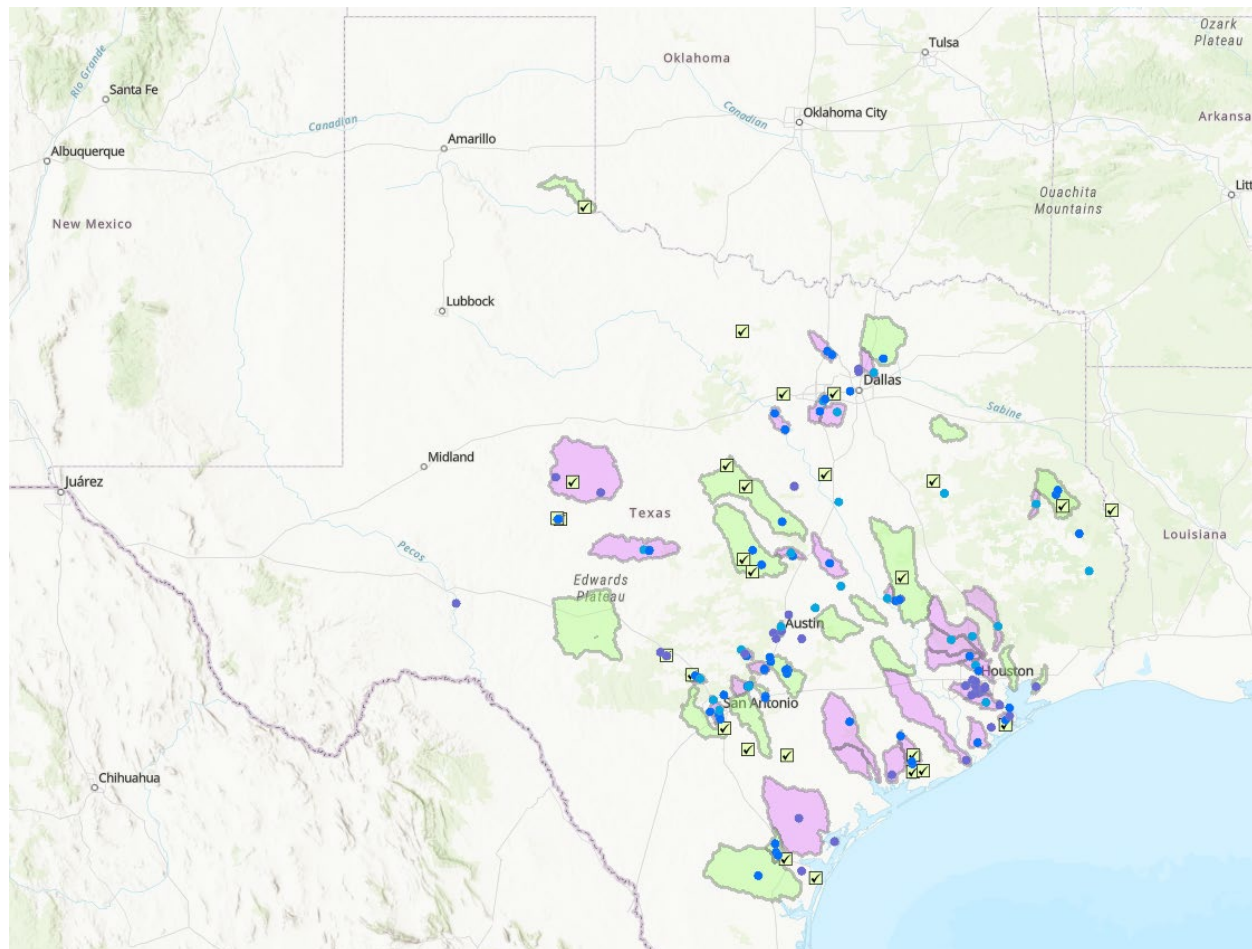


# Nonpoint Source Project Viewer User Guide



Texas Commission on Environmental Quality



## Application Overview

The Texas Nonpoint Source Management Program outlines Texas' comprehensive strategy to protect and restore waters impacted by nonpoint source (NPS) pollution. The United States Environmental Protection Agency (EPA) provides grant funding to Texas to implement the components and goals set forth in the Texas Nonpoint Source Management Program. The responsibility for implementing this program is shared between the Texas Commission on Environmental Quality (TCEQ) and the Texas State Soil and Water Conservation Board (TSSWCB). For more information visit the [TCEQ Nonpoint Source Program webpage](https://www.tceq.texas.gov/waterquality/nonpoint-source)<sup>1</sup> or the [TSSWCB Nonpoint Source Management webpage](https://www.tsswcb.texas.gov/programs/texas-nonpoint-source-management-program)<sup>2</sup>.

This interactive map includes TCEQ projects, watershed protection plans (WPPs), and success stories which have been funded in part by Clean Water Act (CWA) Section 319(h) funds from the EPA. Local project partners also provided funding for these projects. The map is not intended to be a comprehensive list of all the watershed planning efforts currently underway in Texas because there may be other local planning efforts not funded by CWA Section 319(h) funds.

The WPP layer includes watershed boundaries and information for completed and developing nine-element WPPs. The nine-elements are described in EPA's "Handbook for Developing Watershed Protection Plans to Restore and Protect Our Waters". WPPs are accepted as meeting the nine-elements by the EPA, the TCEQ, and the TSSWCB. This layer includes only nine-element plans and is not a comprehensive list of all watershed-based planning efforts in Texas. The WPP boundaries were combined into one layer from various local, state, or national sources. Each source used its own boundary delineation method.

The Project layer includes general locations and information for projects administered through the TCEQ. Projects administered by the TSSWCB are not included. Locations are not meant to be exact since projects can cover large areas.

The TCEQ and the TSSWCB work together to identify water quality improvements where the implementation of NPS best management practices

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<sup>1</sup> <https://www.tceq.texas.gov/waterquality/nonpoint-source>

<sup>2</sup> <https://www.tsswcb.texas.gov/programs/texas-nonpoint-source-management-program>

(BMPs) is a contributing factor. The Success Story layer includes general locations for success stories written for water quality impairments that have been restored according to the Texas Integrated Report of Surface Water Quality for CWA Sections 305(b) and 303(d) (Integrated Report). It is not a comprehensive list of all water quality impairments that have been restored according to the Integrated Report, and locations are not meant to be exact since success stories can cover large areas. More information on Success Stories can be found on [EPA's webpage](#)<sup>3</sup>.

This map was generated and is maintained by the NPS Program of the TCEQ. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the NPS Program at [nps@tceq.texas.gov](mailto:nps@tceq.texas.gov) or (512) 239-5607.

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<sup>3</sup> <https://www.epa.gov/nps/success-stories-about-restoring-water-bodies-impaired-nonpoint-source-pollution>

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# Acronym List

AU - Assessment Unit

BMP - Best Management Practice

CMP - Coastal Management Program

CRP - Clean Rivers Program

CWA - Clean Water Act

CZARA - Coastal Zone Act Reauthorization Amendments

EPA - Environmental Protection Agency

GLO - General Land Office

LID - Low Impact Development

MS4 - Municipal Separate Storm Sewer System

NPS - Nonpoint Source

OSSF - On-Site Sewage Facility

SWQM - Surface Water Quality Monitoring

SWQMIS - Surface Water Quality Monitoring Information System  
TMDL - Total Maximum Daily Load

TCEQ - Texas Commission on Environmental Quality

TMDL - Total Maximum Daily Load

TSSWCB - Texas State Soil and Water Conservation Board  
TWDB - Texas Water Development Board

WPP - Watershed Protection Plan

WWTF - Wastewater Treatment Facility

# GIS Terms

## [ESRI Definition List](#)

Attribute - Nonspatial information about a geographic feature in a GIS, usually stored in a table and linked to the feature by a unique identifier. For example, attributes of a river might include its name, length, and sediment load at a gauging station.

Attribute Table - A database or tabular file containing information about a set of geographic features, usually arranged so that each row represents a feature, and each column represents one feature attribute. In a GIS, attribute tables are often joined or related to spatial data layers, and the attribute values they contain can be used to find, query, and symbolize features.

Feature - A representation of a real-world object on a map.

