



Source Protection Information Atlas (SPIA)
OMAFRA Consultants Information Day
Source Protection Programs Branch
April 23, 2018

How to use the SPIA?

Ontario Source Water Protection Information Atlas
Ministry of the Environment and Climate Change

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Source Water Protection Information Atlas
Search a location to see if it is in a vulnerable area – that is, close to a municipal drinking water well or other drinking water intake. In these areas certain land or water activities, if left unchecked, could pollute the water supply. If your location is in a vulnerable area, follow the link to the source protection plan to find out what activities are prohibited or need to be managed.

Attention New Users: To Get started - Open Search By Box, and pick a location search type.
By using this map you agree to the terms and conditions stated in the legal disclaimer.

Who Needs This Information

Business developers
Find out if the property you are looking at has land-use restrictions because ground or surface water is nearby. This map also gives you vital information you'll need to complete your application for a provincial environmental compliance approval (ECA).

Farm Owners
Find out if the property site has restrictions affecting animal penning, manure storage or fertilizer use.

Municipalities
Find vulnerable areas to help when issuing building permits, developing Official Plans, plotting utility or transportation corridors, or creating risk management plans.

Prospective home owners
Find out if the property you want to buy has specific requirements, e.g., a fuel tank must be above ground.

For additional help, please contact: source_protection@ontario.ca

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To find SPIA - Google: Ontario Source Protection Information Atlas.

What is a SPIA?

- An interactive mapping tool that allows anyone to determine if a location is in a source protection vulnerable area like a Wellhead Protection Area (WHPA) or an Intake Protection Zone (IPZ).
- The tool is available publicly.
 - Provides a provincial view not limited to any jurisdiction
- An educational and information resource to help you understand and learn about Source Protection in Ontario
 - Displays over 40 layers – Including Administrative boundaries and over 20 Source Protection Vulnerable Area Mapping layers.
 - Links to source protection plans and policies as well as reference and research tools
- A critical tool used in emergency response incidents, waste and sewage ECA reviews, as well as many other compliance related activities
- A critical support tool for OMAFRA staff and consultants in the field, supporting instruments issued through the Nutrient Management Act

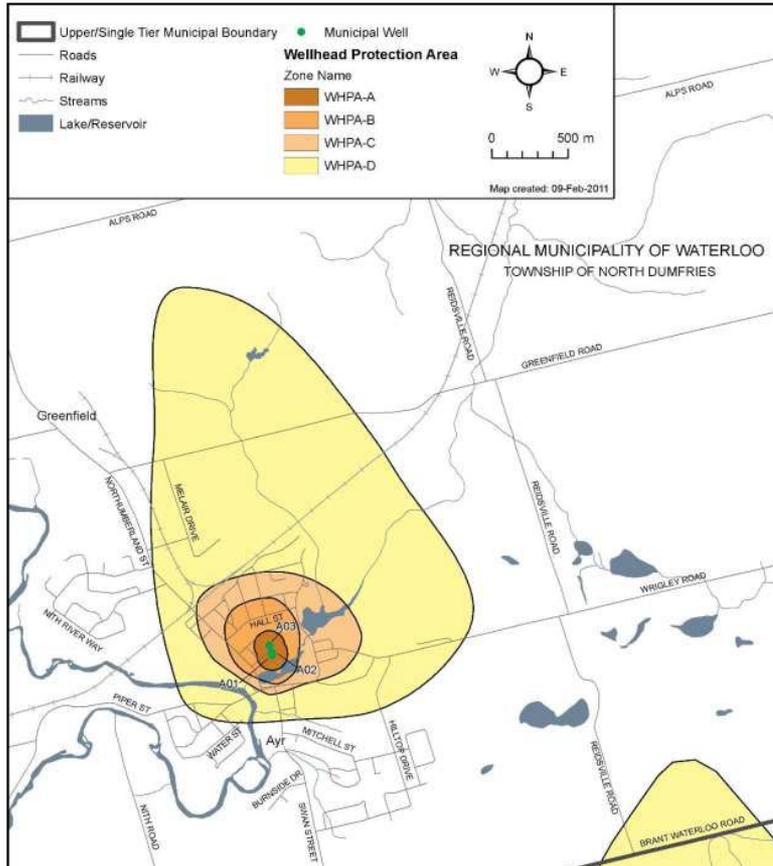
What Information is Available on SPIA

- SPIA shows property specific mapping to it's stakeholders.
 - Perimeter address searches for Lot and Con and property parcels , showing all intersecting vulnerable area layers.
- Vulnerable area types with administrative boundaries (LHIN, MOECC Districts, ORM, NEPDA, First Nations)
 - Direction of Flow – where an overland spill may go.
 - Names of WHPA and IPZ
- Automated access to key references like source protection policies and tables of threats and circumstances.
- Upload Widget enables anyone to temporarily display their own data or maps on top of MOECC and Source Protection layers, and create their own maps.
- Source Protection layers are also available on OMAFRA's [AGMAPS atlas](#).

Today's Outline

- Review the Source Protection Information Atlas functions and layers
- Outline SPIAs functions and layers in a live demo
 - Overview the available legends
 - Watercourse direction of flow, Admin boundaries,
 - Overview options/functions
 - Transparency control
 - Upload your own Excel and shape files
 - Perimeter boundary searches, street intersection
 - Automated link to the threats tool and policy displays

Wellhead Protection Areas (WHPA)



The WHPA is the area around the well that contributes water to a well. Its size is dependent on several factors, including type of aquifer (bedrock, sand) and the direction and speed that groundwater travels.

