

User Guide to the Drinking Water Mapping Application to Protect Source Waters (DWMAPS)



1 CONTENTS

2. Welcome to DWMAPS	4
3. DWMAPS Welcome Screen	5
4. Navigating and Exploring DWMAPS	7
4.1 Zoom In/Out	9
4.2 Pan	9
4.3 Home	10
4.4 My Location	10
4.5 Location Search Bar	10
4.6 Map Overview	11
4.7 Coordinates and Scale Bar	12
5. Visualizing the Data	13
5.1 Layer List	13
5.1.1 Turn on/off layers	13
5.1.2 Setting Layer Transparency	15
5.1.3 Access Layer Details	16
5.1.4 View Layer Attributes	16
5.2 Legend	17
5.3 Add Data	18
5.3.1 Add data from ArcGIS Online	19
5.3.2 Add layers by URL	21
5.4 Print	22
5.5 Attribute Table	25
5.5.1 Open Layer Attribute Table	25
5.5.2 Filter & Select Attributes	27
5.5.3 Highlight an Attribute on the Map Display	33
5.5.4 Export Attribute Data	33
6. Search Tools	34
6.1 Locate Drinking Water Providers	34
6.1.1 Systems by Area Served	37
6.1.2 Systems by Source of Drinking Water	37
6.2 Potential Sources of Contamination	39
6.3 Nearby Discharges	43
6.4 Polluted Waterways	47

6.5 Projects and Source Water Collaboratives 50

7. Help and Contact Us..... 53

2 WELCOME TO DWMAPS

The Drinking Water Mapping Application to Protect Source Waters (DWMAPS) is an online mapping tool that provides state and utility drinking water professionals, watershed protection groups, source water protection partnerships, and others with information to update source water assessments and prioritize source water protection measures in any location or watershed in the country. DWMAPS includes several search tools that, when used together with state and locally available mapping tools and data, can help users:

- ✓ Identify potential sources of contamination;
- ✓ find data to support source water assessments and plans to manage potential sources of contamination;
- ✓ evaluate accidental spills and releases, identifying where emergency response resources for accidental releases must be readily available;
- ✓ promote integration of drinking water protection activities with other environmental programs at the EPA, state, and local levels; and
- ✓ identify source water protection partnerships and watershed projects.

DWMAPS provides geographic data regarding the nation's sources of drinking water and public water systems but obscures the precise locations of Public Water System intakes. DWMAPS has been designed to work in tandem with local data and information to assist with source water protection and emergency preparedness.

The DWMAPS application contains map controls, search tools, and interactive data displays to help users navigate, visualize and sort through map data. Search tools can be accessed through the Welcome Screen or toolbar located in the primary map display.

DWMAPS is hosted on EPA's GeoPlatform and integrated with Esri ArcGIS Online, a dynamic, expansive, and collaborative web platform that allows users to create and share data, maps, analytics, and mapping applications. Users do not need access to additional software, such as ArcGIS, to use DWMAPS. This user guide provides step-by-step instructions for each search tool and navigational feature--including those provided through ArcGIS Online-- located within DWMAPS. Use the following link to access DWMAPS: <https://geopub.epa.gov/DWWidgetApp/>.

3 DWMAPS WELCOME SCREEN

DWMAPS contains useful links and advanced search tools that are accessible from the **Welcome Screen**. Additional navigation controls and search tools are accessible from the map display. Figure 1 below familiarizes users with the **Welcome Screen** and Table 1 provides a brief description of each element on the **Welcome Screen**.

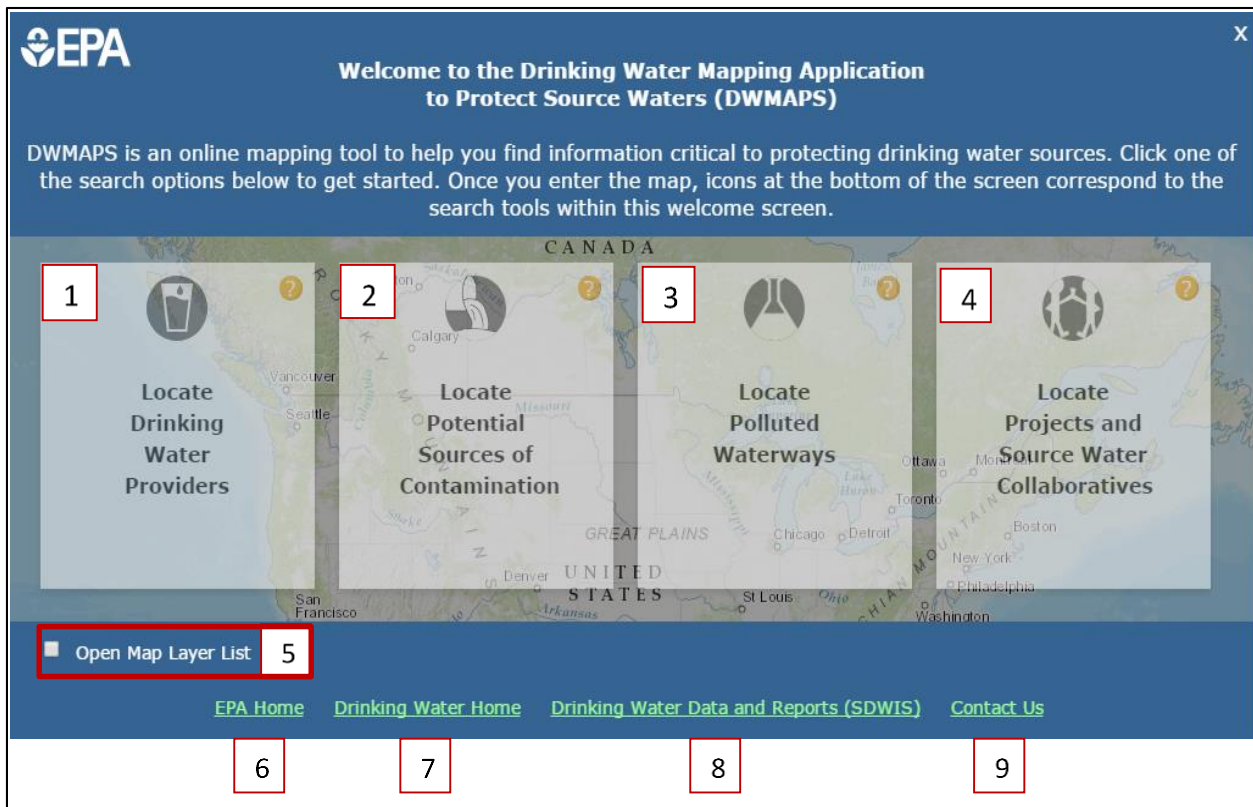


Figure 1: DWMAPS Welcome Screen highlighting interactive tools and features. Numbers correspond with Key number in Table 1.

Table 1: Welcome Screen elements

Key #	Title	Description
1	Locate Drinking Water Providers	Click Locate Drinking Water Providers to search for drinking water providers in a specified area. Click the question mark icon in the upper right corner of the box to access more information about drinking water providers on the EPA Office of Ground Water & Drinking Water website.
2	Locate Potential Sources of Contamination	Click Locate Potential Sources of Contamination to search for potential sources of contamination upstream of a specified area. Click the question mark icon in the upper right corner of the box to access the Integrated Compliance Information System and learn more about potential sources of contamination regulated by EPA.
3	Locate Polluted Waterways	Click Locate Polluted Waterways to search for the polluted waterways in a specified area. Click the question mark icon in the upper right corner of the box to access more information about polluted waterways (i.e. 303(d) impaired waters) on EPA's website.
4	Locate Projects and Source Water Collaboratives	Click Locate Projects and Source Water Collaboratives to search for projects and source water collaboratives in a specified area. Click the question mark icon in the upper right corner of the box to access more about EPA's watershed restoration programs and projects.
5	Open Map Layer List	Click the Open Map Layer List check box to open the Layer List tool upon entering the map display. The Layer List tool will provide a list of geospatial data layers that are available to view in the map display.
6	EPA Home	Click the EPA Home text link to open the EPA's website home page in a separate browser window.
7	Drinking Water Home	Click the Drinking Water Home text link to open the EPA's Office of Ground Water and Drinking Water webpage in a separate browser window.
8	Drinking Water Data and Reports (SDWIS)	Click the Drinking Water Data and Reports text link to open the EPA's Safe Drinking Water Information System (SDWIS) Federal Reports Search webpage on the EPA's website in a separate browser window.
9	Contact Us	Click the Contact Us text link to open the EPA's Ground Water and Drinking Water Contact Us webpage in a separate browser window.

4 NAVIGATING AND EXPLORING DWMAPS

DWMAPS contains a number of tools that may be used to navigate and explore the map display. Figure 2 and Table 2 highlight tools and features located within the map display.

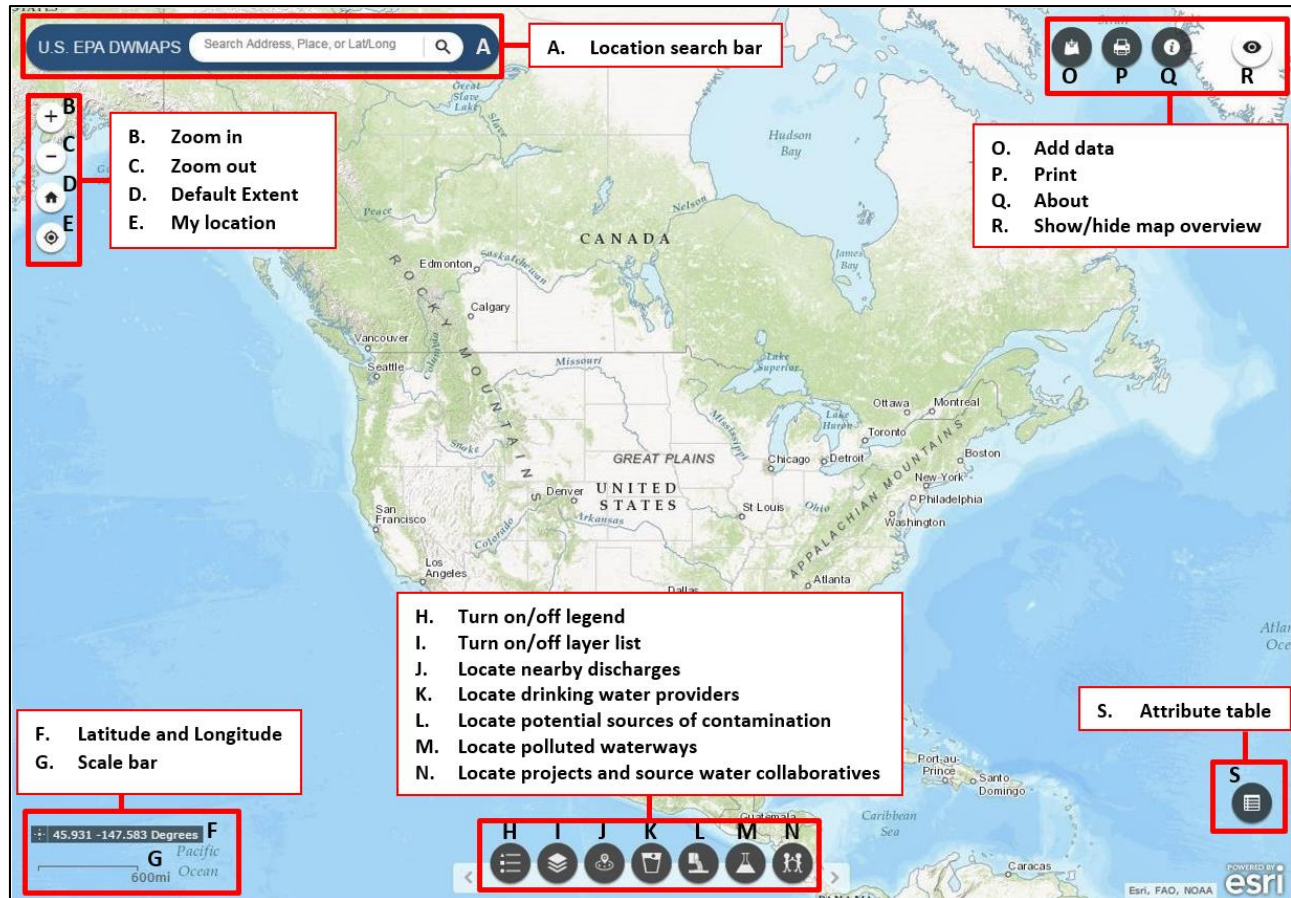


Figure 2: DWMAPS map anatomy highlighting interactive tools and features located in the map display.

Table 2: Map Elements (corresponds with lettering of elements in Figure 2)

Key	Map Element	Function
A	Location Search Bar	Zoom to a specific location by entering an address, zip code, or place name.
B	Zoom in	Manually zoom into a target location.
C	Zoom out	Manually zoom out to view a larger area.
D	Home	Re-center the map display to the continental United States.
E	My Location	Zoom to the user's physical location. The user must adjust browser privacy preferences to allow DWMAPS to access their location.
F	Latitude and Longitude (Coordinates)	Latitudinal and longitudinal coordinates coinciding with the cursor's location on the map.
G	Scale Bar	Scale bar adjusts as the user zooms in and out of the map.
H	Legend	View active layers and map symbols.
I	Layer List	Open the layer list to view all layers available in DWMAPS and to select which layers to view on the map.
J	Locate Nearby Discharges	Search for pollutant discharges, impaired waters, and watershed protection projects and source water collaboratives within a specified radius of a selected point.
K	Locate Drinking Water Providers	Search for drinking water providers serving a selected political boundary or with sources located in a selected watershed.
L	Locate Potential Sources of Contamination	Search upstream from a selected point for potential sources of contamination. By default, the tool displays National Pollutant Discharge Elimination System (NPDES) permitted dischargers; to locate other potential point sources of contamination, open the layer list and activate the <i>Other Point Sources of Pollution</i> layers.
M	Locate Polluted Waterways	Search upstream from a selected point for waters listed as impaired in accordance with Section 303(d) of the Clean Water Act. Also locate waters with active Total Maximum Daily Loads (TMDLs).
N	Locate Projects and Source Water Collaboratives	Search for completed or ongoing watershed protection projects and source water collaboratives in a specified area.
O	Add Data	Add data from EPA's GeoPlatform, Esri, and other sources to view as layers within DWMAPS. The data is

		not saved to DWMAPS and is only available within the user's current session.
P	Print	Print the current map view.
Q	About	Open this window to read a brief description of DWMAPS.
R	Map Overview	Open a small, zoomed out view of the current map display.
S	Attribute Table	Open the attribute tables for all active layers in the map, and export data as a .csv file.

