiltration galleries will not provide pathways to the municipal aquifer.

It is concluded that there are no observed or reported pathways that are likely to result in an increase in vulnerability at the subject lands.

#### 4.0 Threat Mitigation

Mitigation measures may be required for the stormwater management and sewer threats identified in Section 3.1. The mitigation measures could include the following considerations:

- Due to proximity of SWM Pond 2 to WHPA-A, the SWM Pond should be lined with natural or synthetic materials to prevent infiltrating in the vicinity of the WHPA-A.
- Efforts should be made in the pond drainage area to reduce salt loading (see Salt Management Plan).
- Review of available geological data and cross-sections indicates that an approximately 5 m thick layer of clay silt and stones exists in the area of the pond and WHPA-A. This layer will serve to protect the underlying sediments from potential contamination. In constructing the pond, efforts should be made to determine the thickness of the layer in the vicinity of the pond and to preserve as much of this layer as possible.
- The emergency spillway for SWM Pond 2 will outlet to the right-of-way (ROW) along Eighth Line. The layer of clay silt identified in the area will likely serve to protect deeper formations from infiltration from the spillway. Lining of the ROW ditch across the WHPA may also be considered.
- No subsurface discharge of the SWM Ponds is being proposed.
- Higher construction standards should be implemented on pipes crossing the WHPA. Pipes should be designed to minimize leakage. For trenches used to install pipes, trench plugs should be used to reduce the redirection of groundwater and the creation of preferential pathways. As with the above geological review for the pond, the location of the clay liner along the sewer alignment could be verified and efforts made to avoid or limit the extent of trenching in this layer.
- Periodic inspections of all facilities within the WHPA could be done.

The mitigation measures will ensure that the proposed development does not pose a significant threat to the municipal drinking water source.

## **5.0 Salt Management Plan**

### **5.1 Road Salt Application and Storage**

The threat posed by the use and storage of road salt and storage of snow is related to the potential for salt laden waters to infiltrate into the ground and contaminate the local municipal aquifer. It is assumed that road salt applications will occur on roads, sidewalks and driveways during the winter months.

Design elements to reduce the need for salting will be considered for the residential homes such as directing downspouts to pervious areas and grading to prevent ponding of water and ice.

Once the roads of the subdivision are assumed by the Town, winter maintenance of roads and sidewalks will be the responsibility of the Town and a municipal wide salt management strategy would apply.

Maintenance of driveways would be the individual residential property owner's responsibility. The local source protection region has education and outreach materials targeted to educate residential homeowners on proper salt application practices.

### **5.2 Snow Storage**

Snow ploughed from municipal roads and sidewalks will be stored at curbside and on boulevards as per the municipal and industry standards. Should snow require moving by the Town or property owner, it should be transported to a certified snow disposal site.

