# Surface Water Data Viewer Guide


**Guide Version: 2025-1**
**SWDV Version: 2.0**

**Department of Natural Resources**

**Water Quality Bureau & IT**

**2/21/2025**

# Table of Contents

# 1. Introduction

The Surface Water Data Viewer (SWDV) is a Wisconsin DNR data delivery system that provides interactive web mapping tools for a wide variety of datasets including chemistry (water, sediment), physical and biological (macroinvertebrate, fish) data. This guide outlines the parts, functions and tools present in the SWDV.

## 1.1 Contact

Please direct questions to the Surface Water Data Viewer inbox at: DNRSWDV@wisconsin.gov.

## 1.2 Terms of Use

The Wisconsin Department of Natural Resources seeks to provide access to the best statewide map information available to the DNR for use in Public services.

The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. **Users of these maps should confirm the ownership of land through other means in order to avoid trespassing**. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

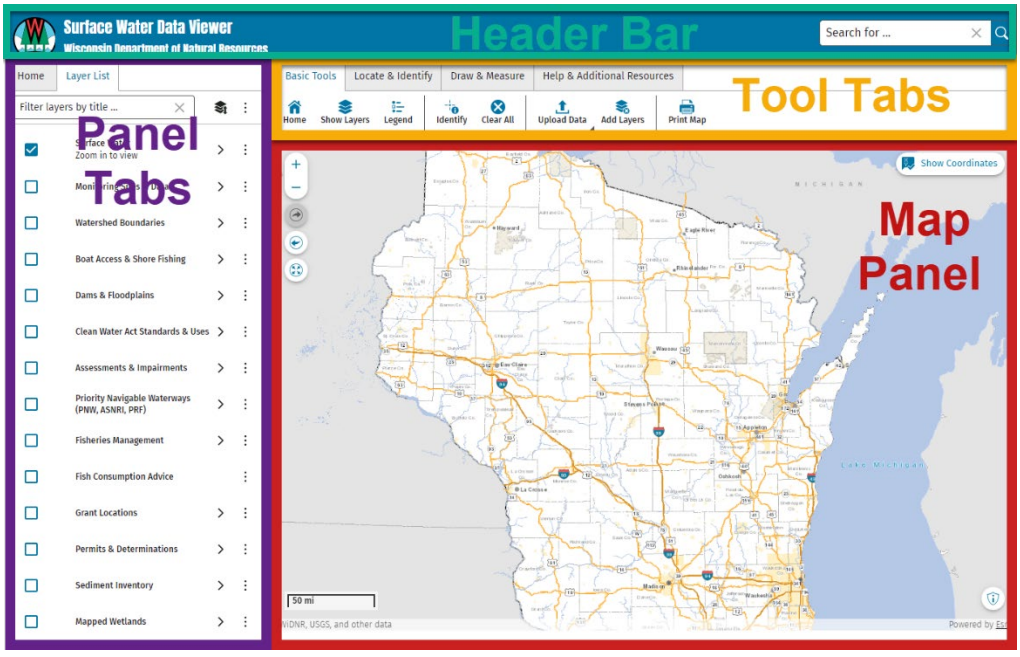
For additional information, see the DNR Terms and Conditions

## 1.3 Versioning

The SWDV version numbering system started back at 1 with the update to the Vertigis platform. The planned versioning sequence for releases is a set of three values separated by periods. The first value is for major updates, the second value is for minor updates, and the third value is for small bug fixes. The third value will be shown in the app but will not be on the cover of this guide so that the guide does not need to be republished with bug fixes unless necessary.

# 2. Layout Navigation

This guide uses the following terms to indicate locations in the viewer: Header Bar, Panel Tabs, Tools Tabs, and Map Panel. The sections are set up as pictured:



# 3. Panel Tabs Summary

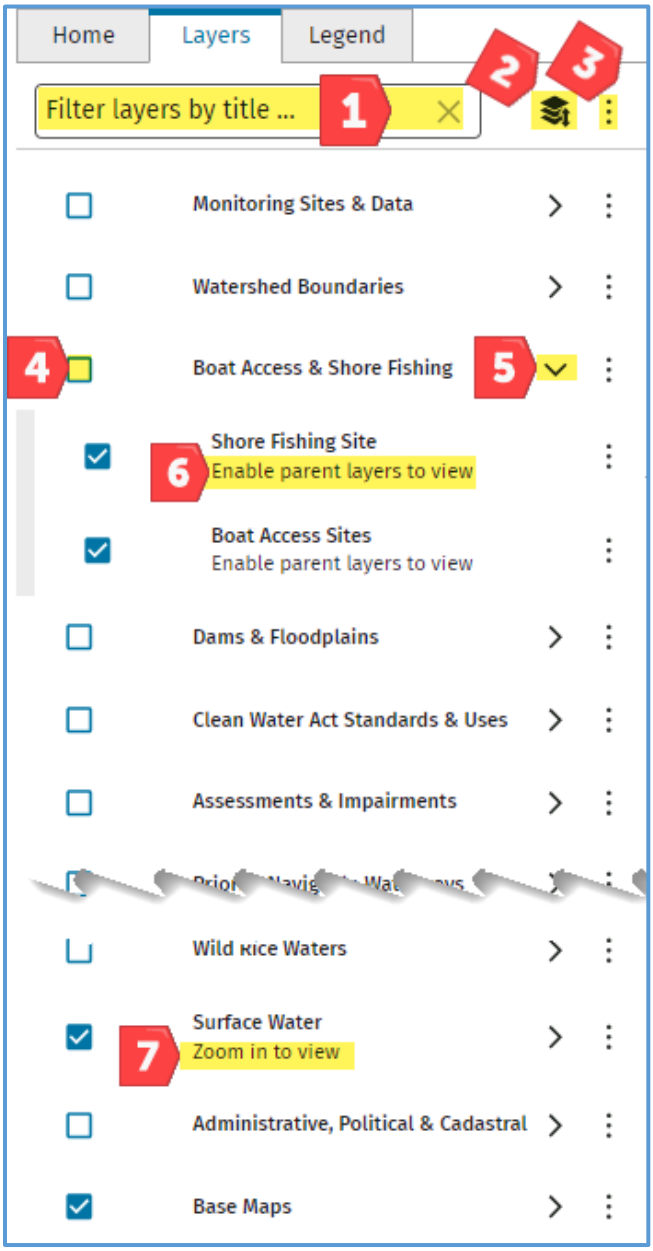
The SWDV Panel Tabs provide information and tools based on what activities the user engages. There are three main Panel Tabs: **Home**, **Layers** and **Legend**. More panel tabs appear as you use tools or select data.

## 3.1 Home

Displays a basic introduction, a short set of directions on finding layers and turning layers on/off, as well as a description of tools in the Tool Tabs.

## 3.2 Layers

Displays the list of layers available in the viewer. Some layers are scale dependent and are only viewable when zoomed in on the map.




1. **Filter Layers** – Search all layer names in the **Layers** Panel and confines the layer list to specified search criteria. It's an easy way to find a layer and turn it on.

2. **Reorders Layers** – Enables the user to reorder the layers' drawing order.

3. **Layer Options** – see Section 3.2.1.

4. **Layer Group Check Box** – Used to show or not show the layer group data on the map. Note: Depending on the View selected not all layers under the group may be turned on.

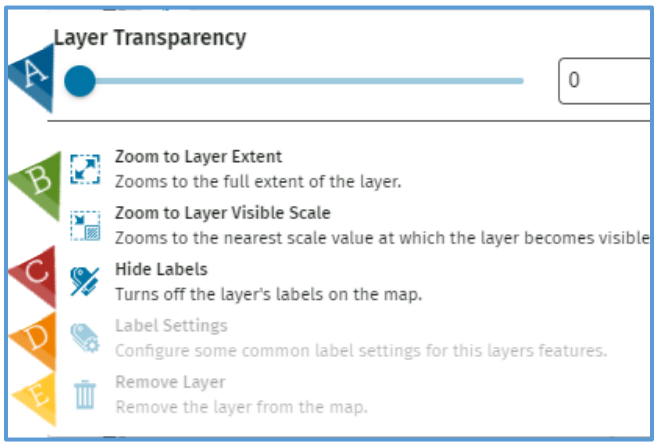
5. **">" and "v" Icon** – Expands/contracts list of layers in the layer group.

6. **Enable parent layers to view** - Used to indicate the parent layer's check box needs to be checked ("turned on") in order to see the layer on the map. Once the parent layer is on this text will disappear.

7. **Zoom in to View** – A scale threshold is set so it will not be visible until you zoom into that visible scale. Once you have the text "Zoom in to view" will disappear.

### 3.2.1 Layer Options

Each layer has most of the following options. If an option is not available, the text will be grey.




A. **Layer Transparency** – A tool to choose the level of transparency by slider or typing a value in the box.

B. **Zoom to Layer Extent** and **Zoom to Layer Visible Scale** – Zooms to either the layer's full extent or the nearest scale value at which the layer becomes visible.

C. **Show/Hide Labels** – Toggles the Labels On/Off.

D. **Label Settings** – Configure common label settings.

E. **Remove Layer** – Remove the layer from the viewer; used mostly for user-uploaded data.

## 3.3 Legend

Displays symbology for visible layers in the map area and their drawing order. The legend will not show a layer in the legend if it is not turned on or if it is not visible on the map.