4.1 ZOOM IN/OUT



Use the **Zoom In/Out** tool (Figure 2, Map Elements B & C) and the keyboard controls to zoom in and out of the map display.

To use the Zoom In/Out tool in the map display:

1. Click the plus (+) sign to zoom in to the map display.
2. Click the minus (-) sign to zoom out of the map display.

To use the keyboard to zoom in and out of the map display:

1. Hold the control key with one hand.
2. Push the plus (+) key to zoom in.
3. Push the minus (-) key to zoom out.

To use the mouse to zoom in and out of the map display:

1. Move the roller wheel one direction to zoom in.
2. Move the roller ball the opposite direction to zoom out.

4.2 PAN

Use the mouse and keyboard controls to scroll the map display in the direction and area you choose.

To use the mouse to pan across the map:

1. Click and hold on any location in the map display.
2. Drag the mouse, and the map will move in the corresponding direction.

To use the keyboard to pan across the map:

1. Push the up arrow key to move north in the map display.

2. Push the right arrow key to move east in the map display.
3. Push the left arrow key to move west in the map display.
4. Push the down arrow to move south in the map display.

4.3 HOME



The **Home** tool (Figure 2, Map Element D) re-centers the continental United States across the map display.

1. Click the **Home** icon to re-center the map display.

4.4 MY LOCATION



The **My Location** tool (Figure 2, Map Element E) zooms the map display to your current physical location. A blue dot will appear on the map indicating your current location (Figure 3).

1. Click the **My Location** icon to zoom to your current location.

Note: You may be required to reconfigure your browser's privacy settings to allow DWMAPS to access your location.



Figure 3: A blue dot indicates the user's location on the map.

4.5 LOCATION SEARCH BAR

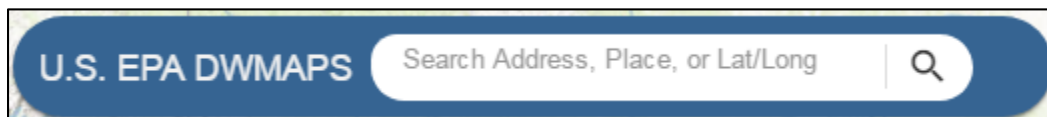


Figure 4. The Location Search Bar tool.

The **Location Search Bar** tool (Figure 2, Map Element A) allows the user to find and zoom to a location of interest by entering an address, city and state, zip code, coordinate, or place name.

1. Enter a location in the **Location Search Bar** text box (Figure 4).
 - ✓ The tool will display possible matches (Figure 5).
2. Click the location match to select and zoom to the desired location (Figure 5);

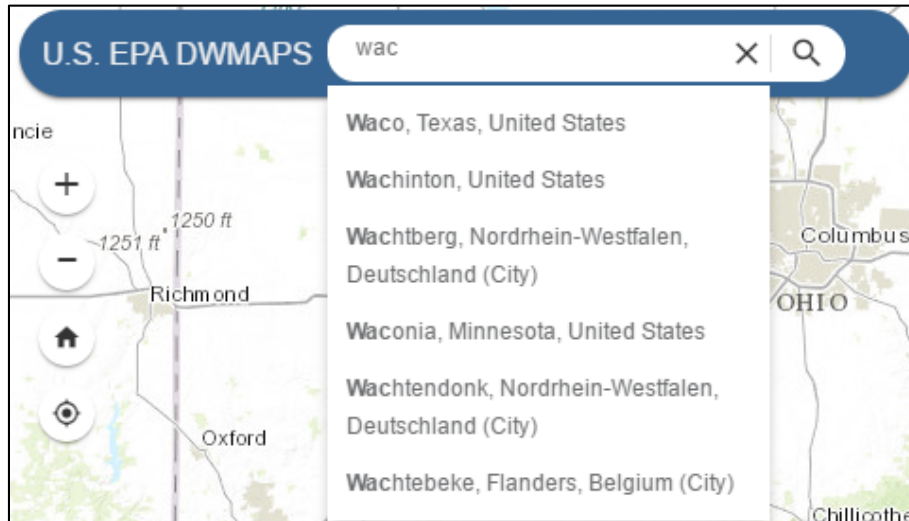



Figure 5: The Location Search Bar tool will suggest location matches for the inputted text.



Or;

Click the magnifying glass icon  or press enter to zoom the map display to entered location. If no matches are found for the input location, the map will remain unchanged.

4.6 MAP OVERVIEW



The **Map Overview** tool (Figure 2, Map Element R) displays a small overview map in the upper right corner of the map display that shows a zoomed-out view of the current map display. A grey rectangle within the overview map indicates the current extent of the primary map display (Figure 6).

1. Click the **Map Overview** icon to expand the overview map.
2. Click the expand icon  to expand the overview map.
3. Click the minimize icon  to shrink the overview map.

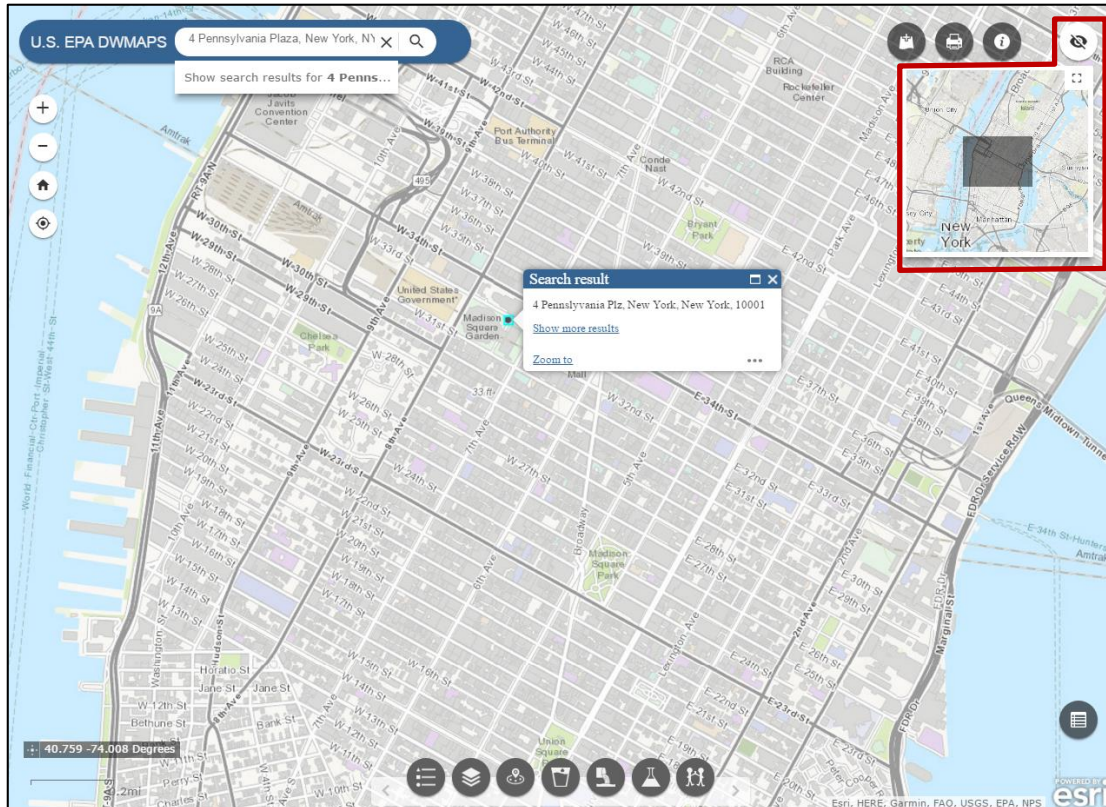


Figure 6: The Overview Map. The inset grey box indicates the area being displayed in the main map view.

4.7 COORDINATES AND SCALE BAR

The **Map Coordinates** tool (Figure 2, Map Element F) and **Scale Bar** tool (Figure 2, Map Element G) can be found in the lower left hand corner of the map display. The **Coordinates Tool** displays the coordinates that coincide with the location indicated by the mouse cursor. The coordinates will change as the mouse is moved over the map. The **Scale Bar** tool indicates the scale (the ratio between the distance on the map and the corresponding distance on the ground) of the map display. The **Scale Bar** adjusts with the zoom of the map and is displayed in miles (Figure 7).

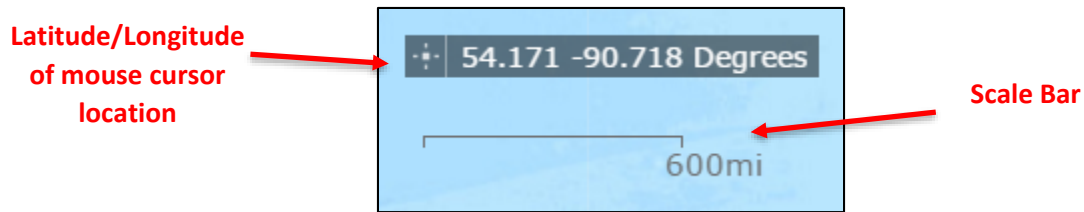

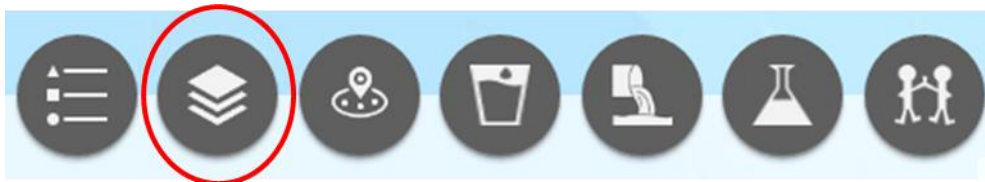


Figure 7: The Coordinates and Scale Bar display. The numbers displayed at the top of the image indicate the longitudinal & latitudinal coordinates that coincide with the location of the mouse cursor. The scale bar (at the bottom) will automatically adjust when zooming in and out on the map.

1. To get map coordinates for a specific location, click the location symbol  next to the longitude and latitude coordinates, then click the map.
 - ✓ A green location pin will mark the location and the latitude/longitude display will show the precise latitude/longitude of the marked location.

5 VISUALIZING THE DATA

5.1 LAYER LIST



There are many useful data layers that can be viewed within DWMAPS. Use the **Layer List** tool (Figure 2, Element I) to access a range of data layers that can be viewed in the DWMAPS map display. Additional data layers are also available through the **Add Data** tool.

5.1.1 Turn on/off layers

1. Click the **Layer List** icon in the toolbar at the bottom of the DWMAPS map display,

Or;

Check the box next to the **Open Map Layer List** icon (Figure 8) on the **Welcome Screen**.

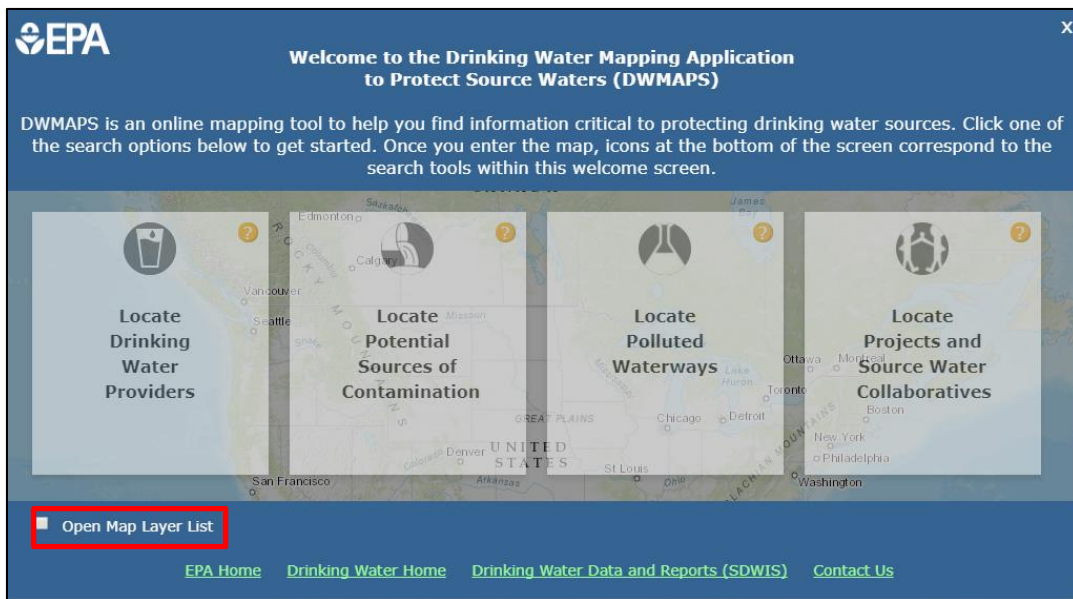


Figure 8: Open Layer List Icon.

- ✓ The **Layer List** window will display (Figure 9).

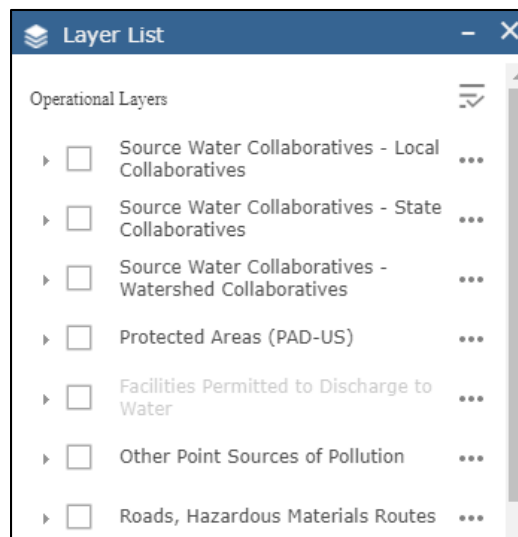


Figure 9: The Layer List window.

2. Click the box to the left of the layer name to view the layer in the map display. Grey text indicates layers that cannot be viewed at the current map scale. To view these layers in the map, zoom in or out until the layer text appears opaque.

- ✓ A blue box with a check mark will show activated layers (Figure 10).