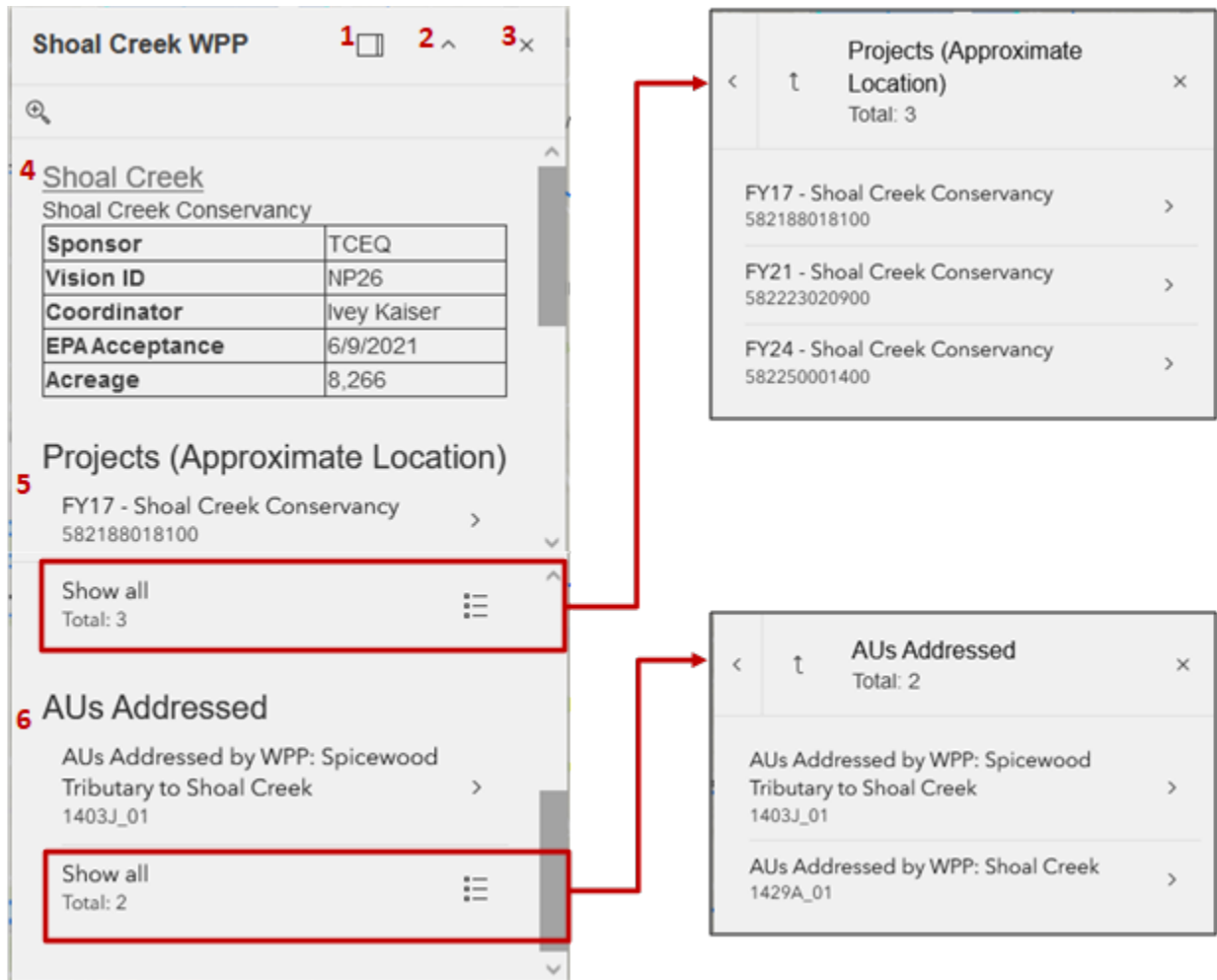
Layer - The visual representation of a geographic dataset in any digital map environment. Conceptually, a layer is a slice or stratum of the geographic reality in a particular area and is more or less equivalent to a legend item on a paper map. On a road map, for example, roads, national parks, political boundaries, and rivers might be considered different layers.

Query - A request to select features or records from a database. A query is often written as a statement or logical expression.

Spatial Query - A statement or logical expression that selects geographic features based on location or spatial relationship. For example, a spatial query might find which points are contained within a polygon or set of polygons, find features within a specified distance of a feature, or find features that are adjacent to each other.

## Popups

When a project, WPP, assessment unit (AU), or success story is clicked, a popup will appear with information. Information in the geodatabase is linked to allow for the viewing of all associated information. For example, below is a diagram of how information and webpages associated with a WPP can be accessed through a WPP popup.

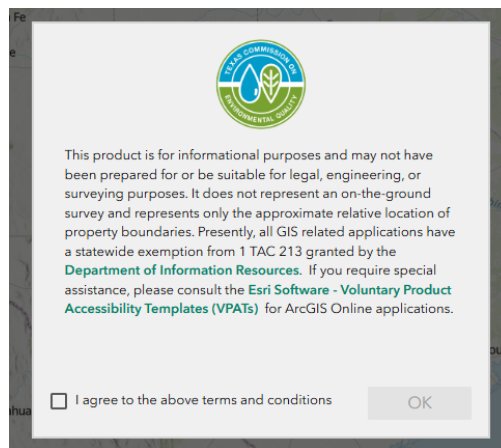


1. Dock: Pin the popup to the side of the browser window
2. Collapse: Shrink the popup to its top bar
3. Close the popup
4. Link to the WPP (opens new browser tab)
5. Projects associated with the WPP (opens in same popup window)
6. AUs associated with the WPP (opens in same popup window)

# Navigating Around the Map

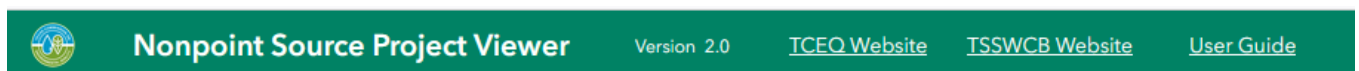
## Splash Screen Pop Up

When first accessing the Viewer, you will see a pop-up that includes disclaimer information on the intended use of the application. Users must select the checkbox next to “I agree to the above terms and conditions” and then the “OK” button will be selectable. Click the OK button to exit the window and continue to view the application.





## Viewer Header

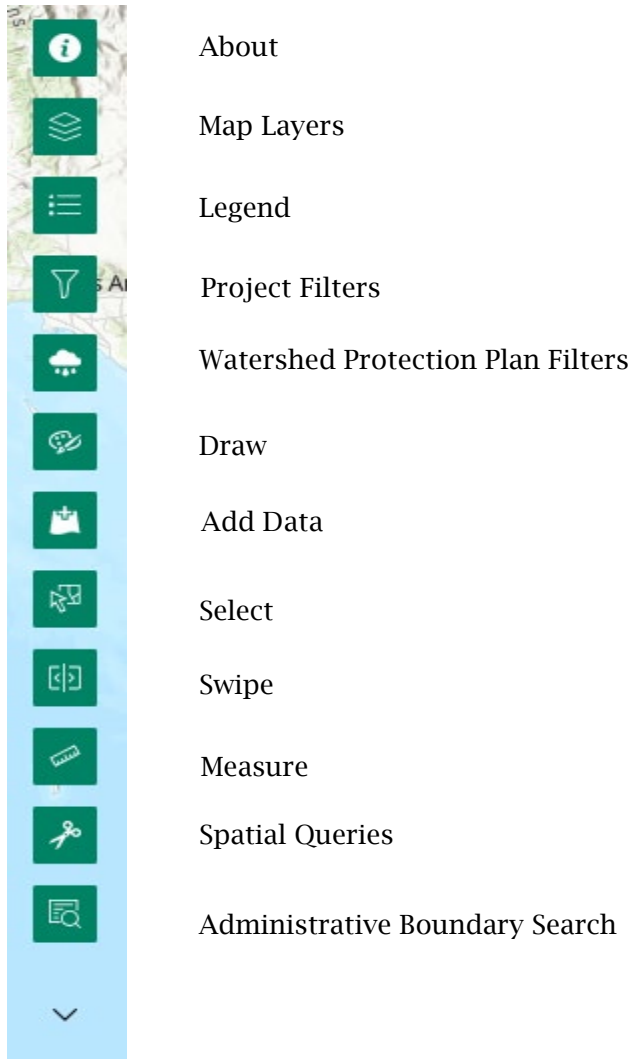
The header section of the Viewer includes the Viewer’s title and essential information about the Viewer. It provides links to the TCEQ Homepage, the TCEQ NPS Program page, the TSSWCB Website, and the Viewer’s User Guide. A version number may also be displayed to assist with version control for developers.



## Widgets


The **Widget Controller** is located on the left-hand side of the Viewer. It hosts individual widgets to conduct varying actions such as measuring or changing the basemap being displayed. Not all widgets can be displayed at the same


time, so the top caret  and bottom caret  (just above and below the widget controller) will need to be clicked to shift the viewable widgets.