## 3.4 Results

Displays a list of results from the search bar, find tools, identify or buffer identify. For more information see Section 7.

## 3.5 Query Builder

Displays a dialog for the user to query data from certain layers in the layer list. For more information see Section 6.2.

## 3.6 Find Locations

Displays a list of tools to find various features in the viewer (e.g. Open Waters, Watersheds, Dams, etc.). For more information see Section 6.4.

## 3.7 Acronyms

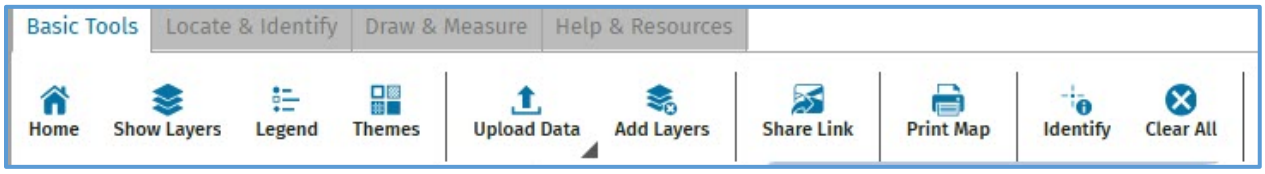
Displays a list of acronyms and their definitions for terms used in the viewer. For more information see Section 4.4.1.

# 4. Tool Tabs Summary

The Tool Tabs contain tools to work with the map.

## 4.1 Basic Tools

The tools available on the **Basic Tools** tool tab are related to navigation, identification, adding data, sharing a map view and map printing. Clicking the buttons ***Home***, ***Show Layers***, ***Legend*** or ***Themes*** makes the corresponding panel tab visible. For information on the ***Upload Data*** and ***Add Layers*** buttons, see Section 8. For information on the Themes button, see Section 5.7. For information on the ***Print Map*** button, see Section 9.




### 4.1.1 Identify

The ***Identify*** button lets you click on the map and identify all visible features under that point. Layers need to be turned on before the identify tool can work. This is a simple point-identify.

### 4.1.2 Clear All

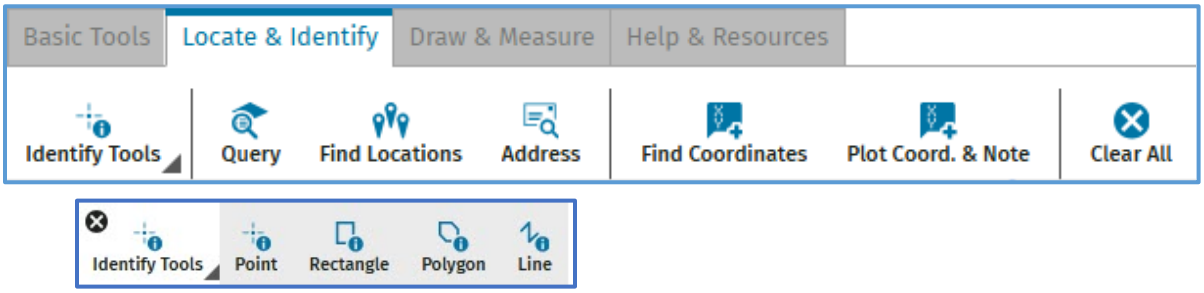
The ***Clear All*** button removes all drawn layers, highlights, drawings, measurements, and search results.

### 4.1.3 Share Link

The ***Share Link*** button generates a URL or QR code that will replicate the current view and settings.

## 4.2 Locate & Identify

The **Locate & Identify** tool tab contains tools to find and identify features. This ***Identify*** button give the options for choosing a larger area for identifying features. The ***Clear All*** button also removes all drawn layers, highlights, drawings, measurements, and search results.




More information on using the ***Query*** tool can be found in Section 6.2.

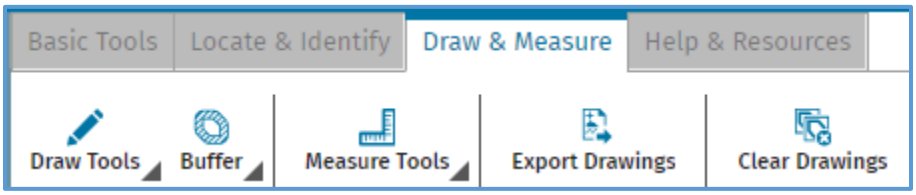
More information on using the ***Find Locations*** tool can be found in Section 6.3.

More information on using the ***Address*** tool can be found in Section 6.4.

More information on finding and plotting coordinates can be found in Sections 6.5 and 6.6.

## 4.3 Draw & Measure

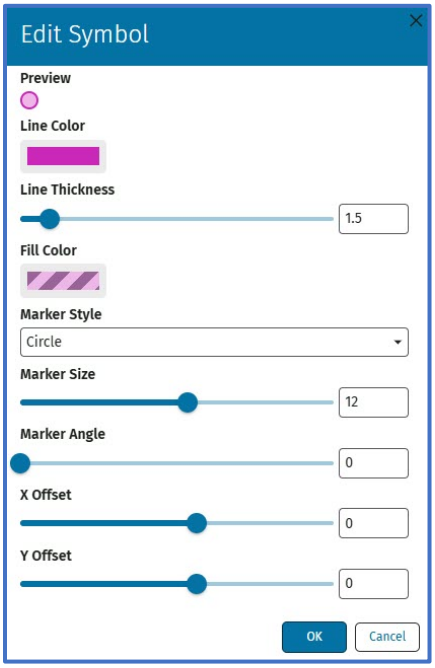
The tools available on the **Draw & Measure** tool tab allow the user to mark up the map. The first three buttons have sub-menus.



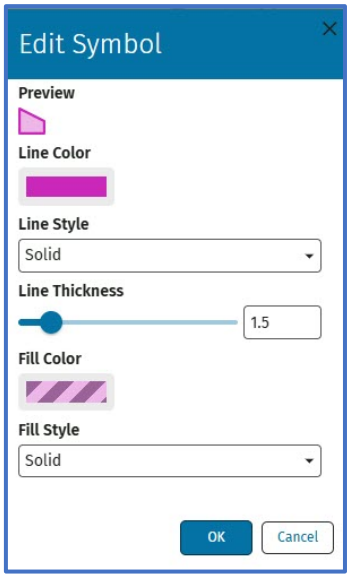

### 4.3.1 Draw Tools

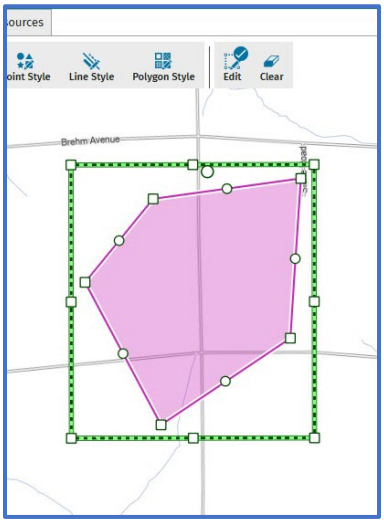
The ***Draw Tools*** button expands a menu of shapes to draw, draw icon styles, edit and deletion options. If you want a style that is not the default, the styling needs to be set before drawing.


***Point Style*** ***Line Style*** ***Polygon Style***







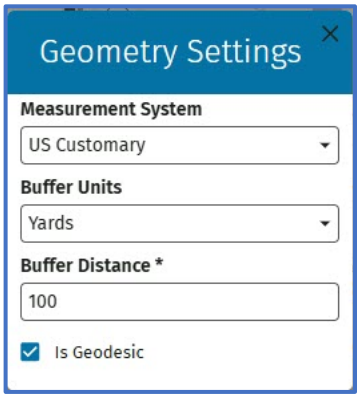

To edit a drawn shape, click the ***Edit*** button, then click on the shape to edit. A green and black dashed-line box will appear around the shape. Clicking and dragging one of the small white squares on the outer box resizes the shape proportionally. Clicking and dragging one of the small white squares or circles on the drawing changes only that portion of the drawing.

When you are done editing the shape, double click on the map, outside of the box.

If you want to discard the edits you are making, click the ***Edit*** button again and the shape returns to its former size/shape.

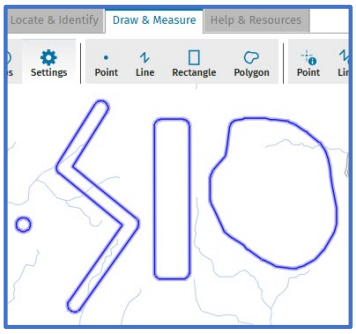
### 4.3.2 Buffer

The ***Buffer*** button expands a menu of buffer shapes to draw, tips, settings, and edit and deletion options. The ***Tips*** button opens a set of instructions.

