Introduction

The Pipeline Compliance Surveillance Initiative Mapping System is an online interactive map, also called a geographic information system (GIS), designed to provide high-quality geographic data regarding the proposed disastrous Atlantic Coast Pipeline (ACP).

The purpose of the CSI Mapping System is to support public oversight and data-based resistance to the construction of the ACP, which will harm our region's resources and endanger our collective future if allowed to be built. The geographic extent of the mapping system includes the ~200 miles of upland areas, extending from Harrison Co, WV to Buckingham Co, VA

The CSI Mapping System is an ongoing effort by the Allegheny-Blue Ridge Alliance and our coalition members. We are always looking for volunteers & support.

Pipeline CSI Online Mapping System User Guide

A Powerful Pipeline Fighting Tool

Use this guide as you navigate our coalition's new and improved online Mapping System. Learn how close the ACP is proposed to be to your home, water source, creek, or favorite viewshed. View the geologic and downstream risks associated with this route. Let this mapping system guide your geographically-based organizing and environmental monitoring efforts. We are always improving and adding to our data, so stay tuned to our Pipeline Air Force Flights tab especially to stay informed on the so-called "progress" of the Atlantic Coast Pipeline.
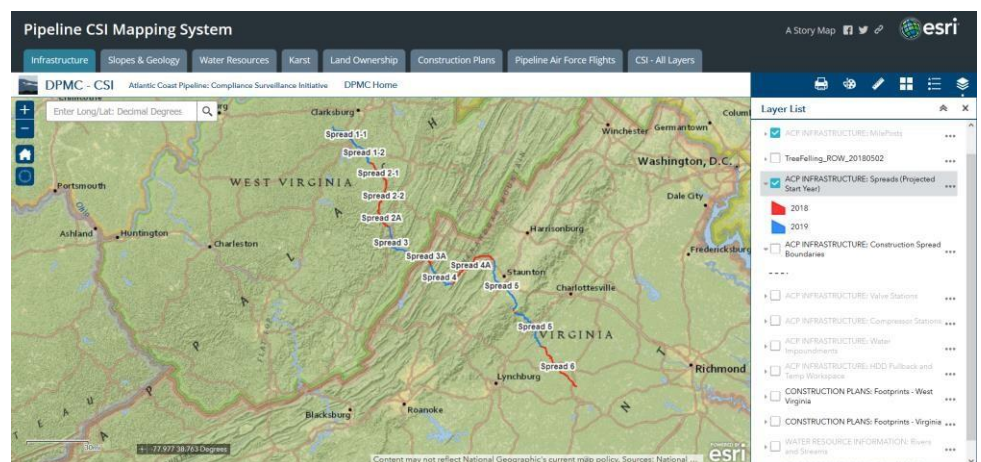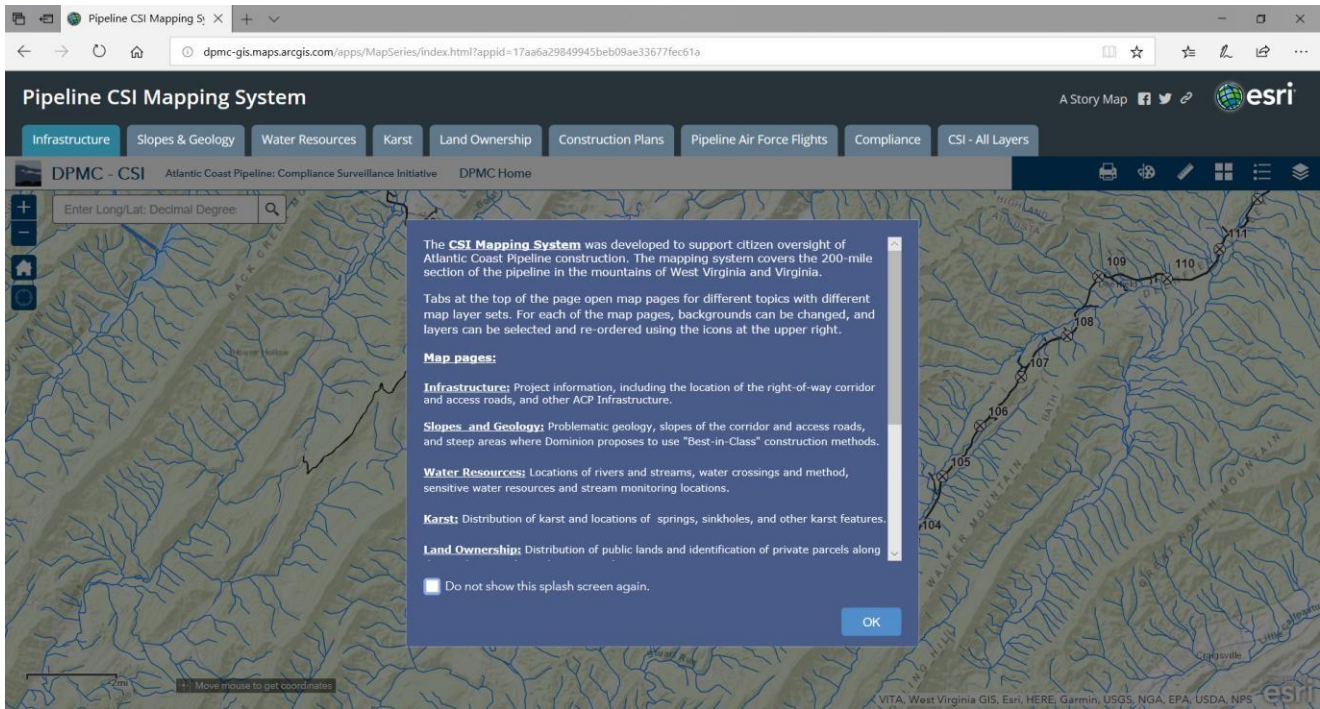

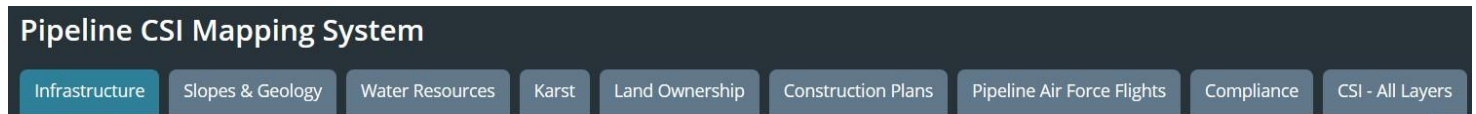*An overview of our study area.*

Volunteers collaborating

Getting Started

This is the 'Splash Screen', or the homepage that you land on when first opening the Pipeline CSI Mapping System.

At the top of the screen there are different tabs representing different, thematic map pages.


Explanations of these tabs and their content are listed in the Splash Screen pop-up.

Note: For most of the layers, additional information, including access to data, reports, photos, citations, and explanatory material can be accessed by clicking on map features.

Read the Splash Screen to get acquainted with the different map pages or tabs. When you're ready to dive in,

press OK . Please also note that the speed at which the map pages load is dependent on your internet speed.

2. Navigating the Mapping System
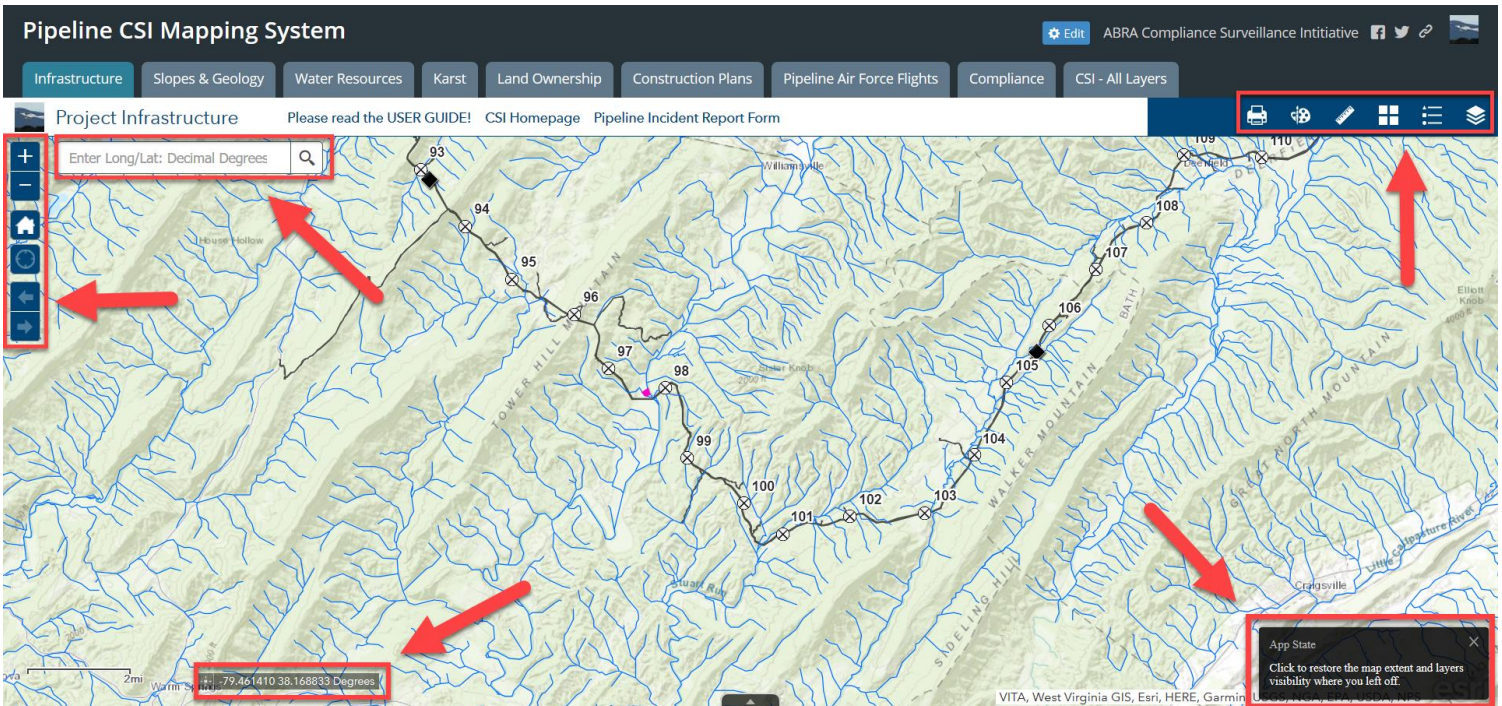
Everything you now need to navigate the Mapping System is located at the corners of your screen, shown here with red boxes and arrows. (Above)
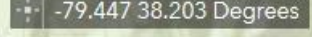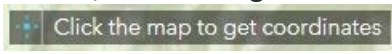
Towards the upper left of the screen, you'll see your Zoom In/Out controls, a Return to Home button, and a My Location crosshair. The Forward & Back Extent arrows (right) will return your view of the map to your last view. Of course, the easiest way to Zoom in/out is with the scroll wheel on your mouse (recommended).

As you will see, every time you change the Map Page that you're on by selecting a different map tab at the top of your screen, your map's extent will revert to its original location/extent. In addition to panning with the cursor, there are several ways to quickly move to where you want when you change Map Pages.
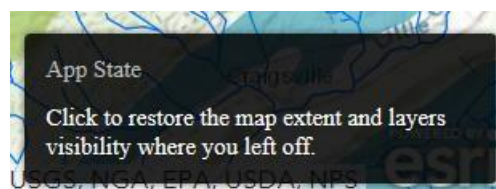
To the right of the +/- Zoom controls, is a Search bar:

Enter coordinates here to move to that location on any map page you are on.