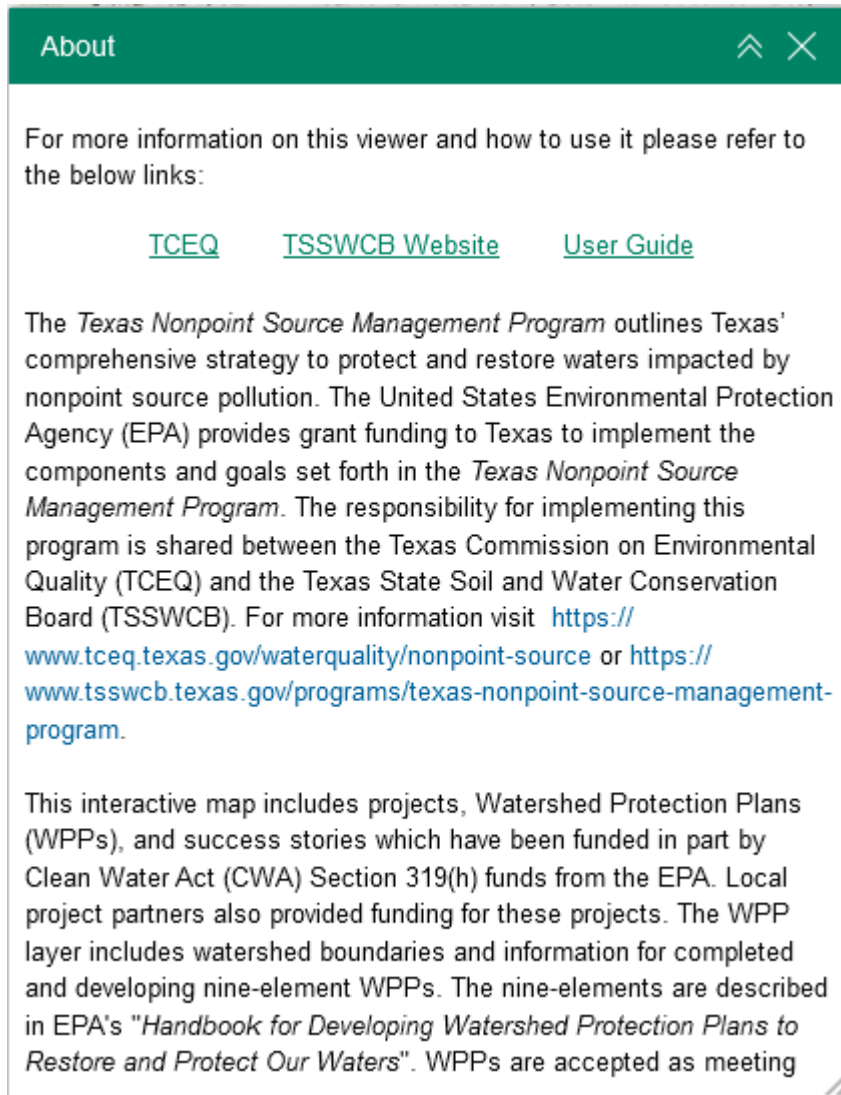






## **About**


 The **About** widget provides users with essential information regarding the application, including its purpose, user guide, data sources, and any credits or acknowledgements related to the content.


- To use the **About** widget, click on the I  icon in the widget controller.
- This opens a brief description of the application and the links.

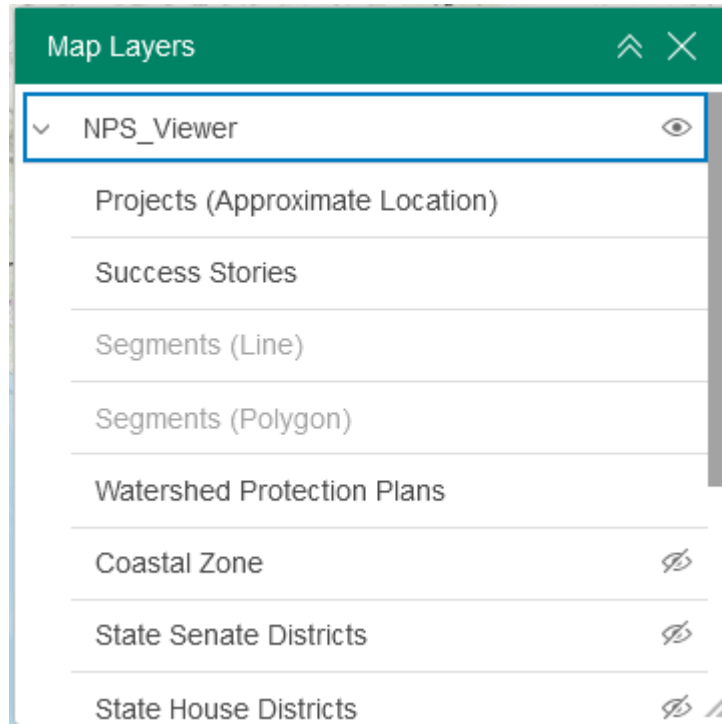


- To close the window, click the X  in the upper right-hand corner.
- To collapse the window, click the upward facing double caret  just to the left of the close button.

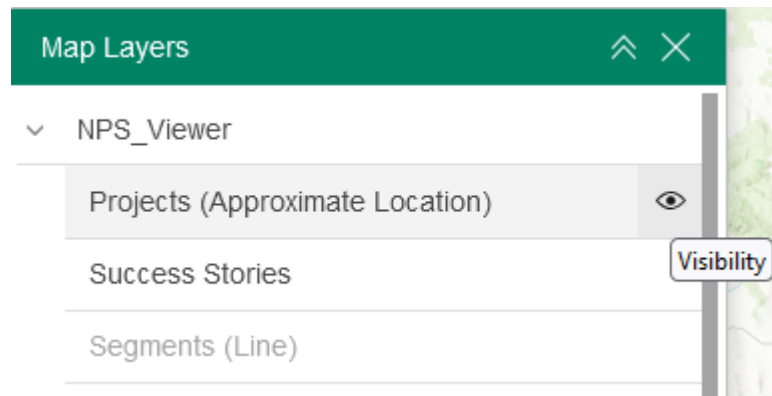
## **Map Layers**

 The **Map Layers** widget can be used to turn on and off data layers such as the Surface Water Intake and the current query results.


- To **view** the layers, simply click the **Map Layers** button  in the widget controller. Then browse through the available layers.





- To **toggle the layer visibility**, hover over the layer with your mouse and click the eye icon or the row. This toggles the visibility of the layer on and off for the map.

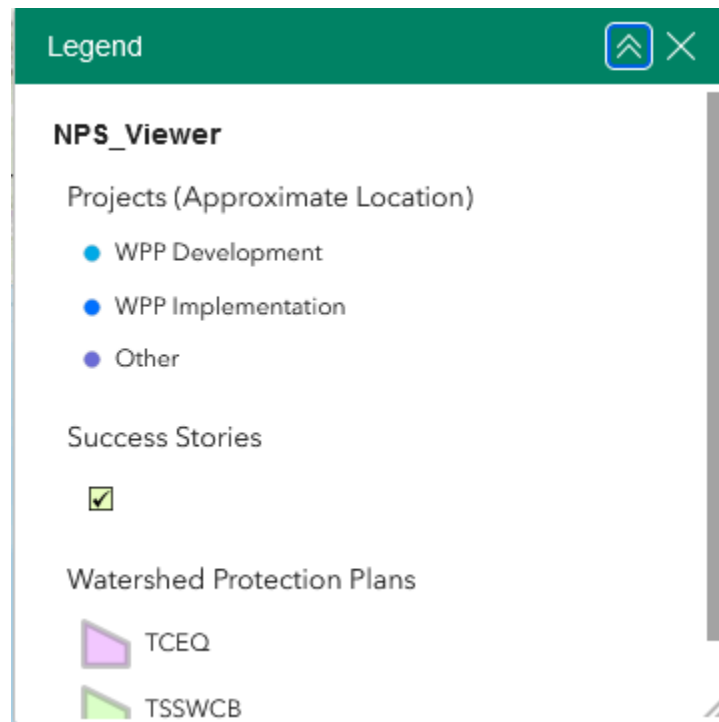


## **Legend**

 The **Legend** widget shows the symbols for the various layers on the map.

- Simply click the **Legend** button  in the widget controller



- To close the window, click the X  in the upper right-hand corner.
- To collapse the window, click the double upward facing carets  just to the left of the close button.
- The legend will only show those layers that are currently turned on using the layers tool.

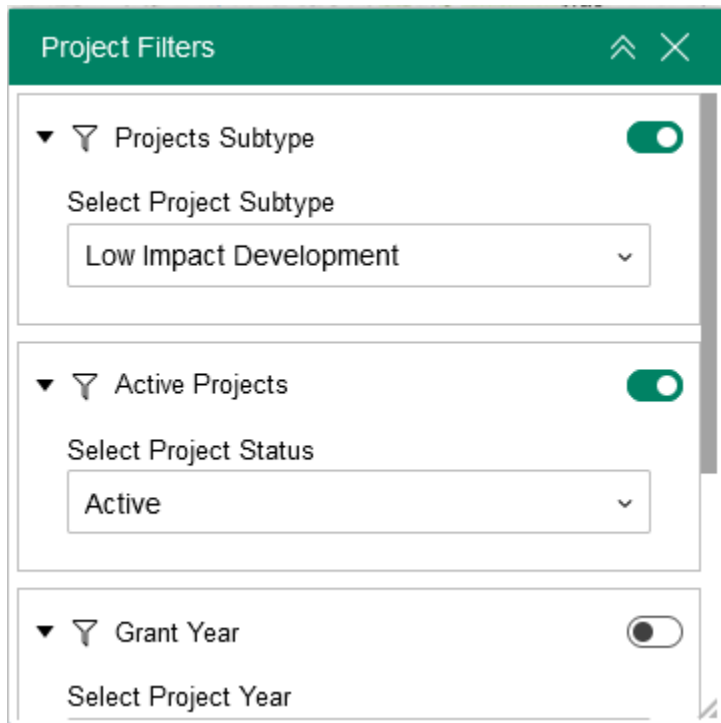


## **Project Filters**



Filter projects by subtype, status, and federal grant year.


- Select the criteria for your filter using the four dropdown lists. Scroll down to see all the options.
- Once criteria are selected, toggle the filter to active by clicking the activate filter button. Circle slid left  is off and circle slid right  is on.
- The projects on the map will be filtered to meet the criteria
- For example, the filter in the image below selects all Low Impact Development projects that are currently active.