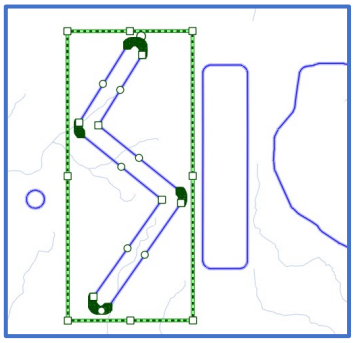




The ***Settings*** button gives the options for setting the measurement system, units and buffer distance. Measurement systems include Metric and US Customary. The US units include Feet, Yards, Miles and Nautical Miles while Metric includes Meters and Kilometers. The buffer tool defaults to a geodesic measurement, meaning the curvature of the earth is included in the calculations (3D). Unclicking this setting changes the measurement to planar, a flat surface (2D).

These settings automatically save.

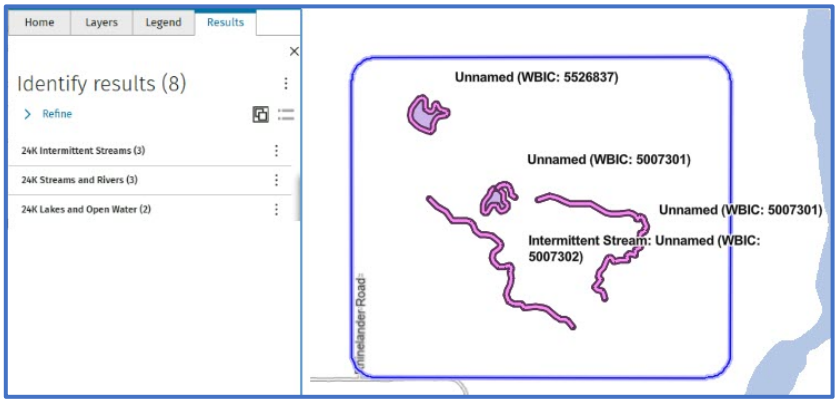



The first set of buffer tools create a drawn buffer area around the shape placed on map (point, line, polygon, rectangle). Choose a tool and draw the shape you want. When you are done drawing the shape, double click the last spot and a blue buffer appears. The drawn shape does not stay visible; only the buffered area is shown. If you would also like to have a drawing, please use the drawing tool on the draw tools outlined in section 4.3.1.



To edit a buffered area, click the ***Edit*** button, click the map and drag the edit tool over the buffer shape or shapes. A green and black dashed-line box will appear around the buffer shape. Clicking and dragging one of the small white squares on the outer box resizes the buffer proportionally. Dragging one of the small white squares or circles on the buffer changes only that portion of the drawing.

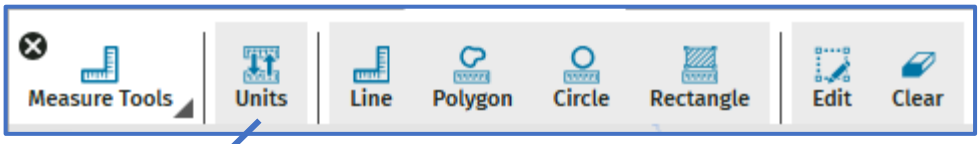
When you are done editing the shape, double click on the map outside of the box. If you want to discard the edits you are making, click the ***Edit*** button again and the shape returns to its former size/shape.

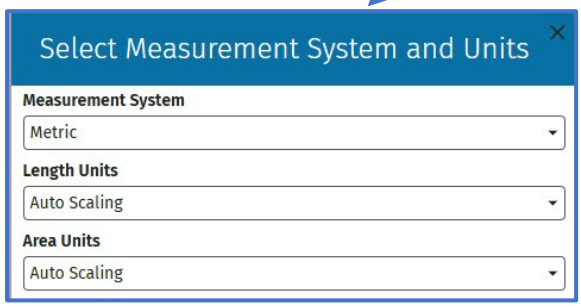



The second set of buffer tools act similarly, including editing, but also identifies all features within the buffer area. Layers need to be turned on for the identifications to be made.

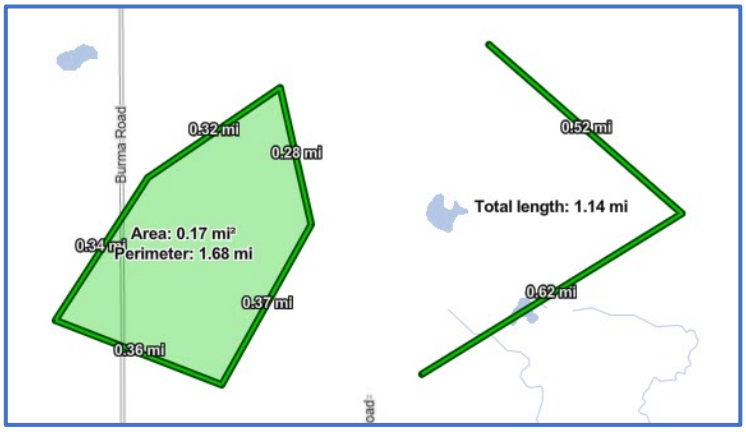
### 4.3.3 Measure Tools

The ***Measure Tools*** button expands a menu of shapes to use for measurement, unit settings and edit and deletion options.



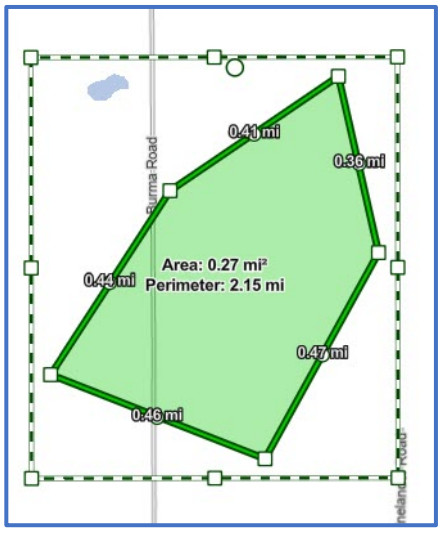




The ***Units*** button gives the options for setting the measurement system, units for length and area. Measurement systems include Metric and US Customary (default). The US length units include Feet, Yards, Miles and Nautical Miles. The US area units include Square Feet, Square Yards, Square Miles and Acres. The Metric length units include Meters and Kilometers, and the area units are Square Meters, Square Kilometers, Ares and Hectares. An Are is equal to 100 square meters and the equivalent of 0.0247 acre.




These settings automatically save.

To measure a length or area, choose a shape button and click the map. When you are done shaping, double click the map. The total length, area and perimeter are calculated and displayed.



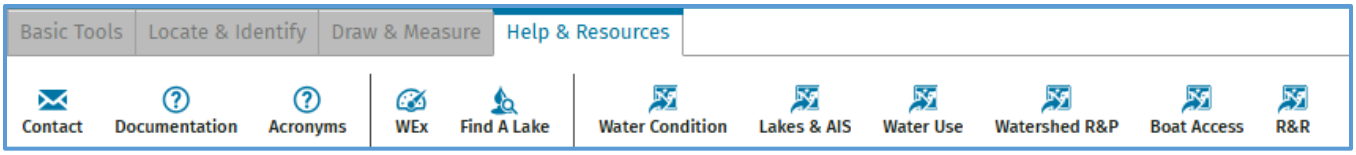

To edit a drawn shape, click the ***Edit*** button, then click on the shape to edit. A green and black dashed-line box will appear around the shape. Clicking and dragging one of the small white squares on the outer box resizes the shape proportionally. Clicking and dragging one of the small white squares or circles on the drawing changes only that portion of the drawing. The measurements will adjust with the edits. For example, in the picture to the left, the bottom right corner was used to make the shape bigger proportionally and all the measurements adjusted.

When you are done editing the shape, double click on the map, outside of the box.

If you want to discard the edits you are making, click the ***Edit*** button again and the shape returns to its former size/shape.

The Clear button deletes all drawings on the map. To delete a single drawing, use the ***Edit*** button to select it, then press your keyboard's ***Delete*** button.

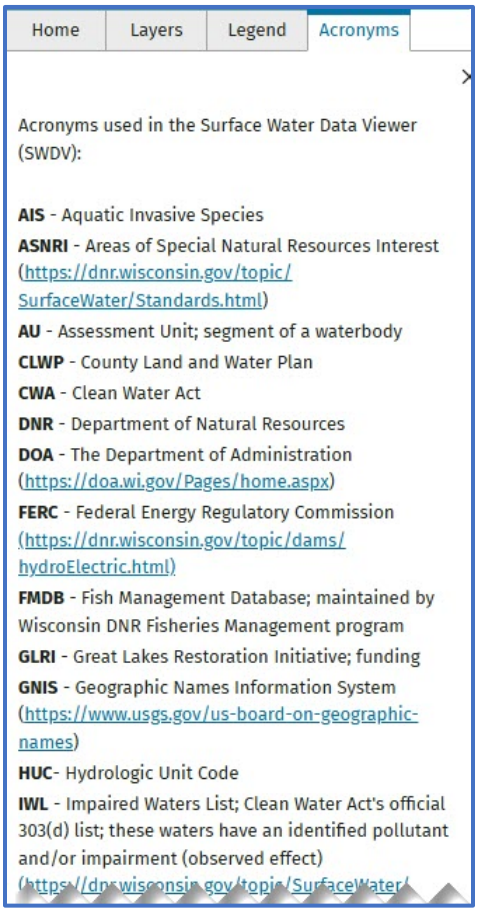
## 4.4 Help & Additional Resources




The **Help & Additional Resources** tool tab displays buttons to open additional resources. The ***Contact*** button gives you the SWDV inbox email: DNRSWDV@wisconsin.gov. The ***Documentation*** button opens the SWDV webpage where this help guide is linked: https://dnr.wisconsin.gov/topic/SurfaceWater/swdv.