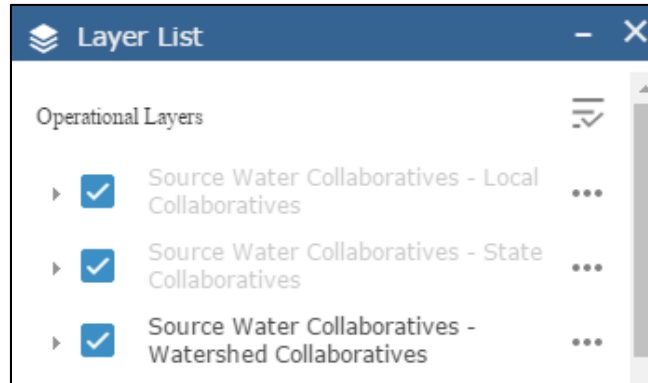


Figure 10: The Layer List tool with layers activated.

Note: If using a search tool (e.g. My **Drinking Water**), the data layers utilized within that tool will automatically turn on and display in the **Layer List**. By default, additional layers do not appear in the map display unless turned on by the user. If you want additional layers turned on, select the layers.

5.1.2 Setting Layer Transparency

The user can adjust the transparency of a top layer to allow them to see this layer while still viewing underlying layers.

1. Within the **Layer List**, click the ellipsis icon located next to a layer (Figure 11).

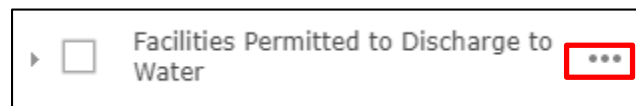


Figure 11: Layer List tool ellipse icon.

- ✓ A layer options menu will display (Figure 12).

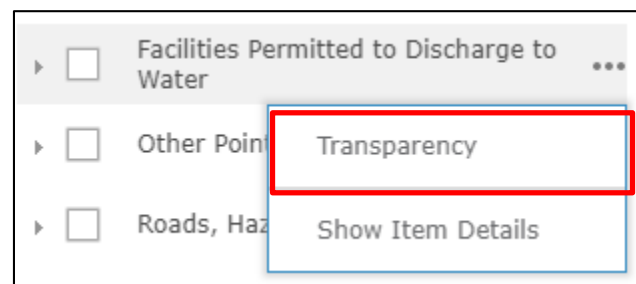


Figure 12: Layer List tool layer options menu transparency button.

2. Click the **Transparency** button to open the layer transparency slider. Drag the circular slider towards the plus or minus signs or click the plus or minus signs to adjust layer transparency (Figure 13).

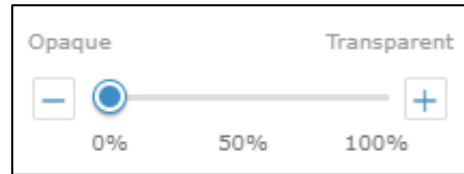


Figure 13: The Layer List tool transparency slider bar.

5.1.3 Access Layer Details

Within the **Layer List** tool, a user can access additional information about a layer and its underlying data, such as a service description, metadata, and access and use constraints. The **Layer List** tool also provides access to a layer's map service (e.g. ArcGIS Server Web Service, WMS OGC Web Service) endpoint, which they can use to bring the layer into a separate map or mapping application. Availability of information and data services may vary by the source, owner, and type of layer service.

1. Within the **Layer List** options menu, click the **Show Item Details** button. Alternatively, click the layer **Description** button (Figure 14).

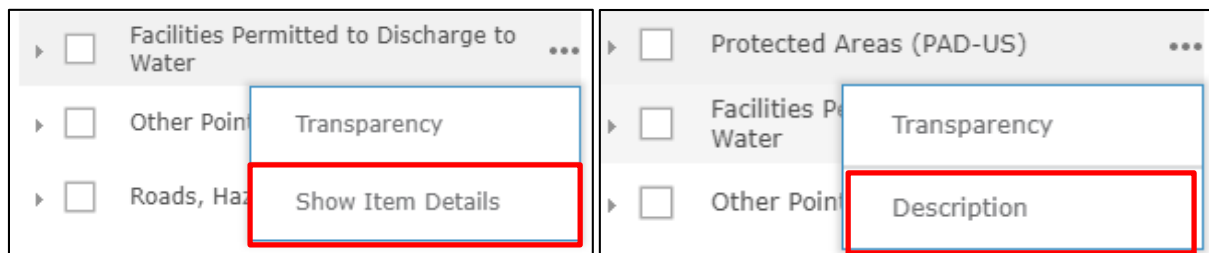


Figure 14: The Layer List tool options menu Show Item Details button and Description Button.

- ✓ A separate browser window will open with an Item Details page or an ArcGIS REST Services Directory Map Server page, depending on the layer's map service origin.

5.1.4 View Layer Attributes

A user may access a layer's attribute table via the **Layer List** tool for viewing in the **Attribute Table** tool.

Note: Certain layer services do not provide access to layer attribute tables. This feature is set by the layer's service owner and is not unique to DWMAPS.

1. Within the layer List tool options menu, click the Open Attribute Table button (Figure 15).

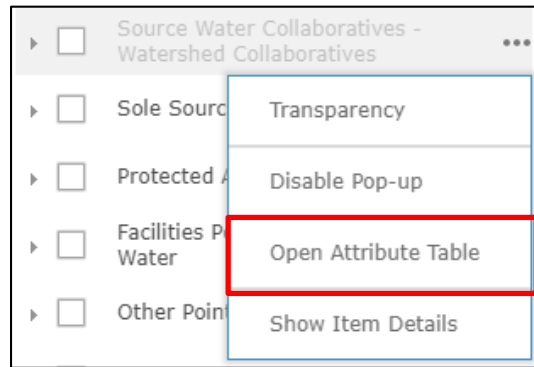


Figure 15: The Layer List tool Open Attributes Table button.

- ✓ The layer's attribute table will open in the **Attribute Table** tool (Figure 16).

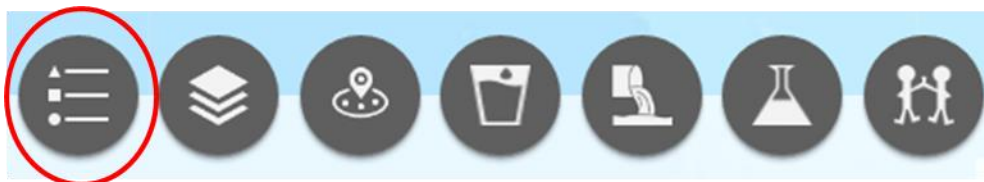
 A screenshot of the Attribute Table tool. The table has the following columns: OBJECTID, Shape, PERMANENT_ID, EVENTDATE, REACHCODE, REACHSMDATE, FEATURE_PERI, SOURCE_ORIG, SOURCE_DATA, SOURCE_FEAT, FEATUREDETA, MEASURE, and EVEN. Two rows are visible:

OBJECTID	Shape	PERMANENT_ID	EVENTDATE	REACHCODE	REACHSMDATE	FEATURE_PERI	SOURCE_ORIG	SOURCE_DATA	SOURCE_FEAT	FEATUREDETA	MEASURE	EVEN
1		{47F8DB02-BB8B-3F45-E053-63DD4386AFD}	February 7, 2017	02070010001	February 20, 2001	22340557	DC	PIPE	DCR05301600	https://echo.epa.gov/facility-report?fid=DCR05301	38.79	0.00
2		{47F8DB02-BB8D-3F45-E053-}	February 7, 2017	02070010001	February 20, 2001	22340557	DC	PIPE	DCR05301800	https://echo.epa.gov/facility-report?	36.89	0.00

 The status bar at the bottom indicates '337062 features 0 selected'.

Figure 16: Layer attribute table displayed via the Attribute Table tool.

5.2 LEGEND



The **Legend** tool (Figure 2, Element H) lists the data layers that are currently active and visible in the map and explains the symbols used on the map. In the **Legend**, a symbol will appear beneath each layer title that matches the symbol for the layer displayed on the map. Data layers will appear in the legend only if they are being utilized or displayed in the map.

1. Click the **Legend** tool icon in the toolbar at the bottom of the map display.

- ✓ The legend window will open (Figure 17). Active layers will appear in the legend. If no data layers are active, it will appear blank (certain layers may appear automatically).

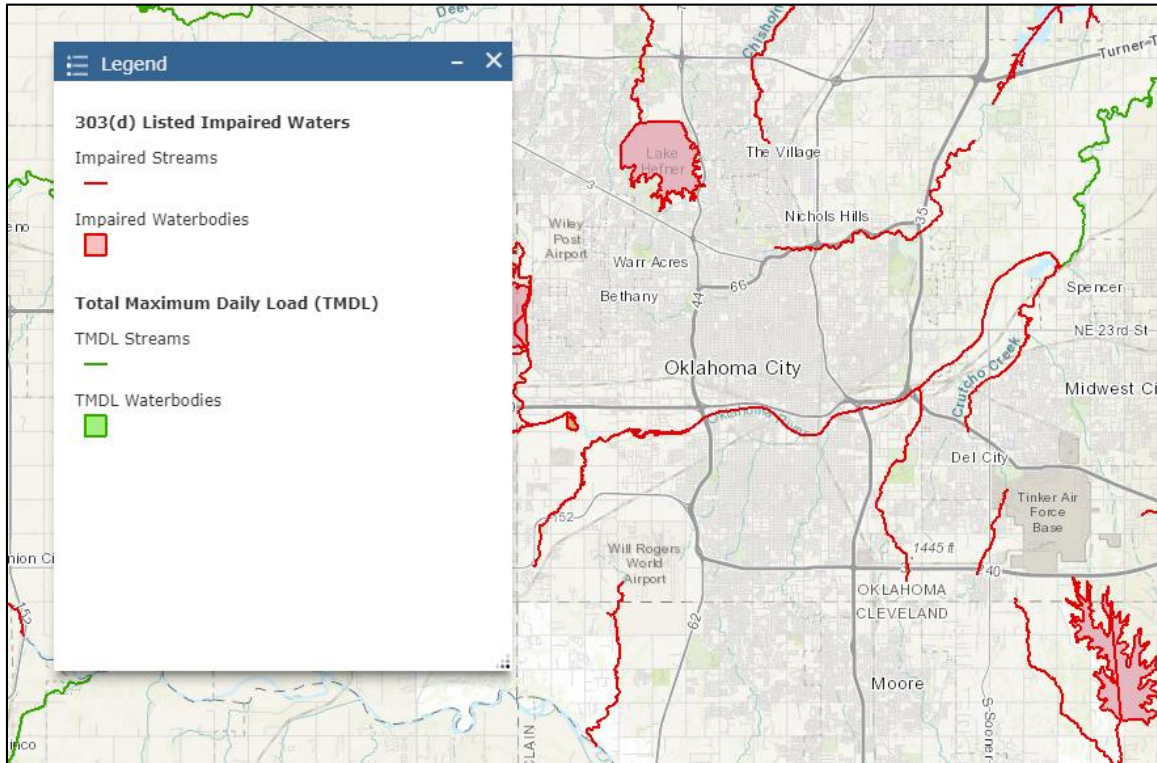


Figure 17: The Legend explains the symbols used in the map. Red lines on the map show locations of impaired streams and waterbodies. Green lines show locations of TMDL streams and waterbodies.

- To close the **Legend** tool, click the **X** in the top right corner or click on the **Legend** tool in the toolbar.

5.3 ADD DATA



The **Add Data** tool (Figure 2, Element O) allows users to temporarily add data to the map by searching for layers in ArcGIS online for ArcGIS content, entering URLs, or uploading files from your desktop. Users can temporarily add layers to the map; however, data layers cannot be saved to the DWMAPS map interface. Added data layers will only be visible to the user that added the data and will not be visible to

separate users. Users can print maps that include data added through the **Add Data** tool.

1. Click the **Add Data** icon in the upper right corner of the map display.
 - ✓ The **Add Data** tool window will open (Figure 18).

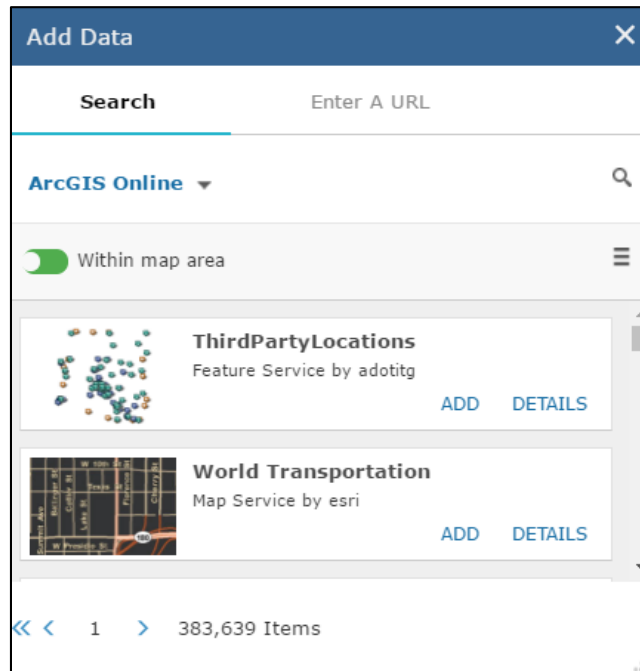


Figure 18: The Add Data tool window.

5.3.1 Add data from ArcGIS Online

Esri provides access to many geospatial layers through ArcGIS Online. DWMAPS users may access publicly-available and licensed data services through the **Search** tab and ArcGIS Online dropdown menu option.

1. Click the **Search** tab.
 - ✓ ArcGIS Online data layers that are available for viewing in the current map area will automatically populate in the **Add Data** layer list (Figure 19). Data layers that do not have data for the current map location and scale will not appear in the data layer list.

Note: Activate the Within map area option to view only layers that are visible in the current map viewing area.