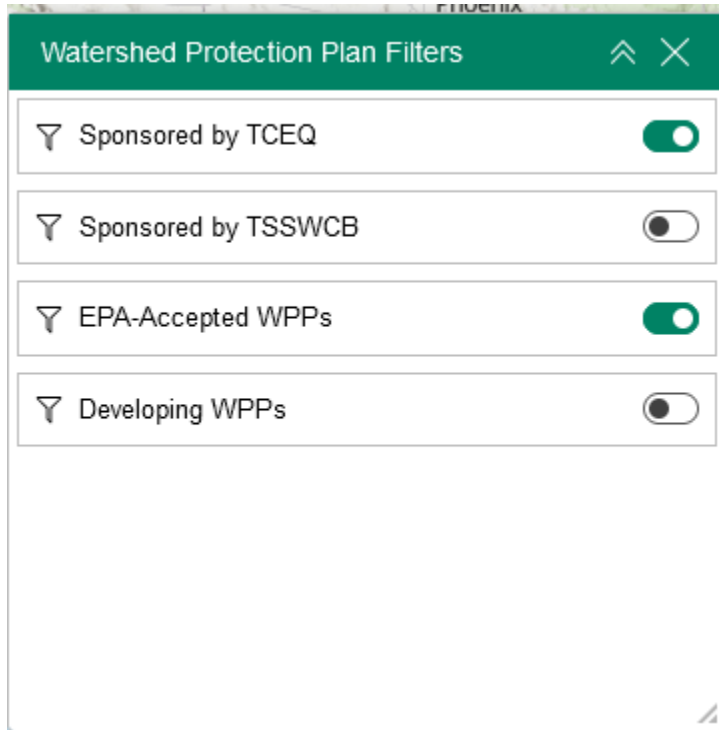


### ***Watershed Protection Plan (WPP) Filters***



Filter WPPs by sponsor and status. There are four criteria options that can be toggled on and off. If more than one criterion is toggled on, then the WPP layer will be filtered to show only WPPs that meet all criteria.

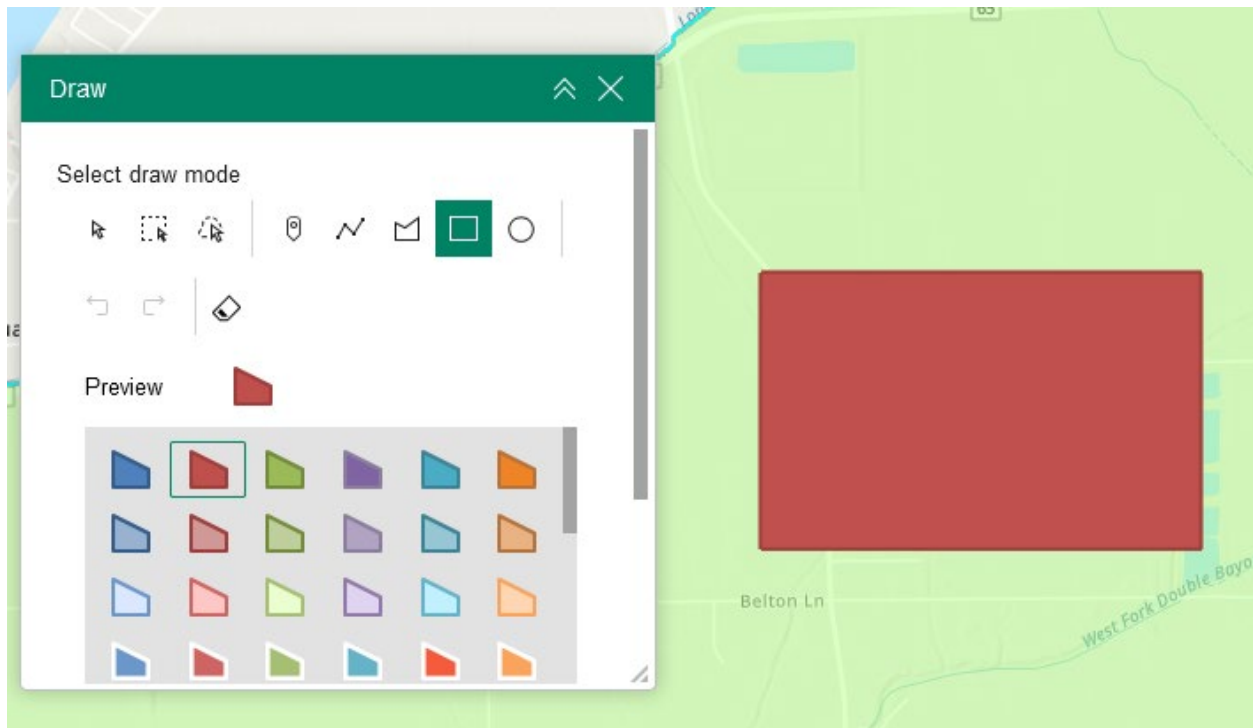
- Toggle the criteria of your choice by clicking the white oval with the inset black circle . The WPPs in the map will be filtered to meet the criteria. For example, the filter in the image below selects WPPs that are sponsored by TCEQ and are accepted by EPA.



### **Draw**



Mark up the map with different shapes and points. Polyline, polygon, and rectangle options are available. Preset color options can be selected. Click and drag with your mouse over the map once you have made your selections.



## Add Data



Publicly available layers can be added to the map by searching ArcGIS Online or using a map service URL. Users can also add their own GIS layers. Once the viewer is closed all user-added layers are removed and will not appear when the viewer is opened again. Below is a useful list of GIS layers related to watershed management.

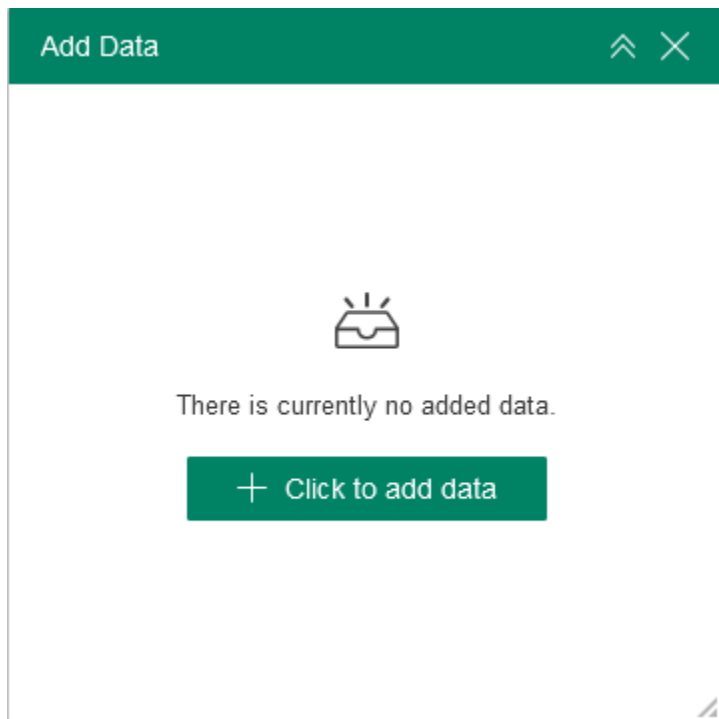
Currently, you can upload data in the following formats: CSV, GeoJSON, KML, GPX, and shapefile (as a .zip).

***Note: Uploaded .csv files are limited to a maximum of 1,000 records, and all other supported file types are limited to 4,000. The maximum upload size is 2 MB for a shapefile and 10 MB for all other file types. You can upload up to 30 files at once.***

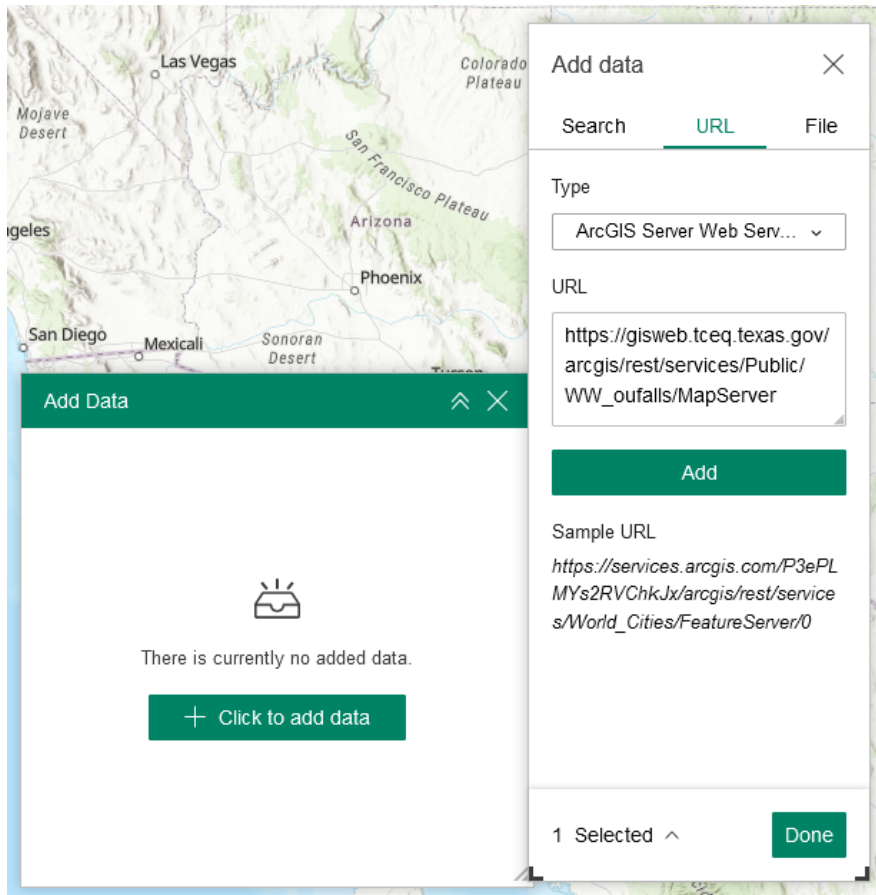
Example application: Add TCEQ wastewater outfalls from ArcGIS online.