### 4.4.1 Acronyms

The ***Acronyms*** button opens the corresponding panel tab. This panel lists out all the acronyms used in the application and for some there are additional information links.




### 4.4.2 Database Links

The ***WEx*** and ***Find A Lake*** buttons open SWDV companion tools.

In the **Water Explorer tool (WEx**, https://dnr-wisconsin.shinyapps.io/WaterExplorer/), you can explore Wisconsin water resources through data visualization:

Under the Watersheds tab, users can explore characteristics of the watersheds that either contribute directly to a waterbody or characteristics of the cumulative upstream watershed.

Under the Lake Tools tab, users can explore trends in water quality (e.g., Secchi depth or Chlorophyll-a over time) or use the WiLMS model to estimate in-lake phosphorus concentrations.

Under the Stream Tools tab, users can visualize estimated streamflow or use the PRESTO tool to estimate phosphorus loading between point and nonpoint sources. The PRESTO tool was formerly housed in SWDV.

The **Find A Lake** tool gives users and easy way to find specific lakes: https://apps.dnr.wi.gov/lakes/lakepages/Search.aspx. Searches can be done using lake name, WBIC, county, fish species, boat launches, beaches, public lands, water clarity, or bottom substrate.

### 4.4.3 Other Viewer Links

The rest of the buttons on the tool tab are links to other data viewers including: Water Condition Viewer (WCV), Lakes & AIS Viewer (LAV), Water Use Viewer, Watershed Restoration & Protection Viewer (WRPV), Boat Access Viewer, and the Remediation & Redevelopment Viewer (R&R).

# 5. Map Panel

The map area is the main element in the application. This is where you will be able to visualize the data, see outputs from search results, filters, queries, buffers and selections.

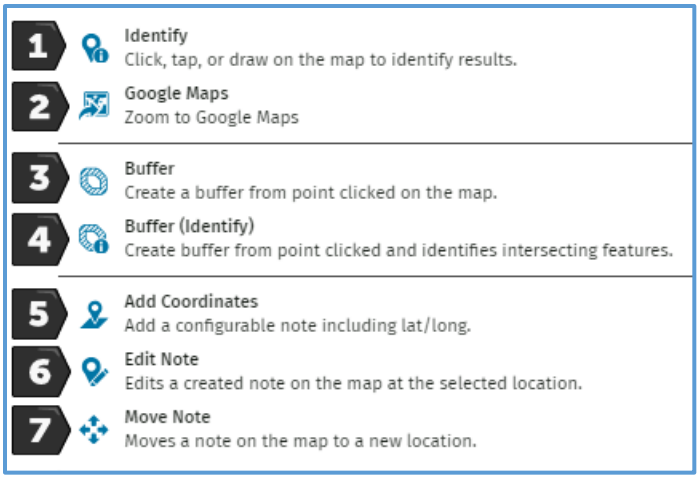
## 5.1 Map Navigation Tools


In the **Map** Panel there are tools for navigation in the upper left corner.

1. **Symbols +/-** – these buttons allow you to zoom in (+) and zoom out (-). This function can also be duplicated scrolling on your mouse.
2. **Circled Arrows** – these buttons allow the user to go between map instances with the 'Next Extent' (right facing arrow) and the 'Previous Extent' (left facing arrow).
3. **Zoom to Full Extent** – this button zooms the map out to its full extent.
4. **Compass** – Indicates current direction of North; clicking the button reorients the map to vertical North-South.

## 5.2 Right-Click Menu

A tool menu appears when you right-click on the map:




1. **Identify** – Identify features where you right-clicked.
2. **Google Maps** – Opens Good Maps to the same location.
3. **Buffer** – Add a buffer around the point clicked.
4. **Buffer (Identify)** – Identify all features intersecting with features clicked.
5. **Add Coordinates** – Add a note to the map, including coordinates. This tool is also a method for copying lat/long coordinates.
6. **Edit Note** – Edit note at this location.
7. **Move Note** – Move note to a new location.

## 5.3 Click-Identify

A left click on the map will identify all visible features.

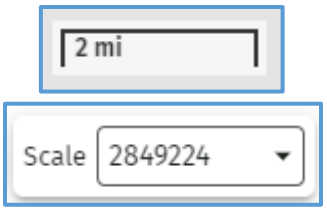
## 5.4 Rotate Map

To rotate the map, right-click and hold then move the mouse. To reorient the map to face North-South, click on the compass button.

## 5.5 Scale

At the bottom left corner is a scale bar showing length in feet or miles.

At the bottom right corner, a drop-down displays the current scale ratio. A different scale is selectable using preset options in the drop down, or by selecting 'Enter Scale' and typing in a value.




## 5.6 Coordinates

At the top right corner of the map the coordinates are displayed with a dropdown of coordinate systems. Coordinate systems available are:

- Wisconsin Transverse Mercator (WTM)
- Decimal Degrees (DD)
- Degrees Decimal Minutes (DDM)
- Degrees Minutes Seconds (DMS)

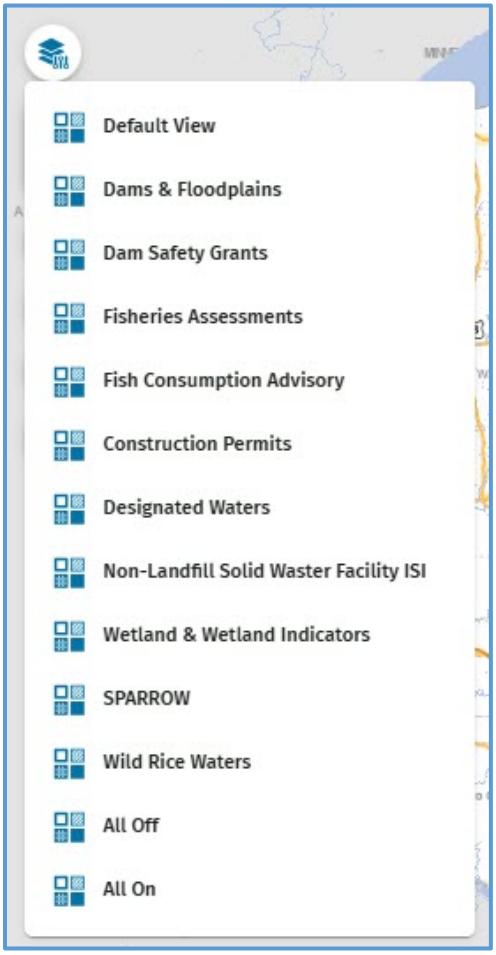

The coordinates bar can be hidden using the ***Hide Coordinates*** button.

## 5.7 Themes

The button with stacked squares ( ) in the **Map** panel opens a list of different themes. To revert to the viewer's original layer list and settings choose the ***Default View*** button. Themes options include:

- Default View
- Dams & Floodplains
- Dam Safety Grants
- Fisheries Assessments
- Fish Consumption Advisory
- Construction Permits
- Designated Waters
- Non-Landfill Solid Waste Facility ISI
- Wetland & Wetland Indicators
- SPARROW
- Wild Rice Waters
- All Off
- All On

A short description of themes is available via the ***Themes*** button on the **Basic Tools** tab.



# 6. Search

There are multiple ways to find information in the viewer.

## 6.1 Search Bar

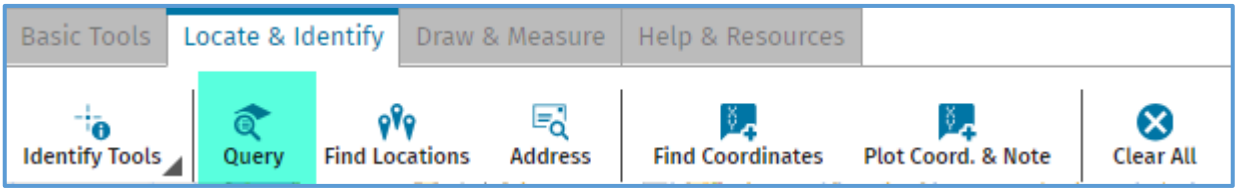
In the Header Bar is the Search Bar. This bar searches all layers that are search enabled and the software's Word Geocoder. The geocoder converts addresses or names of places into coordinates (and vice versa).