At the bottom right of your screen, you'll see this bar: -79.447 38.203 Degrees . This bar displays the coordinates of your mouse on the map for lat/long quick reference. If you click the little star, it will turn greenish blue and

then show you the coordinates for anywhere you *click* with your mouse, Click the map to get coordinates . You can copy these coordinates and paste them in the above described Search Bar to go to the same location on any Map Page you open

Also, at the bottom right of your screen a small pop-up window titled **App State** briefly appears when you change Map Pages. If you click on that, you can restore the map to exactly how you you had it the last time you visited that Map Page. (Below)
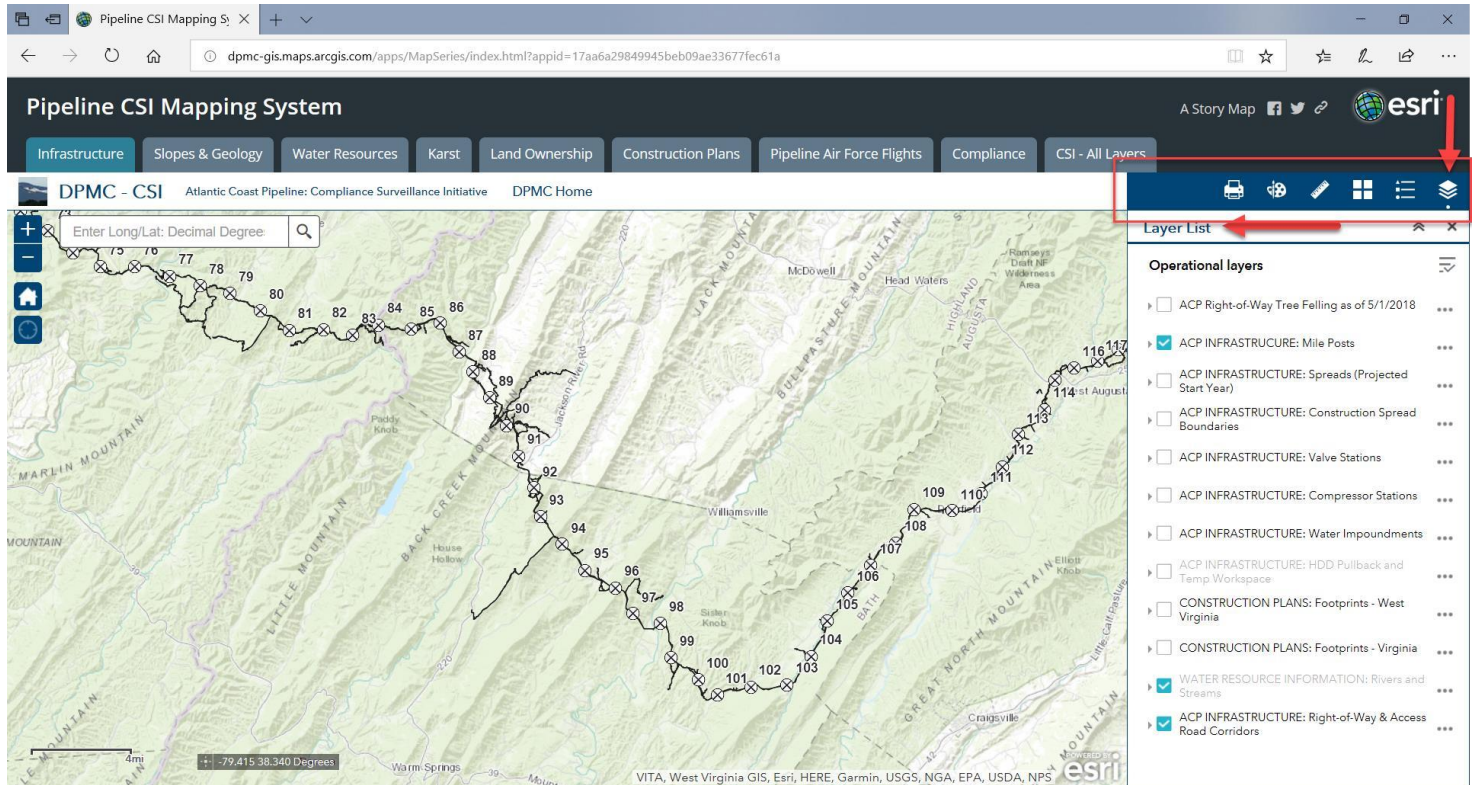
Toolbar

Layer List -

On the far right of the Toolbar, you'll see the *Layer List* icon.

Here, Layers like Percent Slope, Mile Posts, Rivers & Streams, and many more can be turned on and off to show what you want to see.

Press the dropdown arrow to the right of each listed layer to see the symbol that represents the layer (similar to the Legend).

To the right of **Operational Layers** in the Layer List is a dropdown menu that gives you the option to turn all layers on/off or to expand or collapse all layers. This can help you more quickly get to only the info you want.

Each of the different Tabs at the top of the screen has a different Layer List, while the 'CSI – All Layers' tab has every layer available on one map, minus the Pipeline Air Force flight imagery layers.

When a layer is grayed-out, like Rivers and Streams is to the right, it means it cannot be displayed at your current extent or zoom level. Change your zoom level to see that layer again.
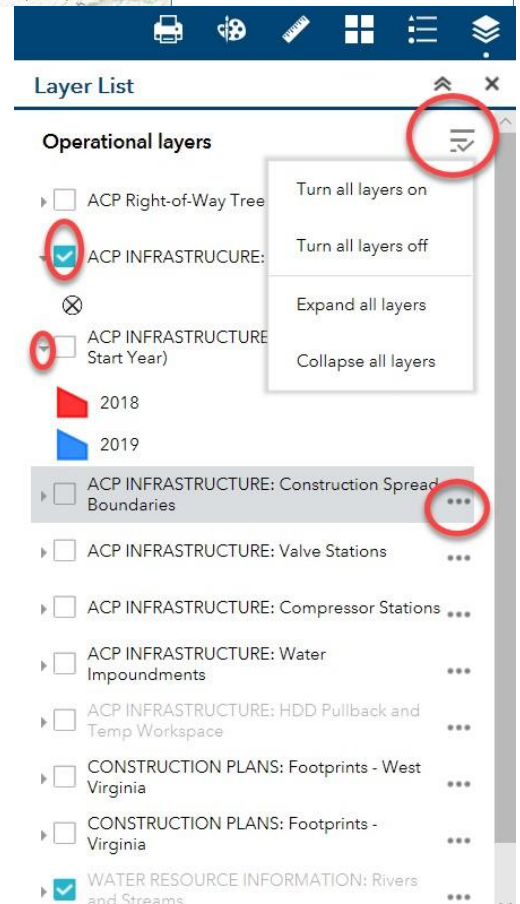
Layer Editing

Each of the layers in the layer list can be turned on and off and manipulated to suit your display needs. Furthermore, the ellipsis shown to the right of each layer opens another dropdown menu of more options.

'Zoom to' will zoom to the default extent of that layer.

'Transparency' allows you to set the transparency or opacity of a layer.

'Disable pop-up' will allow you to click on a map feature without having its informational pop-up appear.

'Hide labels' will turn off the labels associated with that layer (like the Mile Posts).

'Move up' & 'Move down' allow you to rearrange the order of the layers in the list. Changing the order of the layers list will also change how those layers are stacked within the map. For instance, if you want two layers on but don't like that one seems to cover the other, you can change the order by moving the listed layer up or down.