Additional useful GIS layers to add can be found in the [ArcGIS Online Layer List](#) section.

- Click Add Data widget, then click “Click to add data”.



- Click URL.
- Copy the URL (Right click -> Copy Hyperlink) from the ArcGIS Online Layer List section in this document for Wastewater Outfalls.
- Paste the URL (Ctrl + V) in the URL box and click “Add”.



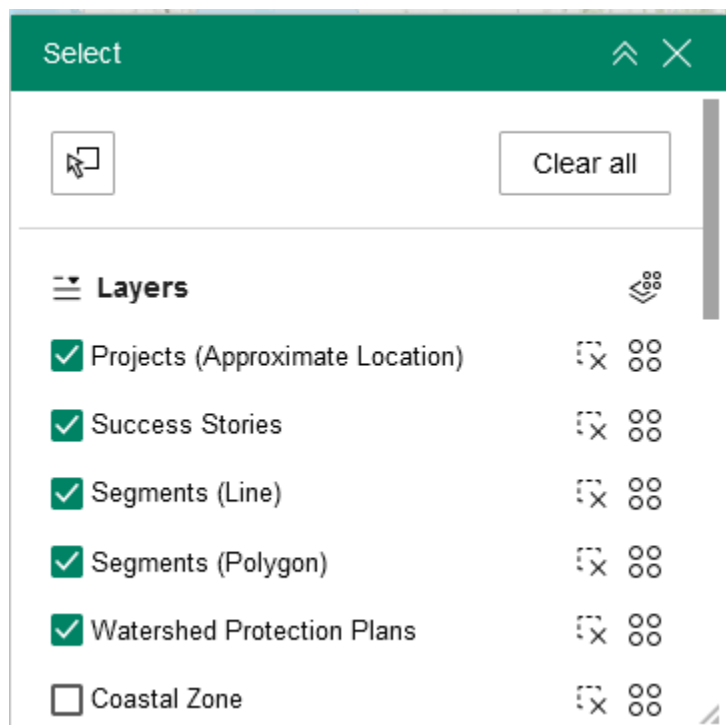
- Click “Done” to add the layer to the widget. Finally click the action button and select “Add to Map”.
- The layer WW\_oufalls should appear in the Add Data widget and on the map.
- To remove it click the Remove  (trash can) icon.

## Select

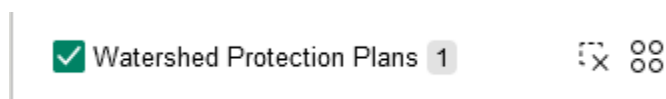


The Select widget allows you to select features using attribute selection, interactive map selection, and spatial selection. You can enable various actions that allow you to perform data processing tasks with a selection. The widget displays selections made with other widgets, such as Table and List widgets, meaning you can select a feature in another widget and run data actions on that selection with the Select widget.

Different layers can be toggled as selectable or not by clicking the check mark next to each from the widget window.



- Click the “Select by Rectangle”  button and then click and drag to draw a rectangle over the layer/features you want to select. The number of selected features will show in the widget window and the features will be highlighted in blue on the map.







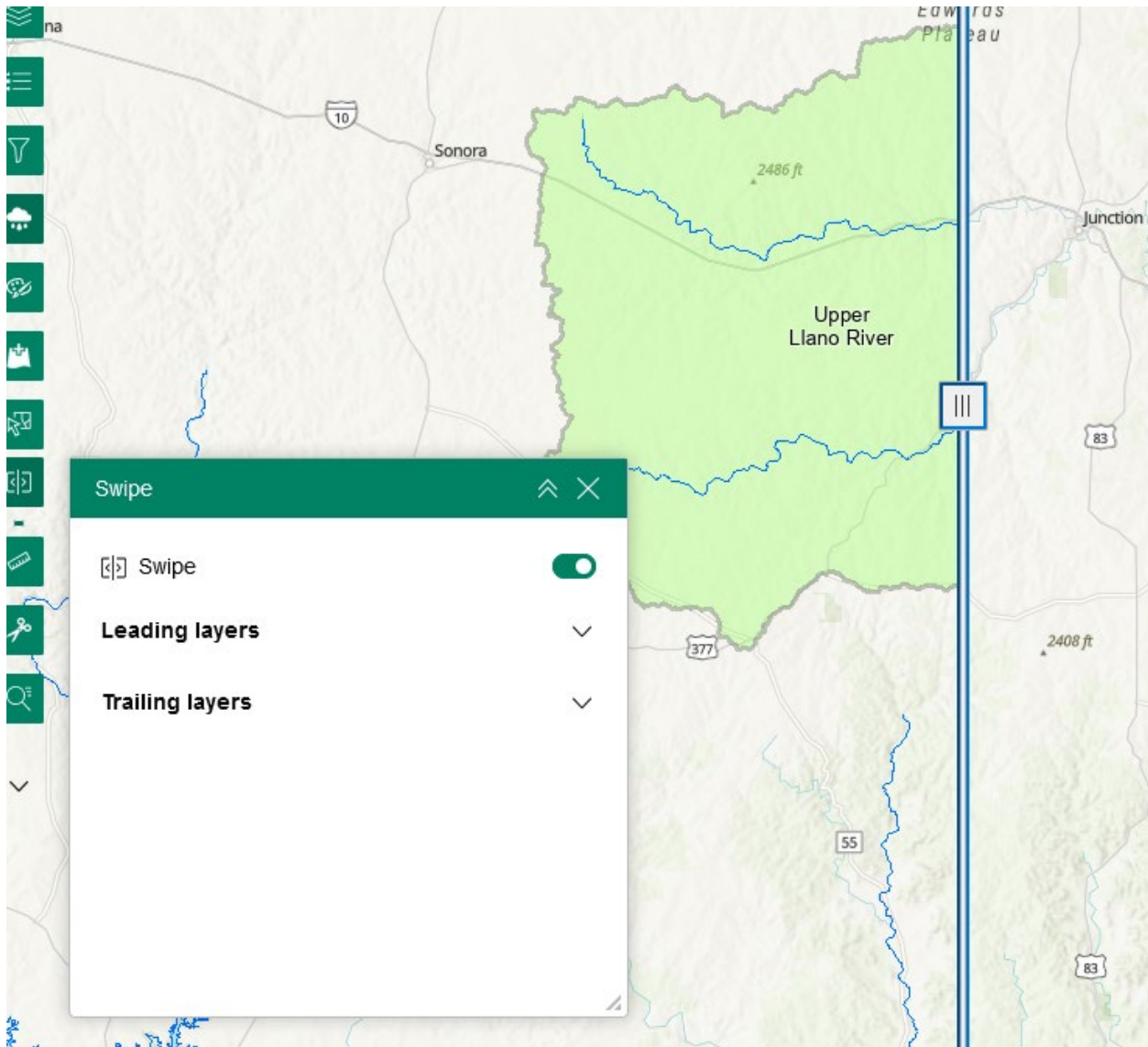
The Select widget can be used in combination with other widgets like in the [Spatial Queries](#) example below.

## Swipe





The Swipe widget allows the user to see underneath layers.

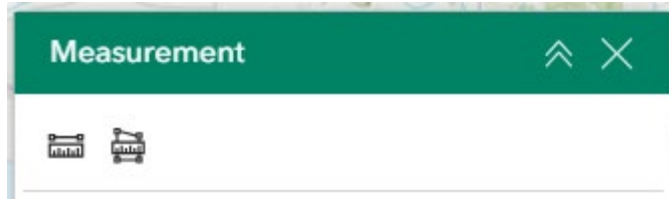
- Click the Swipe widget and then click the toggle button  in the widget window. A vertical bar with a handle will appear.
- Drag the handle by left clicking and hold to swipe the vertical bar from left to right to see the basemap underneath.
- Click the toggle button  again to turn it off.






## **Measurement**


 The Measurement widget enables user to calculate the area, and distance directly on the map.

- To measure a feature, click on the **Measurement**  widget in the widget controller.
- The Measurement window will appear as shown below.