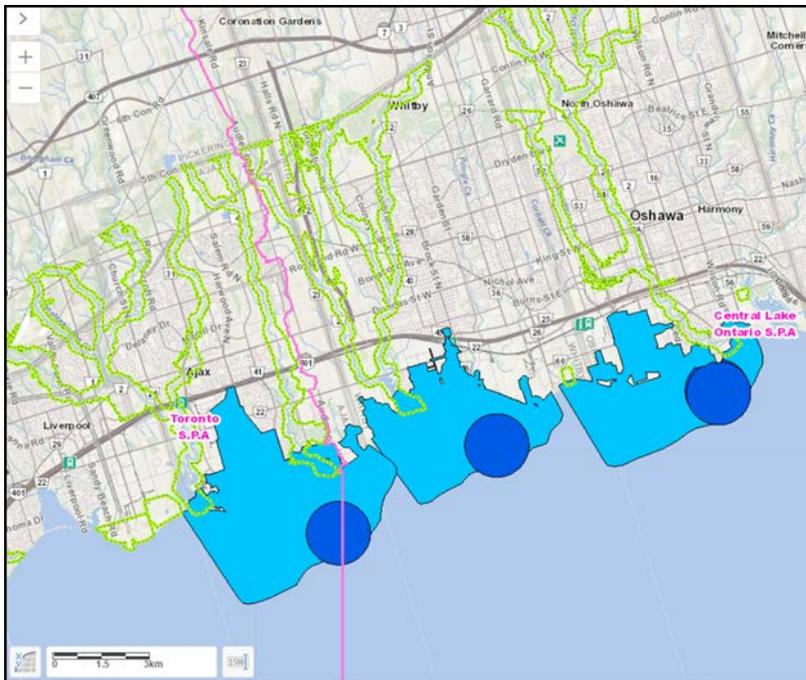
Four water quality zones are delineated based on how long it takes water to move underground to the well (the time of travel). These are further subdivided by a vulnerable score between 2 and 10.

- WHPA-A: 100m radius (quickest)
- WHPA-B: 2 yr. Time of Travel (TOT)
- WHPA-C: 5 yr. TOT
- WHPA-D: 25 yr. TOT (slowest)

Intake Protection Zone (IPZ)

A zone around a municipal intake that draws from a surface water source is called an Intake Protection Zones (IPZs) and there are 3 sub-areas within the IPZ for water quality:

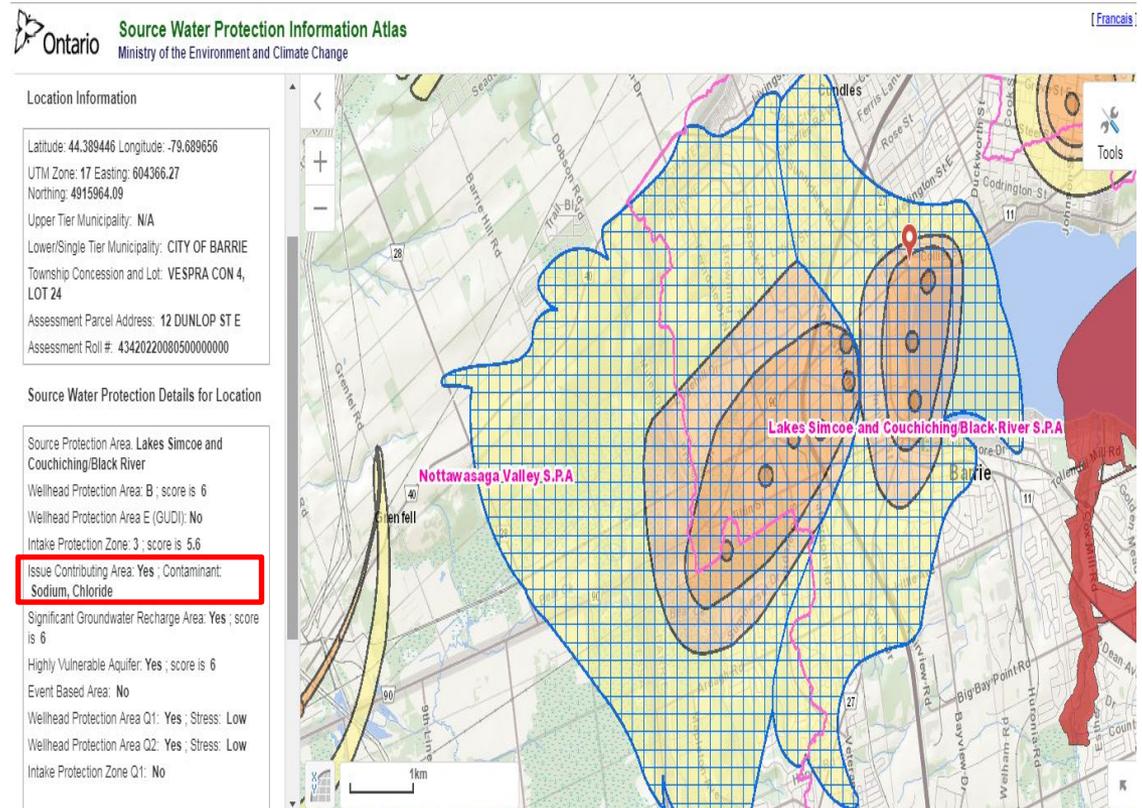
- IPZ-1: closest to the intake, have a radius that ranges between 200 m to 1 km
- IPZ-2: are based on a minimum time of time of travel of 2 hours, but can be larger where the time it takes a drinking water plant operator to respond to an emergency is higher
- IPZ-3: the third and largest zone around the intake where activities can impact the source water but there is time to take action
- Modelling and local site characteristics are used to delineate these protective zones



Issues Contributing Area (ICA)

An area where land-based activities may contribute to the presence of an existing contaminant in the source water. Contaminants from activities identified in these areas can also contribute to the issue and may be significant threats.

- Chloride, sodium, nitrate, *E.coli*, etc.



Events Based Area (EBA)

Areas within an Intake Protection Zone where a spill from an activity under an extreme storm event could contaminate the drinking water supply. The EBAs are delineated using modelling and/or monitoring data.