Pop-ups

For most of the layers, additional information, including access to data, reports, photos, citations, and explanatory material can be accessed by clicking on map features. This information is presented in the form of a pop-up window, as seen below. Click 'Zoom to' to zoom directly to the select feature on the map. Most pop-ups contain more info than will fit in the initial window, so look for a scroll bar to the right side of the pop-up window to see more.
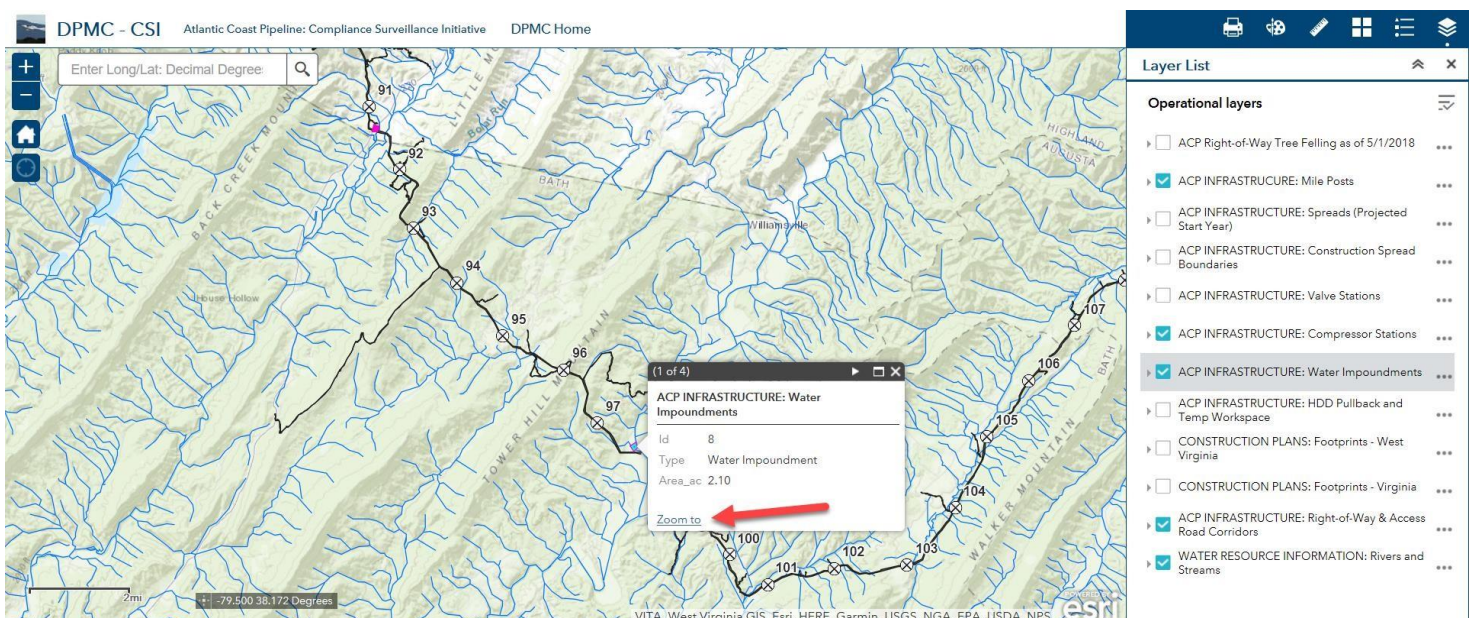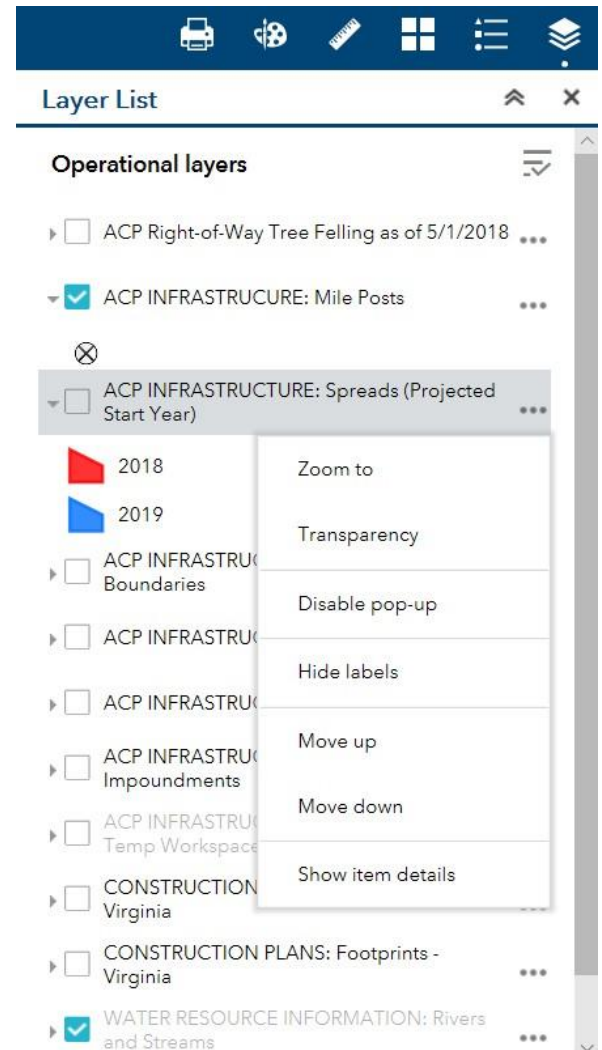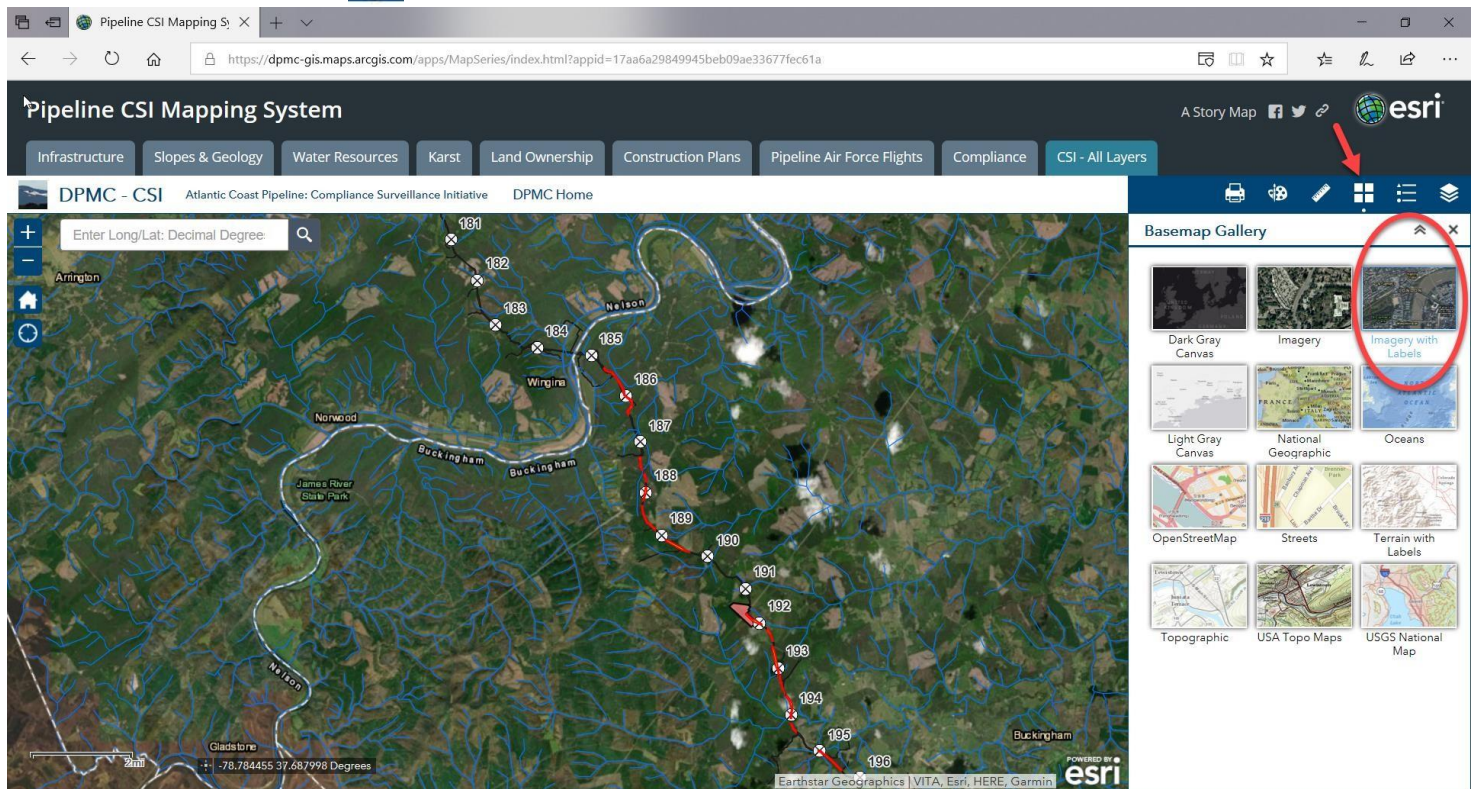
Legend -
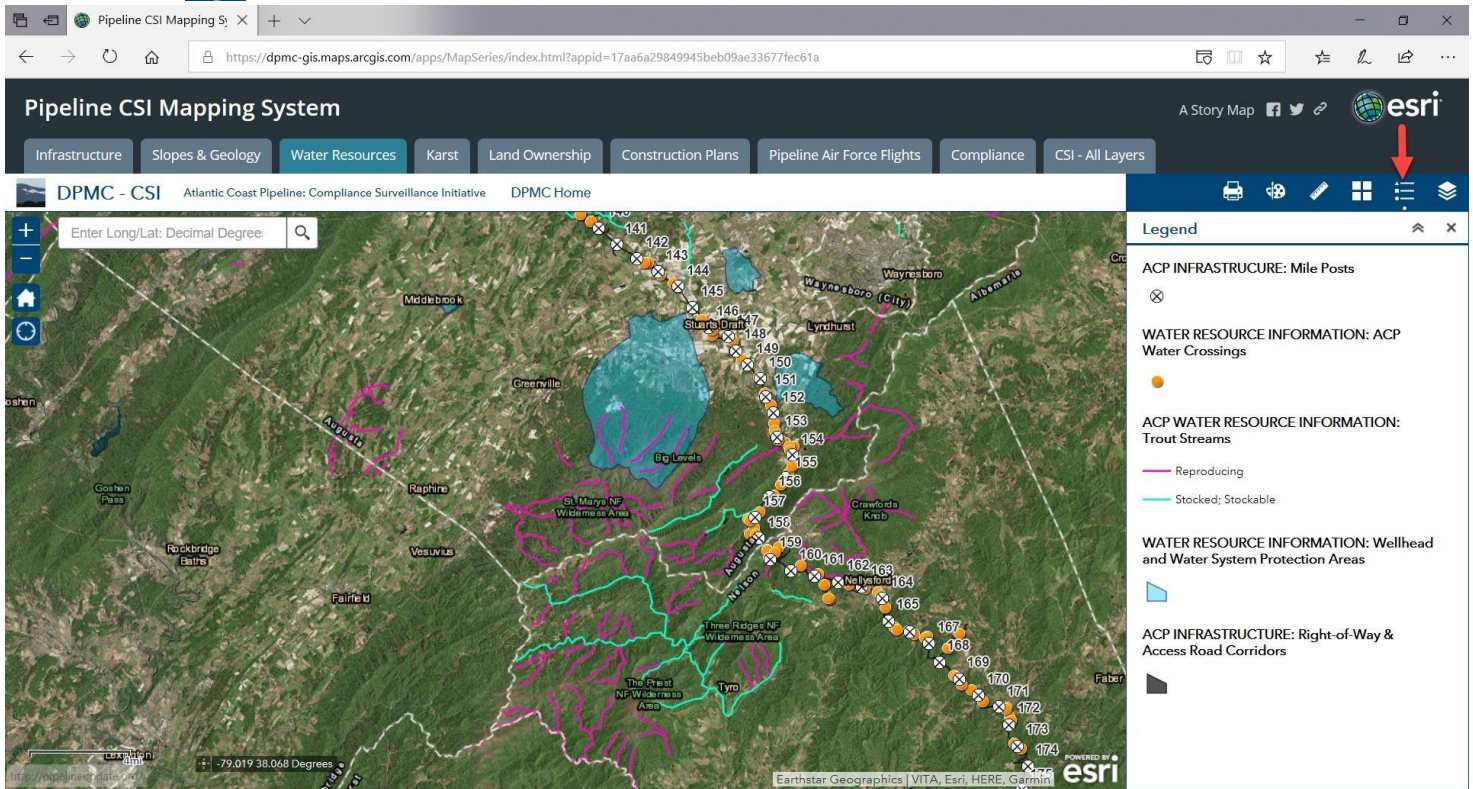
The Legend is a key to what the symbols on the map represent. *Remember: You can learn more about each layer or item on the map by simply clicking on them, as seen below!*
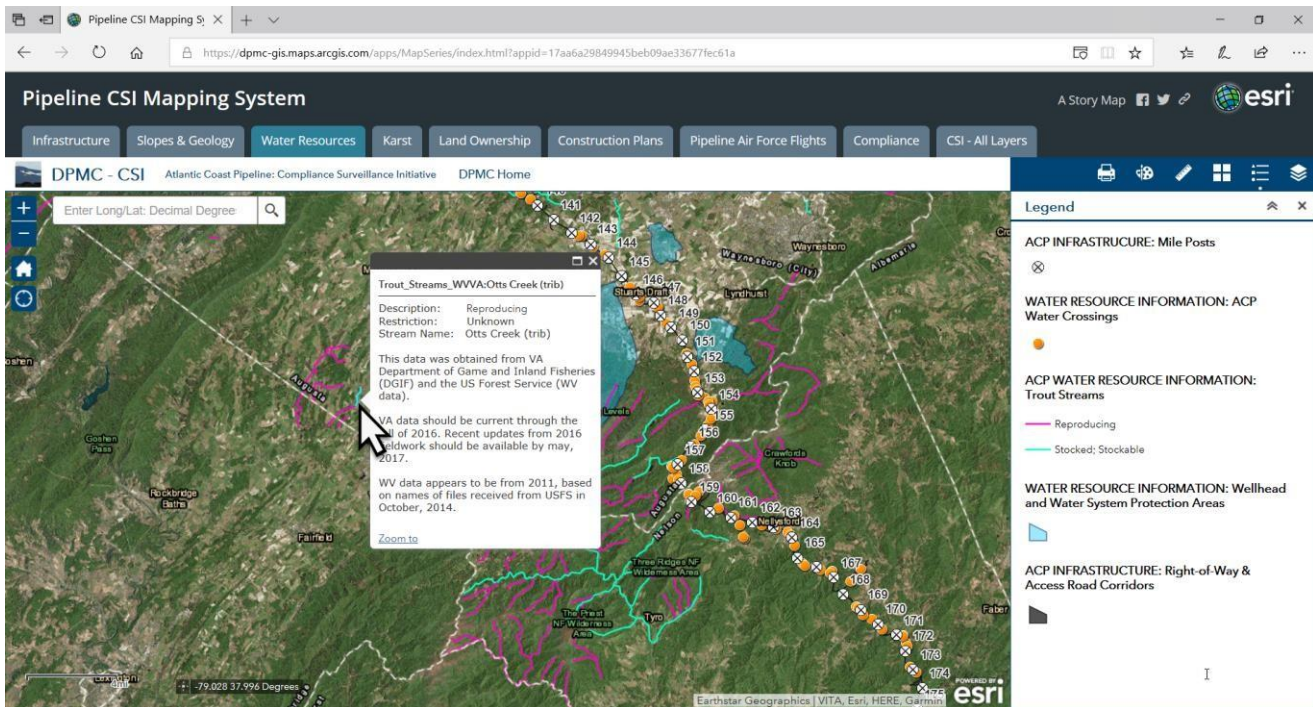
Basemap Gallery -