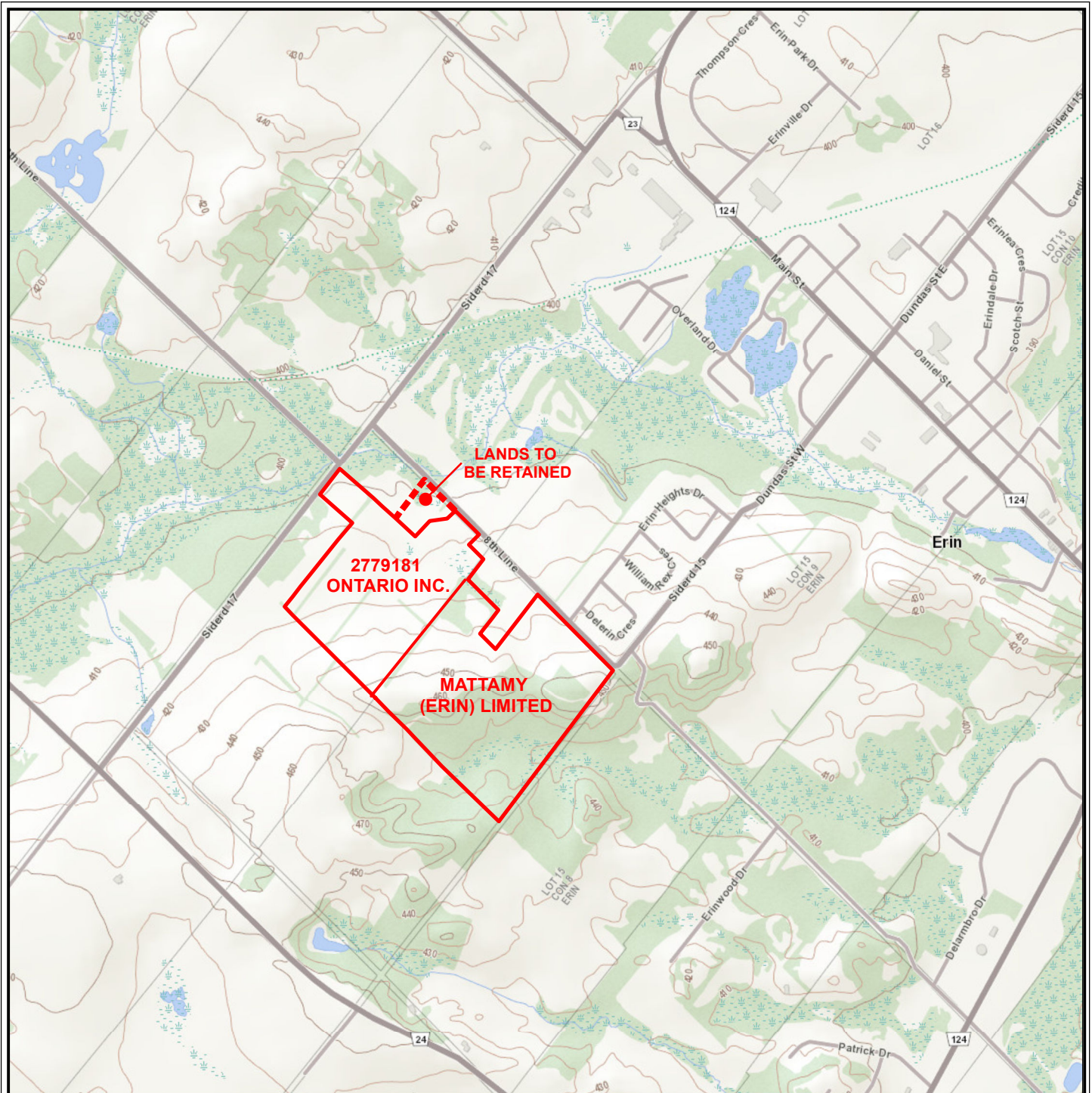


# BURNSIDE


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**Figures**



**LEGEND**

 SUBJECT LANDS

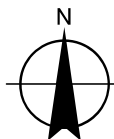
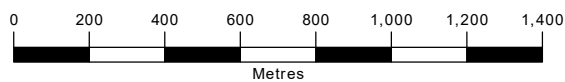