Searchable layers table:

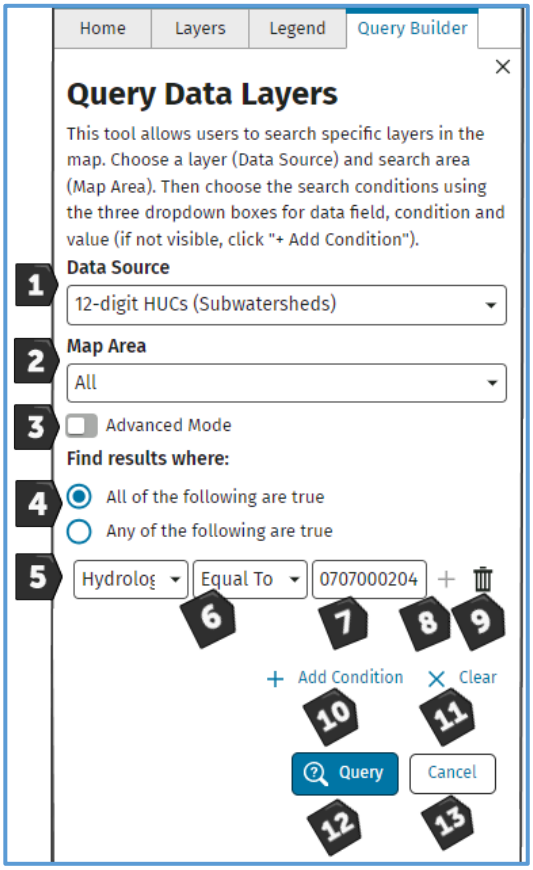
| Parent (Top) Layer Name | Sublayers (searchable) | Searchable Fields |
|---|---|---|
| Dams & Floodplains | • Dams | • DKSN, Regulatory Type, Official Name, Popular Name |
| | • FERC Boundaries | • FERC License No., Dam Popular Name, Dam Official Name |
| Assessments & Impairments | • Assessment Units (AUs) | • AU ID, WBIC, Waterbody Name |
| Surface Water | • 24K Lakes and Open Water | • Waterbody WBIC, Waterbody Name |
| | • 24K Streams and Rivers | • Waterbody WBIC, Waterbody Name |
| | • 24K Intermittent Streams | • Waterbody WBIC, Waterbody Name |
| Administrative, Political & Cadastral | • Cities, Towns & Villages | • Municipality Name |
| Monitoring Sites & Data | • Monitoring Station Points | • Station ID, Station Name, WBIC, Waterbody Name |
| | • Monitoring Station Lines | • Station ID, Station Name, WBIC, Waterbody Name |
| | • Monitoring Station Areas | • Station ID, Station Name, WBIC, Waterbody Name |
| | • FMDB Survey Sites | • FMDB Site ID, FMDB Station Name, SWIMS Station ID, SWIMS Station Name |
| | • USGS Gage Stations | • USGS Station ID, USGS Station Name |

## 6.2 Query

On the **Locate & Identify** tool tab is a ***Query*** button. When clicked this button opens the **Query Builder** panel tab.



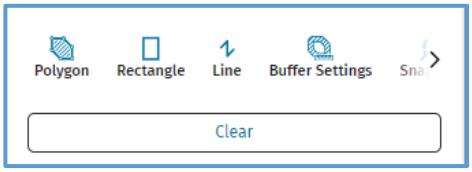
The Query Builder tool allows you to search on specific layers using all fields. The tool has many parts:



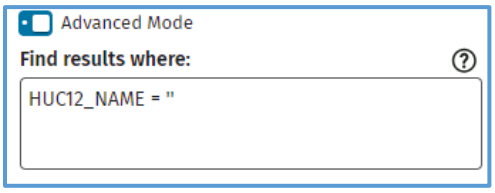

1. The **Data Source** dropdown has a list of sublayers that are searchable. The following sublayers are searchable:

| Parent (Top) Layer Name | Sublayers (searchable) |
|---|---|
| Watershed Boundaries | • Hydrologic Units (HUCs) |
| Assessments & Impairments | • Water Condition Lists<br>• TMDL Priority |
| Clean Water Act Standards & Uses | • Total Phosphorus Criteria - NR102 |

2. The **Map Area** dropdown has three options: All, Visible Area, and Custom. The Custom option gives a subset of tools to select an area to query.




3. **Advanced Mode** changes the 'Find results where:' options (portions 4 through 8) into a box for coding.




4. When using the regular mode of searching, you can choose if the conditions you set all have to be true, or some of them are true.

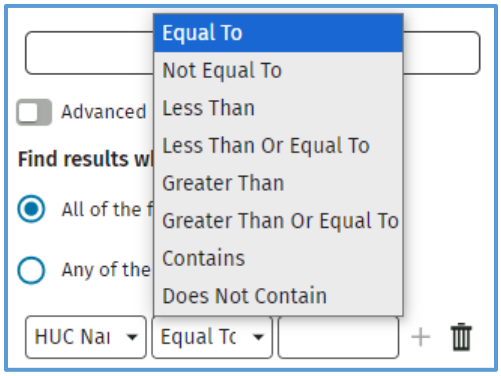
5. Choose a search field in the layer from the dropdown.

6. Choose the condition, like 'equal to' or 'less than'.

7. This box is for entering the value to search.

8. To add a sub-condition, click the plus sign (+) next to the search value.

9. To remove a condition, click the garbage bin ( 🗑 ) icon at the end of the condition row.



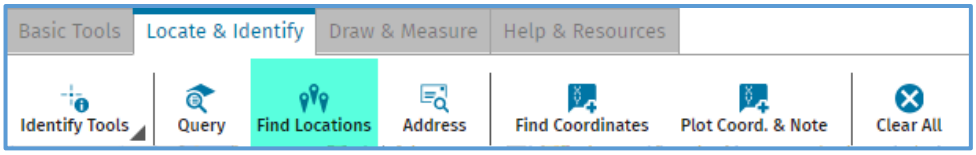

10. To add additional conditions, click the ***+ Add Condition*** button.

11. To clear the query conditions, click ***X Clear***.

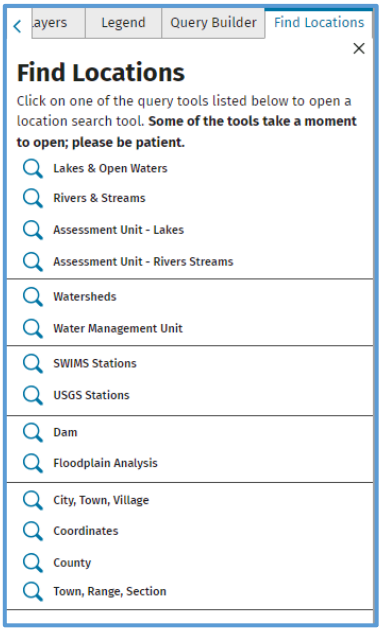
12. To execute the query, click the ***Query*** button.

13. To close the tool, click ***Cancel***.

## 6.3 Find Locations




The button ***Find Locations*** on the **Locate & Identify** tool tab opens the **Find Locations** Panel Tab. This tab contains a list of search tools that search specific layers.



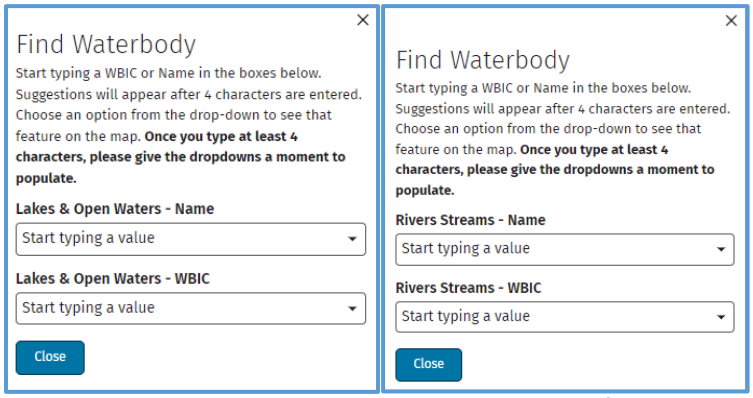

The search tools are sorted by type with dividers between them: waterbodies, watersheds, stations, dams & floodplains and geographic.

Each of these tool buttons opens a panel tab with a specific search layout.

For most of these search tools the related layers are turned on when searched, however not all are built like this. If you are conducting a search and are unable to see the layer data, please confirm the parent layer and sublayer are checked ( ☑ ) 'on'.

### 6.3.1 Lakes & Open Waters, River & Streams

The first two search tools are for waterbodies, based on names and WBIC (Waterbody Identification Code).

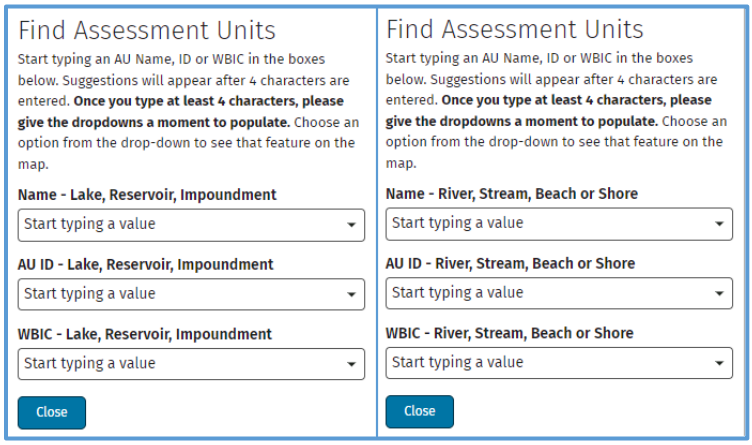



After typing at least 4 characters, corresponding records appear in the dropdown options.