The Basemap Gallery shows a menu of different Basemaps for you to choose as backgrounds to your given map. Different Basemaps will serve different display needs. You might choose a Topographic basemap to highlight issues of slope and elevation, a Streets basemap with labels for familiar roads and common places for context, or an Imagery basemap to show the recent view of a location from satellite imagery. Try different ones until you find one that fits your mapping needs. See examples of Buckingham County below and above.
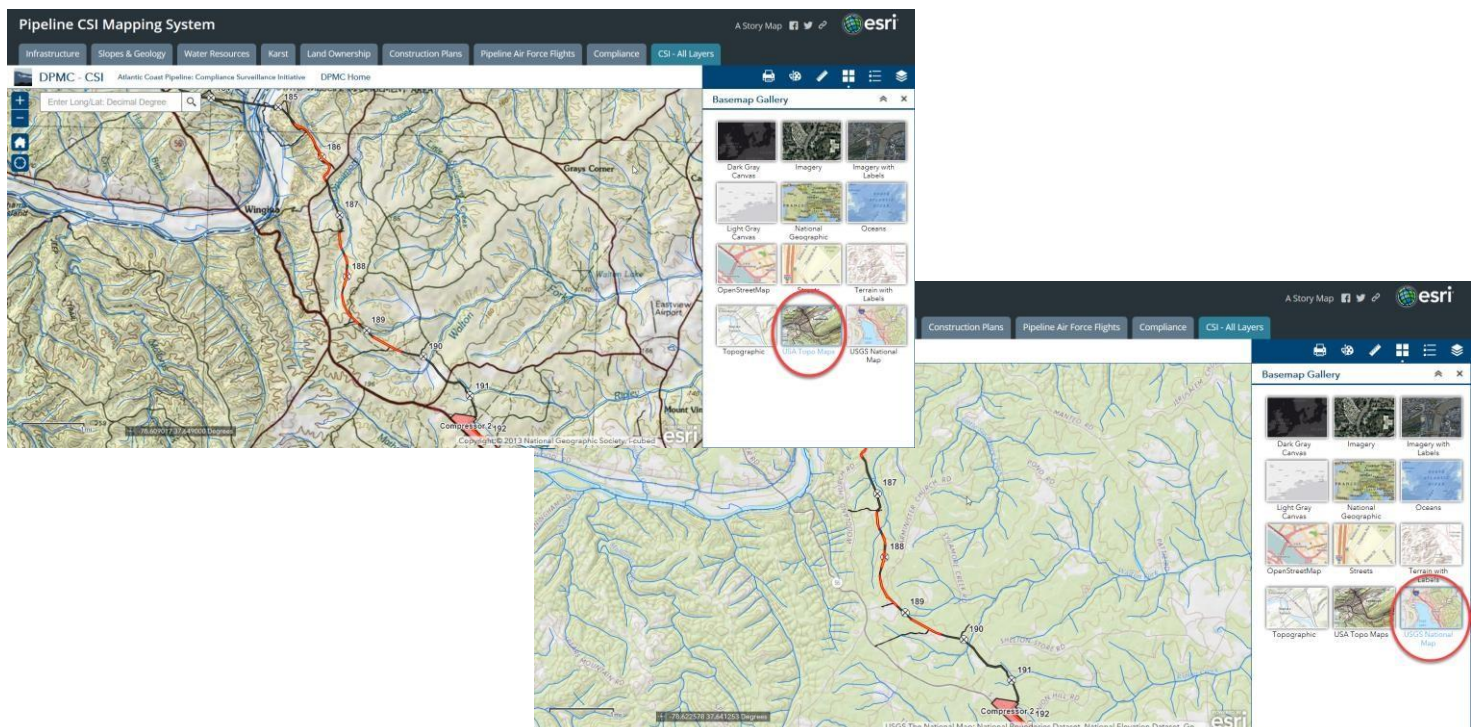
Measurement Tools -
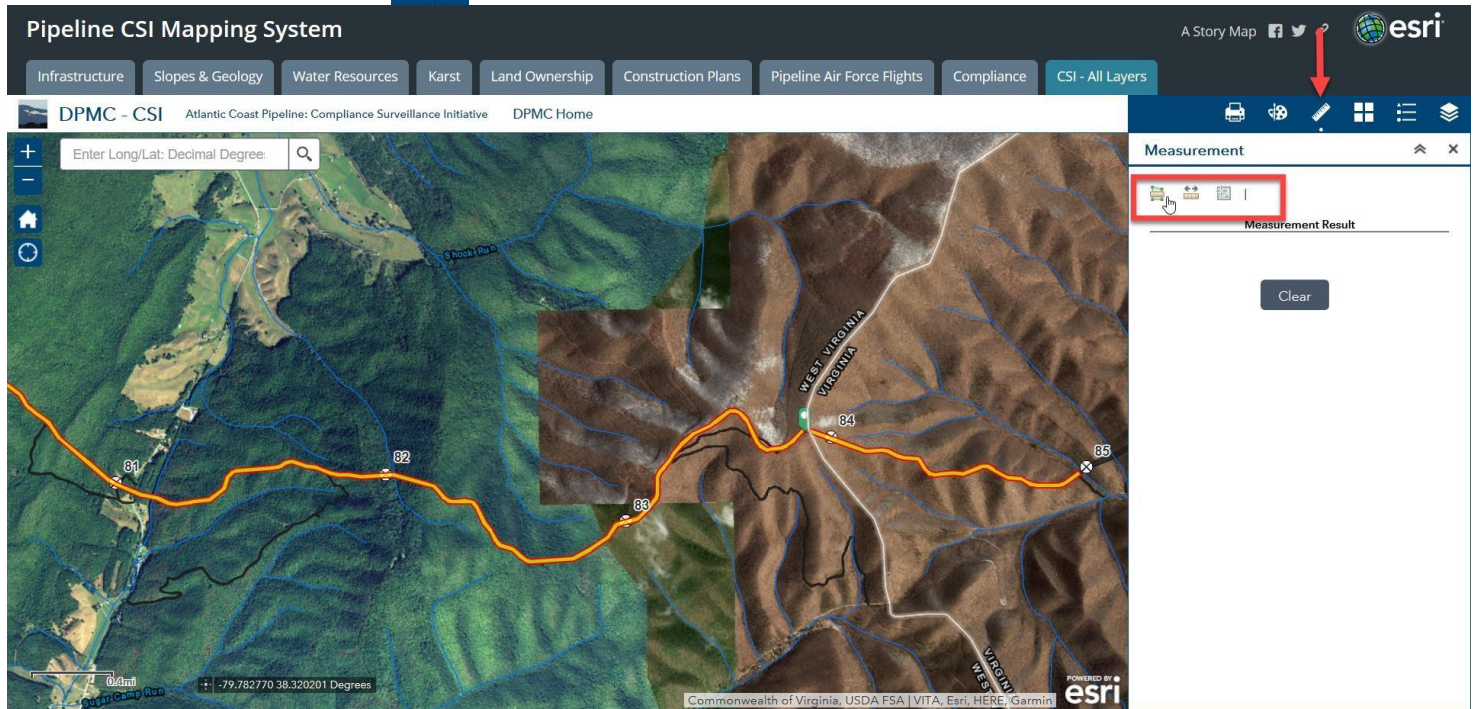
The Measurement tools are especially important, as they include Area, Distance, and Location.

Area –

Click to create and measure a polygon area in a variety of different units.
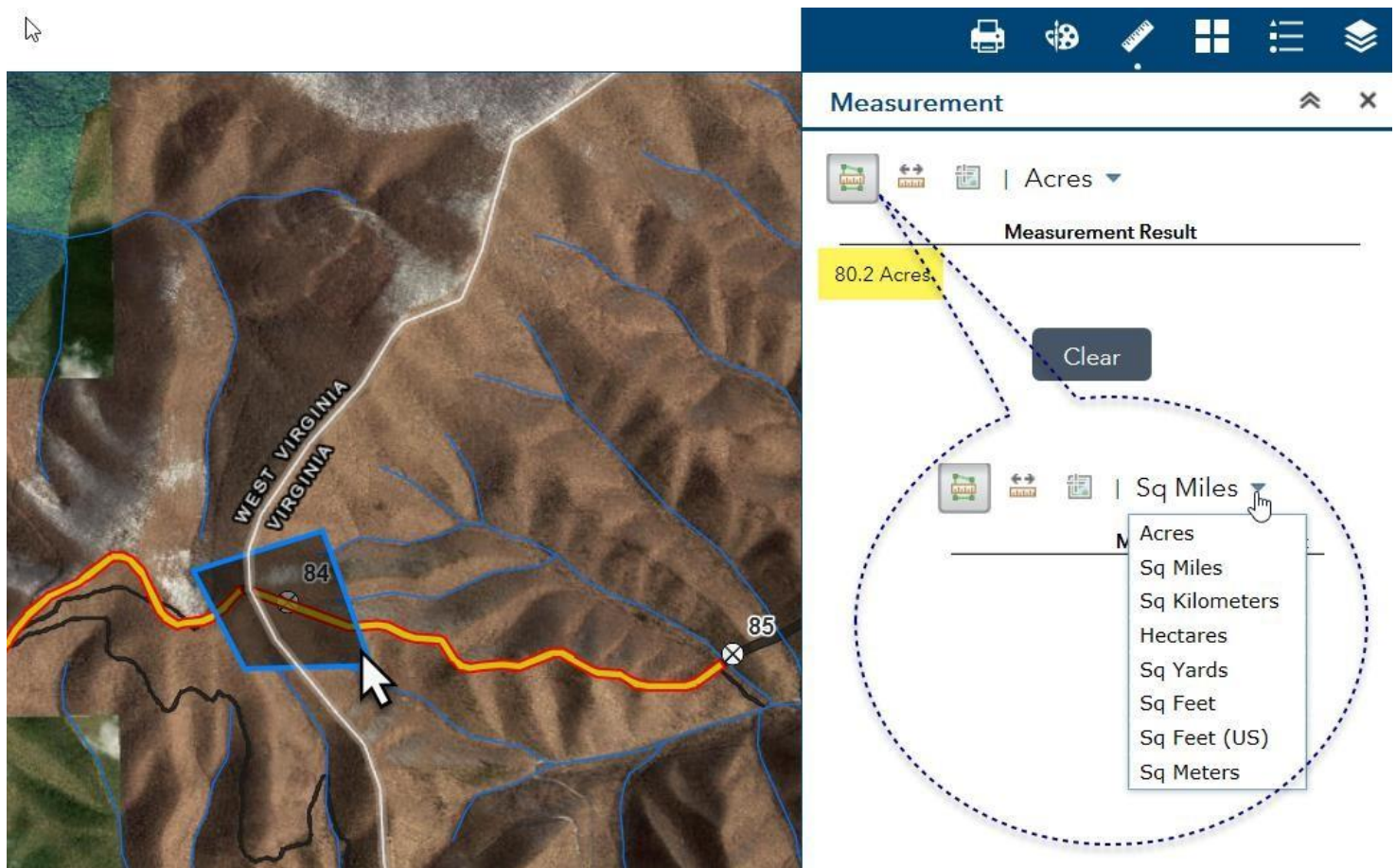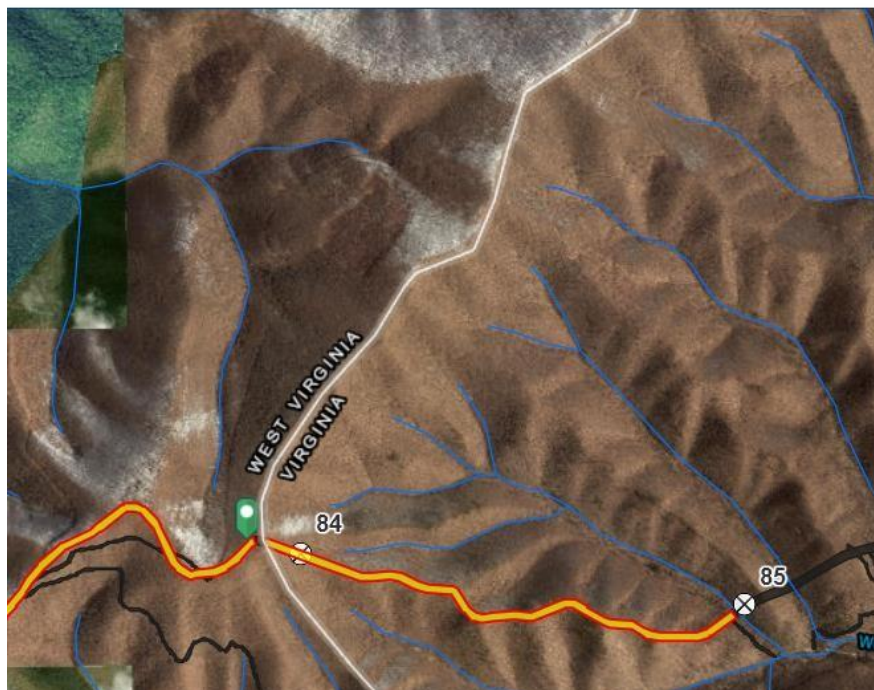
Distance –