- To close the window, click the  in the upper right-hand corner.
- To collapse the window, click the  just to the left of the close button.
- There are two different ways to measure features on the map:

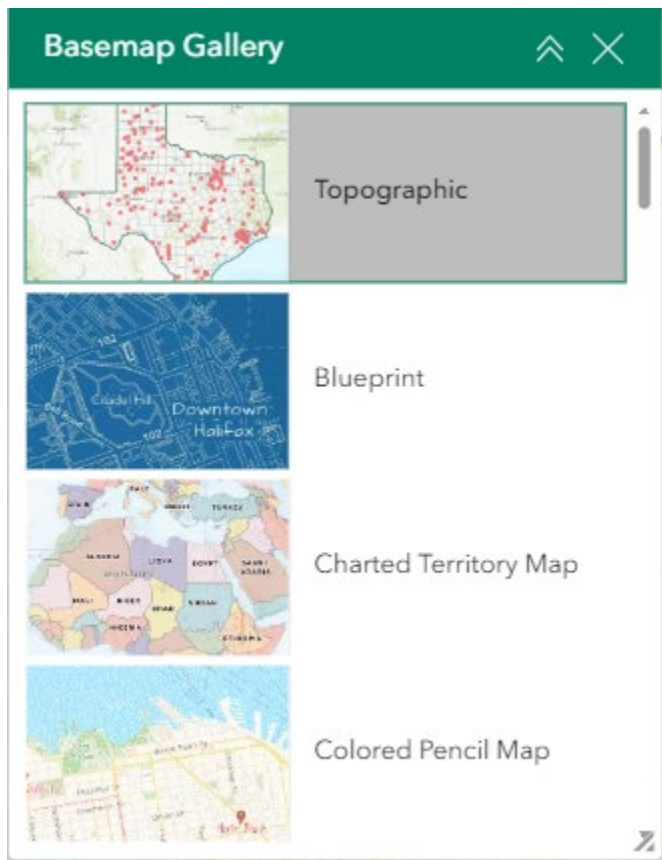
 **Area** - Click this button, then single-click the first point of your polygon on the map. Continue to single-click until you have finished measuring your area feature. Double-click to end. Results will appear in the Measurement window. Choose a unit of measure from the drop-down list.



 **Distance** - Click this button, then single-click the first point of your line on the map. Continue to single-click until you have finished measuring your linear feature. Double-click to end. Results will appear in the Measurement window. Choose a unit of measurement from the drop-down list

## ***Basemap Gallery***

 The **Basemap Gallery** widget can be used to change the background in the map viewer. The topographic basemap is the default basemap.

- To change the basemap, click on the Basemap Gallery widget  on the widget controller, then select the basemap you wish to use.

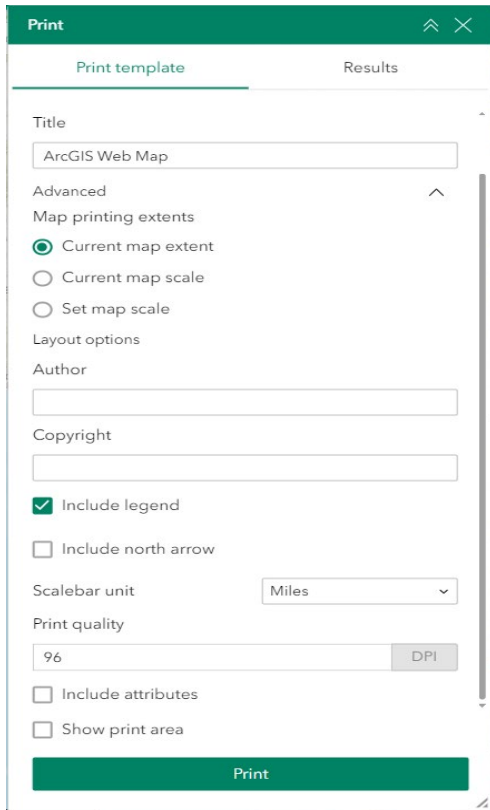


- You may choose from thirty-four different basemaps.
- To close the window, click the X  in the upper right-hand corner.
- To collapse the window, click the double upward facing caret  just to the left of the close button.

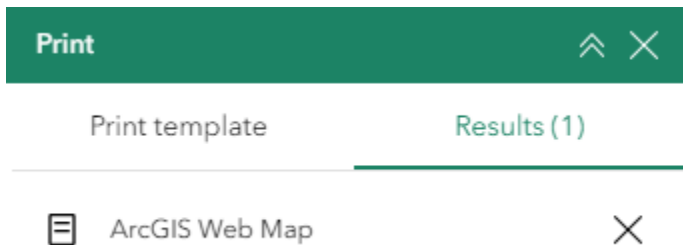
### **Print**





Use the **Print** widget to save the current map as a PDF file. You may give it a customized title and select a layout and size. Advanced features include ability to add map scale, author, copyright, north arrow, and legend. You may also set the map extent and printing quality.



- After clicking print, the results will show in the results panel of the Print window.

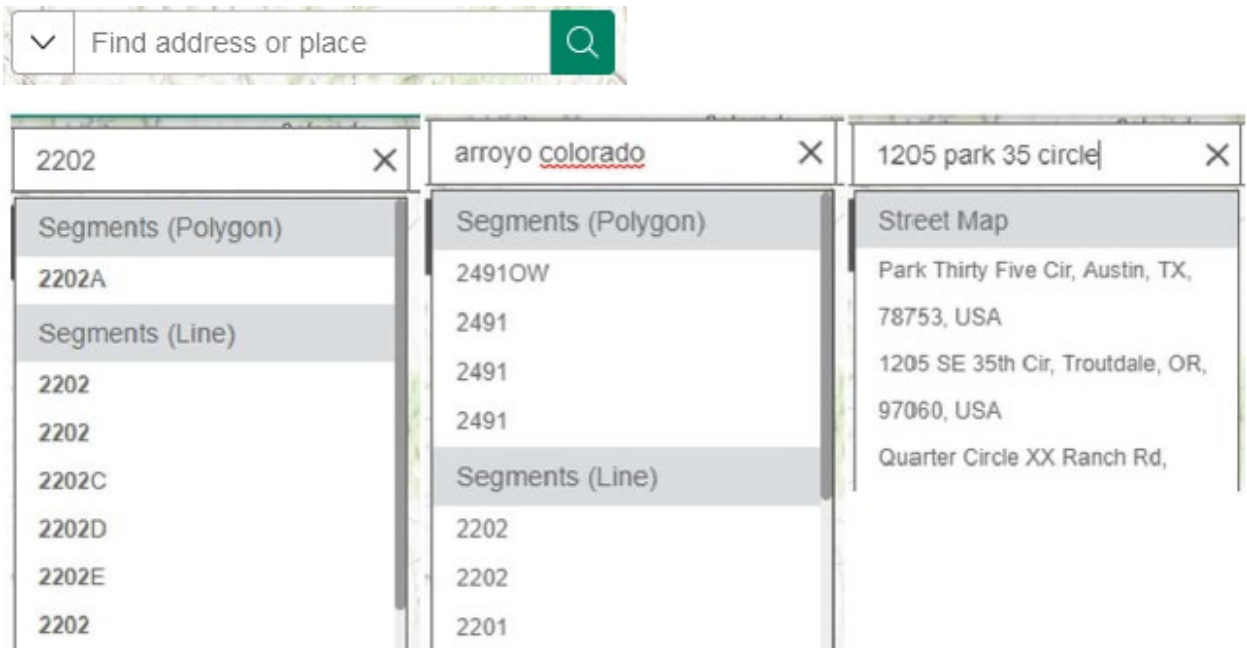


- To close the window, click the X  in the upper right-hand corner.
- To collapse the window, click the double upward facing caret  just to the left of the close button.

## Search

Type in an address, place, stream segment name, or segment number into the search bar. As you type, you will be presented with potential matches. If you see your desired match appear, click on it and the map will zoom to that

location. You can also finish typing in the search criteria and press Enter on the keyboard or click the magnifying glass. Clicking the X on the bar will clear out the search bar.



The following are examples of the types of searches you can perform.

- Addresses: 100 Congress Ave, Austin, TX, 78701
- Names: Zilker Park
- Counties: Travis County
- Segment Name: Arroyo Colorado
- Segment Number: 2201

### ***Administrative Boundary Search***



This tool allows the user to search for Legislative Districts and other boundaries. Click on the boundary type you are interested in to find the corresponding district or county boundary (Senate Districts, House Districts, U.S. Congressional Districts, and Counties).

Administrative Boundary Search
⤴ ✕

Senate Districts
➤

House Districts
➤

U.S. Congressional Districts
➤

Counties
➤

Example application: Find and zoom to Texas Senate District 5.

- Click the magnifying glass surrounded by a square note icon in the widget controller. Click Senate Districts and type “5” in the search box or select it from the drop down list. Click Apply.

Administrative Boundary Search
⤴ ✕

←
Senate Districts

---

Senate Districts


Select or type senate district

5
▾

Apply

Reset

↙

- The map should zoom to Senate District 5 and display it with a green outline and transparent green fill.
- To remove the result from the map, click the  trash can icon for the current boundary result.

← Results



Features displayed: 1 - 1 / 1

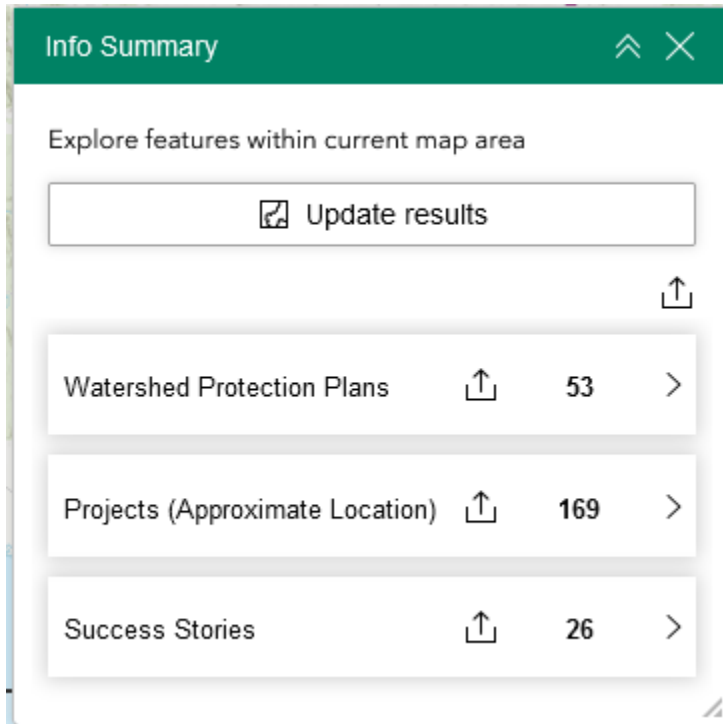
▶ Senate Districts: 5

### ***Info Summary***



This tool allows the user to see a summary of the three Nonpoint Source layers displayed within the current map view. The number of visible features for each layer will be displayed on the right. The number is filtered by the current map extent and any other filters that may have been applied.