Once a record is selected, the tool selects any related records in the layer. If there are multiple options, a list appears on the **Results** panel tab and a locator pin is dropped on the map where all the results are located. If there is only one option, the tool zooms the map too the feature selected and shows the result details in the **Results** panel tab.

### 6.3.2 Assessment Units

The second set of search tools are for waterbody segments called Assessment Units (AUs), based on names, WBIC and AU ID.



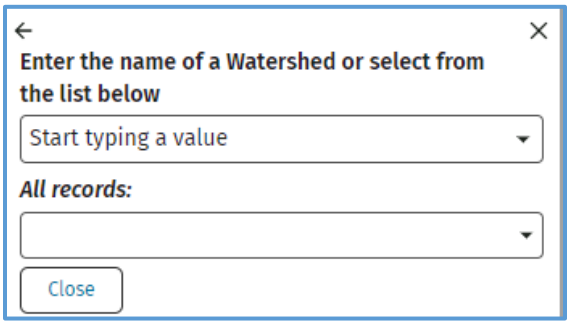
After typing at least 4 characters, corresponding records appear in the dropdown options.

Once a record is selected, the tool selects any related records in the layer. If there are multiple options, a list appears on the **Results** panel tab and a locator pin is dropped on the map where all the results are located. If there is only one option, the tool zooms the map to the feature selected and shows the result details in the **Results** panel tab.

### 6.3.3 Watersheds

The Watershed search tool lets you type in the name of a watershed or choose from a dropdown list of all watersheds in the state.

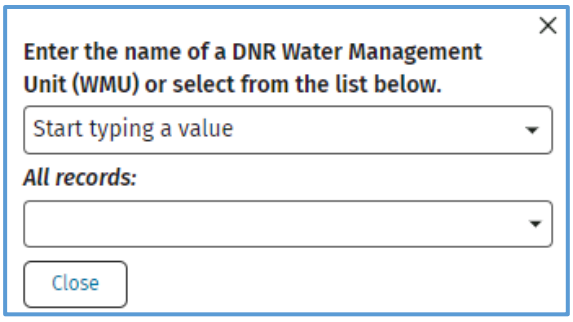
Once a watershed record is selected, the tool will zoom to the watershed, highlight the shape, and open the results details in the **Results** panel.




### 6.3.4 Water Management Units

The Water Management Unit (WMU) search tool lets you type in the name of a WMU or choose from a dropdown list of all WMUs in the state.

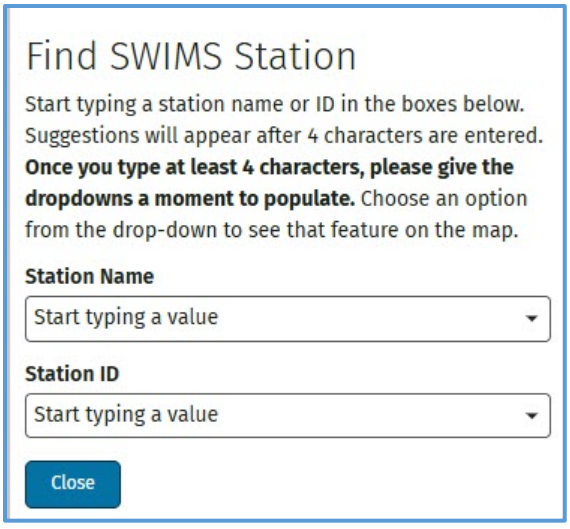
Once a WMU record is selected, the tool will zoom to the WMU, highlight the shape, and open the results details in the **Results** panel.




### 6.3.5 SWIMS Stations

The SWIMS Station search tool allows searches based on Station ID and name. Once four characters are typed, similar options appear in the dropdowns.

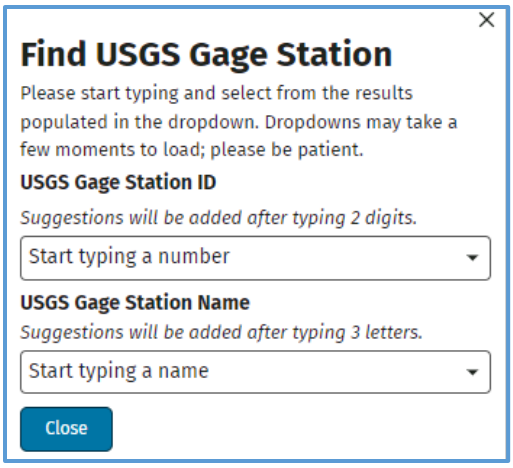
Once a record is selected, the tool selects any related records in the layer. If there are multiple options, a list appears on the **Results** panel tab and a locator pin is dropped on the map where all the results are located. If there is only one option, the tool zooms the map to the feature selected and shows the result details in the **Results** panel tab.



### 6.3.6 USGS Stations

The USGS Gage Station search tool allows searches based on Station ID and name. Once two characters are typed, similar options appear in the dropdowns.

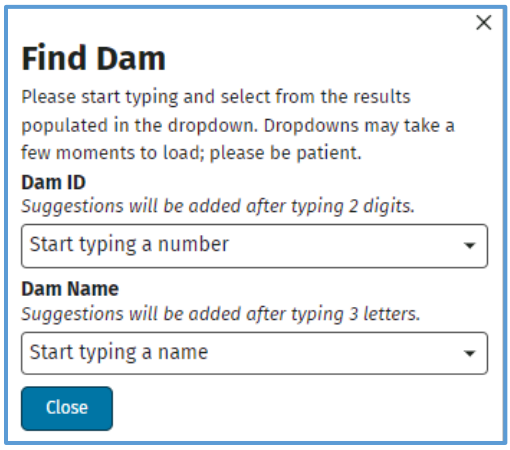
Once a record is selected, the tool selects any related records in the layer. If there are multiple options, a list appears on the **Results** panel tab and a locator pin is dropped on the map where all the results are located. If there is only one option, the tool zooms the map to the feature selected and shows the result details in the **Results** panel tab.




### 6.3.7 Dam

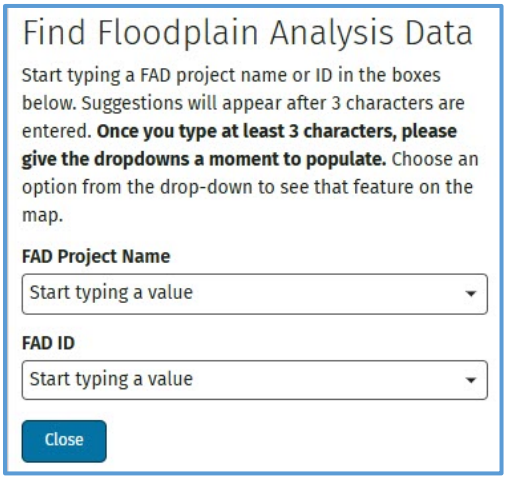
The Dam search tool allows searches based on Dam ID and name. Once two characters are typed, similar options appear in the dropdowns.

Once a record is selected, the tool selects any related records in the layer. If there are multiple options, a list appears on the **Results** panel tab and a locator pin is dropped on the map where all the results are located. If there is only one option, the tool zooms the map to the feature selected and shows the result details in the **Results** panel tab.




### 6.3.8 Floodplain Analysis

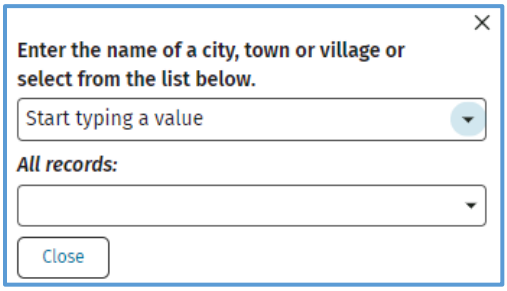
The Floodplain Analysis Data (FAD) search tool allows you to search based on FAD ID or Project Name. A successful search opens the **Results** panel tab and the tool zooms the map to the feature selected. If there are multiple records, a list appears on the **Results** panel tab and the features are highlighted on the map.




### 6.3.9 City, Town, Village

The City, Town, Village search tool lets you type in the name of a municipality or choose from a dropdown list of all municipalities in the state.

Once a record is selected, the tool selects any related records in the layer. If there are multiple options, a



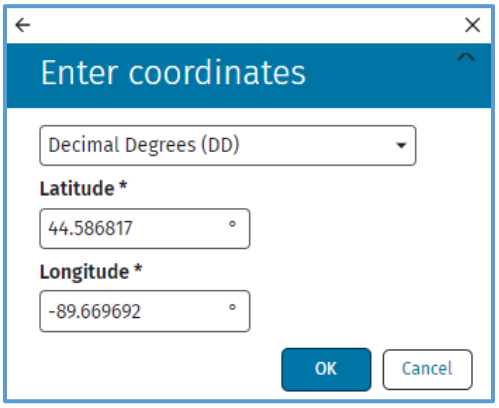
list appears on the **Results** panel tab and a locator pin is dropped on the map where all the results are located. If there is only one option, the tool zooms the map to the feature selected and shows the result details in the **Results** panel tab.