Similar to Area, only with this tool you can measure linear distance. Learn how far away a building or water monitoring location is from the *proposed* ACP!
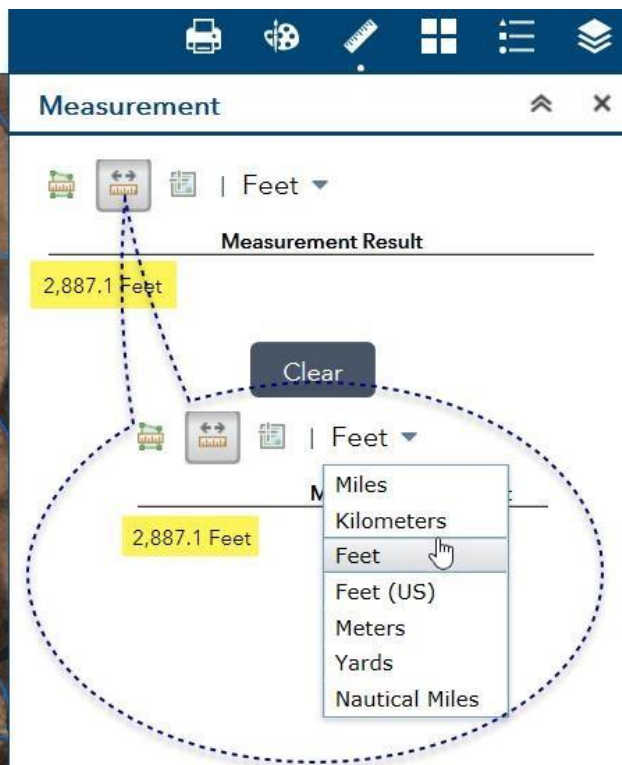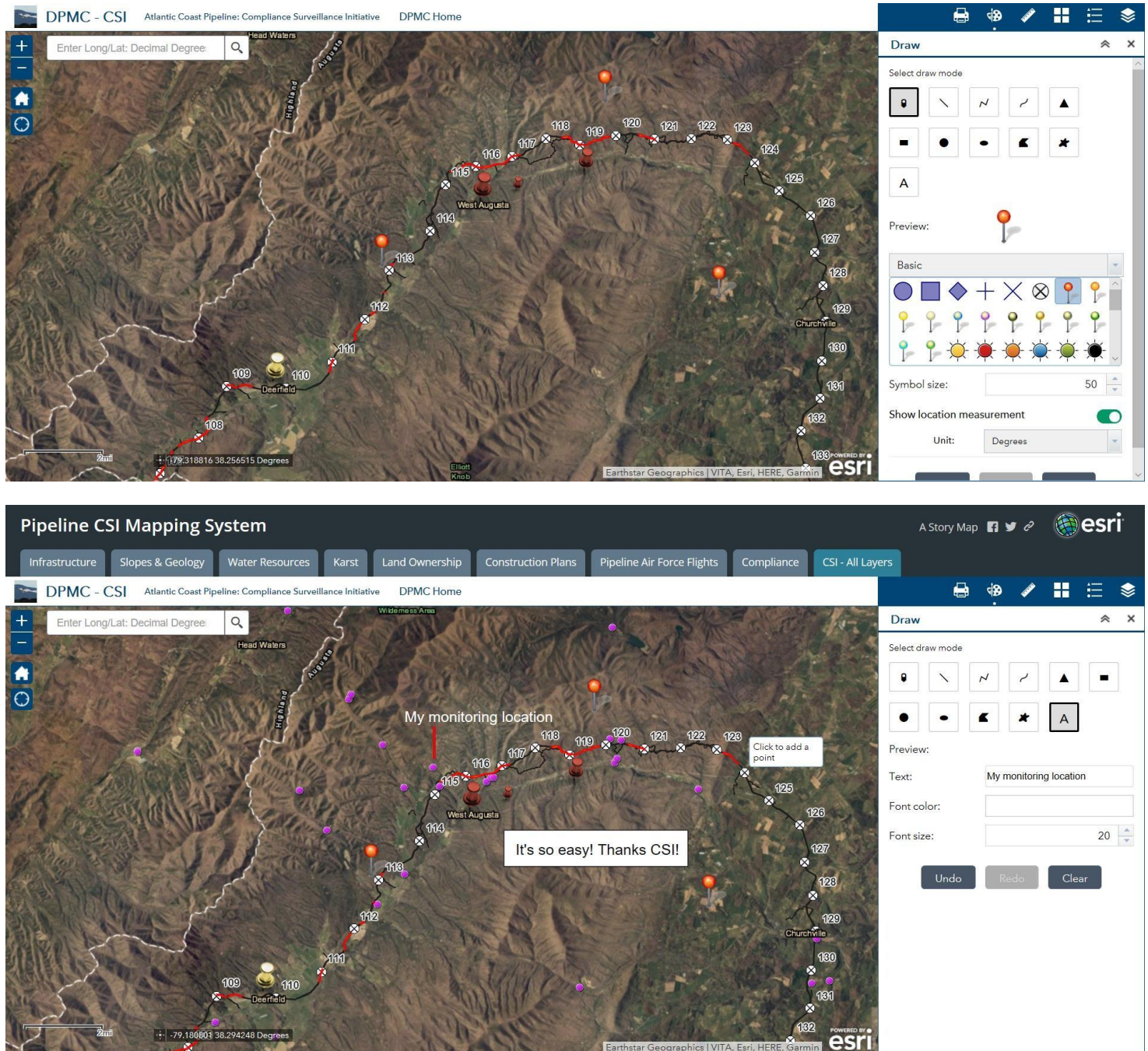

Location -

Use the location tool to measure the coordinates of a given point on the map in either Decimal Degrees (as shown below) or Degrees, Minutes, Seconds. *Generally Decimal Degrees is preferred.*
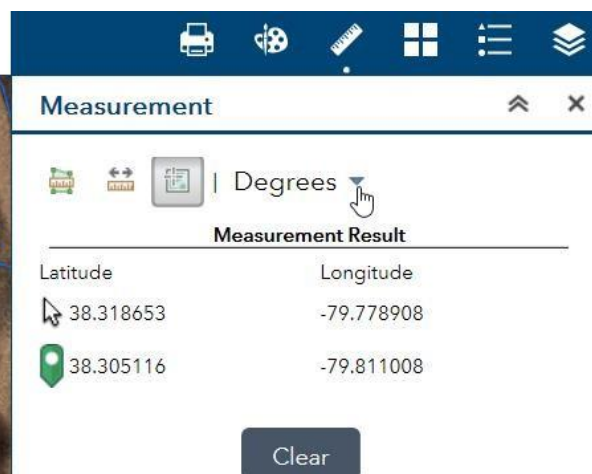
Draw Tools –

Here is where you get to get creative. The Draw tools menu offers a wide range of shapes and graphic design elements for you to add to your map as you see fit. You can add a Pin in the map like those shown below to highlight a specific site to another activist or fill a Text Box with your thoughts and words right there on the map. You are well on your way to becoming a cartographer yourself.

Print –

The Print menu is where you can take the map that you created and set up options for exporting the map in different printable formats. You can set the Map Title, the Layout (paper size, et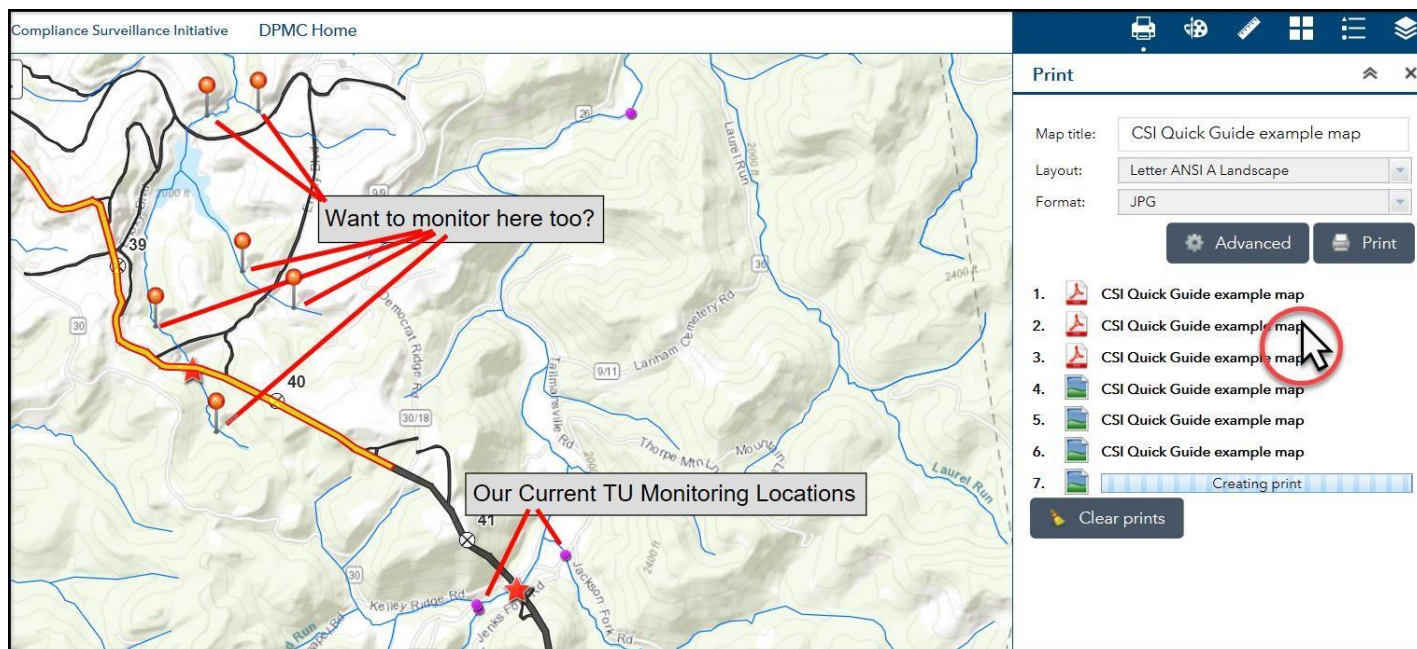c.), and file format (JPG, PDF, GIF). Using the Draw tools from the adjacent menu, you can design your map for your specific circumstance. In the example shown below, a hypothetical volunteer wants to show their peers some other potential water quality monitoring locations in Upshur County, WV.