Client / Report

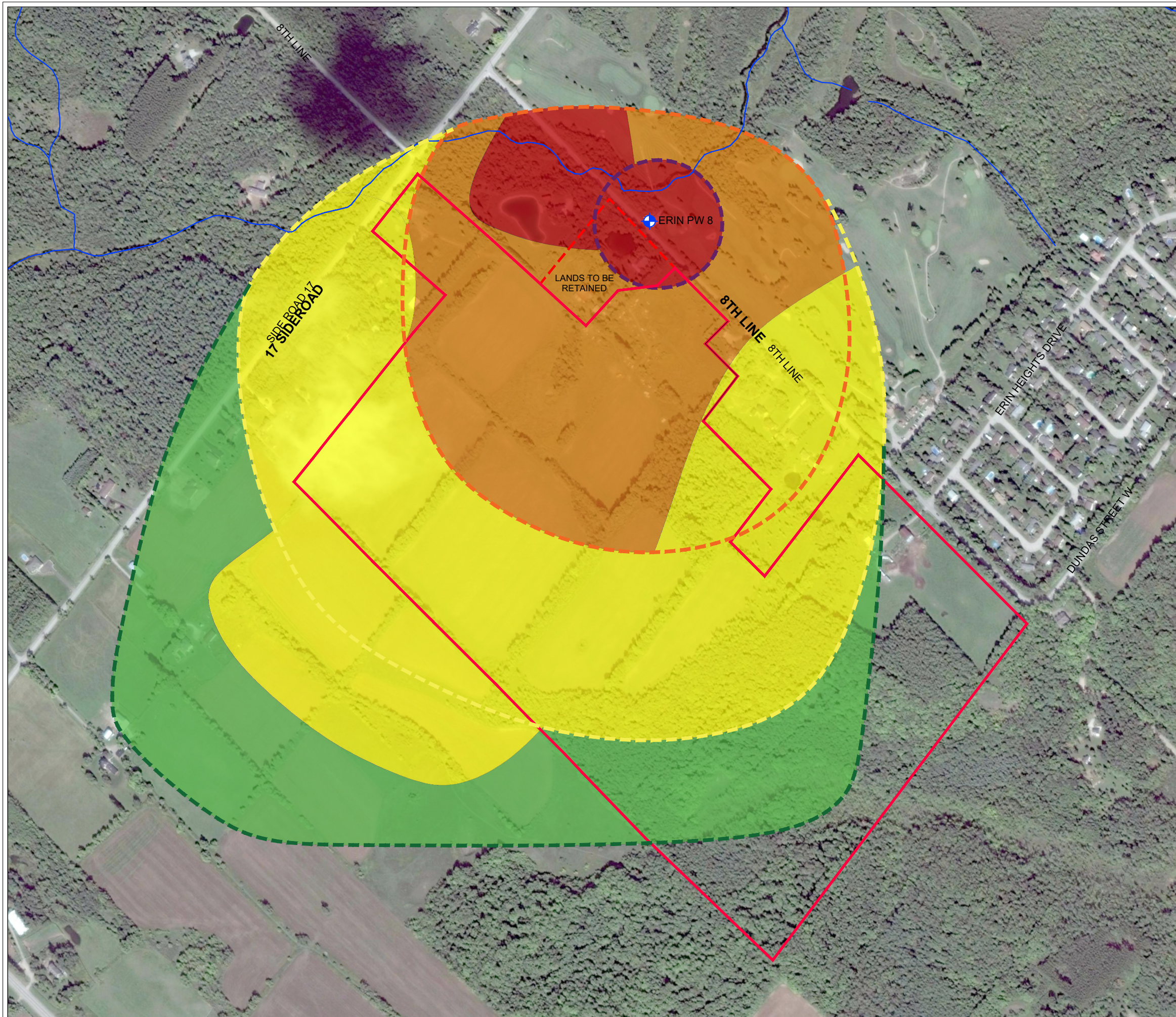
**MATTAMY (ERIN) LIMITED  
& 2779181 ONTARIO INC.**  
ERIN, ONTARIO  
*HYDROGEOLOGICAL ASSESSMENT  
LANGEN PROPERTY*

Figure Title:

**SITE LOCATION**



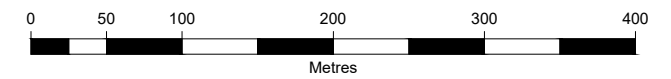
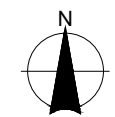
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SK	SC	JUNE 2022	
Scale 1:20,000	Project No. 300052075		



**LEGEND**

- SUBJECT LANDS
- WATERCOURSE
- WHPA A : 100m RADIUS
- WHPA B: 2 YEAR TIME OF TRAVEL
- WHPA C: 2 TO 5 YEAR TIME OF TRAVEL
- WHPA D: 5 TO 25 YEAR TIME OF TRAVEL
- VULNERABLE SCORING AREA GROUNDWATER - 10
- VULNERABLE SCORING AREA GROUNDWATER - 8
- VULNERABLE SCORING AREA GROUNDWATER - 6 TO 4
- VULNERABLE SCORING AREA GROUNDWATER - 2
- + MUNICIPAL SUPPLY WELL