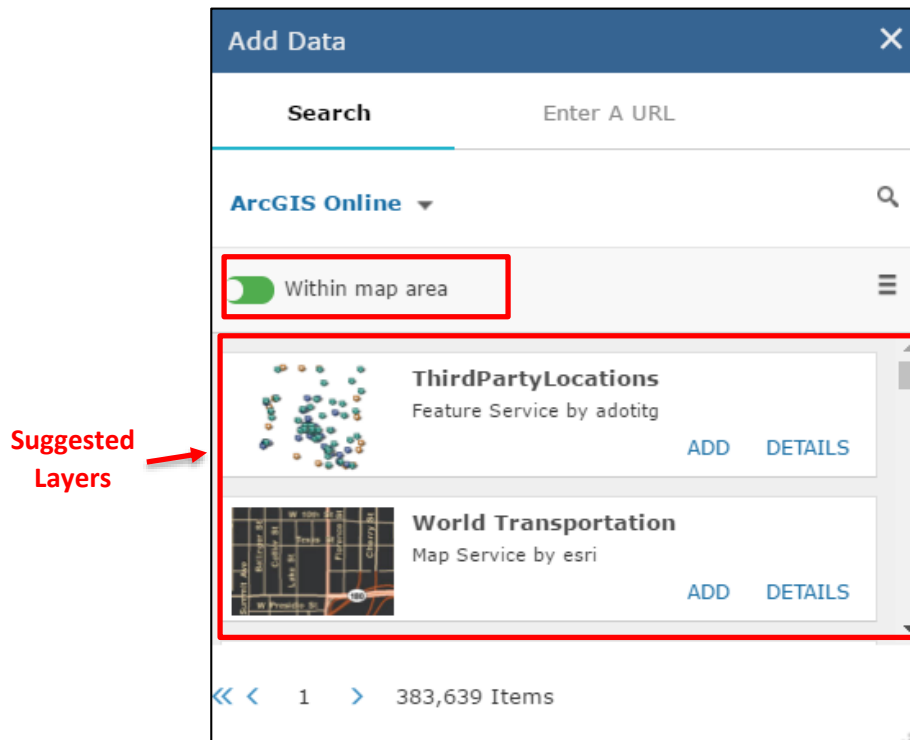


Figure 19: The Add Data tool window with suggested layers. The Within Map Area toggle.


2. Locate the layer(s) of interest in the data layer list and click **ADD** to add the data layer to the map display.
 - ✓ The layer will appear in the map display, the **Layer List**, and the **Legend**.
3. Click **REMOVE** to remove the layer from the map, the **Layer List** tool, and the **Legend** tool (Figure 20).



Figure 20: The REMOVE and DETAILS buttons.

- Click **DETAILS** to access information about the layer and obtain the map service URL, which a user may use to view the same layer within DWMAPS or within a separate map or mapping application through their ArcGIS Online account (Figure 20).

Optionally, to search for layers in the **Add Data** tool:

- Click the magnifying glass icon  .
 - ✓ A search bar will appear (Figure 21).
- Type a name or keyword to search for a data layer.
 - ✓ Data layers matching the search criteria will appear in the data layer list. The number of results will appear at the bottom of the window.
- Click **ADD** to add the layer to the map display (Figure 21).

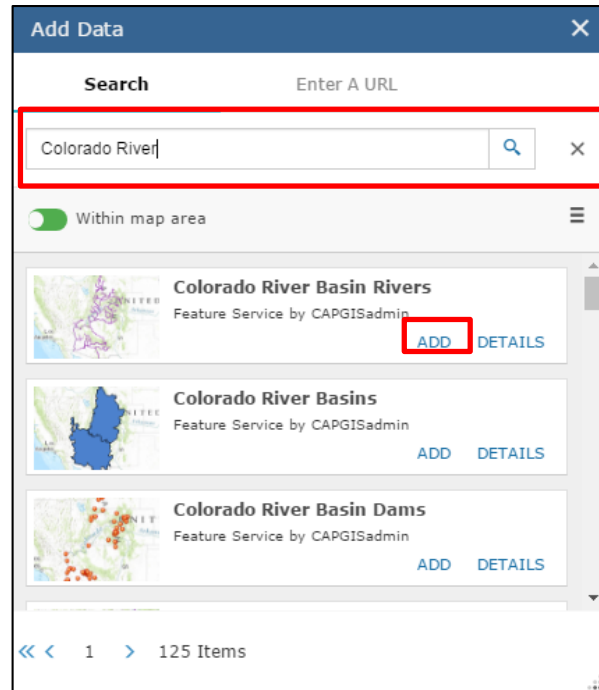


Figure 21: The Add Data tool search bar and ADD layer button.

5.3.2 Add layers by URL

- Click the **Enter A URL** tab located next to the **Search** tab (Figure 22).

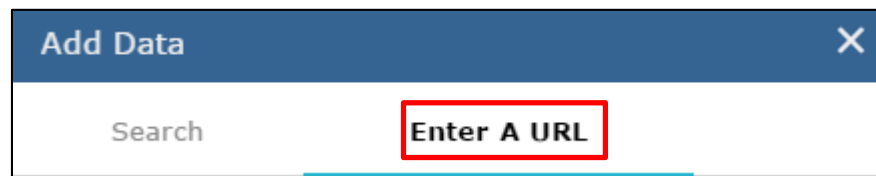


Figure 22: The Add Data tool Enter A URL tab.

- Click the drop down arrow and select the data type to be added (Figure 23). The following types are supported through the **Enter a URL** option:

- An ArcGIS Server web service
- A WMS OGC web service
- A KML file
- A GeoRSS file
- A CSV file

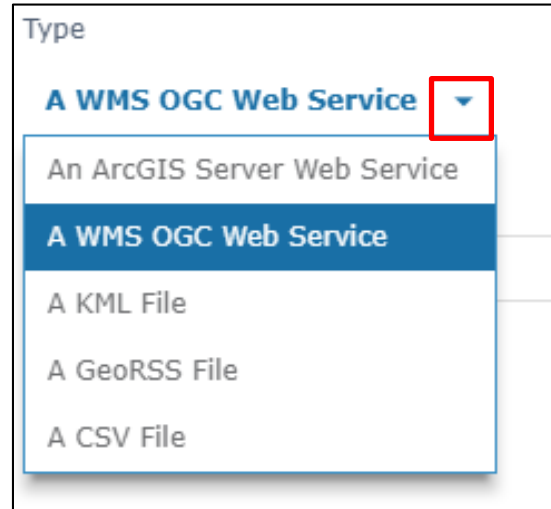


Figure 23: The Add Data tool drop down menu arrow.

- Type or copy and paste the URL into the URL text box (Figure 24).



Figure 24: The Add Data text box, ADD button, and Sample URL(s) button.

- Click **ADD** to add the data to the DWMAPS display (Figure 24).
- Click **Sample URL(s)** to see the URL format for each type (Figure 24).

5.4 PRINT



The **Print** tool (Figure 2, Element P) offers the option to print the current map display. Only the data layers visible on the map will display in the printed file.

- Click the **Print** tool icon in the upper right corner of the map display.
 - ✓ The **Print** tool display will appear (Figure 25).

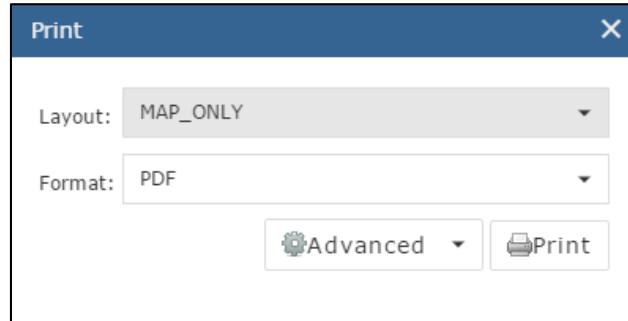


Figure 25: The Print tool display.

2. Select the applicable print layout option from the **Layout** dropdown menu (Figure 26).

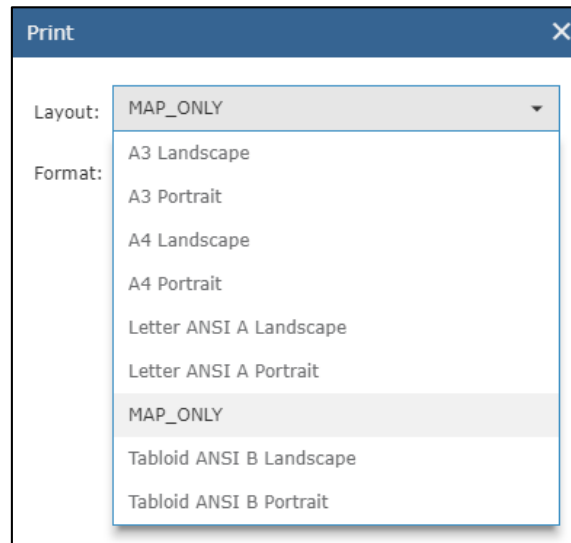


Figure 26: The Print tool option Layout dropdown menu.

3. Select the applicable file type from the **Format** dropdown menu (Figure 27).

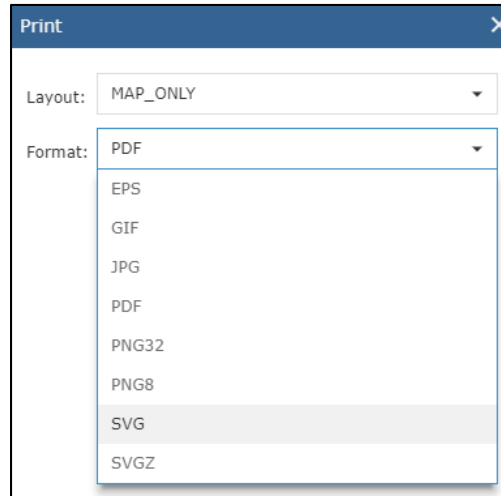


Figure 27: The Print tool Format dropdown menu.

- Click **Advanced** from the **Print** tool display (Figure 25) to customize the map size and quality and to choose between printing the map scale or extent (Figure 28).

Note: Map scale/extent section defines the area to printed area. Try both options and select which works best for your uses.

Map scale/extent:

Preserve: map scale map extent

Force scale: current

Layout metadata:

MAP_ONLY size:

Width (px):

Height (px):

Print quality:

DPI:

Figure 28: Print tool Advanced Customization options.

- Click **Print** once desired settings are selected.

5.5 ATTRIBUTE TABLE



The **Attribute Table** tool (Figure 2, Map Element S) lists information for features in the map layer in tabular format. Users may use this tool to filter and select (highlight) attributes to view in the map and in the attribute display. Attributes tables are available for **Layer List** layers and user-added external layer services that are query capable. A query capable layer will have the **Open Attribute Table** option available in the layer's description tab.

5.5.1 Open Layer Attribute Table

1. Click the **Attribute Table** tool icon in the bottom right corner of the DWMAPS map display (Figure 29).
 - ✓ The attribute table will display below the map panel. Attribute table field names appear above the feature values (Figure 29).

The screenshot shows the U.S. EPA DWMAPS interface. The map displays the Midwest region with cities like Kansas City, St. Louis, and Indianapolis. The 'Attributes Table' tool icon is highlighted in the bottom right corner of the map. Below the map, the attribute table is open, showing a list of features with their attributes. The table has the following columns: OBJECTID, Shape, PERMANENT_ID, EVENTDATE, REACHCODE, REACHSMDATE, FEATURE_PERI, SOURCE_ORIG, SOURCE_DATA, SOURCE_FEAT, FEATUREDETAIL, MEASURE, and EVEN. The first four rows of data are visible, with the first two rows having their 'FEATUREDETAIL' columns highlighted.

OBJECTID	Shape	PERMANENT_ID	EVENTDATE	REACHCODE	REACHSMDATE	FEATURE_PERI	SOURCE_ORIG	SOURCE_DATA	SOURCE_FEAT	FEATUREDETAIL	MEASURE	EVEN
14325		{47F8F69B-0E45-74B8-E053-63DD43865F7}	February 7, 2017	103001010025	July 9, 1999	4389345	AR	FAC no PIPE	ARR000003	https://echo.ejfacility-report?fid=ARR000003	16.82	0.00
39071		{47F8F69B-3289-74B8-E053-63DD43865F7}	February 7, 2017	110701020004	September 17, 1999	21513922	AR	FAC no PIPE	ARR150914	https://echo.ejfacility-report?fid=ARR150914	44.66	0.00
40622		{47FBA3C8-1FC0-643E-E053-63DD43861ED}	February 7, 2017	050902				PIPE	KY000203800E	https://echo.ejfacility-report?fid=KY000203800E	13.30	0.00
40623		{47FBA3C8-1FC2-643E-E053-63DD43861ED}	February 7, 2017	050902030000	August 25, 2005	3408285	KY	PIPE	KY0002038007	https://echo.ejfacility-report?fid=KY0002038007	86.63	0.00

Figure 29: Map display with Attributes Table tool icon and open display. Field Names and Feature Values shown.

Or;

Click the **Open Attribute Table** text link within the **Layer List** tool to view attribute data for a specific data layer (Figure 30). View detailed instructions on accessing attribute information through the **Layer List** tool in the **Layer List** in Section 4.1.4. of this document.

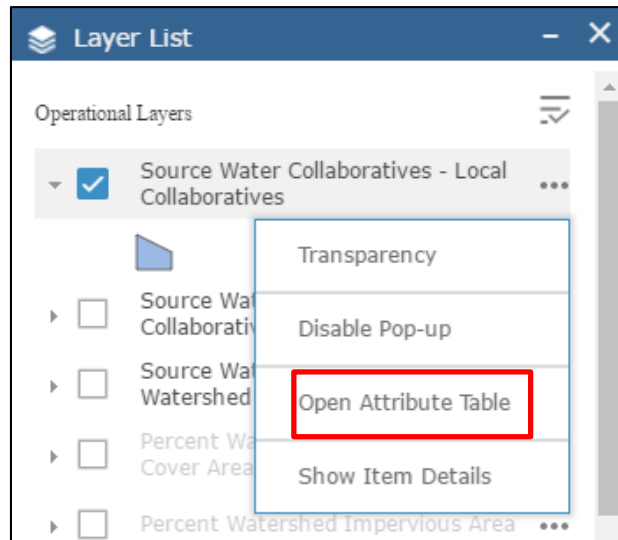
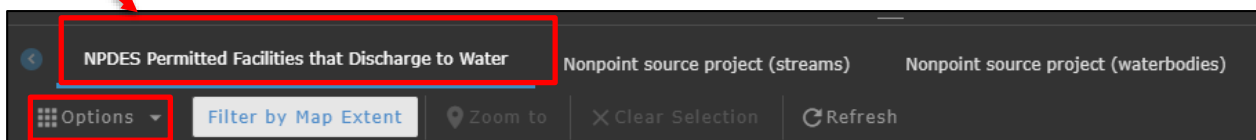


Figure 30: Open Attribute Table link in Layer List tool window.

Layer Tab



Options dropdown menu

Figure 31: The Attribute Table tool layer viewing panel with layers tab and Options dropdown menu.

2. Within the **Attribute Table** tool, select a layer tab from the layer panel to view that layer's attribute table (Figure 31).

Or;

Click the options dropdown menu icon and select a layer from the dropdown menu (Figure 31 & Figure 32).

