



FRA GIS Web Application

User Guide

June 2025



U.S. Department of Transportation
Federal Railroad Administration

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PURPOSE

FRA has migrated several JavaScript web applications to ArcGIS Experience Builder. This guide is designed to help users navigate and operate these updated applications more effectively.

Migrated Applications

- FRA – Safety Map
- FRA – Trespassers Map
- FRA – Crossing Viewer

Supported Web Browsers

- Google Chrome
- Microsoft Edge
- Mozilla Firefox
- Safari

INTERFACE

The screenshot displays the FRA Rail Network web application interface. The main map shows the rail network across North America. A table at the bottom lists rail grade crossings with columns for AADT, AADTYEAR, ACC_LINK, CITYCD, and CITYNAME. The table has a total of 241,762 records and 1 selection.

AADT	AADTYEAR	ACC_LINK	CITYCD	CITYNAME
		View	010732510	PLEASANT GROVE
		View	010731717	HUEYTOWN
		View	010732180	MULGA
		View	010732510	PLEASANT GROVE

Callouts in the image identify the following interface elements:

- Search**: Search bar in the top left.
- Select**: Select tool in the top right toolbar.
- Measurement**: Measurement tool in the top right toolbar.
- Add Data**: Add Data tool in the top right toolbar.
- Print**: Print tool in the top right toolbar.
- Filter**: Filter tool in the top right toolbar.
- Find my location**: Find my location button on the right side of the map.
- Zoom In**: Zoom In button on the right side of the map.
- Zoom Out**: Zoom Out button on the right side of the map.
- Default Extent**: Default Extent button on the right side of the map.

TOOLS

Map Layer: The user will be able to turn on or off layers.

Basemap Gallery: The user will be able to toggle between basemaps.

Legend: The user will be able to view the legend.

Search: The user can search for specific locations and the map will zoom to that area on the map.

Filter: The user can limit the visibility of features in a layer based on an expression criteria.

Select: The user can select features on a map.

Measurement: The user has the ability to measure an area, measure the length, or determine the coordinates on the map. The user will have the options to toggle between different metrics.

Add Data: The user will have the option to search for layers to add to the map, add mapping services or add their data to the map.

Print: The user can print out the map as a PDF or JPEG and can select to have it landscape, portfolio, or map only.

Find my location: User can put in a latitude and longitude and the map will center on this location

Zoom In/Out: Allow the user to zoom in or out of the map. Note: the user can use their mouse to zoom in or out.

Default Extent: Zoom back to the original extent of the map

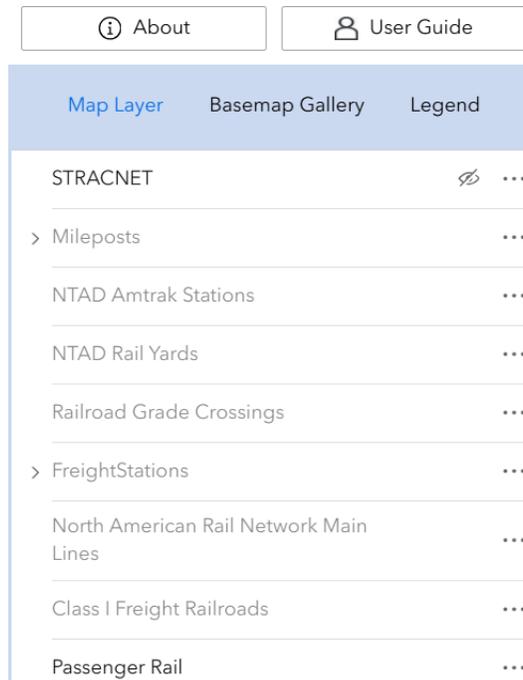
MAP CONTENT

Map Layer

The user can turn on and off the layers.

Some of the layers have sub-layers.

Some layers will not be visible until the user zooms into the map.