Applicable only to surface water intakes located in large water bodies such as Great Lakes, Connecting Channels, Lake St. Clair, Lake Simcoe and Ottawa River

Ontario Source Water Protection Information Atlas
Ministry of the Environment and Climate Change

[Français]

Location Information

Latitude: 42.274302 Longitude: -83.082357
UTM Zone: 17 Easting: 328283.08
Northing: 4682331.98
Upper Tier Municipality: N/A
Lower/Single Tier Municipality: CITY OF WINDSOR
Township Concession and Lot: SANDWICH CON 1
PETITE COTE, LOT 55
Assessment Parcel Address: N/A
Assessment Roll #: 373980840001060000

Source Water Protection Details for Location

Source Protection Area: Essex
Wellhead Protection Area: No
Wellhead Protection Area E (GUDI): No
Intake Protection Zone: 3
Issue Contributing Area: No
Significant Groundwater Recharge Area: No
Highly Vulnerable Aquifer: No
Event Based Area: Yes for type:
Stored/Transported Fuel/Oil Spill
Wellhead Protection Area Q1: No
Wellhead Protection Area Q2: No
Intake Protection Zone Q1: No

Use the Policy search tab to see if any policies apply
- for more details see the [source protection plan](#)

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*Note: Wastewater Treatment Plant / Sanitary Sewer EBA have the potential to make Sewage Works a significant threat (not waste sites or other Instruments).

Verification of Location

 **Source Protection Information Atlas**
Ministry of the Environment and Climate Change

Search By

Result Details

Searched By:
Assessment Roll #
Value:
40200900090100000000

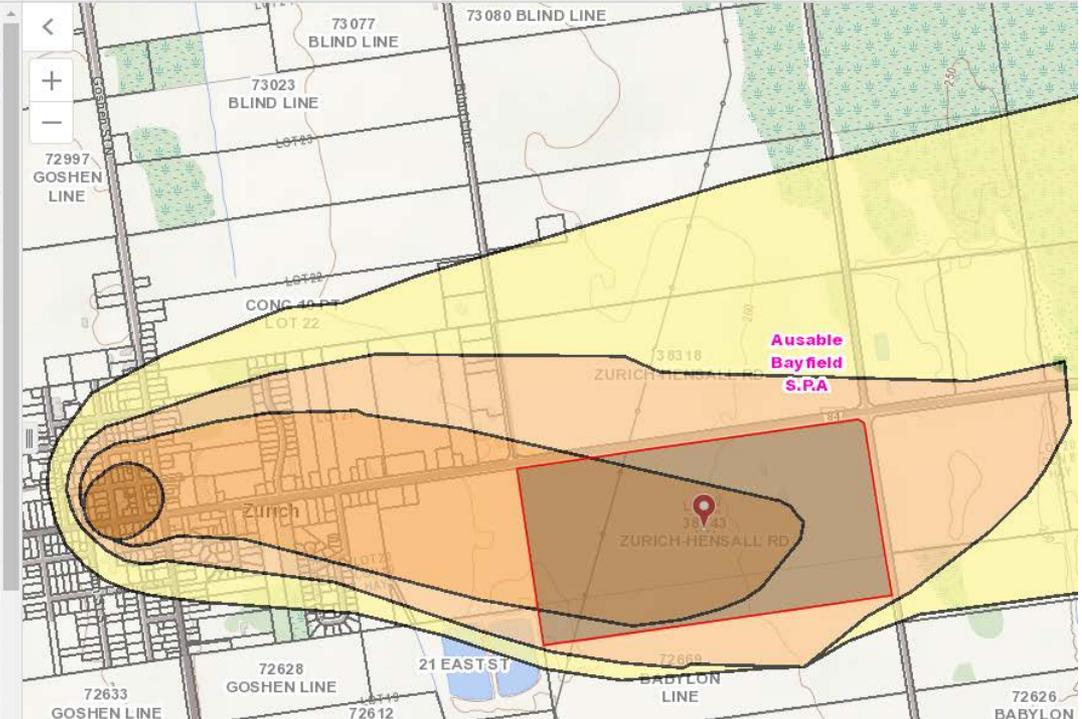
Location Policy Search by SPA

Location Information

Latitude: 43.42071 Longitude: -81.6057
UTM Zone: 17 Easting: 450968.39 Northing: 4807713.9
Upper Tier Municipality: COUNTY OF HURON
Lower/Single Tier Municipality: MUNICIPALITY OF BLUEWATER
Township Concession and Lot: HAY CON 9, LOT 20
Assessment Parcel Address: 38343 ZURICH-HENSALL RD
Assessment Roll #: 40200900090100000000

Source Protection Details for Location

Source Protection Area: Ausable Bayfield
Wellhead Protection Area: B,C ; score is 10
Wellhead Protection Area E (GUDI): No
Intake Protection Zone: No
Issue Contributing Area: No
Significant Groundwater Recharge Area: No



- When searching by street address, Do not assume default PIN location is correct. Confirm the search by zooming in and moving the PIN.
- The PIN may land in the street in front of the property

Searching within Properties

Move PIN to portion of property the activity is located, confirming the zone and score

Do not assume default is correct.

Zoom check address and adjust the PIN location against the property boundary if necessary.