- Click the right facing caret > to navigate and drill down into the subcategories. WPPs are grouped by Sponsor and Projects are grouped by Federal Grant Year. If you need to change the extent after opening the info summary, you will need to click “Update results” to refresh the counts.



## ***Spatial Queries***

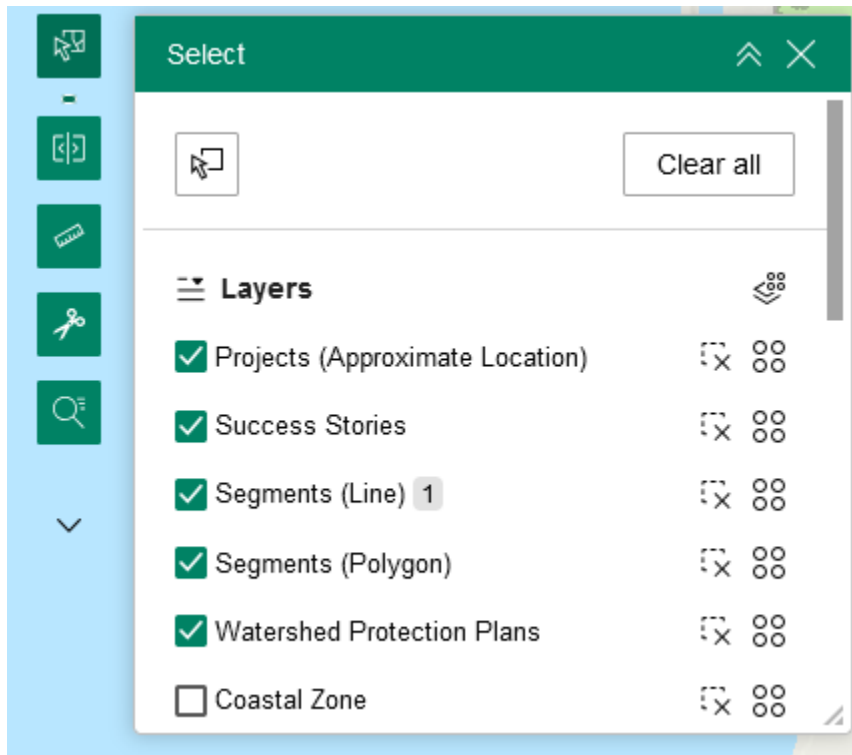



Identify features that have a spatial relationship with features in another layer. The query selects features from one layer that are also contained in a related layer. Once the spatial query is executed, the user can view the locations of the features and export a spreadsheet (CSV file) of the feature attributes. Attributes are discussed further in the Layer Metadata section of this guide.

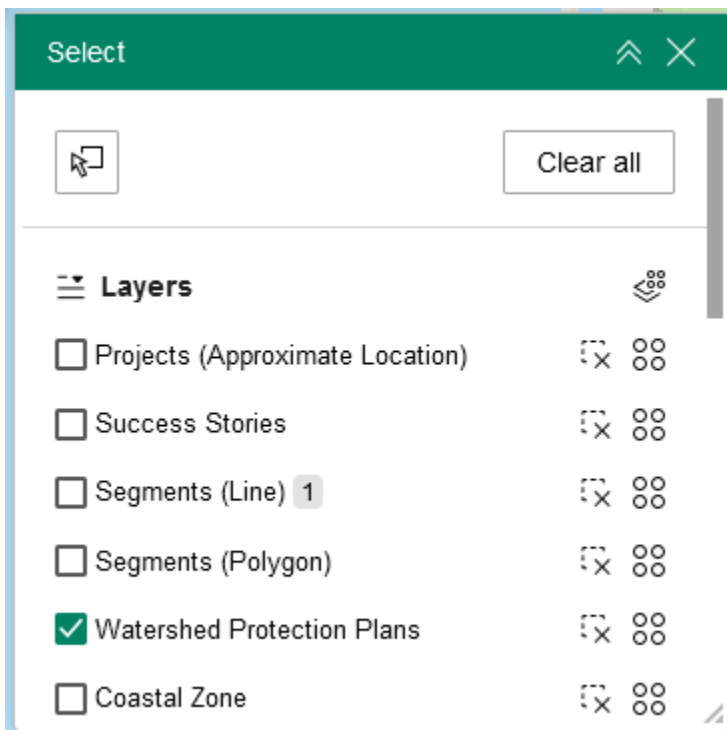
- Example application: Select all wastewater outfalls that intersect with the Double Bayou WPP and export a spreadsheet with attribute information for the wastewater outfalls.
- Type in “2422D” into the Search bar and press Enter. This should zoom you to Double Bayou WPP.




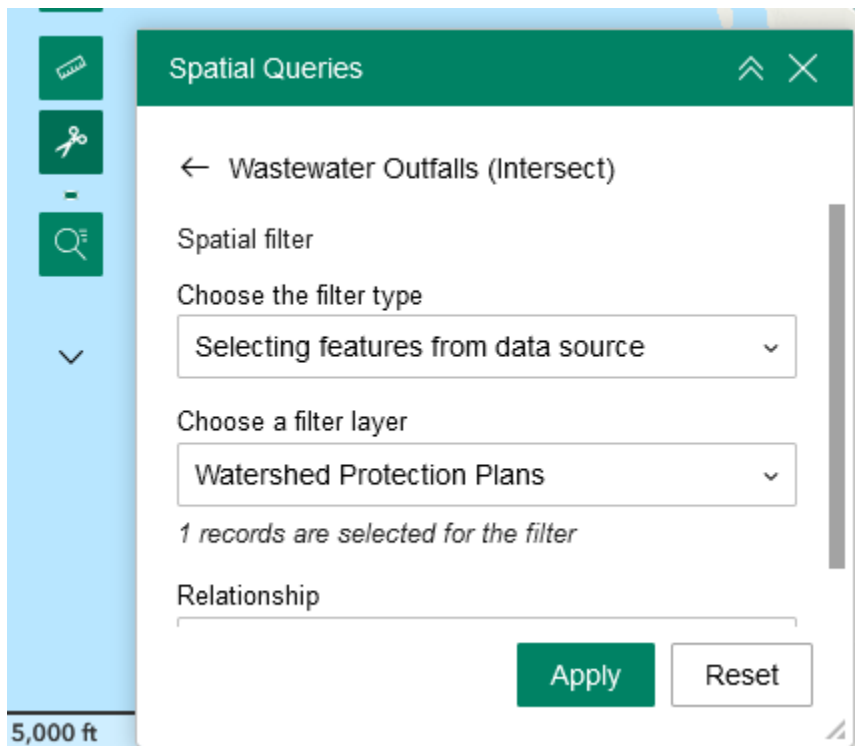
- Click Select widget (a mouse pointer next to a fragmented square). All selectable layers will be selected by default.