### 6.3.10 Coordinates

The Coordinates search tool opens the 'Enter Coordinates' window. Coordinate systems available are:

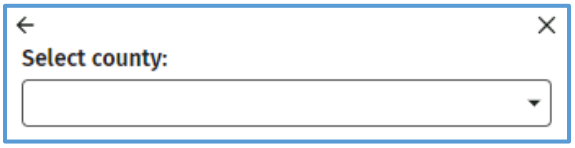
- Wisconsin Transverse Mercator (WTM)
- Decimal Degrees (DD)
- Degrees Decimal Minutes (DDM)
- Degrees Minutes Seconds (DMS)

Once the ***OK*** button is clicked a marker appears on the map at the chosen location.



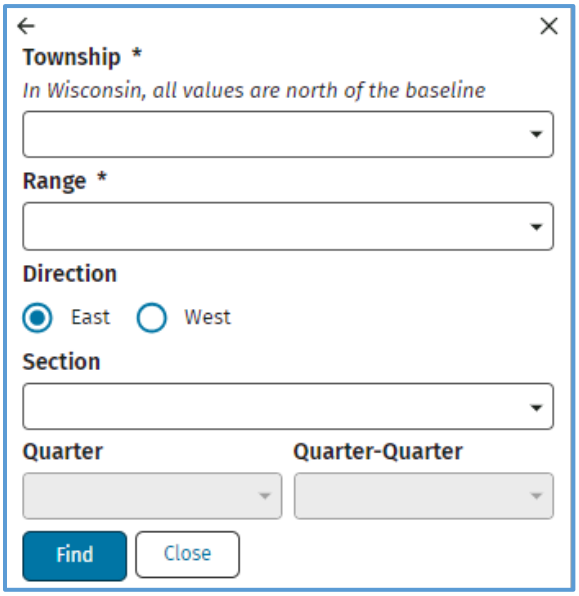

### 6.3.11 County

The County search tool provides a dropdown list of all counties in the state. When one is selected the map zooms to the county and outlines it in red.



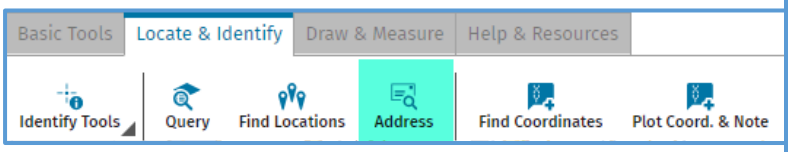

### 6.3.12 Town, Range, Section

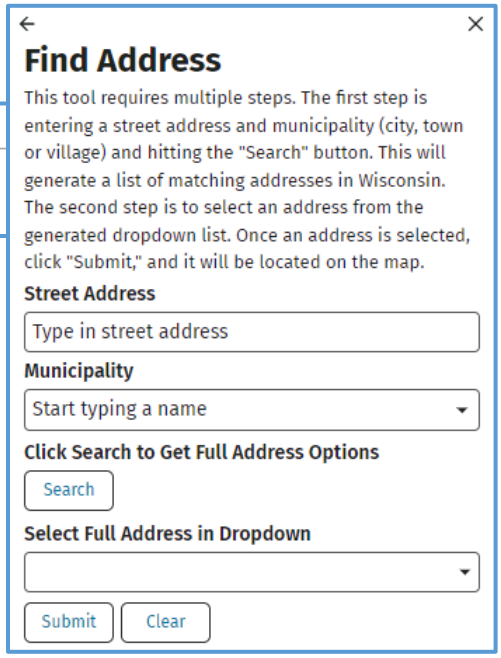
The Town, Range, Section search tools provides a way to search the grid system known as the Public Land Survey System (PLSS). This search requires values for Township and Range, with the rest being optional. When the ***Find*** button is clicked the tool locates the grid square and highlights it.



## 6.4 Address

The ***Address*** button on the **Locate & Identify** tool tab opens a panel tab with the *Find Address* tool.



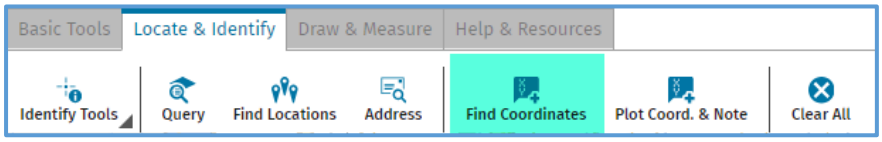




This tool requires you to enter pieces of an address so that a full known address can be selected from the dropdown. The dropdown is only generated after address information is populated and the ***Search*** button clicked.

After ***Search*** is clicked a list of related street addresses populates the Full Address dropdown. Once an address is selected from the dropdown the tool zooms to the address on the map.

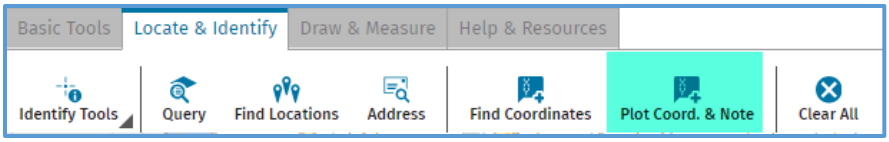
## 6.5 Find Coordinates

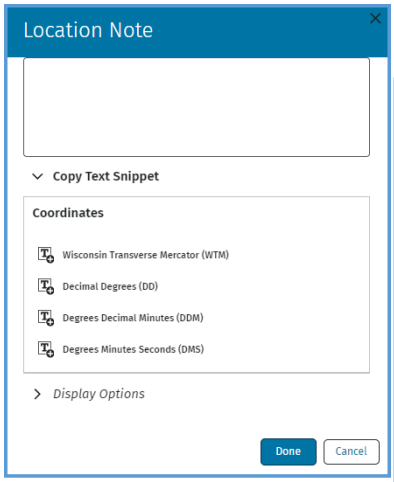
The ***Find Coordinates*** button opens the ***Enter Coordinates*** tool in a map floating window. This is the same tool linked in the Coordinates tool on the **Find Locations** panel tab.

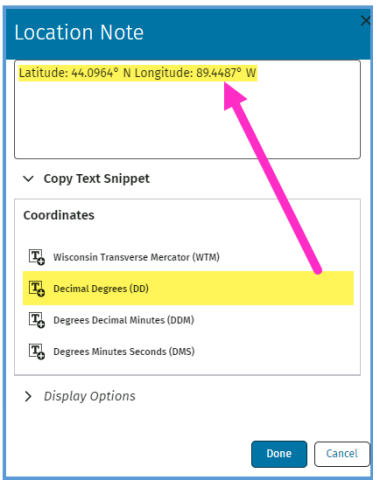



## 6.6 Plot Coordinates

The ***Plot Coordinates*** button opens the ***Location Note*** tool where a user can place the coordinates on the map as a note.



# 7. Results

Results from the identify, search, or query tools are listed in the **Results** panel tab.

Results appear at three different levels, first grouped by layers (1), then showing the result list for a specific layer (2), and the result details for one specific record (3). Only one of the three results windows will show at a time.


At the grouped level (1) the results can be ungrouped if needed by clicking the top right button above the list: 

When a records list is shown, each record is displayed in compact rows. The top right button that looks like a bulleted list () allows users to display each record in a bigger row.


## 7.1 View Results

In order to see a specific spatial record when there are multiple values in the results, click until there is only one record showing (example in numbered screenshots). If clicking the result record does not zoom to the spatial feature, then you can click the zoom button (  ).


Another option is to zoom to a set of results. This is possible by clicking the vertical ellipse (⋮) at the end of the row. This opens a sub-menu with a button to zoom to result.

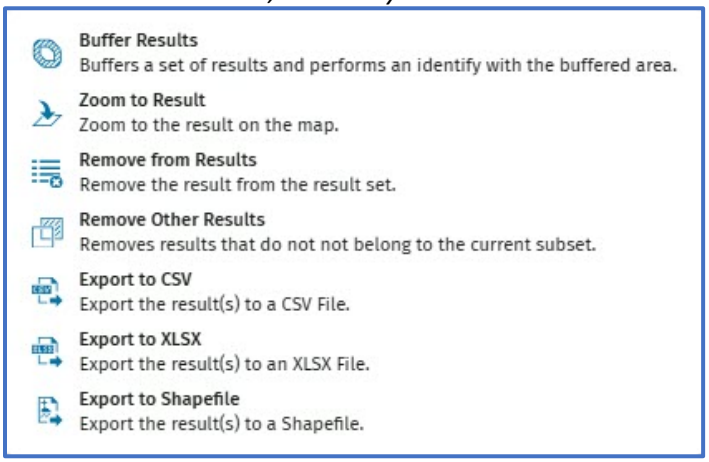
## 7.2 Modify Results List

At the grouped level (1) and layer list level (2) you can modify the list of results. In this way you can get a specific set of results to either view or export. The menu under the vertical ellipse (⋮) has the options to remove an individual record or remove the other results from the list.

## 7.3 Export Results

The results can be exported as a CVS, XLSX, or shapefile.