Result Details

Searched By:
Map location

Value:
User identified location

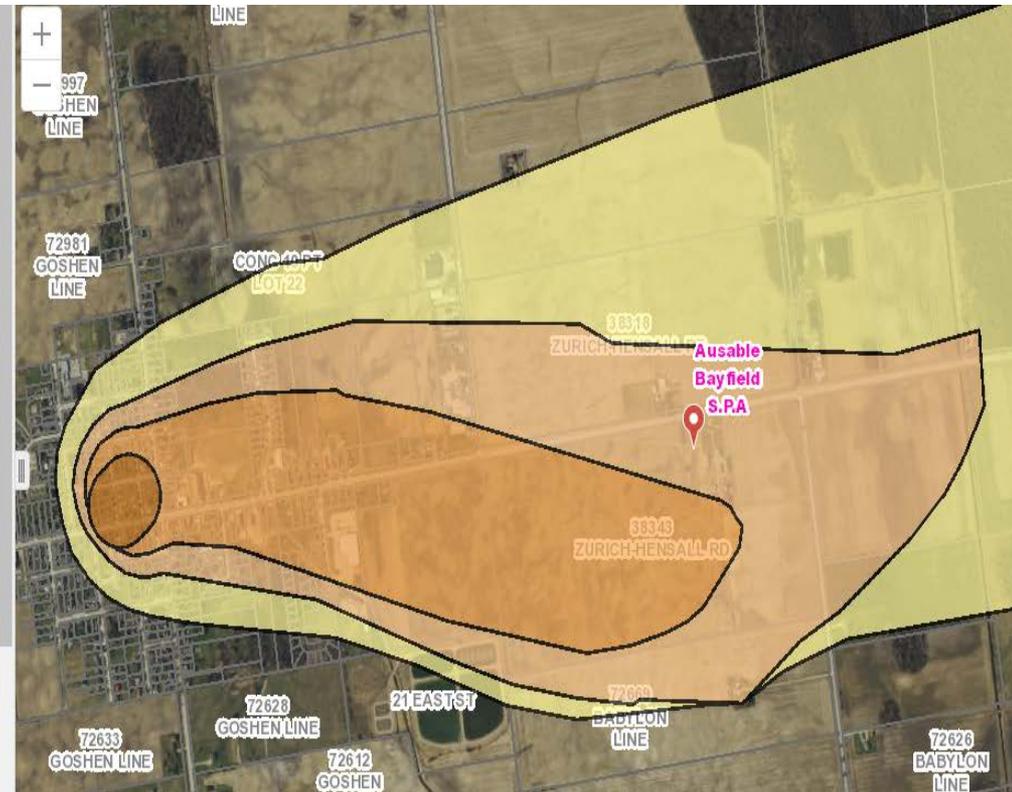
Location Policy Search by SPA

Location Information

Latitude: 43.42258 Longitude: -81.60407
UTM Zone: 17 Easting: 451101.91
Northing: 4807920.64
Upper Tier Municipality: COUNTY OF HURON
Lower/Single Tier Municipality: MUNICIPALITY OF BLUEWATER
Township Concession and Lot: HAY CON 9, LOT 20
Assessment Parcel Address: 38343 ZURICH-HENSALL RD
Assessment Roll #: 40200900090100000000

Source Protection Details for Location

Source Protection Area: Ausable Bayfield
Wellhead Protection Area: C; score is 6
Wellhead Protection Area E (GUDI): No
Intake Protection Zone: No
Issue Contributing Area: No



Begin by clicking on the “Search By” tab

Click Here to Open the box! Open - Close any box on the left panel by clicking it.

Search By

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Source Water Protection Information Atlas

Search a location to see if it is in a vulnerable area – that is, close to a municipal drinking water well or other drinking water intake. In these areas certain land or water activities, if left unchecked, could pollute the water supply. If your location is in a vulnerable area, follow the link to the source protection plan to find out what activities are prohibited or need to be managed.

Attention New Users: To Get started - Open Search By Box, and pick a location search type.

By using this map you agree to the terms and conditions stated in the legal disclaimer.

Who Needs This Information

What is in the “Search By” tab?

Search By

Search By Point

- Address (Address, City, Postal Code)
- Coordinates (Latitude/Longitude/UTM)
- Municipality (Lower/Single and Upper/District)

Search By Boundary

Note: This search will return the highest vulnerability scores and all Source Protection details found inside the parcel or lot boundary.

- Geographic Township/Lot/Concession
- Assessment Roll #

Enter Address

Search

Result Details

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There are two types of searches in SPIA:

1. Search By Point

- Address (Address, City, Postal Code)
- Coordinates (Latitude/Longitude/UTM)
- Municipality (Lower/Single and Upper/District)

2. Search By Boundary

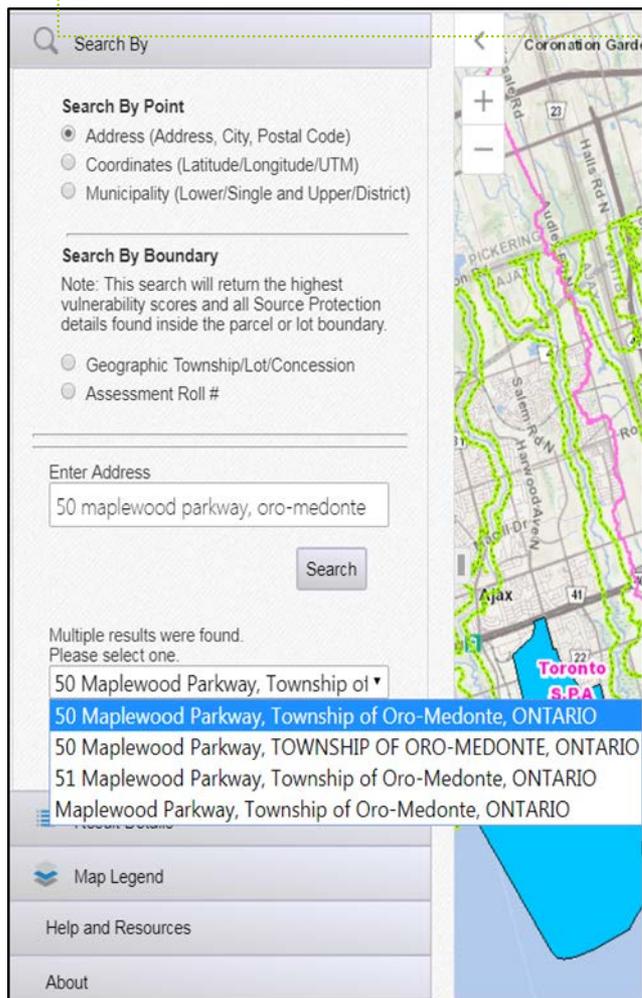
- Geographic Township/Lot/Concession
- Assessment Roll #

Note: A search by boundary will return the highest vulnerability scores and all Source Protection details found inside the parcel or lot boundary.

402009000901000

Important: It is the user’s responsibility to confirm the location of the search. A map search in SPIA will place you in or very close to your specified search.