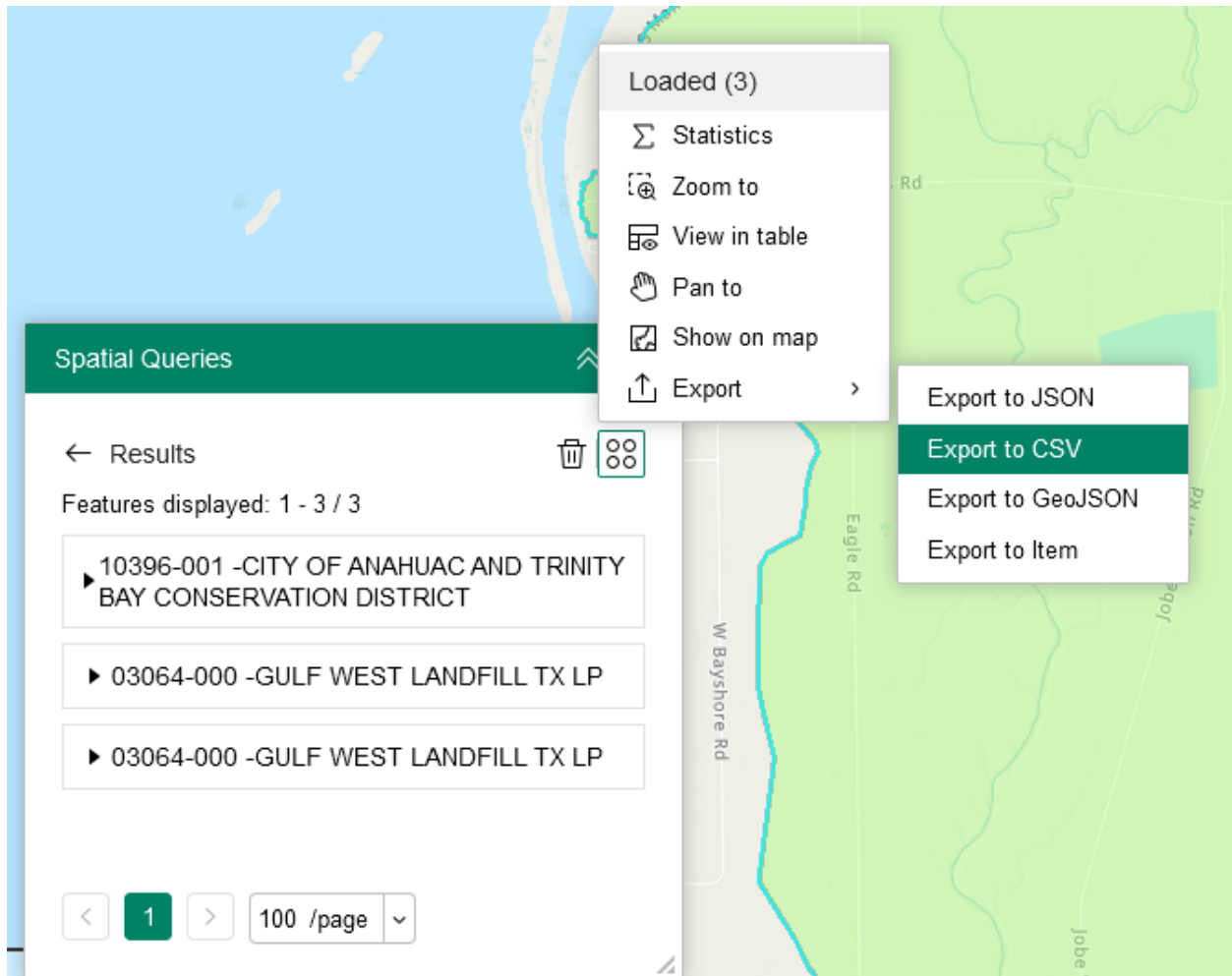
- Click option button  to the left of Layers. Select “None selectable” to clear all layers then click the checkbox next to “Watershed Protection Plans”.





- Click the “Select by Rectangle” button  and click and drag to draw a small rectangle over the “Double Bayou WPP”. A 1 should show up next to the “Watershed Protection Plans” layer denoting that one feature is selected.
- Close the Select widget by clicking on the X and click the Spatial Query scissors button.
- Select the layer you are interested in, for this example select “Wastewater Outfalls (Intersect)”.
- Select the related layer you are interested in. For this example, click the drop down arrow under “Choose a filter layer” and select “Watershed Protection Plans”.



- A list of wastewater outfalls that intersect the selected WPP will appear on the map and a list will appear in the Spatial Queries window.
- To export a spreadsheet with the Results information, click the four circles icon in the Results window and select “Export to CSV”. A CSV will be downloaded to your device. Open the CSV file in Microsoft Excel. Other options are also available like JSON and GeoJSON.




## Attribute Table

To view the attribute table, click on upward facing caret  the icon at the bottom of the viewer. The attribute table will expand. To collapse the attribute table, click on the downward facing caret  icon at the top of the table.

Projects (Approximate Location)										Success Stories		Segments (Line)		Segments (Polygon)		Watershed Protection Plans	
Contract	Grant	WPP	PM	Contractor	Start	End	Project Name	Type	Subtype								
582245022400	FY23	NP19	Jaymes Howard	Texas Water Resources Ins...	8/31/2023	8/30/2026	Village Creek-Lake Arling...	WPP Implementation	Low Impa								
582245021800	FY23	SB10	Proy Chalitruangkul	Nueces River Authority	8/31/2023	8/30/2027	Lower Nueces River WPP I...	WPP Implementation	Septic Sys								
582250001400	FY24	NP26	Savannah Hernandez	Shoal Creek Conservancy	8/31/2024	8/30/2028	Shoal Creek WPP Implant...	WPP Implementation	Education								
582250002200	FY24		Proy Chalitruangkul	Texas Water Resources Ins...	8/31/2024	8/30/2027	Sandy Creek Watershed C...	WPP Development	Watersher								
582250002500	FY24		Proy Chalitruangkul	Texas Water Resources Ins...	8/31/2024	8/30/2027	Hands-On Watershed Edu...	WPP Implementation	Education								
582250001800	FY24	NP16	Kristin DeBone	City of San Marcos	8/31/2024	8/30/2027	Upper San Antonio River ...	WPP Implementation	Low Impa								
582250003800	FY24	NP16		City of San Marcos	8/31/2024	8/30/2027	Upper San Antonio River ...	WPP Implementation	Low Impa								
582250007800	FY24	SB17	Roberto Vega	Texas Water Resources Ins...	8/31/2024	8/30/2027	Urban Streams Restoratio...	WPP Implementation	Riparian R								

- Clicking on the layer name header at the top of the attribute table will change to display that data. Individual records for layers in the map can be inspected from the attribute table.

- Click on the action button  (four circles) to set a filter, zoom to a selected record, pan, generate statistics, or export records to a file.

## Map Tools

The zoom tools are located on the bottom right-hand side of the map application.



### **Zoom In**



Click the plus button once or multiple times to **zoom in** at fixed increments.

### **Zoom Out**



Click the minus button once or multiple times to **zoom out** at fixed increments.

### **Previous Extent**



Click left arrow button at the bottom right of the map after zooming in or out to return to the previous extent.

## **Next Extent**



Click the right arrow button at the bottom right of the map to proceed forward one extent from the previous extent.

## **Home**



Click the home (house) button once to return to the default extent.

## **My Location**



Clicking the bullseye button will take you to your current location.

## **Scale Bar**





Shows the scale of the map at your current extent, located in the bottom left corner of the viewer window.


## **Coordinates**

The **Coordinates** widget is found on the bottom left corner of the viewer window, above the scale bar. The coordinates automatically update to the location of the cursor in the viewer window.




- To get the coordinates of a particular location on the map, click on the bullseye  icon.
- Click on the map to create a marker . The coordinates widget will update with the coordinates of the marker.



- You can copy the coordinates of the marker by clicking the papers  icon.

## ArcGIS Online Layer List

Here is a list of GIS layers related to watershed management. These layers are publicly available and can be added to the NPS Viewer using the Add Data

widget . They can be added on the Search tab using the layer name, or under URL by copying the blue linked text in the table below.

Layer Name	User	Description
<a href="#">Wastewater Outfalls</a>	TCEQadmin	Wastewater outfalls
<a href="#">Water Districts</a>	TCEQadmin	Water districts of Texas
<a href="#">TCEO Service Regions</a>	TCEQadmin	TCEQ's 16 Service Regions
<a href="#">Groundwater Conservation Districts</a>	TCEQadmin	
<a href="#">Permitted OSSFs H-GAC Region</a>	Sungmin.lee	
<a href="#">PriorityProtectionAreas</a>	Admin_tglo	
<a href="#">Coastal Projects for Storm Viewer</a>	ArcGIS REST Service URL	GLO Coastal Projects
<a href="#">Texas Groundwater Data</a>	ArcGIS REST Service URL	
<a href="#">Texas Councils of Governments</a>	TPP_GIS	Council of Governments
<a href="#">TxDOT City Boundaries</a>	TPP_GIS	City Boundaries
<a href="#">TxDOT_Roadways</a>	TPP_GIS	TxDOT Roadways
<a href="#">Mesonet Sites</a>	TWDBpub	
<a href="#">Texas Major Aquifers</a>	TWDBpub	
<a href="#">Texas Groundwater Management Areas</a>	TWDBpub	
<a href="#">Texas Groundwater Conservation Districts</a>	harcuser	
<a href="#">TexasRockUnit</a>	TWDBpub	Geology units
<a href="#">Level IV EcoRegions</a>	Federal_User_Community	
<a href="#">FWS HO ES NWI Wetlands</a>	jane_harner@fws.gov_fws	National Wetland Inventory
<a href="#">FWS HO NWRS National Wildlife Refuge Boundaries</a>	frank_wagner@fws.gov_fws	National Wildlife Refuges

<a href="#">USA Soils Erosion Class</a>	USFSMapsandApps	U.S. Forest Service
<a href="#">PAD-US Protection Status by GAP Status Code</a>	rjohnson@usgs.gov_USGS	USGS Protected Areas Database
<a href="#">TWDB_Texas_River_Basins</a>	ArcGIS Rest Service	Basins
<a href="#">NOAA Colorized Satellite Imagery</a>	NOAA.GeoPlatform	NOAA Weather Radar
<a href="#">NOAA Estuarine Bathymetry</a>	NOAA.GeoPlatform	
<a href="#">Sewer CCN</a> <a href="#">Water CCN</a>	ArcGIS Online Rest Services	Public Utility Commission of Texas
<a href="#">DWH_ALL_Prjs_Pt</a>	<a href="mailto:jskillman@ducks.org">jskillman@ducks.org</a> _duinc	Deepwater Horizon Projects

# Contact Us

Email the Water Quality Planning Division at [nps@tceq.texas.gov](mailto:nps@tceq.texas.gov) or talk with staff in the program at 512-239-6682.