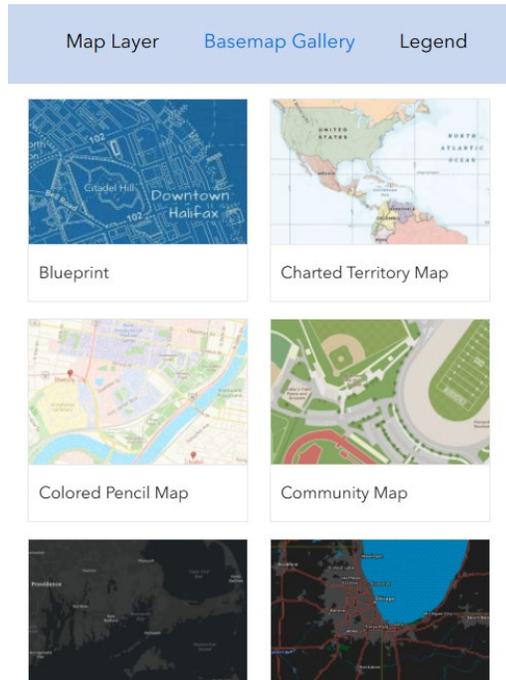
Data Available

- STRACNET
- Mileposts
 - Rail Mileposts
- NTAD Amtrak Stations
- NTAD Rail Yards
- Railroad Grade Crossings
- Freight Stations
 - Freight Stations
- North American Rail Network Main Lines
- Class I Freight Railroads
- Passenger Rail

Data Disclaimer: The FRA Mileposts is a spatial file that originates from multiple sources and contains point locations of mileposts along the rail network. The mileposts were developed from various sources and is intended for general reference purposes only. The rail lines and mileposts are privately owned and may be changed without notice. As a result, this file may not reflect current conditions. Users should contact the appropriate railroad to verify milepost numbers and their locations.

Basemap Gallery

The user can toggle between the basemaps, which are reference layers that are standard geographic maps.



Legend

The legend is dynamic, so it will only show the layers that are currently turned on and visible within the map.



Passenger Rail

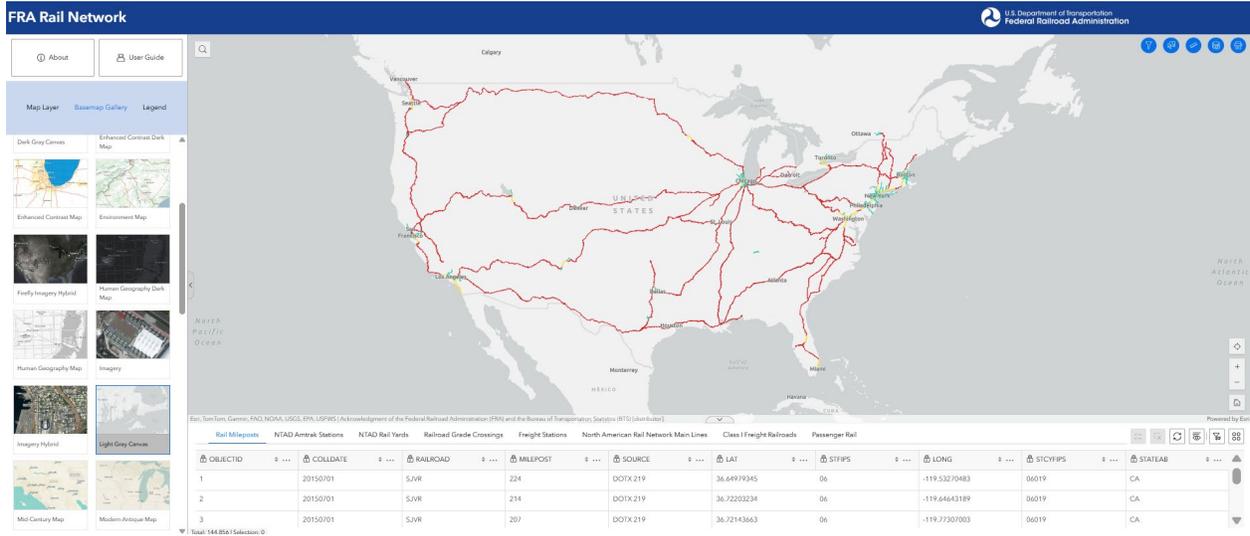
Passenger Rail

- Amtrak
- Commuter
- Amtrak & Commuter
- Intercity HSR
- Intercity HSR & Commuter
- Other