What is in the “Search By” tab? (Cont’d)



Example: Address search

1. Select the Address search option.
2. Enter your address information in the following order: Address, City, (ex. “**50 Maplewood Parkway, Oro-Medonte**”) and Click Search.
 - Multiple results will be generated based on similar address types. Use the drop down menu and make a selection.
3. Click 
4. **Important:** After performing a search, zoom in on the map and ensure that the red pin is within your desired address. The result detail box will confirm this for you.
 - The Red Pin can be moved by clicking on the map.



What is in the “Search By” tab? (Cont’d)

Search By

Search By Point

Address (Address, City, Postal Code)

Coordinates (Latitude/Longitude/UTM)

Municipality (Lower/Single and Upper/District)

Search By Boundary

Note: This search will return the highest vulnerability scores and all Source Protection details found inside the parcel or lot boundary.

Geographic Township/Lot/Concession

Assessment Roll #

Enter Coordinates by:

Latitude / Longitude (degrees, minutes, seconds)

Latitude / Longitude (decimal degrees)

UTM

UTM Zone

Easting (e.g. 583689)

Northing (e.g. 5547433)

Example: UTM Coordinate Search

1. Specify your UTM Zone (e.g. 17)
2. Enter your Easting coordinates (e.g. 583689)
3. Enter your Northing coordinates (e.g. 5547433)
4. Click Search.
5. **Important:** After performing a search, zoom in on the map and ensure that the red pin is within your desired address. The results detail box will confirm this for you.
 - The Red Pin can be moved by clicking on the map.



Streets/Intersections searches

Enter a street intersection.

Move PIN to the appropriate street(s) manually, or enter the two street names

Exeter and Wellington, London

The screenshot displays a web application interface for 'Rawley Lodge'. The interface includes a map on the right and a sidebar on the left. The sidebar contains the following information:

- Location Information:** A green box highlights the 'Confirm' button.
- Location Information:**
 - Latitude: 44.804269 Longitude: -79.717898
 - UTM Zone: 17 Easting: 601392.78
 - Northing: 4962007.04
 - Upper Tier Municipality: COUNTY OF SIMCOE
 - Lower/Single Tier Municipality: TOWNSHIP OF SEVERN
 - Township Concession and Lot: TAY CON 12, LOT 18
 - Assessment Parcel Address: 5375 GLOUCESTER POOL
 - Assessment Roll #: 4351040009361010000
- Source Water Protection Details for Location:**
 - Source Protection Area: Severn Sound
 - Wellhead Protection Area: No
 - Wellhead Protection Area E (GUDI): No
 - Intake Protection Zone: 1 ; score is 10
 - Issue Contributing Area: No
 - Significant Groundwater Recharge Area: No
 - Highly Vulnerable Aquifer: Yes ; score is 6
 - Event Based Area: No

The map on the right shows a red-shaded area representing the 'Lakes Simcoe and Couchiching/Black River S.P.A.' and 'Severn Sound S.P.A.'. A red pin is placed on the map, and a scale bar indicates 100m. The map also shows streets such as '2900 KELLYS RD', '3271 STAMANT RD', and '3180 STONEWALL LANE'. The footer of the application includes 'Powered By Land Information Ontario' and '© QUEEN'S PRINTER FOR ONTARIO, 2017'.

What is in the “Result Details” tab?

Location Policy Search by SPA

Location Information

Latitude: 43.42258 Longitude: -81.60407
UTM Zone: 17 Easting: 451101.91
Northing: 4807920.64
Upper Tier Municipality: COUNTY OF HURON
Lower/Single Tier Municipality: MUNICIPALITY OF BLUEWATER
Township Concession and Lot: HAY CON 9, LOT 20
Assessment Parcel Address: 38343 ZURICH-HENSALL RD
Assessment Roll #: 40200900090100000000

Source Protection Details for Location

Source Protection Area: **Ausable Bayfield**
Wellhead Protection Area: C ; score is 6
Wellhead Protection Area E (GUDI): **No**
Intake Protection Zone: **No**
Issue Contributing Area: **No**
Significant Groundwater Recharge Area: **No**
Highly Vulnerable Aquifer: **No**
Event Based Area: **No**
Wellhead Protection Area Q1: **No**
Wellhead Protection Area Q2: **No**
Intake Protection Zone Q: **No**

Use the Policy search tab to see if any policies apply – for more details see the [source protection plan](#)

The Significant threats for the vulnerable areas at this location can be found at this [link](#).

Information is current as of: **March, 2018**

After completing a search, the Result Details will automatically open.

In the Result Details tab there are two sections:

1. Location Details section

- This section lists all location and Source Protection information related to your search.
- For more details surrounding the Source Protection Area, click on the link to the [Source Protection Plan](#).

2. Policy Search section

- This section lists the Source Protection policies which apply to your location. (See the next page for more details)

Note: Result Details will always be populated regardless if a layer is toggled on or off

What is in the “Result Details” tab? (Cont’d)

Search By

Result Details

Searched By:
Address

Value:
50 Maplewood Parkway, Township of Oro-Medonte, ONTARIO

Location

Policy Search

* Source Protection Area: Lakes Simcoe and Couch

Policy Search Type

Must Conform With All Policies

Policy Database Number:

Implementing Body: All

[Policy Atlas Download - All Policies](#)

Search Reset

Map Legend

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2. Policy Search window

- If you're interested in viewing the Source Water Protection policies which apply to your location, click on the Policy Search Window
- Policy Searches can be filtered by “**Must Conform With Policies**” or by “**All Policies**”.
 - **Must Conform With:** are mandatory policies which require action (Prescribed Instruments, Risk Management Plans, Prohibition, Restricted Land Uses, and Land Use Planning policies).
- Users can also download the entire Policy Atlas for local analysis.

Policy Search Results: Policies are displayed below the map.