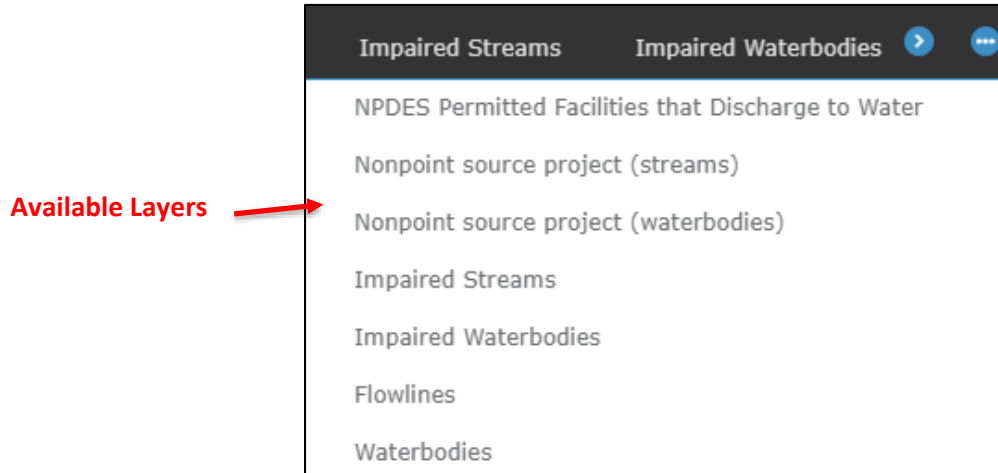


Figure 32: The Attribute Table tool layer dropdown menu.

- ✓ The selected data layer will be underlined in blue in the layer panel (Figure 33).

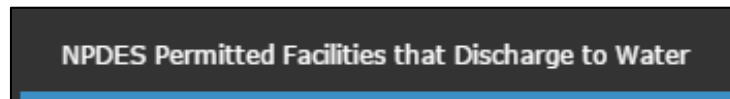



Figure 33: Selected layer panel.

3. Click the **Attribute Table** tool icon  on the map display to close.

5.5.2 Filter & Select Attributes

Use this tool to filter and select which data within a layer to view on the map and in tabular format. Use this tool to download a table with selected attributes.

To show only data being displayed in the current map view in the attributes table:

1. Click **Filter by Map Extent** to view data only visible in the current map view (Figure 34).

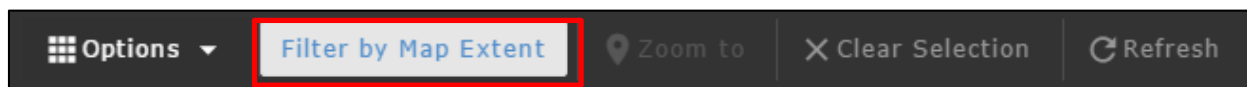


Figure 34: Attribute Table Filter by Map Extent button.

- ✓ The **Attribute Table** tool will show only data in the table that coincides with the data currently visible in the map display (Figure 35).

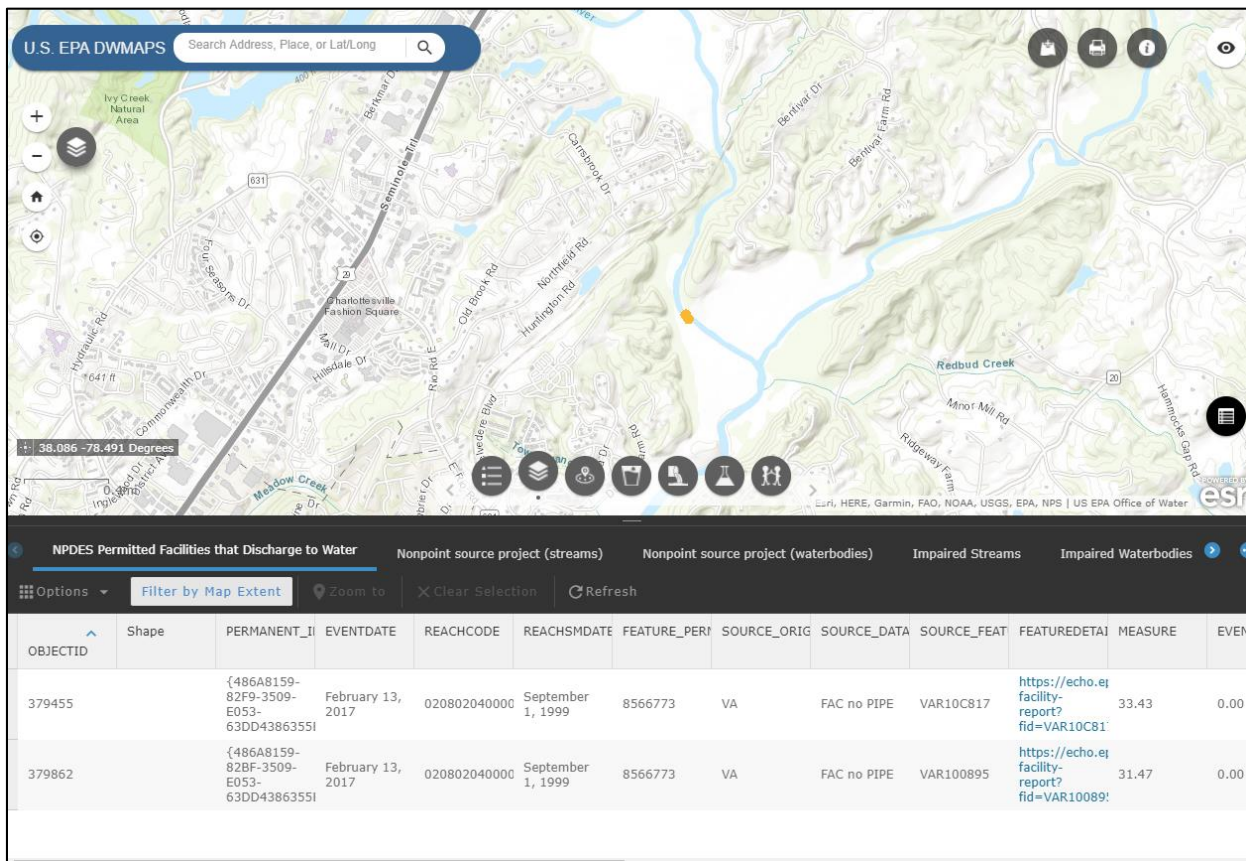


Figure 35: The records that show in the attribute table will match those displayed in the map. In this image, the two records displayed in the attribute table coincide with the two orange points in the map.

To filter table records using a filter expression:

1. Click the **Options** dropdown menu button and the select **Filter** button to access the **Filter** expression window (Figure 36).

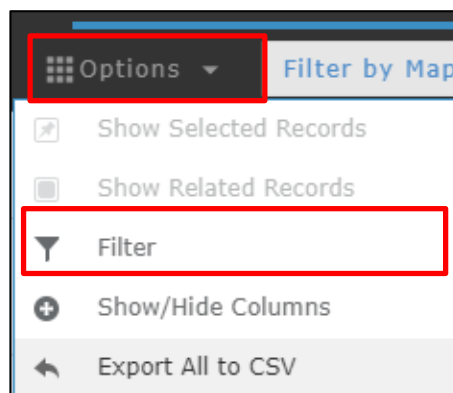


Figure 36: The Attribute Table tool Options dropdown menu and Filter button

- Set the filter expression. The left dropdown menu sets the attribute field to be searched; the middle box sets the function logic; and the right box sets the value, field or unique value by which to filter. Click **OK at the bottom of the page** (Figure 37).

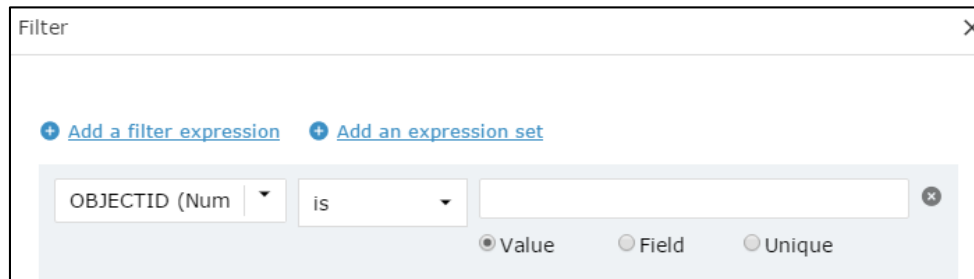


Figure 37: The Attribute Table tool Filter tool expression window.

To filter records by data field (column):

- Click the **Options** dropdown menu button (Figure 38).
- Click the **Show/Hide** columns button (Figure 38).

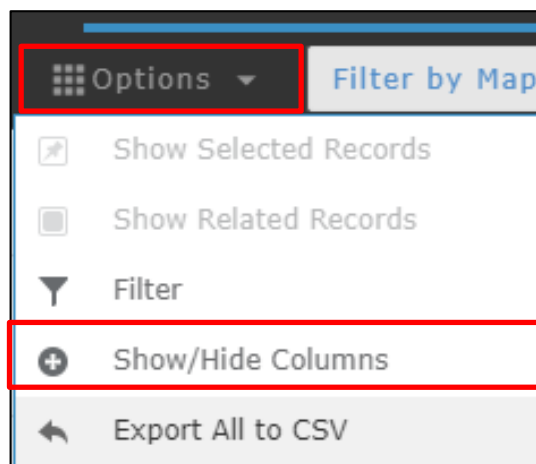


Figure 38: The Attributes Table tool Options dropdown menu and Show/Hide Columns button.

3. Select the data field(s) to display by checking or unchecking the boxes (Figure 39).

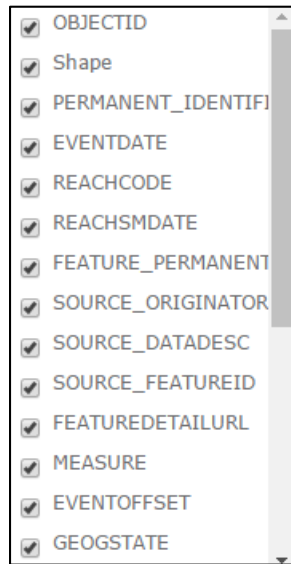


Figure 39: Attribute Table tool data fields selection menu.

- ✓ The attribute table will only show the selected data fields (columns) (Figure 40).

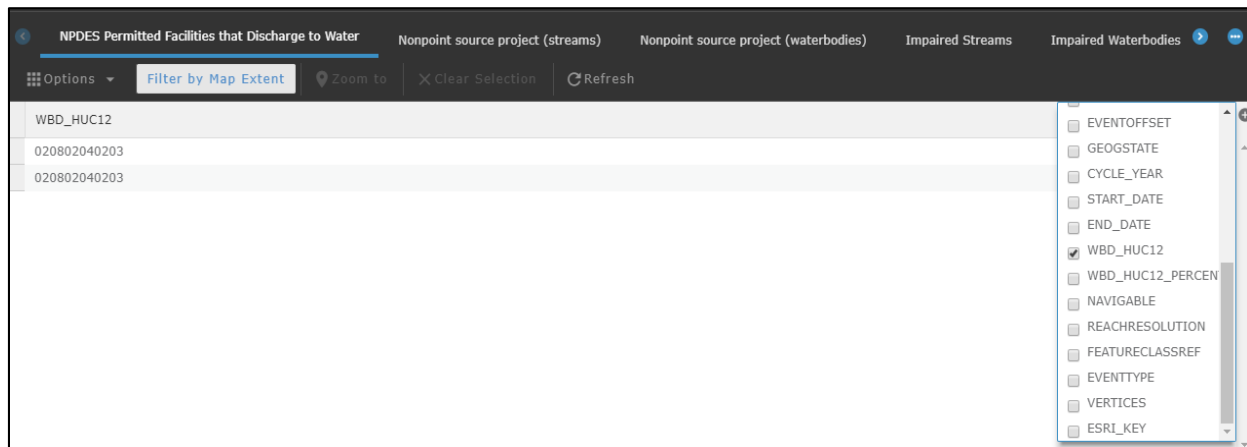


Figure 40: Attribute Table tool display with selected attributes.

To filter by record (row):

1. Click the left side of a record row.
 - ✓ The record row will highlight (Figure 41).

OBJECTID	Shape	PERMANENT_ID	EVENTDATE	REACHCODE	REACHSMDATE	FEATU
137		{47F8F69A-F9BF-74B8-E053-63DD43865F7}	February 7, 2017	08010100000	January 23, 2005	74716
138		{47F8F69A-F9C1-74B8-E053-63DD43865F7}	February 7, 2017	08020205000	August 28, 2005	22864
139		{47F8F69A-F9C3-74B8-E053-63DD43865F7}	February 7, 2017	08020205000	August 28, 2005	22865
		{47F8F69A-				

157616 features 1 selected

Figure 41: Highlighted record row in Attributes Table tool.

2. Click the **Options** dropdown menu (Figure 42).
3. Click the **Show Selected Records** button (Figure 42).

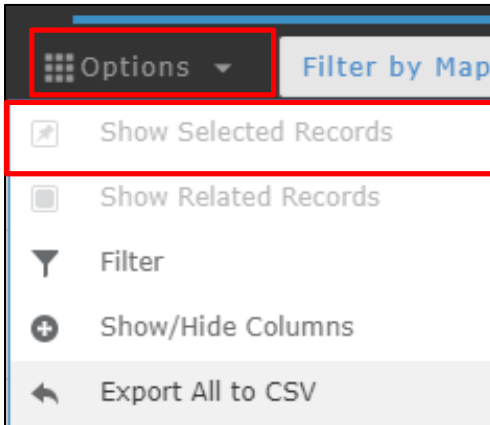


Figure 42: The Attributes Table tool options dropdown menu button and Show Selected Records button.

- ✓ The attribute table will only display the selected records (Figure 43).

OBJECTID	Shape	PERMANENT_ID	EVENTDATE	REACHCODE	REACHSMDATE	FEATU
137		{47F8F69A-F9BF-74B8-E053-63DD43865F7}	February 7, 2017	08010100000	January 23, 2005	74714
138		{47F8F69A-F9C1-74B8-E053-63DD43865F7}	February 7, 2017	08020205000	August 28, 2005	22864
139		{47F8F69A-F9C3-74B8-E053-63DD43865F7}	February 7, 2017	08020205000	August 28, 2005	22865

157616 features 1 selected

Figure 43: The Attributes Table tool display with only selected records.