After selecting a Title, a layout, and a format, you can set more options like author, labels, with the Advanced button: .


You can hit Print as many times as you like, printing different formats or sizes

When you have some prints/export created, simply click them to open the new documents in a new window, shown below. And there you have it; your map has a built-in legend, a title, a time and date stamp, a scale bar, and is now ready to be printed for use offline, emailed to your network, or posted somewhere online. The possibilities are endless.
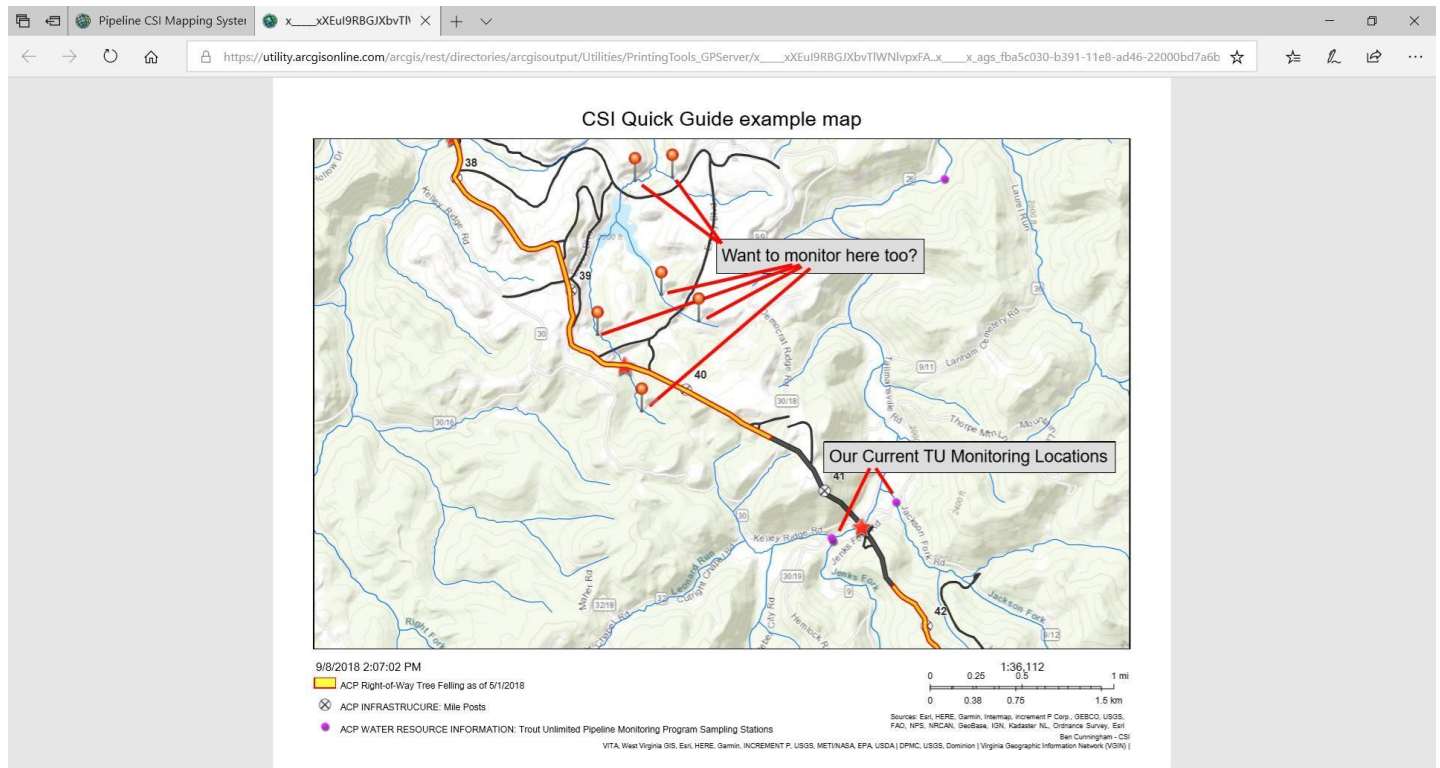
You can also share your map directly to Facebook, Twitter, or embed it on your website by utilizing the Share options in the top right of the screen. This makes for a powerful storytelling tool, an expedient way of sharing data, and a quick way to promote site-specific attention.
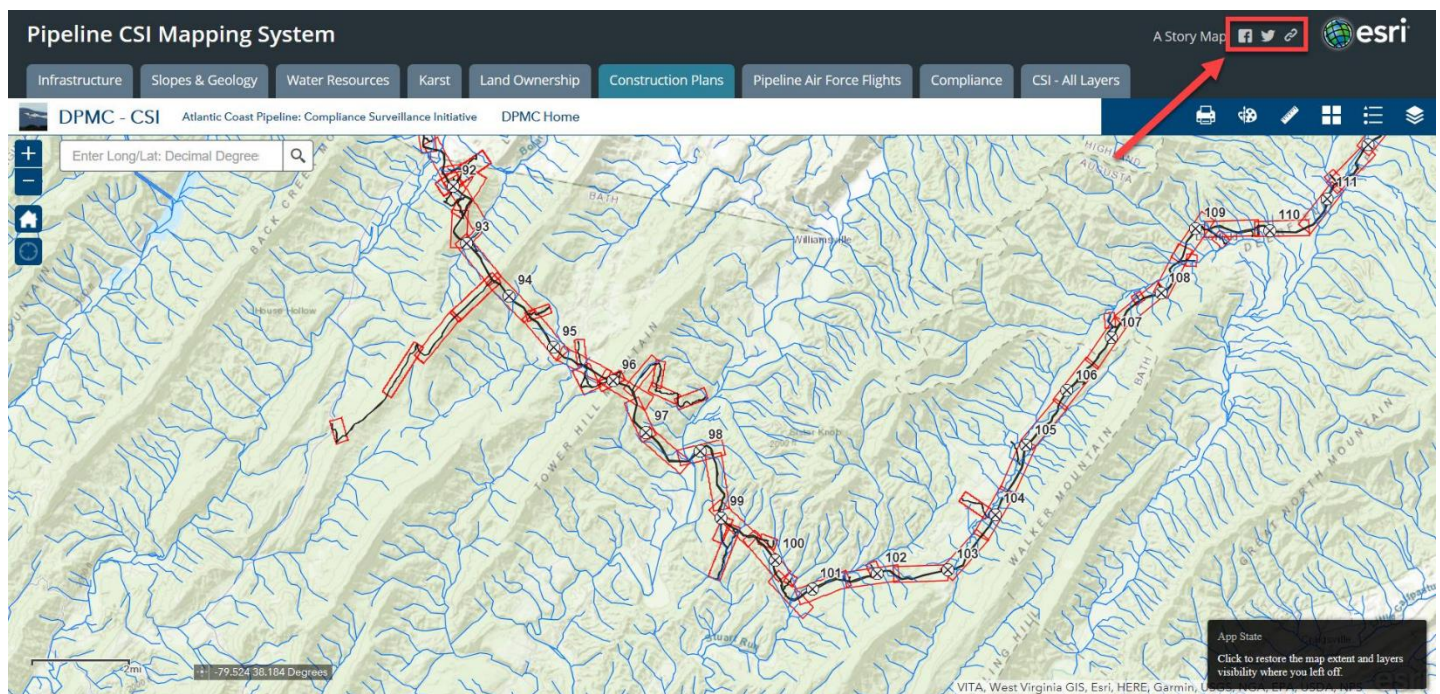
Using Attribute Tables

Attribute tables are the tabular way to view some of the more detailed and numerous data contained on some of the map tab pages. Different attribute tables for different layers are available on the Infrastructure, Water Resources, Compliance, and All Layers map tabs. You can open the attribute table by clicking on the dropdown at the center bottom of the above-mentioned pages, as shown in the red circle in the example below.
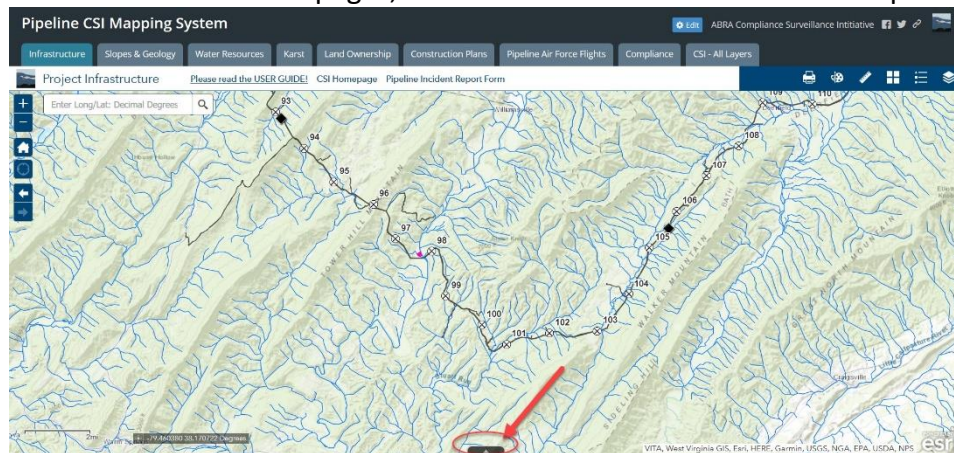
To learn how to use the Attribute tables to their fullest, lets look at the data included on the **Water Resources** map tab.

The Water Resources attribute table contains tabular data for the following layers:

Stream Crossings (Tables 4-1 & 4-2) - ACP_WV_ROWWBC_Table_4-1
Stream Crossings (Tables 4-1 & 4-2) - ACP_WV_ARWBC_Table_4-2
WV Wetland Crossings (Table_6)
VA Waterbody Impact Table (USACE)

The different attribute tables to choose from are listed in tabs above the table. Click on the tabs to show different information or click the arrow button on either side of the tabs to see more (when applicable).