Ontario Source Water Protection Information Atlas Ministry of the Environment and Climate Change

Search By: Address
 Value: 50 Maplewood Parkway, Township of Oro-Medonte, ONTARIO

Location Policy Search

* Source Protection Area: Lakes Simcoe and Couch
 Policy Search Type: Must Conform With All Policies
 Policy Database Number:
 Implementing Body: MOECC

[Policy Atlas Download - All Policies](#)

Search Reset

Policy Search Results

Policy Database Number	Municipality	Policy Text
NASM(App)-3		Where the existing application of category 1, 2 and 3 non-agricultural source material to land requires approval under the Nutrient Management Act or Environmental Protection Act, and is in an area where it is a significant drinking water threat, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval: 1) Prohibits the application of category 1 non-agricultural source material within WHPA-A and IPZ-1, and includes appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat outside of WHPA-A/IPZ-1. 2) Prohibits the application of category 2 and 3 non-agricultural source material within WHPA-A, WHPA-B and IPZ-1 where the activity is a significant drinking water threat and includes appropriate terms and conditions to ensure that the activity ceases to be a significant drinking water threat outside of WHPA-A, WHPA-B and IPZ-1.
NASM(App)-4		The future application of category 2 and 3 non-agricultural source material is prohibited where the activity would be a significant drinking water threat. Where the future application of category 1 non-agricultural source material to land requires an approval under the Nutrient Management Act or Environmental Protection Act, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval prohibits the application of category 1 non-agricultural source material within WHPA-A and IPZ-1, and includes appropriate terms and conditions to ensure the activity does not become a significant drinking water threat outside of WHPA-A and IPZ-1.
NASM(H&S)-3		Where the existing handling and storage of category 1, 2 and 3 non-agricultural source material requires approval under the Nutrient Management Act or Environmental Protection Act and is in an area where it is a significant drinking water threat, OMAFRA and/or MOE shall ensure that the Environmental Compliance Approval: 1) prohibits the handling and storage of category 1 non-agricultural source material within WHPA-A and IPZ-1, and includes appropriate terms and conditions to ensure the activity ceases to be a significant drinking water threat outside of WHPA-A/IPZ-1. 2) prohibits the handling and storage of category 2 and 3 non-agricultural source material within WHPA-A, WHPA-B, A, IPZ-1 where the activity is a significant drinking water threat, and includes appropriate terms and

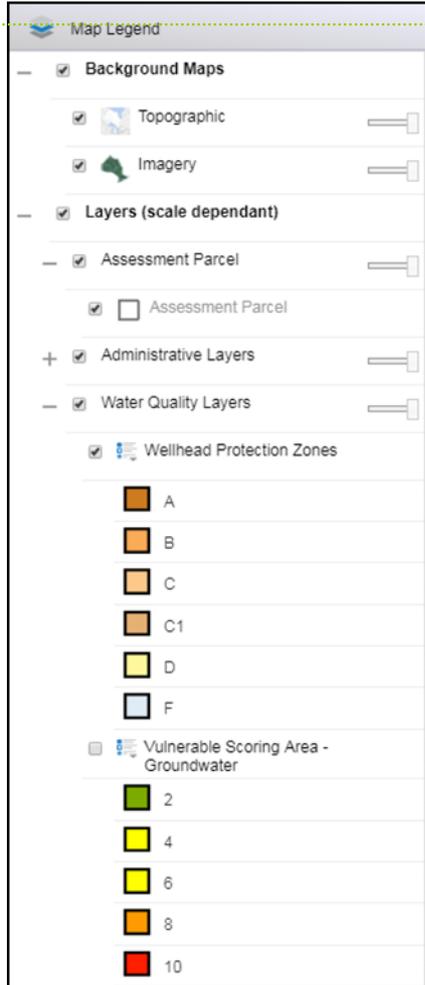
Displaying 1 - 15 (Total: 15)

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What is in the “Map Legend” tab?

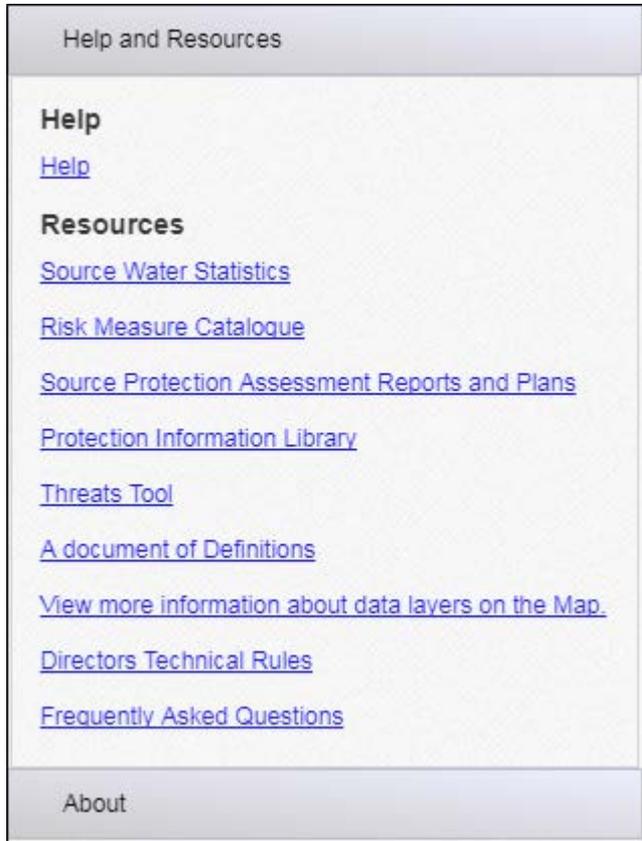


- As you zoom in on the map, more layers of information will become activate. To customize your map view, select from a variety of layers and adjust opacity using the transparency slider.
- Layers which appear greyed out are only visible once you zoom in. For example:



Tip: By deselecting layers you can speed up the maps refresh rate. Toggle off the Imagery and Assessment layers first if not needed.

What is in the “Help and Resources” tab?