5.5.3 Highlight an Attribute on the Map Display

Use this feature to highlight features on the main map display.

1. Click the left side of a record row.
 - ✓ The row will highlight (Figure 43)
2. Click **Zoom to**.
 - ✓ The map display will zoom to the selected record location, which is highlighted in blue (Figure 44).

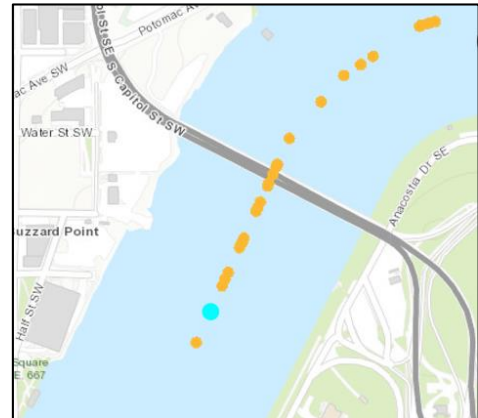


Figure 44: The blue highlighted point indicates the selected record.

5.5.4 Export Attribute Data

Use this feature to export attribute information in a Comma Separate Values (CSV) file.

1. Click Select the **Options** drop down menu button.
2. Click **Export All to CSV** to export all of the desired data layer's attributes in a CSV file format (Figure 45).

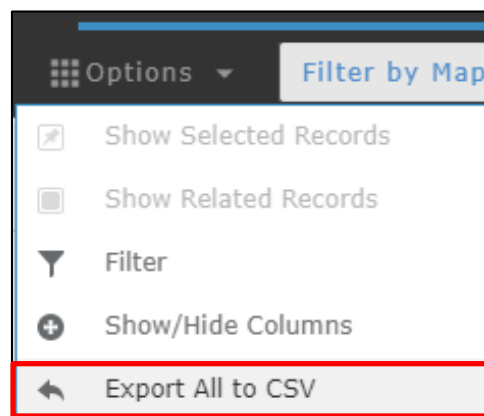


Figure 45: The Attributes Table tool options dropdown menu and Export All to CSV button.

Or; to export select attributes to a CSV file;

3. Select the desired record row(s) in the attribute display (Figure 46);

OBJECTID	Shape	PERMANENT_ID	EVENTDATE	REACHCODE	REACHSMDATE	FEATU
137		{47F8F69A-F9BF-74B8-E053-63DD43865F7}	February 7, 2017	08010100000	January 23, 2005	74716
138		{47F8F69A-F9C1-74B8-E053-63DD43865F7}	February 7, 2017	08020205000	August 28, 2005	22864
139		{47F8F69A-F9C3-74B8-E053-63DD43865F7}	February 7, 2017	08020205000	August 28, 2005	22865
		{47F8F69A-				

157616 features 1 selected

Figure 46: The Attributes Table tool display with records row selected.

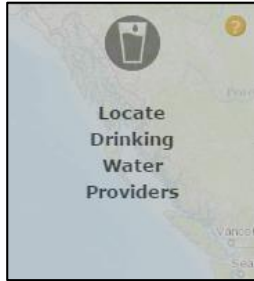
4. Click the **Option** menu; click **Export Selected to CSV**.
5. Click **OK** at the bottom of the page when the “Export data to CSV file?” window opens.

6 SEARCH TOOLS

The DWMAPS application contains several search tools that enable users to filter, select, and view information to help them locate drinking water providers, locate potential sources of contamination, located polluted waterways, and locate projects and source water collaboratives. Users can access search tools either on the **Welcome Screen** or on the **Search Toolbar** at the bottom of the Map Display.

6.1 LOCATE DRINKING WATER PROVIDERS

Use this search tool to view information about drinking water providers and to locate sources of drinking water.



The **Locate Drinking Water Providers** tool (Figure 2, Map Element K) provides information on Public Water System (PWS) service areas and sources of drinking water. Service area information is displayed at the county level, while drinking water source information is displayed by Hydrologic Unit Code (HUC 12) watershed. The tool provides links to information, including service population, source type, and violations, reported by the state, tribe or territory, within EPA's Safe Drinking Water Information System (SDWIS). **DWMAPS does not display the actual locations of Public Water System intakes facilities.**

1. Select the **Drinking Water Providers** tool from the Welcome Screen;

Or;

Click the **Drinking Water Providers** tool icon from the toolbar at the bottom of the DWMAPS map display (Figure 47).



Figure 47: The Drinking Water Providers tool icon in tool bar in the DWMAPS map display.

- ✓ The **Drinking Water Providers** tool search window will display (Figure 48)

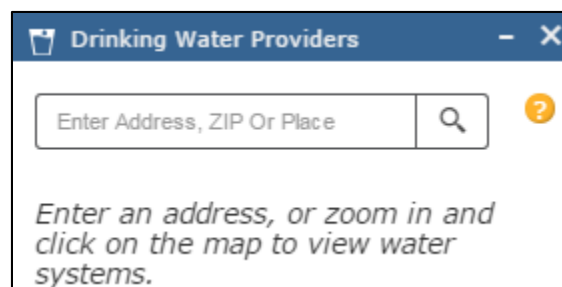



Figure 48: The Drinking Water Providers tool search window.

2. Type in an address, zip code, latitude/longitude coordinates, or place name in the search bar and press enter on your keyboard, click a suggestion from the pop-up box, or click the magnifying glass icon  to search the location.

Or;

Click a point on that map to search that area.

- ✓ The map will zoom to the location and generate results that match the area selected (Figure 49).

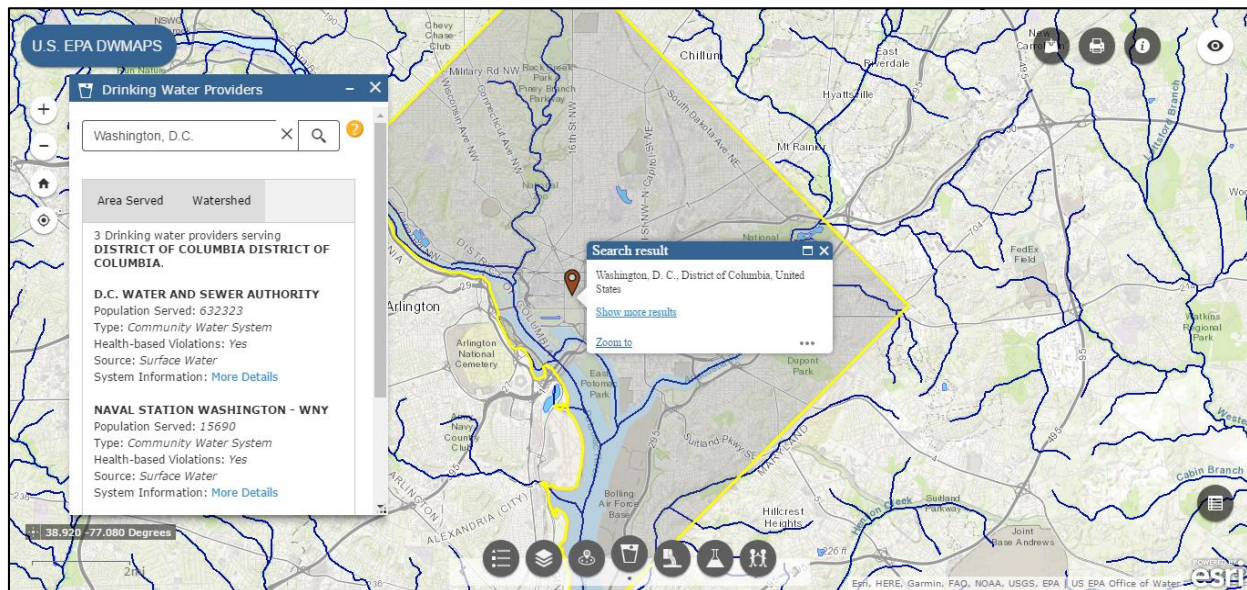


Figure 49: The Drinking Water Providers tool will initially highlight on the map the geographic area served (e.g. county) that encompasses the point clicked or place entered. The results window will show all systems that serve the designated area.

- ✓ The **Drinking Water Providers** tool results window will display (Figure 49). The results window will automatically display the **Area Served** results, as indicated by the **Area Served** tab.

6.1.1 Systems by Area Served

The **Area Served** tab lists all public drinking water providers serving the county encompassing the selected location or map point. Upon searching a location, the **Area Served** results will automatically display in the **Drinking Water Providers** results window (Figure 50).

1. Click the **More Details** button to view more information about that drinking water provider.

6.1.2 Systems by Source of Drinking Water

The **Watershed** tab lists all drinking water providers that have a drinking water source within the HUC12 watershed encompassing the selected location or map point (Figure 51).

1. Within the **Drinking Water Providers** results screen, click the **Watershed** tab to view drinking water providers with a source of water within that HUC12 watershed.
2. Click **More Details** to view more information about the drinking water provider (e.g. facilities, violations).
3. Click the **Export Data Table** at the bottom of the results window to export the drinking water providers list into an Excel file (Figure 52).

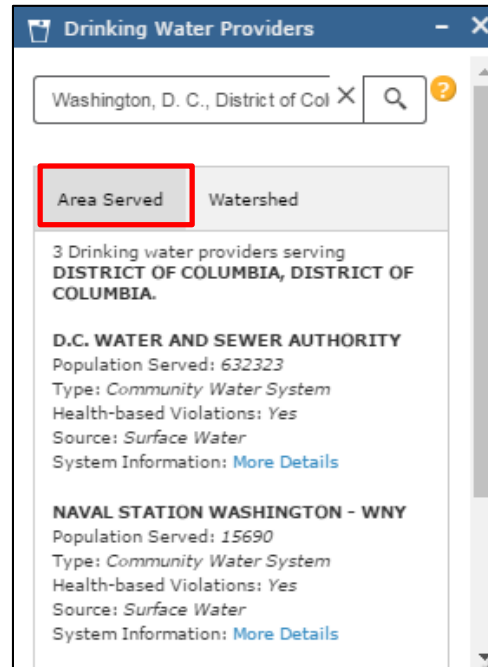


Figure 50: The Drinking Water Providers tool results window, Area Served tab results.

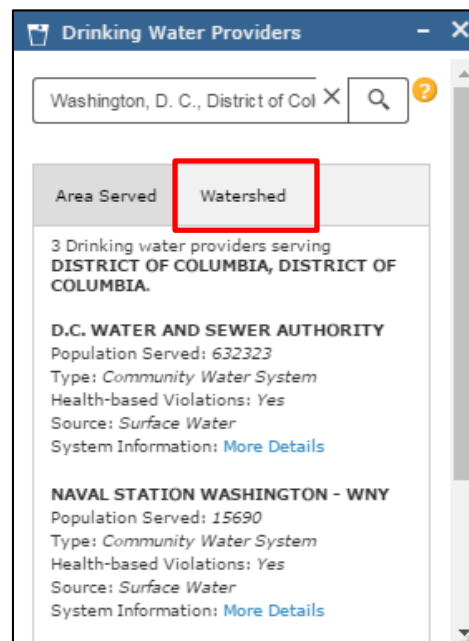


Figure 51: The Drinking Water Providers tool results window, Watershed tab results.

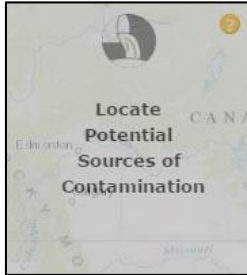


Figure 52: Drinking Water Providers tool Export Data Table text.

Note: Click the **Area Served** or **Watershed** tabs to move between the respective results. Enter a search term into the search bar or click and re-click the **Drinking Water Providers** tab to start a new search.

6.2 POTENTIAL SOURCES OF CONTAMINATION

Use this search tool to locate potential sources of contamination upstream.



The **Locate Potential Sources of Contamination** search tool (Figure 2, Map Element L) locates and highlights National Pollutant Discharge Elimination System (NPDES) permitted facilities located upstream from a user-designated point, within a range of 1-10 miles. Potential contaminant sources are indicated by a yellow icon in map. Further details on each potential contaminant source identified, including enforcement and compliance history, are made available in a results window. This search tool intends to help users identify where they may be able to engage in the CWA to protect sources of drinking water. Refer to the [Clean Water Act-Safe Drinking Water Act Coordination Toolkit](#) for more information.

1. Select the **Potential Sources of Contamination** tool on the Welcome Screen,

Or;

Click the **Potential Sources of Contamination** tool at the bottom of the DWMAPS map display (Figure 53).

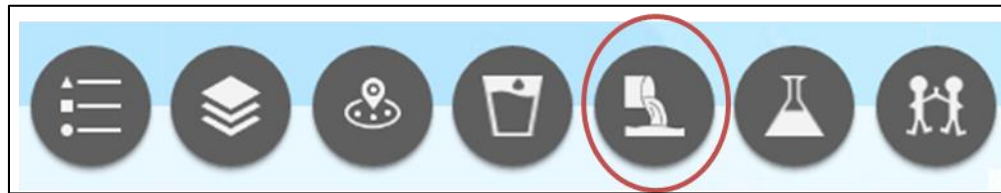


Figure 53: The Potential Sources of Contamination tool icon in toolbar in the DWMAPS map display.

- ✓ The **Potential Sources of Contamination** tool results window will display (Figure 54).

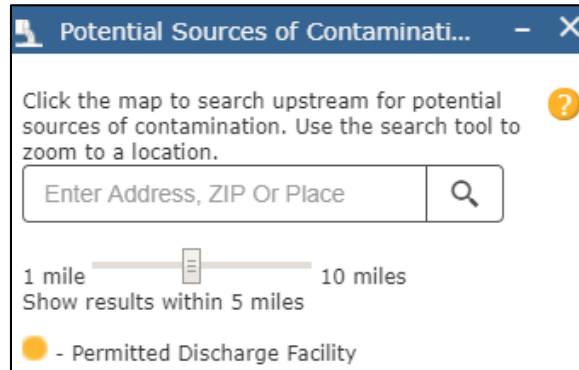



Figure 54: The Potential Sources of Contamination tool search window.

2. Type in an address, zip code, latitude/longitude coordinates, or place name in the search bar. Hit enter or click on the magnifying glass icon  to zoom to a place of interest (unlike the Drinking Water Providers tool, the Potential Sources of Contamination tool will not automatically search the location. You must click a location on the map to conduct a search) (Figure 54).
3. Adjust the slider bar to the preferred search distance up stream (1-10 miles) (Figure 55).