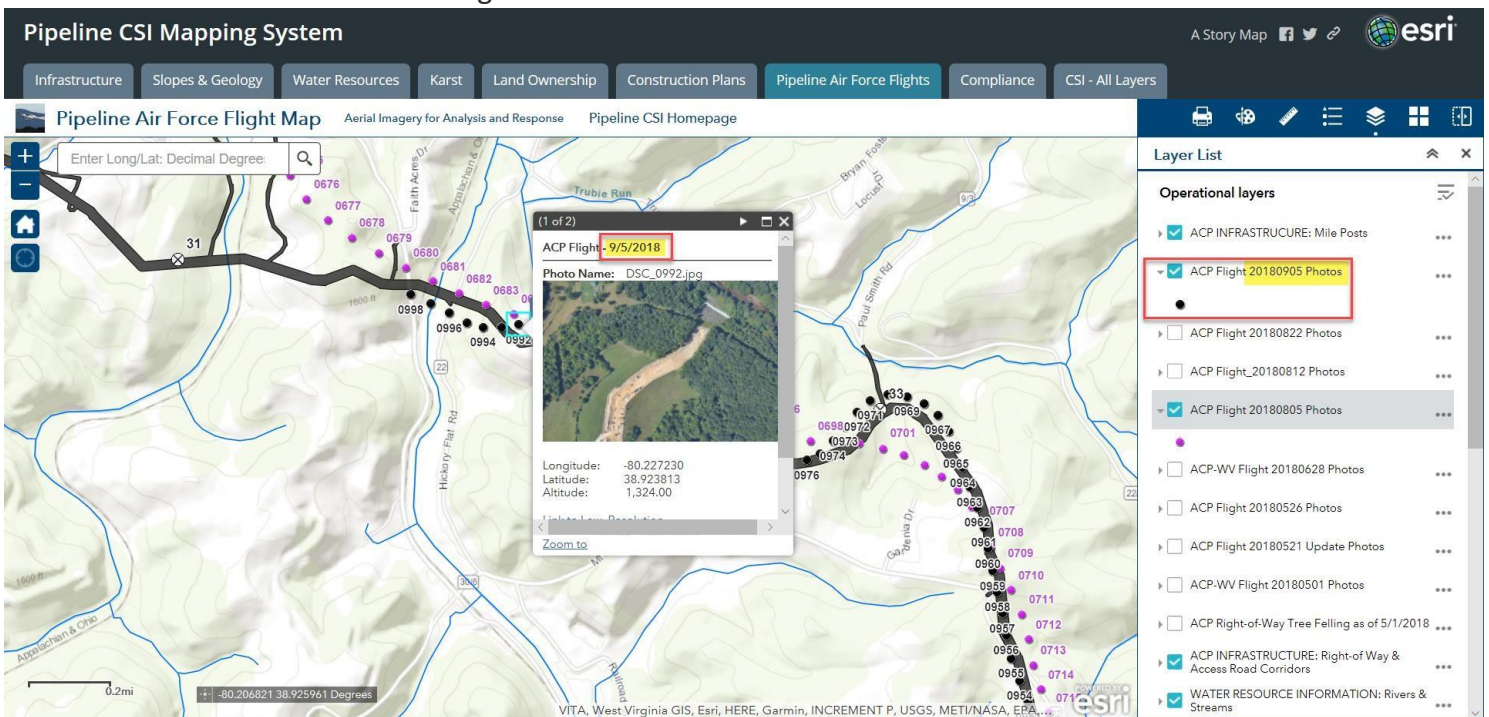| OBJECTID ▲	Milepost	FeatureID	Name	FlowRegime	ApxWidthFt	TASLenFt	Method	StateWCS	Latitude	Longitude	Watershed
145	81	spoe019	UNT to Sugar Camp Run	Intermittent	N/A	36	Not Crossed by Centerline	Unclassified	38.30258	-79.87533	HUC 8-05050003
146	81	spoe016	UNT to Sugar Camp Run	Intermittent	4	71	1) Dam and Pump 2) Flume	Unclassified	38.30159	-79.8732	HUC 8-05050003
147	81	spoe015	UNT to Sugar Camp Run	Intermittent	8	138	1) Dam and Pump 2) Flume	Unclassified	38.30039	-79.86933	HUC 8-05050003
148	82	spoa402	UNT to Sugar Camp Run	Intermittent	4	143	1) Dam and Pump 2) Flume	Unclassified	38.30221	-79.86047	HUC 8-05050003
149	82	spoa400	UNT to Shock Run	Perennial	12	134	1) Dam and Pump 2) Flume	UNT to Tier 3	38.3019	-79.84753	HUC 8-05050003

5 features 0 selected

By default, the option at the top of the attribute table, **Filter by map extent**, is turned on. This means only those features currently visible on your map are displayed in the table below. Click it to toggle it on/off to see all features for that layer.

How is this useful? The attribute table displays the same data details that you find in a feature's pop-up, but the attribute table lets you scroll alphabetically or in some other order through a list of these features as opposed to panning around the map until you find the feature (a stream or wetland crossing, compliance violation, access road, etc.) that you are looking for.

Clicking on record in the table will highlight it on the map, making it easy to locate the feature of interest in question. You can also click **Zoom to** to zoom in on the selected record on the map.

3. Pipeline Air Force Flights Map

A very important addition to this new edition of our CSI Mapping System is our Pipeline Air Force Flight Map. The Pipeline Air Force, a volunteer network of pilots and drone pilots, has been busy capturing aerial imagery of the ACP and organizing it into a legible, shareable format. Drones are used to quickly deploy to specific sites to gather timely intelligence while airplanes are used for long distance overflights to update our understanding of the status of ACP construction. We add more imagery from new flights almost weekly and are constantly improving our methods. We also welcome volunteer pilots and drone pilots to join us in gathering more data on the ACP from the skies.
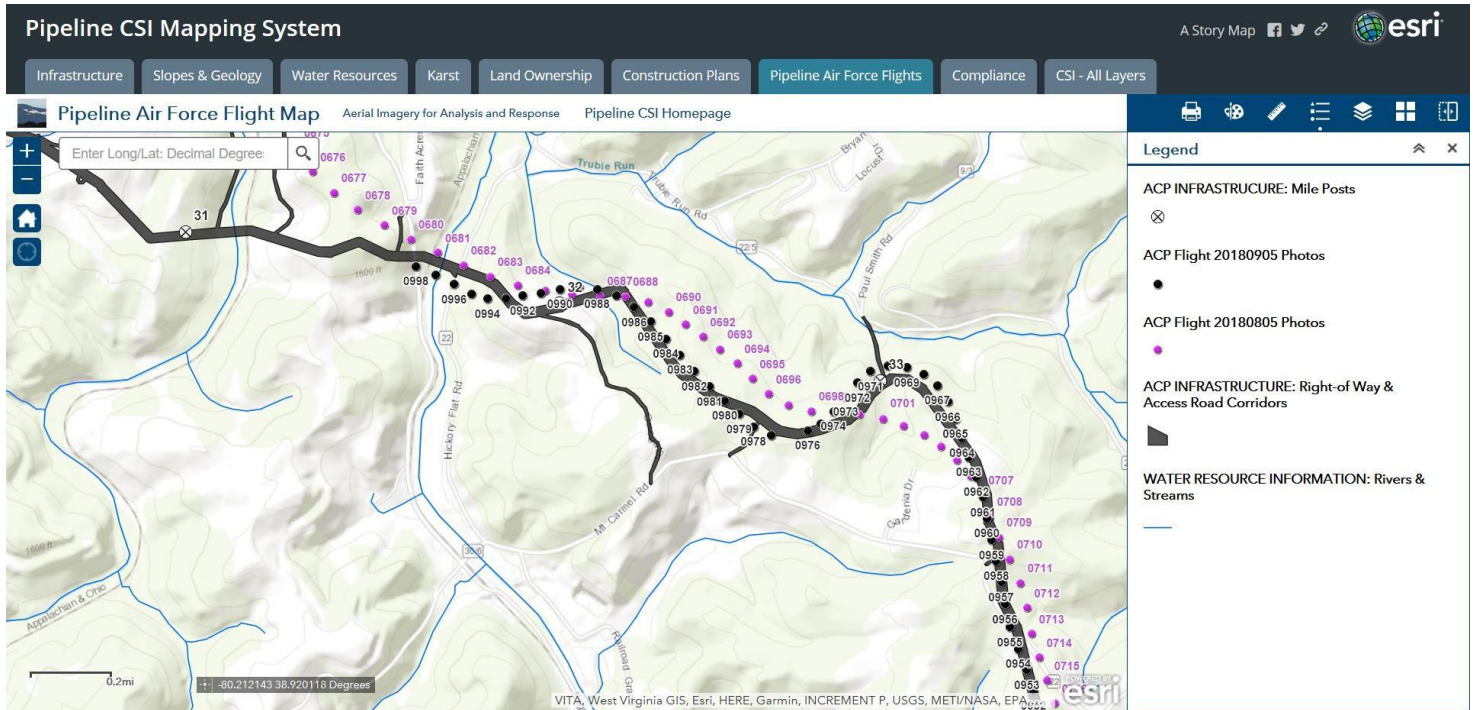
Unique to this Pipeline Air Force Flights Map Page are photo points with pop-ups offering an aerial image thumbnail preview and links to a low-resolution photo (easier on slower internet connections) and a folder of All Full-Resolution Photos from that flight date.

Compare aerial photos of the same areas to analyze change over time to spot and report unlawful construction activities and pollution incidents (sediment entering streams or leaving the construction ROW). *NOTE: not all flights were flown the same direction, so some of the flight photos are flipped 180 degrees, as shown below.*

August 2018 construction in Upshur County, WV.

Mosaics and the Swipe tool

Farther down on the Layer List there are different image **Mosaics**. These orthomosaics (Google it) are processed combinations of multiple aerial images that are laid directly onto the map, as shown below, and allow you to pan around the map and see conditions on the ground as of that PAF flight date. NOTE: There is some drift between mosaics from different dates due to GPS sensor state on that day of flight and differences in processing results. This is normal.

If you turn on the Construction Plans layer, you can easily and quickly compare ACP's obligatory construction plans with conditions on the ground. See the next three screenshots for an example.

Swipe Tool -

Finally, the last, and perhaps most exciting tool to be described in this guide is the Swipe tool in the top right of the PAF Flights map page. The Swipe tool allows you to swipe a bar across the screen to reveal an underlying image layer. See the difference between one flight mosaic and another from an earlier date or compare a flight mosaic to the underlying construction plans by simply panning the screen over or by dragging the Swipe bar across your view.

IMPORTANT:

There is a specific order of operations you must follow for the Swipe tool to function properly. Please pay close attention to these steps.
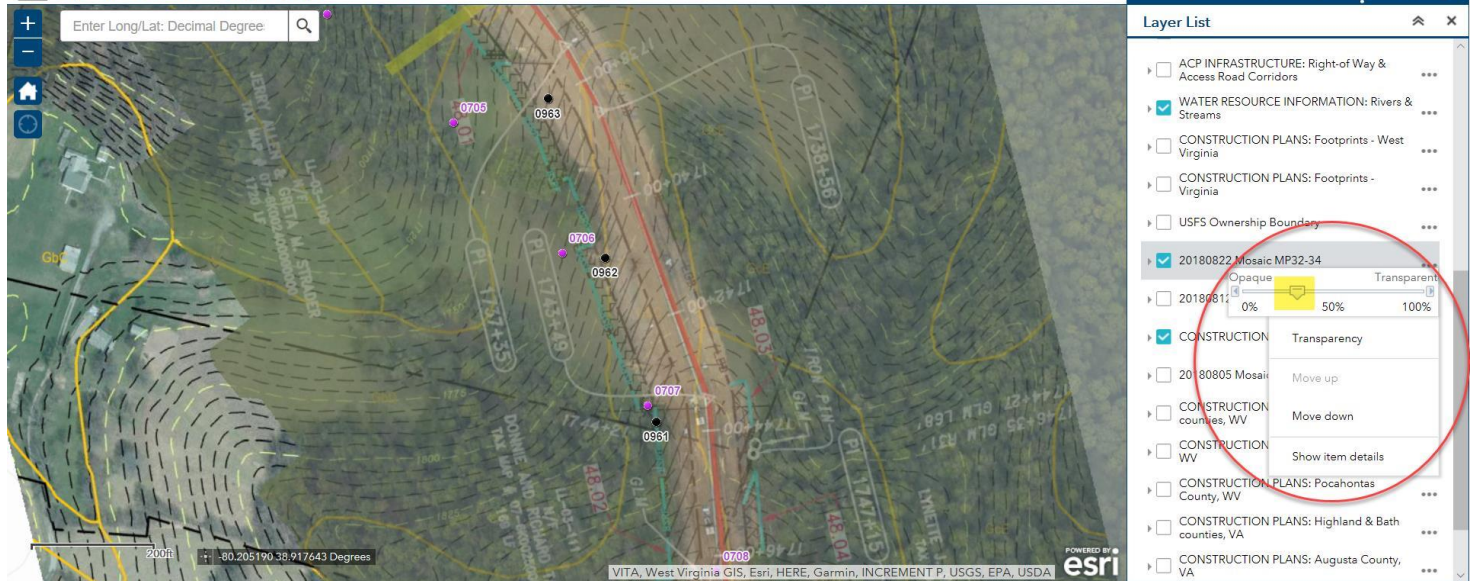
1. Before opening the Swipe tool, first open the Layer List and turn off the ACP INFRASTRUCTURE: Right-of-Way & Access Road Corridors layer.