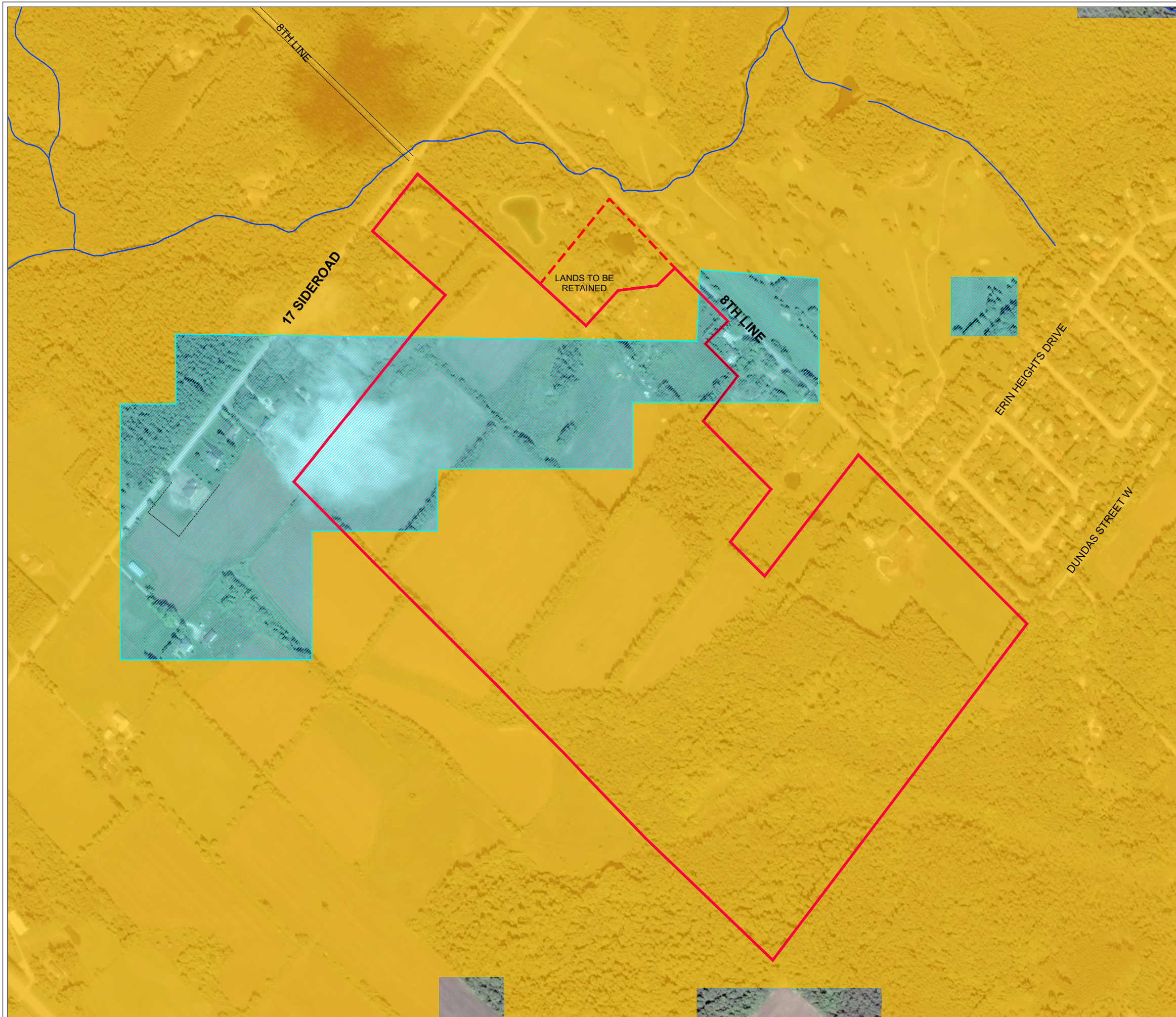
Sources:  
 1. Background satellite / air photo circa 2016 obtained from Google Earth Professional. © Google Earth, use of products are subject to the Terms and Conditions of Licensed Google Earth Software.  
 2. Wellhead Protection Area mapping obtained from Land Information Ontario, Source Protection Information Atlas, MECP, online mapping service.