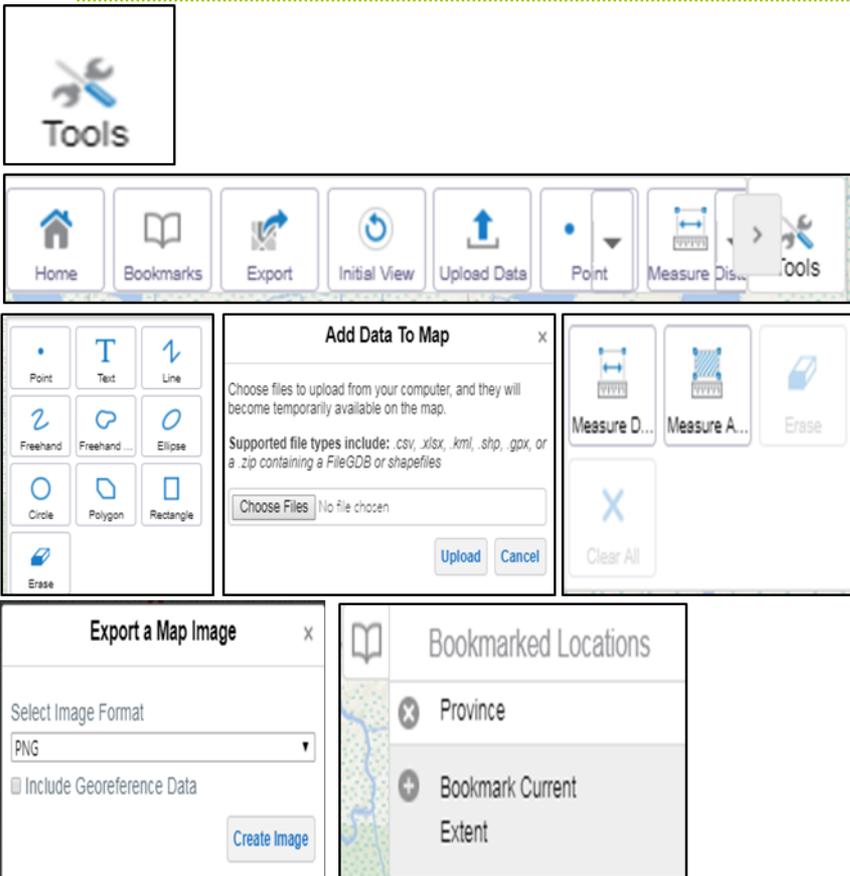
Bonus: There are a number of supporting links and documents provided in the Help and Resources section. Explore them to learn more about Source Protection.

Open the Threats Tool, to determine what Activities are significant risks in different zones and scoring areas.

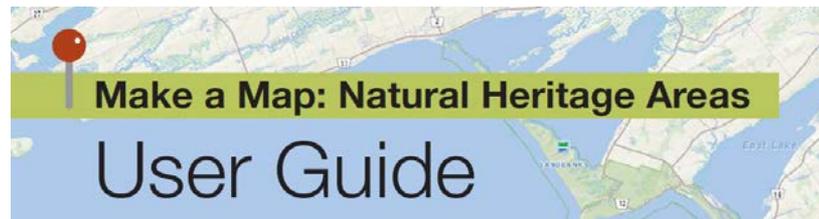


Note: *Significant threat activities in ICAs.* Be aware that you also need to check the contaminants associated with any Issue Contributing Area identified in the Results Details, and decide if the activity you are reviewing involves that contaminant.

What is in the Tools Box?

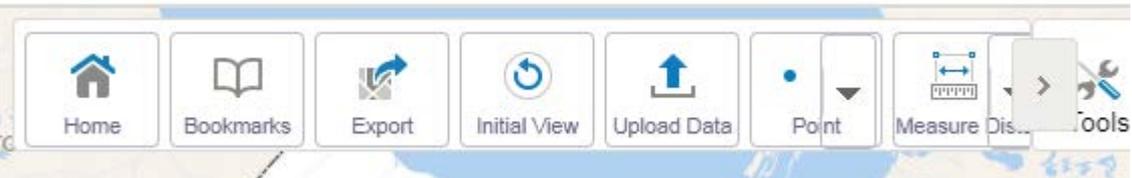


- Click on the Tools Icon located in the top right corner of your screen.
- There are a number of widgets in which you can customize your map.
 - Add Text
 - Add Markups
 - Calculate Distances and Areas
 - Create Bookmarks
 - Export Maps
- Visit https://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/Policy/User_Guide-Map_a_Natural_Heritage_Area-eng.pdf



Upload Widget

	A	B	C	D	E	
	SourceProtectionRegion	SourceProtectionArea	POINT_X	POINT_Y	Hwly	DetailsApprox
1	Lake Erie - Kettle Creek	Grand River	-80.2251	43.49956	6	Hwy 6 Northbc
2	Lake Erie - Kettle Creek	Grand River	-80.3305	43.65783	6	F
3	Lake Erie - Kettle Creek	Grand River	-80.3285	43.52806	7	F
4	Lake Erie - Kettle Creek	Grand River	-80.1319	43.61028	7	F
5	Lake Erie - Kettle Creek	Grand River	-80.375	43.1567	24	F
6	Lake Erie - Kettle Creek	Grand River	-80.3133	43.32951	24	F
7	Lake Erie - Kettle Creek	Grand River	-80.3592	43.07541	24	F
8	Lake Erie - Kettle Creek	Grand River	-80.4891	43.47292	85	F
9	Lake Erie - Kettle Creek	Grand River	-80.4732	43.46799	85	H TC
10	Lake Erie - Kettle Creek	Grand River	-80.3353	43.41368	401	F
11	Lake Erie - Kettle Creek	Grand River	-80.3177	43.41457	401	Hwy 401 West
12	Lake Erie - Kettle Creek	Grand River	-80.2128	43.16762	403	Hwy 403 West
13	Lake Erie - Kettle Creek	Grand River	-80.3592	43.1648	403	Hwy 403 East
14	Lake Erie - Kettle Creek	Grand River	-80.6342	43.39676	08-Jul	Hwy 7/8 Eastb
15	Lake Erie - Kettle Creek	Grand River	-80.4576	43.43508	08-Jul	Hwy 7/8 West
16	Lake Erie - Kettle Creek	Long Point	-80.3496	42.83791	3	Hwy 3 Eastbo
17	Lake Erie - Kettle Creek	Long Point	-80.5197	42.85381	3	Hwy 3 Eastbo