MODIFYING THE MAP

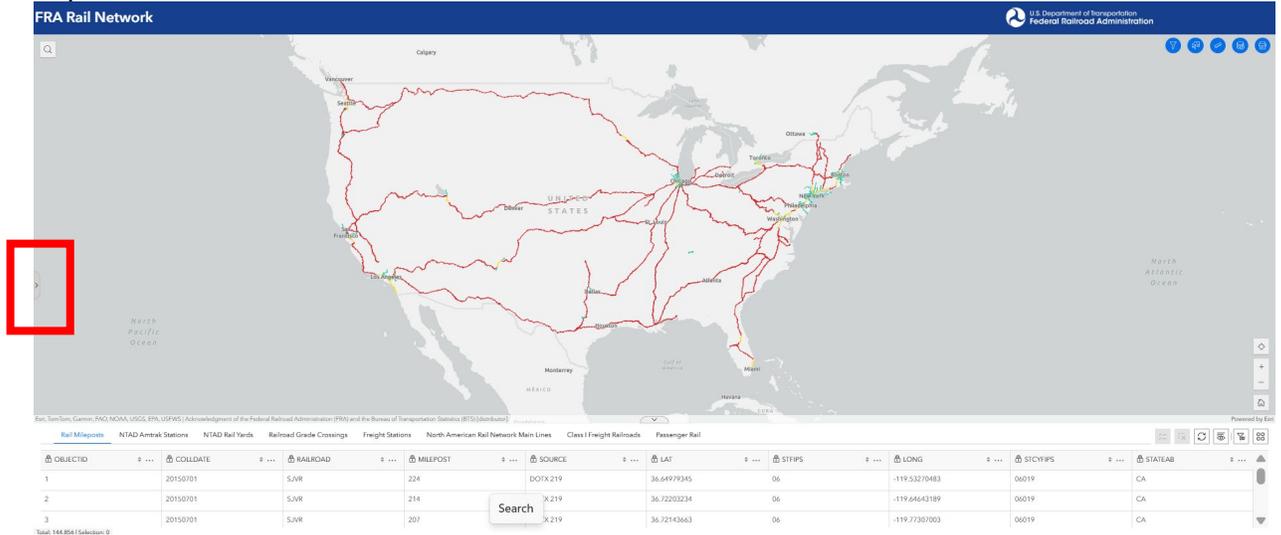
Changing the Basemap

Upon opening the application, the default basemap displayed is Light Grey Canvas, as shown in the image below.



To change the basemap:

- 1) If necessary, expand the Map Content Pane on the left-hand side by pressing the expand button.



2) Select Basemap Gallery

The screenshot shows the FRA Rail Network web application interface. The 'Basemap Gallery' menu item is highlighted with a red box. The main map area displays a light gray basemap with red lines representing the rail network. A data table is visible at the bottom of the screen.

OBJECTID	COLLDATE	RAILROAD	MILEPOST	SOURCE	LAT	STIPIS	LONG	STCYIPS	STATEAB
1	2015/0/1	SJVR	224	DOTX.219	36.64979345	06	-119.53270483	06019	CA
2	2015/0/1	SJVR	214	DOTX.219	36.72203234	06	-119.64643189	06019	CA
3	2015/0/1	SJVR	207	DOTX.219	36.72143663	06	-119.77307003	06019	CA

3) Select a new basemap, this example uses Human Geography

The screenshot shows the FRA Rail Network web application interface with the 'Human Geography Map' selected in the 'Basemap Gallery' menu, which is highlighted with a red box. The main map area now displays a detailed human geography basemap with red lines representing the rail network. The data table at the bottom is identical to the previous screenshot.

OBJECTID	COLLDATE	RAILROAD	MILEPOST	SOURCE	LAT	STIPIS	LONG	STCYIPS	STATEAB
1	2015/0/1	SJVR	224	DOTX.219	36.64979345	06	-119.53270483	06019	CA
2	2015/0/1	SJVR	214	DOTX.219	36.72203234	06	-119.64643189	06019	CA
3	2015/0/1	SJVR	207	DOTX.219	36.72143663	06	-119.77307003	06019	CA

Adding Data

The Add Data widget allows you to temporarily add data sources to the app at run time. You can add data from ArcGIS content, a URL, or local storage. You can manage and filter added data and view data in maps and tables. Importantly, you cannot save data.

The screenshot shows the 'FRA Rail Network' application interface. At the top, there is a header with the U.S. Department of Transportation Federal Railroad Administration logo. Below the header, there are navigation buttons for 'About' and 'User Guide'. The main area is divided into a map and a data table. The map shows the rail network across the United States, with major cities like Chicago, Detroit, Toronto, Boston, New York, Philadelphia, Washington, St. Louis, Dallas, and Atlanta labeled. The data table below the map has the following columns: OBJECTID, COLLDATE, RAILROAD, MILEPOST, and SOURCE. The table contains three rows of data, with the second row selected. The 'Add Data' icon is highlighted with a red box in the top right corner of the map area.