Client / Report  
**MATTAMY (ERIN) LIMITED  
 & 2779181 ONTARIO INC.  
 ERIN, ONTARIO**  
*DRINKING WATER THREATS  
 DISCLOSURE REPORT*

Figure Title  
**WELLHEAD PROTECTION AREAS**

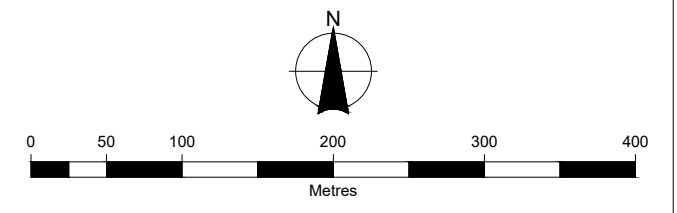
Drawn SK	Checked SC	Date June 2022	Figure No. <b>2</b>
Scale 1:5,000	Project No. 300052075		



**LEGEND**

-  SUBJECT LANDS
-  WATERCOURSE
-  HIGHLY VULNERABLE AQUIFER AREAS
-  SIGNIFICANT GROUNDWATER RECHARGE AREAS

Sources:  
 1. Background satellite / air photo circa 2016 obtained from Google Earth Professional. © Google Earth, use of products are subject to the Terms and Conditions of Licensed Google Earth Software.  
 2. HVA and SGRA mapping obtained from Land Information Ontario, Source Protection Information Atlas, MECP, online mapping service.