*Result Actions Menu, under ⋮ symbol.*

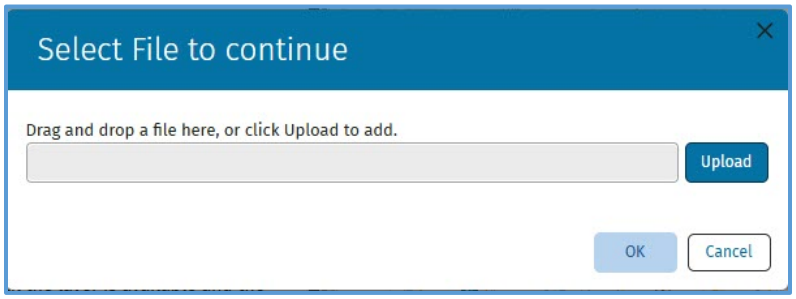


# 8. Add Data

The tools for adding data to the map are on the **Basic Tools** tab.

## 8.1 Upload Data

The ***Upload Data*** button opens a submenu with three upload options and a tips button. Data can be uploaded as a shapefile, Excel spreadsheet (XLSX), or text file (CSV). Clicking any of the three file type upload buttons opens a pop-up window.




When uploading a shapefile, all parts of the shapefile need to be zipped together for upload. All parts of the shapefile need to have the same name, including case. The upload will fail if these conditions are not met.

When uploading an Excel file (XLSX) or text file (CSV), the headers for latitude and longitude need to be formatted like (not case sensitive):

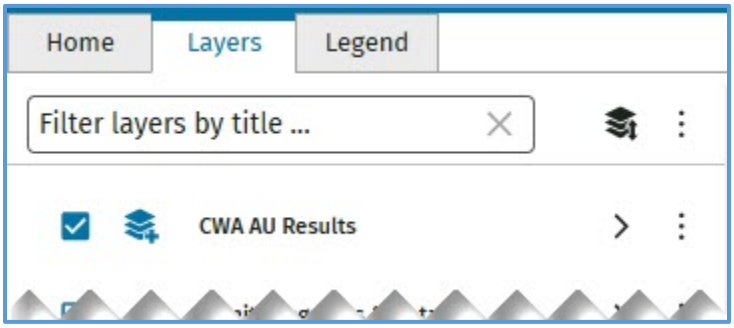
- lat, lon
- lat, long
- latitude, longitude

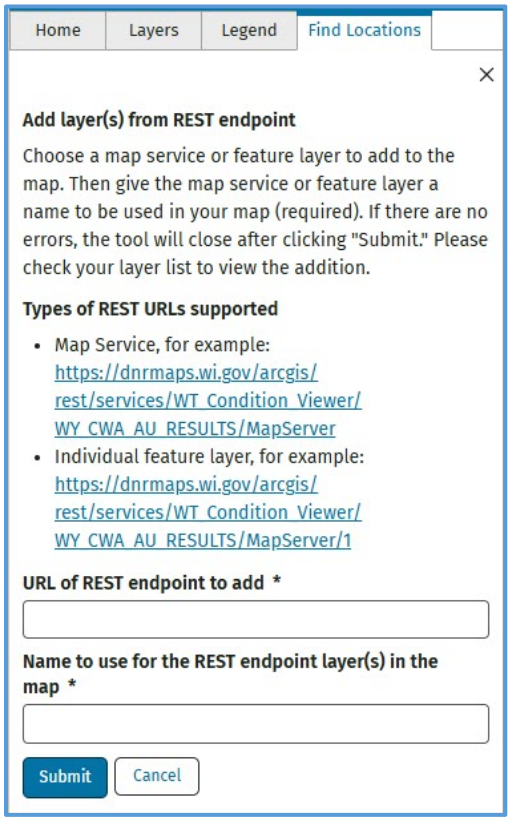
At this time there are no options for modifying the look of the uploaded data.

## 8.2 Add Layers

The ***Add Layers*** button opens a panel tab of instructions. This tool allows adding a map service or single feature layer. The tool requires a URL for a REST endpoint and a name for the data layer.

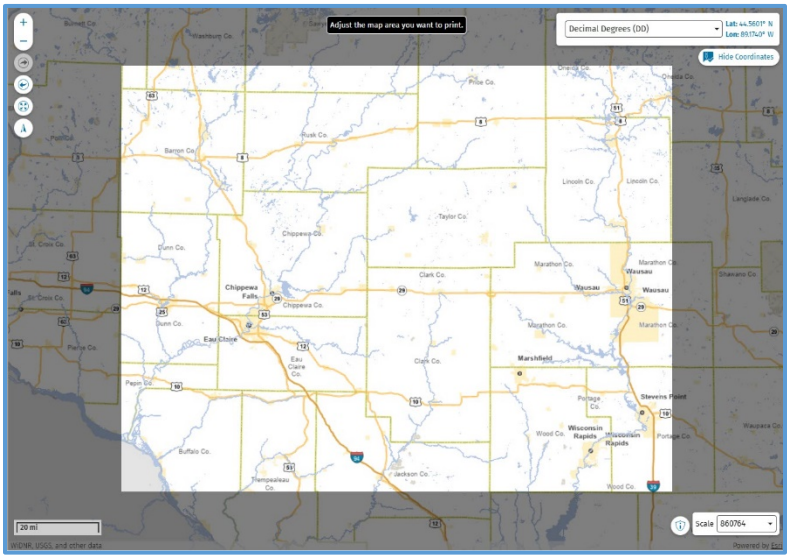
After clicking the submit button the layer appears at the top of the layer list.

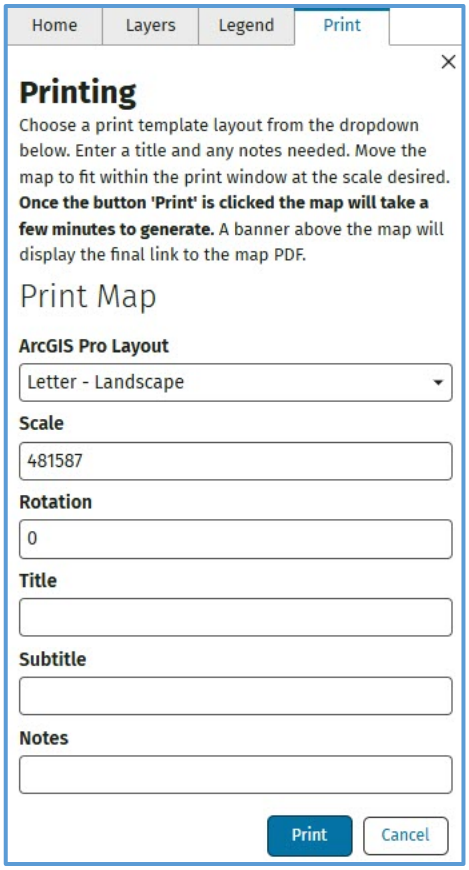


# 9. Print

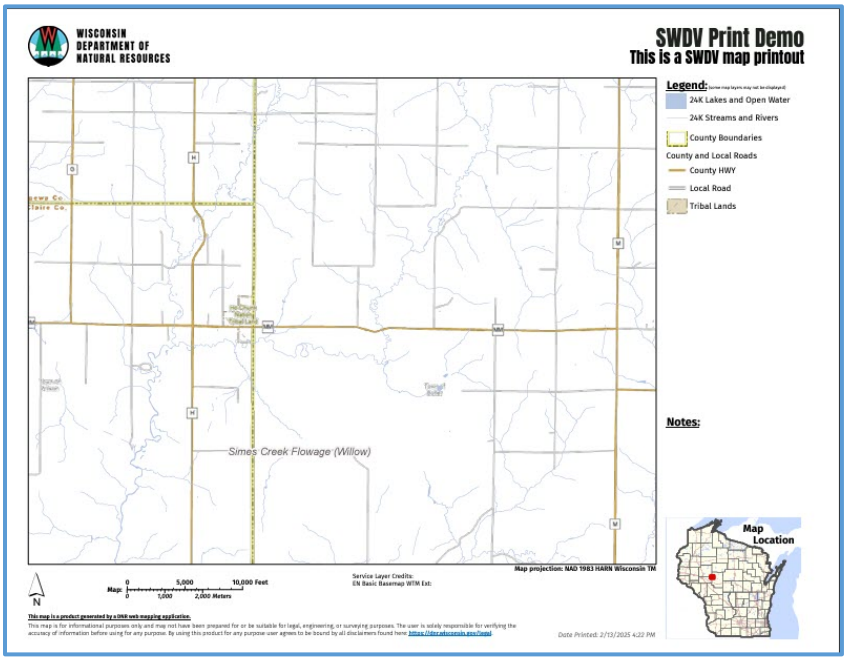
The ***Print*** button on the **Basic Tools** tab opens a panel tab with written instructions and map fields to enter. Two layouts are available: portrait and landscape. A layout square appears in the **Map** panel, and you can adjust what will be printed by moving the map. The box remains the same shape.




When the print button is clicked a small black banner appears in the application header bar (1). When the map has been generated the bar turns green and a download link is given (2). Depending on the size and complexity this process may take a minute or so.


The generated map appears like the SWDV Print Demo pictured here:






*~End~*