2. In the Layer List, turn on the sets of imagery you would like to compare with the Swipe tool. You can have multiple mosaics and construction plans turned on, but you may only compare 2 image sets using the Swipe tool, so it is recommended that you only turn on the 2 imagery layers you would like to compare at a time. For this example, we are only turning on the 20180905 Mosaic MP32-34 and the Construction Plans for Upshur County, WV.
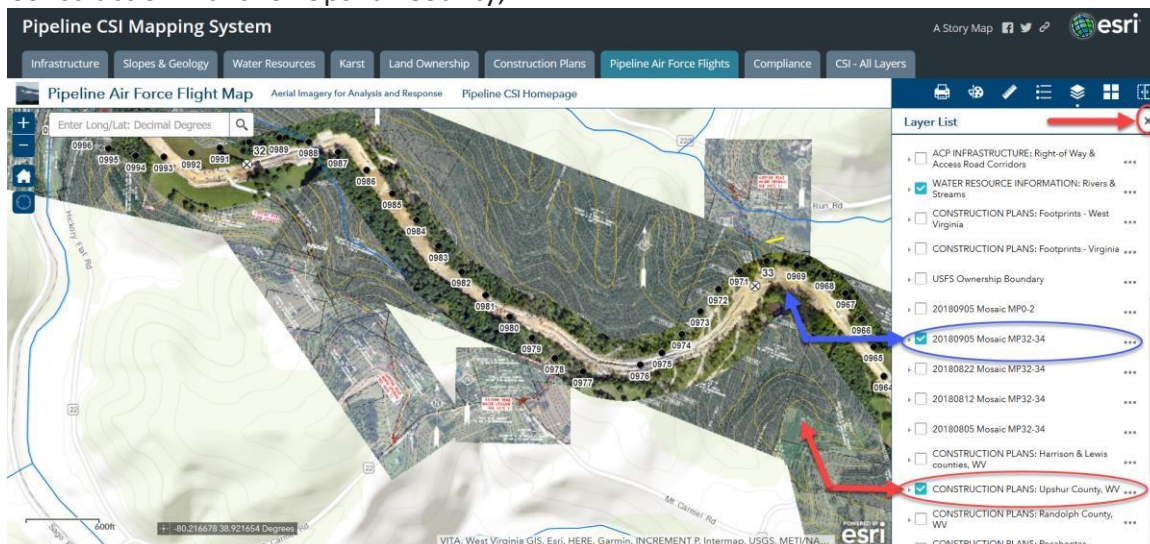
3. Next, **close the Layer List dropdown by clicking the X to the right of 'Layer List'.** The Swipe Tool *may not work properly if this is not done first.*

4. After closing the Layer List, Click the Swipe Tool icon [icon].
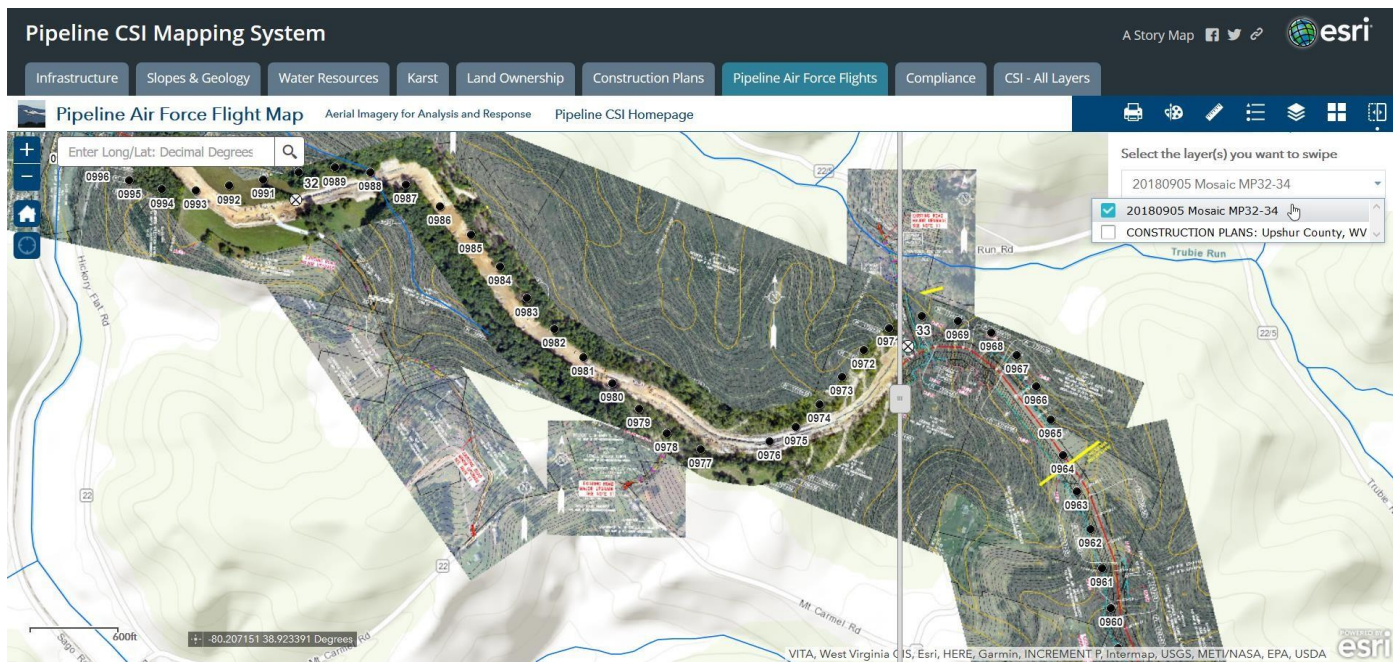
5. The Swipe Tool then prompts you to Select the layer(s) you want to swipe. **Choose the imagery layer that was highest up on your Layer List.** By default, the aerial imagery mosaics are above the construction plans.

6. You are now ready to compare and contrast construction over time and conditions on the ground versus approved construction plans with this unprecedented and unique monitoring system.
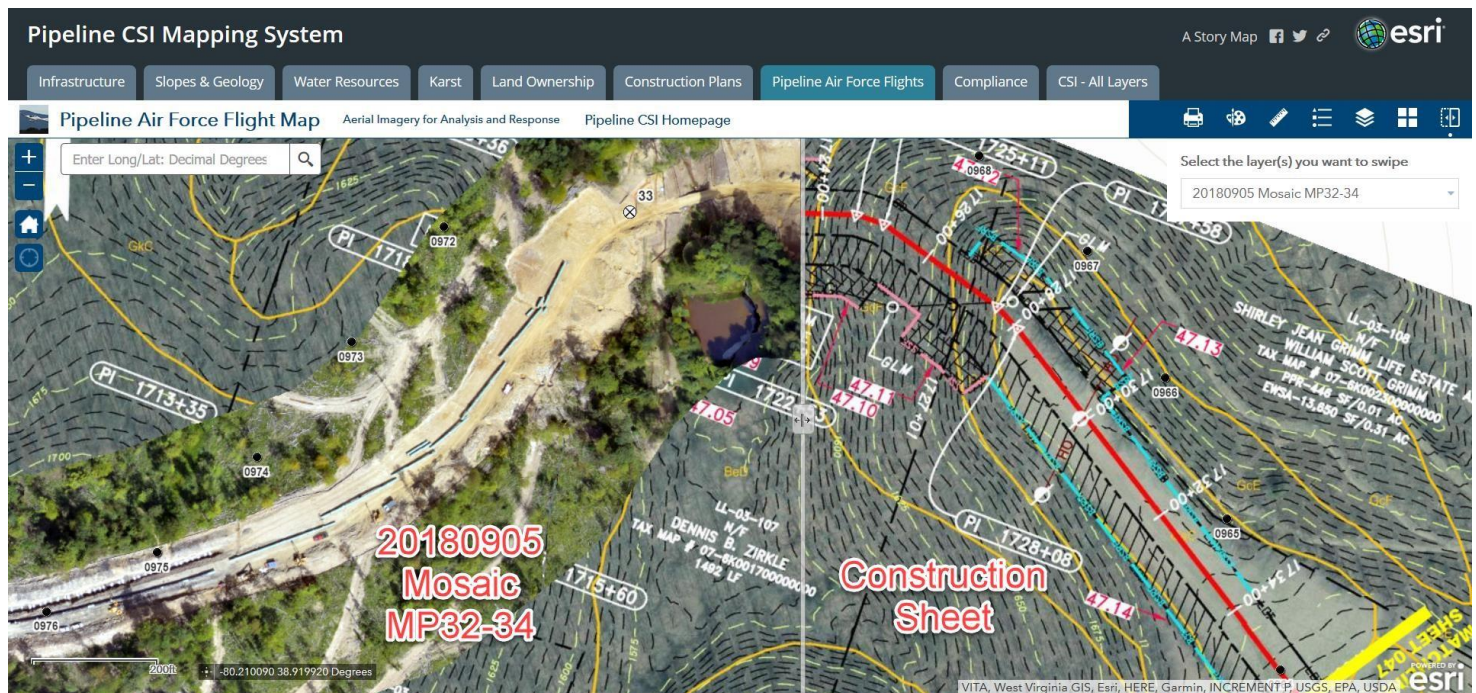
Violation Reporting Resources

Use our reporting resources below to sound the alarm when you spot construction violations. Use the Mapping System to plan your monitoring or other activism or describe the violation location.

Hotline
1-877-GO2ABRA (462-2272)

Email
CSI@ABRAlliance.org

Online
https://bit.ly/2I5cCo1

.

OR

Scan the QR code below to be directed to our online reporting form!

Notes

The Pipeline CSI Mapping System is internet based, so some functionality may be limited depending on your internet speeds. If you experience a bug or something goes wrong, the best option is to close and reopen the web page. If the issue persists, try a different internet browser. The CSI Mapping System is optimized for Chrome. Data provided here is for reference and informational purposes only.

The Pipeline CSI is a program by the Allegheny-Blue Ridge Alliance and its member groups. For more information, go to PipelineUpdate.org/CSI or ABRAlliance.org. Thank you for your continued support.