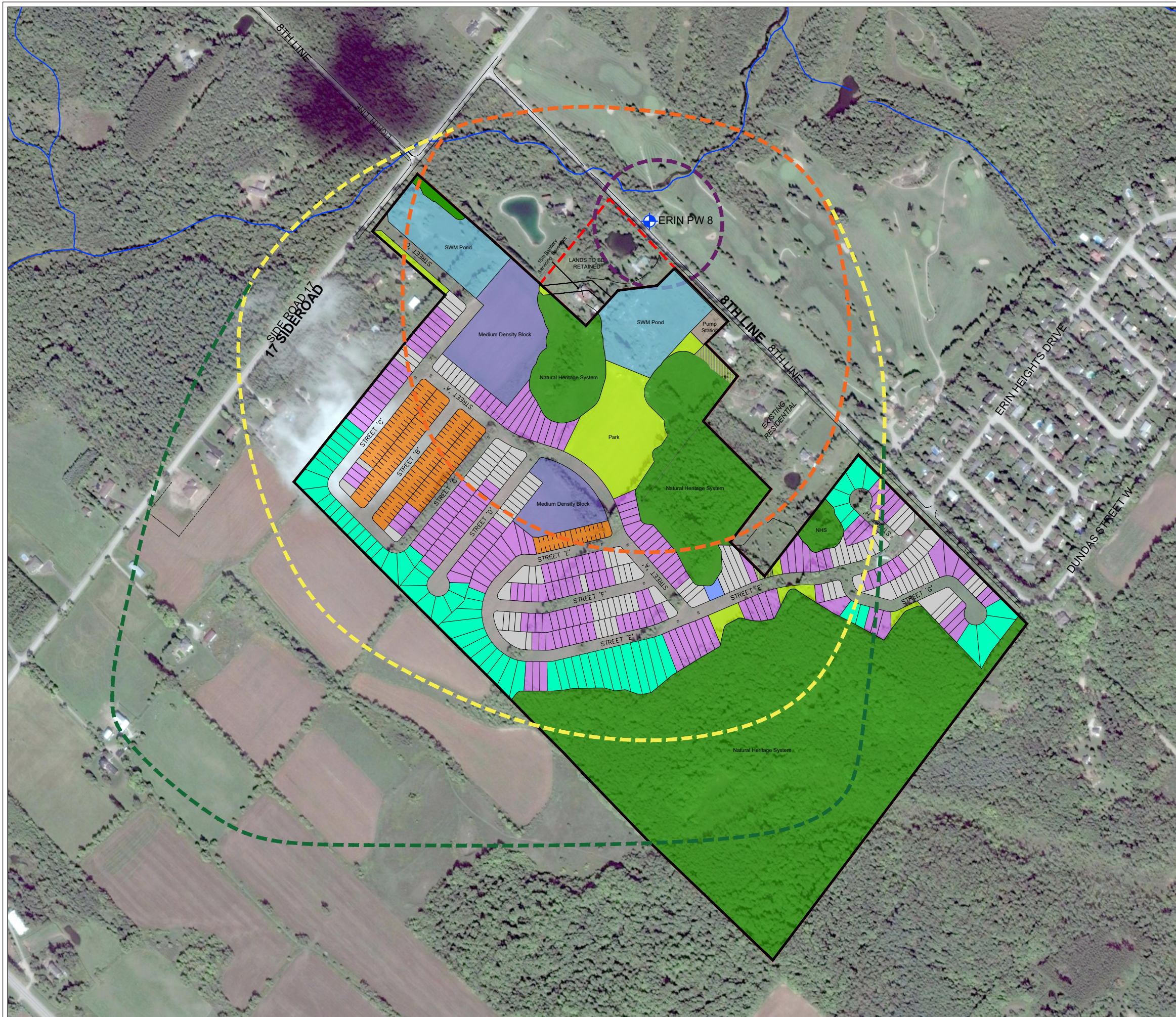


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 ERIN, ONTARIO**  
*DRINKING WATER THREATS  
 DISCLOSURE REPORT*

Figure Title  
**VULNERABLE AREAS**

Drawn SK	Checked SC	Date June 2022	Figure No. <b>3</b>
Scale 1:5,000	Project No. 300052075		

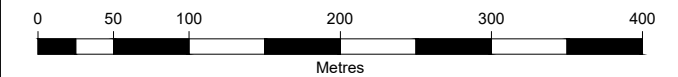
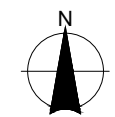




**LEGEND**

- SUBJECT LANDS
  - WATERCOURSE
  - WHPA A : 100m RADIUS
  - WHPA B: 2 YEAR TIME OF TRAVEL
  - WHPA C: 2 TO 5 YEAR TIME OF TRAVEL
  - WHPA D: 5 TO 25 YEAR TIME OF TRAVEL
  - + MUNICIPAL SUPPLY WELL
- LAND USE:
- SINGLE
  - TOWNHOUSE
  - MEDIUM DENSITY
  - SINGLE
  - SINGLE
  - OPEN SPACE
  - PARK
  - NATURAL HERITAGE SYSTEM

Sources:  
 1. Background satellite / air photo circa 2016 obtained from Google Earth Professional. © Google Earth, use of products are subject to the Terms and Conditions of Licensed Google Earth Software.  
 2. Wellhead Protection Area mapping obtained from Land Information Ontario, Source Protection Information Atlas, MECP, online mapping service.



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 ERIN, ONTARIO**  
*DRINKING WATER THREATS  
 DISCLOSURE REPORT*

Figure Title  
**PROPOSED LAND USES**

Drawn SK	Checked SC	Date June 2022	Figure No. <b>4</b>
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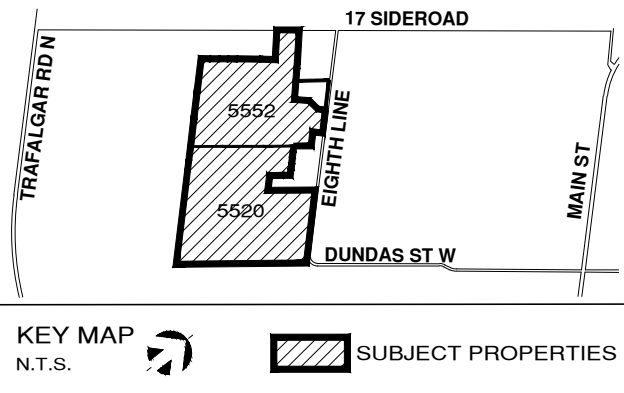
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Appendix A

Composite Plan

Appendix A



**ERIN**  
**5522 EIGHTH LINE &**  
**5520 EIGHTH LINE**

**Preliminary Composite Lotted Plan**

Unit Type	Unit Count (±)	%
30' Singles	121	24
36' Singles	204	40
43' Singles	66	13
66' Singles	1	-
23' Townhouses	116	23
<b>Total</b>	<b>508</b>	<b>100</b>



SCALE 1:3500  
June 2, 2022