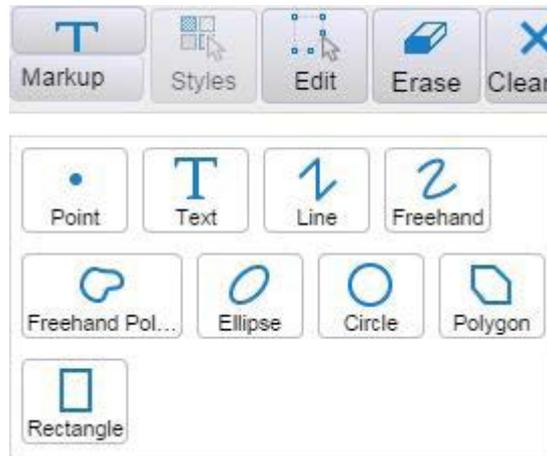


Click on upload Data; You can map locations or upload your own data from a number of compatible file types like Excel and GIS Shape files. You just need Latitude and Longitude fields.

Printing a Map

Option 1: Use the “CTRL” + “Print Scrn” keys, to copy and then paste the image to your document. The F11 command expands the map to fill your screen.

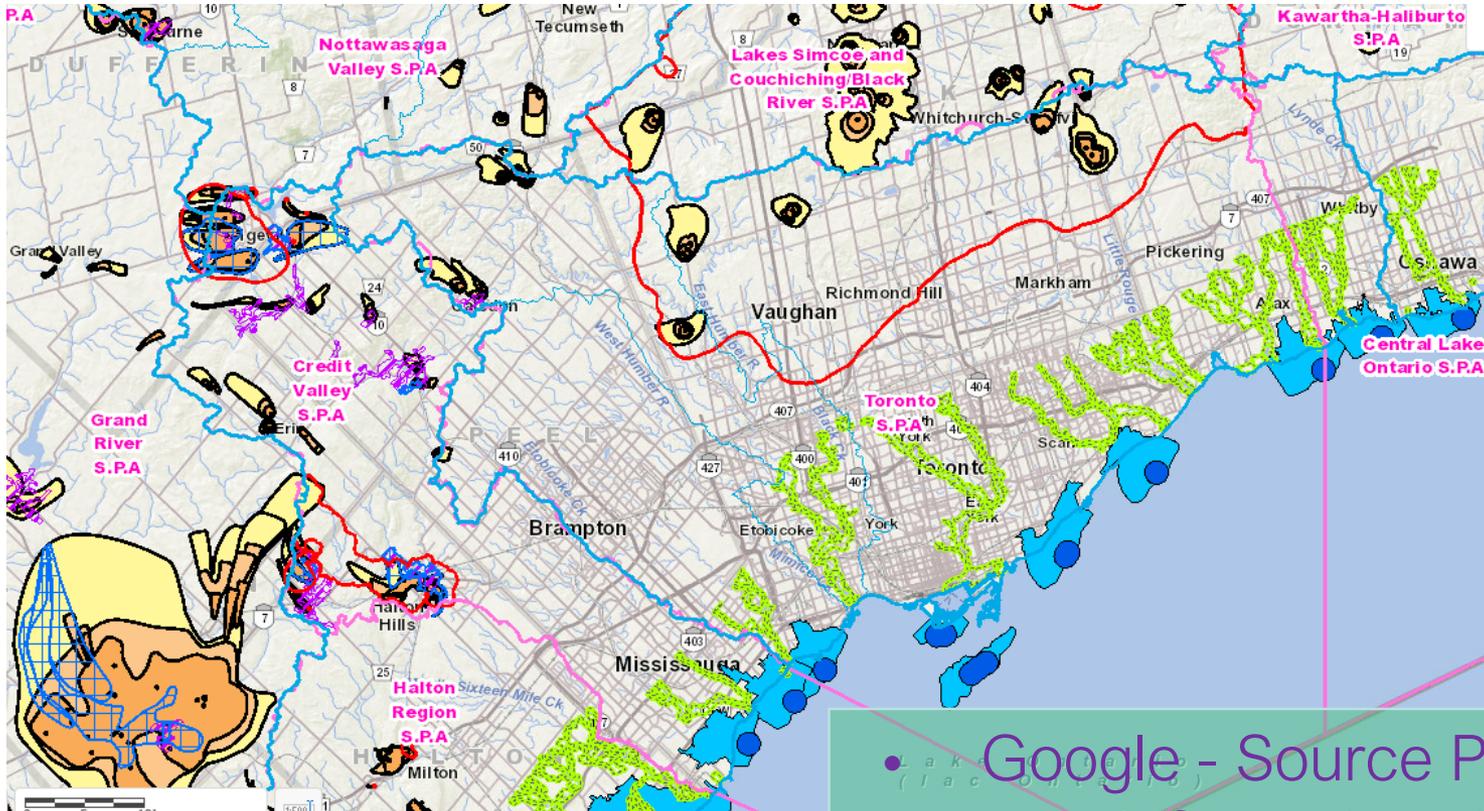
Option 2: Use the Tool Box in SPIA



Troubleshooting Location issues

- **SPIA can't find the address. Now what?
Or, I found on it on Google but it's not in SPIA?**
- Note: Google Map will estimate an address even if the address doesn't exist. Use it if you must, but be careful.
- Addressing is wrong (the site was next door to 111 Albert Street, so user entered 109 into IDS, but there is no 109 Albert Street)
- Check Canada Postal Code. You may need to correct the address as well.
 - Multiple addresses in address field
 - Mailing address is different than physical address
 - (This happens when you merge properties into malls or business complexes)
 - No parcel for address
 - (trailer parks, or informal subdivisions, municipal lots)
 - No official address of any kind – address is a placeholder
 - Same street name in different towns or cities
 - Street naming not current.
 - Municipality name is different; search a partial name
 - O'CONNOR is actually O CONNOR so try a partial name CONNOR
 - *It's only a hyphen or an apostrophe but makes a difference.*

Let's go *LIVE* to SPIA



- Google - Source Protection Information Atlas
- Click: [IACCEPT](#)

Thank you and Questions?