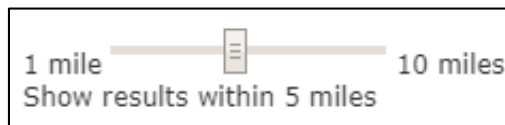


Figure 55: The Potential Sources of Contamination tool search distance slider bar.

4. **Click on the map** to perform the search.

- ✓ Locations of all NPDES-permitted facilities discharging directly to water within the specified search distance will be marked by yellow box on the map. The **Potential Sources of Contamination** search results window will appear with a list of these facilities (Figure 56).

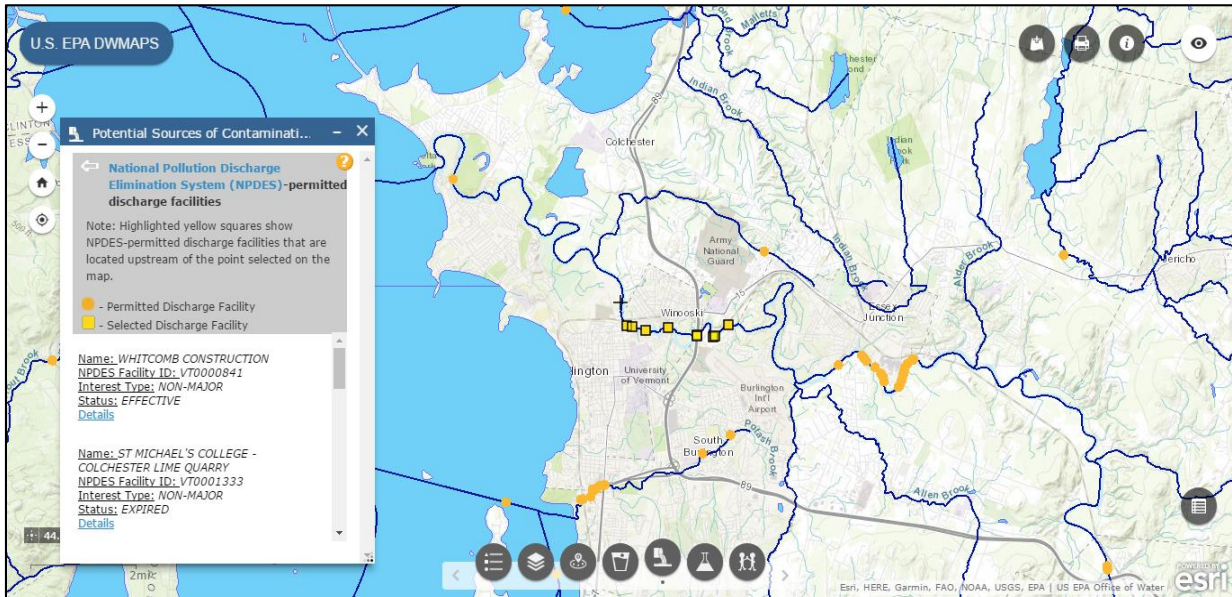


Figure 56: Potential sources of contamination located within the search distance upstream will be marked by a yellow square on the map. View more information about these facilities in the results window or by clicking on the yellow square on the map.

5. Click **Details** in the search results or click the yellow square icon on the map (Figure 56) to view more information (e.g. compliance, pollutants, monitoring) about the listed facility (Figure 57).
6. Click the **National Pollutant Discharge Elimination System** link at the top of the results window to view more information about the Clean Water Act NPDES program (Figure 57).

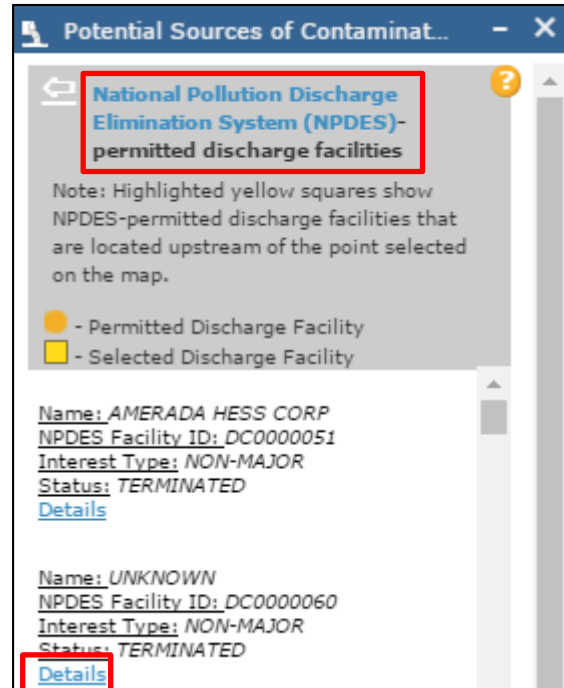


Figure 57: The Potential Sources of Contamination tool search results window with details link and National Pollution Discharge Elimination System link.

6.3 NEARBY DISCHARGES

Use this search tool to find potential sources of contamination, source water protection projects, and waters identified as impaired under Clean Water Act 303(d) provision and Total Maximum Daily Load (TMDL) waters within a search radius.

The **Nearby Discharges** tool (Figure 2, Map Element J) locates NPDES-permitted discharge points, Clean Water Act Section 319 nonpoint source pollution projects, impaired waters (under CWA Section 303(d)), and assessed waters (under Section 305(b)). Unlike the **Potential Sources of Contamination** tool, which provides results upstream from a given point, the **Nearby Discharges** provides results that fall **within a specified radius** (1 to 30 miles) of an address, place, or specified location by clicking on the map. The tool is not located on the Welcome Screen but can be found at the bottom of the DWMAPS map display.

1. Select the **Nearby Discharges** tool from the tool bar at the bottom of the map display (Figure 58).



Figure 58: The Nearby Discharges tool icon in tool bar in the DWMAPS map display.

- ✓ The **Nearby Discharges** search window will appear (Figure 59).

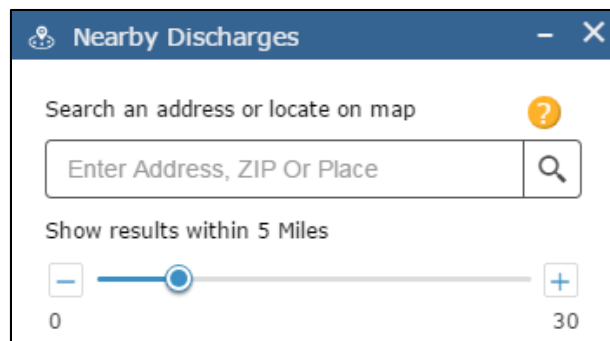


Figure 59: The Nearby Discharges search window.

- In the tool search window, adjust the slide bar to the desired search radius before specifying your search location (Figure 60).

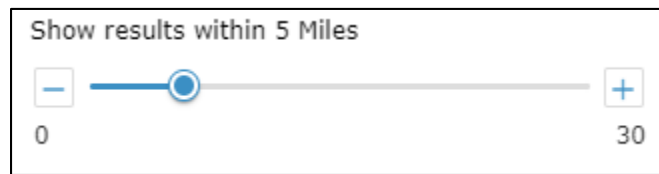



Figure 60: The Nearby Discharges tool search distance slider bar.

- Enter an address, zip code, latitude/longitude coordinates, or place name in the search tool bar (Figure 61). Press enter or click on the magnifying glass icon  to search,

Or;

Click on the map to search a different location.

- ✓ A green circle on the map indicates the selected search radius
- (Figure 62).

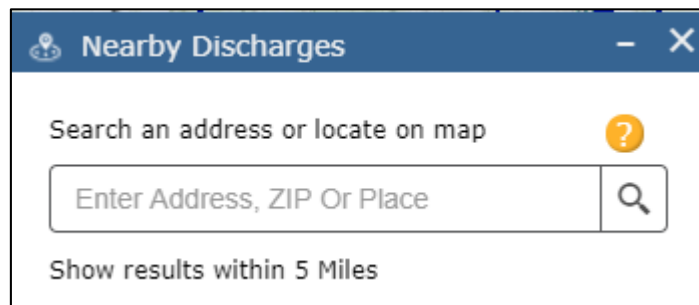


Figure 61: The Nearby Discharges tool search bar.

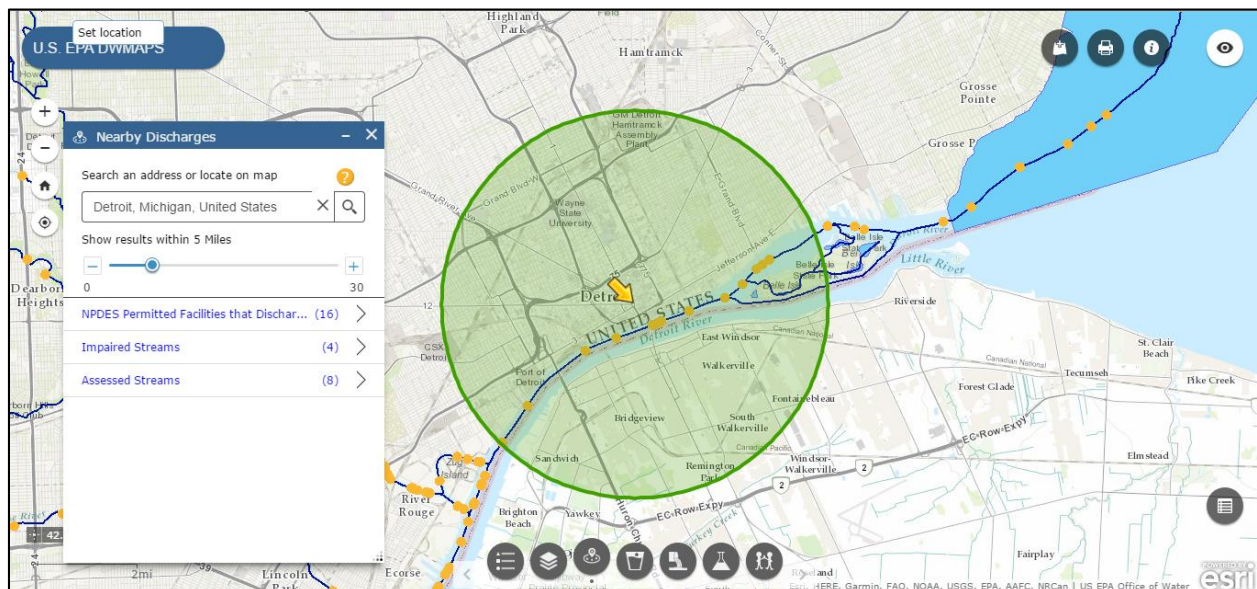


Figure 62: A green circle will indicate the search radius from the point selected.

- ✓ A window will also appear that displays search results for NPDES-Permitted Facilities that Discharge to Water, Impaired Streams and Waterbodies (listed under CWA Section 303(d)), Assessed Waters (under CWA Section 305(b)), and Nonpoint source projects (funded under CWA Section 319 non-point source pollution grants) that are located within the search radius. The number in brackets for each search result category indicates the number of items meeting discharge category (Figure 63).

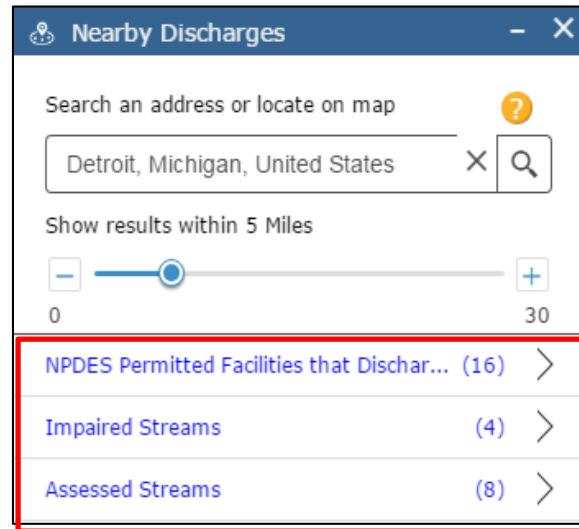


Figure 63: Nearby Dischargers tool search results window.

4. Adjust the search radius using the slide bar in the results window. The green search radius on the map and results list will update as you adjust the slide bar.
5. Click on a category link to view detailed results (Figure 64).



Figure 64: Nearby Dischargers tool results window category links.

- ✓ A facilities list will appear (Figure 65).

NPDES Permitted Facilities that Disch...	
Facility Discharging to Surface Water	1.09 mi
Facility Discharging to Surface Water	1.56 mi
Facility Discharging to Surface Water	2.43 mi
Facility Discharging to Surface Water	2.43 mi
Facility Discharging to Surface Water	2.51 mi

Figure 65: Nearby Dischargers tool results window facilities list

6. Click on an individual facility link for more details.
 - ✓ Additional information will appear in the window with a link to further information (Figure 66).

NPDES Permitted Facilities that Disch...	
Information	Directions
Facility Discharging to Surface Water	
NPDES Permit Number	VAU001851
Facility Description	FAC no PIPE
State	VA
HUC12	020700100401
Facility Information	More info

Figure 66: Nearby Discharges tool individual facility details information.

6.4 POLLUTED WATERWAYS

Use this search tool to locate polluted waterways.



The Clean Water Act (CWA) requires states to identify waterbodies-- rivers, streams, and lakes-- that are “impaired,” or not meeting the water quality standards to support activities such as recreation, fishing, and public water supply. The **Locate Polluted Waterways** search tool (Figure 2, Map Element M) allows users to search for CWA waterways that are on impaired waters list and/or have an active Total Maximum Daily Load (TMDL). This search tool intends to help users identify where they may be able to engage in the CWA to protect sources of drinking water. Refer to the [Clean Water Act-Safe Drinking Water Act Coordination Toolkit](#) for more information.

1. Click the **Locate Polluted Waterways** box on the Welcome Screen

Or;

Select the icon from the search bar at the bottom of the DWMAPS map display (Figure 67).

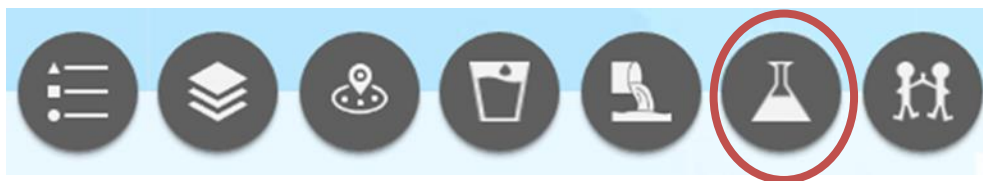


Figure 67: The Locate Polluted Waterways tool icon in tool bar in the DWMAPS map display.

- ✓ The **Locate Polluted Waterways** window will appear (Figure 68).

2. Enter an address, zip code, latitude/longitude coordinates or place name into the search bar to zoom to an area of interest.
3. Adjust the slide bar to set upstream search distance.
4. **Click a location on the map to perform a search.** Click on a waterbody for best results.

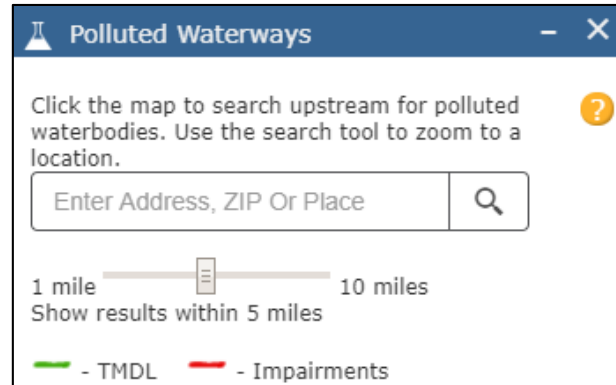


Figure 68: The Locate Polluted Waterways tool search window.

- ✓ The polluted waterways (TMDL and impaired waterbodies) located within the search distance will highlight in yellow on the map. A window will appear that displays a list of search results (Figure 69).

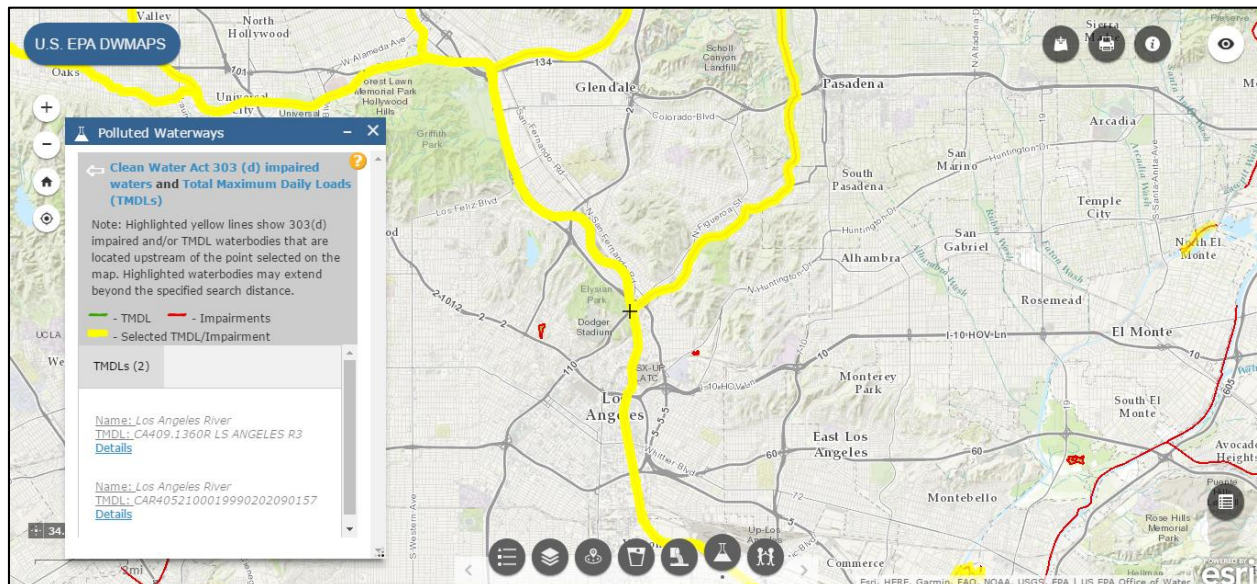


Figure 69: Polluted waterbodies that are within the search distance upstream will highlight in yellow on the map. The results window will display more information about these waterbodies.

5. Click a waterbody line or area on the map to view more information about that waterbody, including a Waterbody Quality Assessment Report.
6. To view more information about the causes of impairments, click on the **Impairments** tab in the results window (Figure 70).
7. To view more information about the selected TMDLs, such as the type of impairment, click on the **TMDLs** tab in the results window (Figure 70).
8. For more information on an impairment or TMDL, click the **Details** link. A new window will open with a Waterbody Quality Assessment Report for an impairment or a TMDL Report for a TMDL (Figure 70).

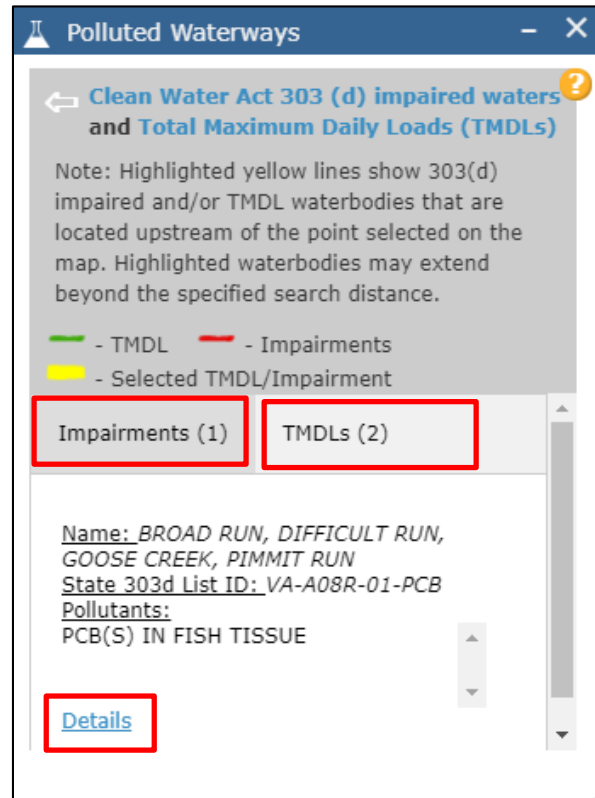
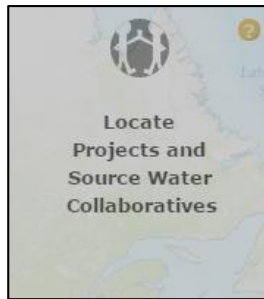


Figure 70: The Impairments tab, TMDL tab and Details link in the Polluted Waterways tool results window.

6.5 PROJECTS AND SOURCE WATER COLLABORATIVES

Use this search tool to locate watershed projects and source water collaboratives working in a specified area.



The **Locate Projects and Source Water Collaboratives** tool (Figure 2, Map Element N) locates and displays the location of ongoing and completed Nonpoint Source Management Program grants funded by Section 319 of the Clean Water Act and the location of source water collaboratives. The tool identifies projects upstream of a user-defined location. This tool is intended to inform users about source water protection activities and programs in their area so that they may get involved. For more information on source water collaboratives and tools for source water protection visit the national [Source Water Collaborative](#) website.

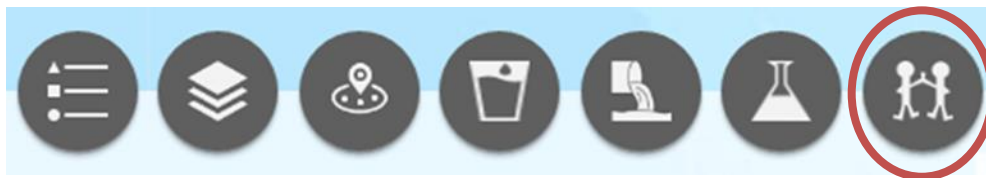


Figure 71: The Locate Projects and Source Water Collaboratives tool icon in toolbar in the DWMAPS map display.

1. Click the **Locate Projects and Source Water Collaboratives** box on the Welcome Screen,
Or;

Click the icon in the toolbar at the bottom of the DWMAPS map display (Figure 71).

- ✓ The **Locate Projects and Source Water Collaboratives** search window will appear and the location of restoration projects will display as purple lines and areas in the map (Figure 72).

2. Type in an address, zip code, latitude/longitude coordinates, or place name into the search toolbar to zoom to an area of interest.
3. Adjust the slide bar for desired search distance upstream.
4. **Click on the map** to perform the search.

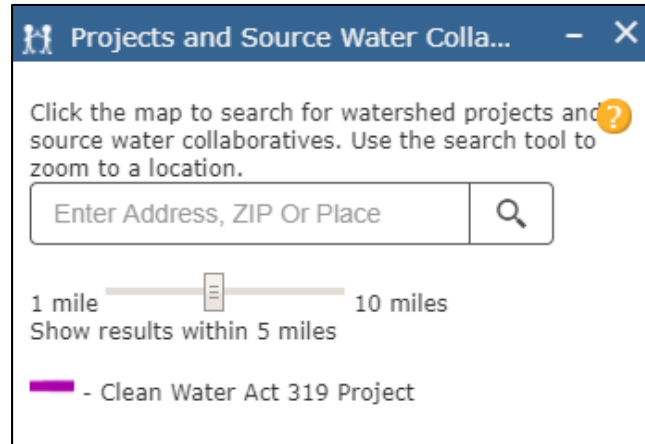


Figure 72: The Locate Projects and Source Water Collaboratives tool search window.

- ✓ Completed and ongoing Section 319-funded projects will highlight in yellow on the map (Figure 73).
- ✓ A window will appear that displays a list of search results, including the source water collaboratives located within the search area (found at the bottom of the search results window) (Figure 73).

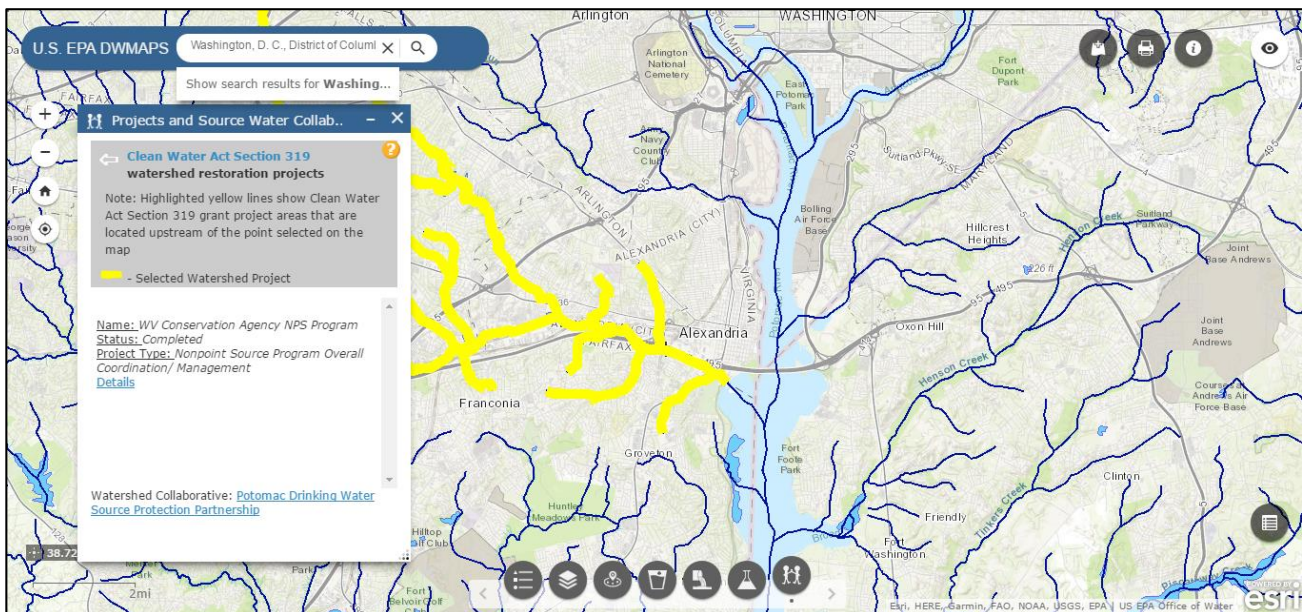


Figure 73: The waterbody area(s) with completed or active restoration projects will highlight yellow on the map. The results window will display more information about these projects.

5. Click the **Details** link (Figure 74) for additional information about that Section 319-funded project. A new browser window will open with Grants Reporting and Tracking

System information (GRTS), including the project title, project manager, contact information, project budget, and a project summary.

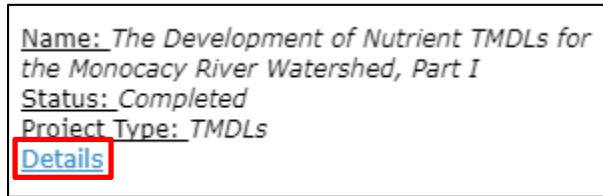


Figure 74: The Details link in the Projects and Source Water Collaboratives tool search results window.

Note: If a source water collaborative is present in the user defined area, it will appear at the bottom of the search window with a link to more information on the collaborative (Figure 75). If a source water collaborative is not present in the user defined area, the search window will not display information about source water collaboratives.

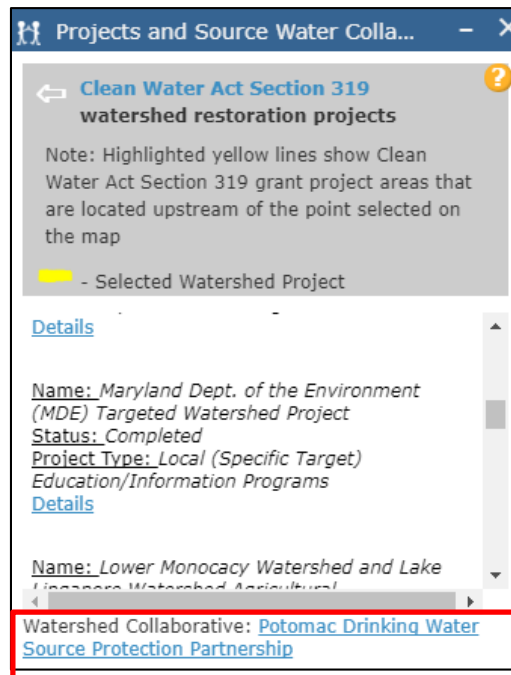


Figure 75: Source water collaboratives located in the area selected will appear in the Projects and Source Water Collaboratives tool results window.

7 HELP AND CONTACT US

For additional information, comments on usability, or help navigating DWMAPS, please visit the DWMAPS support site: <https://dwmaps.zendesk.com/hc/en-us>