OBJECTID	COLLDATE	RAILROAD	MILEPOST	SOURCE
1	20150701	SJVR	224	DOTX 219
2	20150701	SJVR	214	DOTX 219
3	20150701	SJVR	207	DOTX 219

Search

Search for content stored as ArcGIS items. You can browse and search for data sources in your content, your groups, your organizations, and content that's shared publicly, including ArcGIS Living Atlas of the World. The layer will be added to the Map Content.



Add data

Search URL File

ArcGIS Online

Search

- World Imagery (Wayback 2018-06-06)
esri_imagery
- World Imagery (Wayback 2014-02-20)
esri_imagery
- World Imagery (Wayback 2022-06-08)
esri_imagery
- Sentinel-2 Views
esri

Add Data

There is currently no added data.

+ Click to add data

Powered by Esri

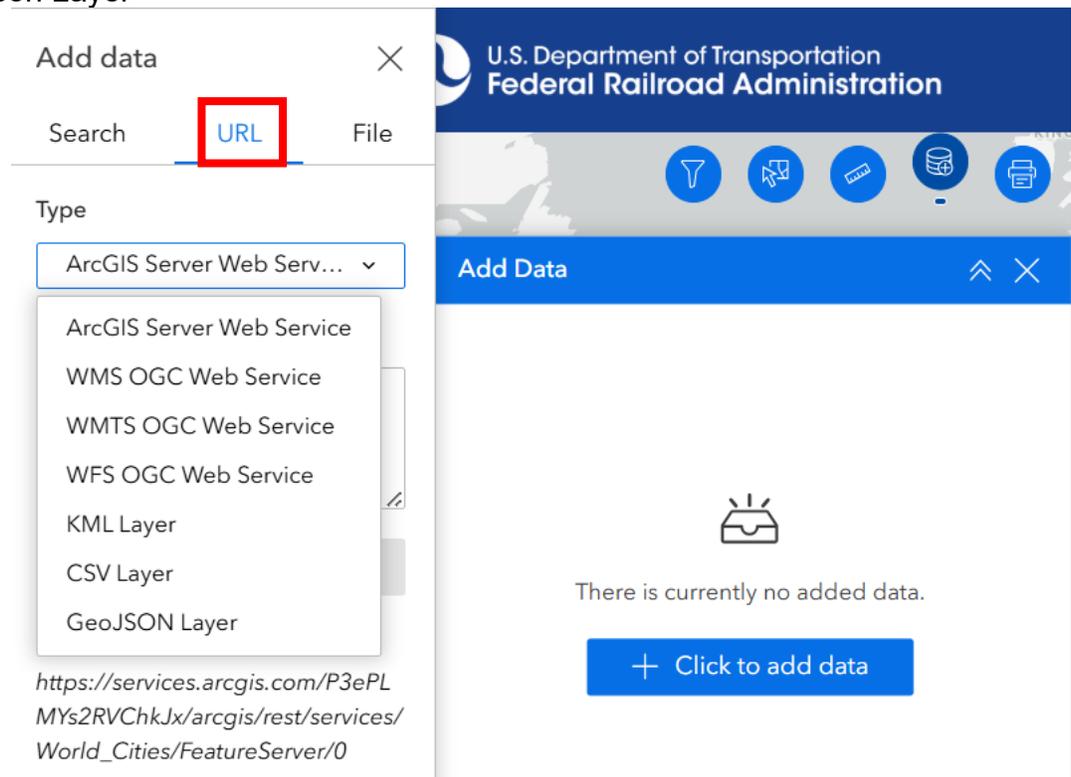
ork Main Lir >

LAT	STFIPS
36.64979345	06
36.72203234	06
36.72143663	06

URL

Add layers or web services by URL. The drop-down menu lists the types of data that you can add by URL. You must select the appropriate type to add data of that type by URL. The layer will be added to the Map Content.

- ArcGIS Server Web Service
- WMS OGC Web Service
- WMTS OGC Web Service
- WFS OGC Web Service
- KML Layer
- CSV Layer
- GeoJson Layer



Adding a layer via URL example

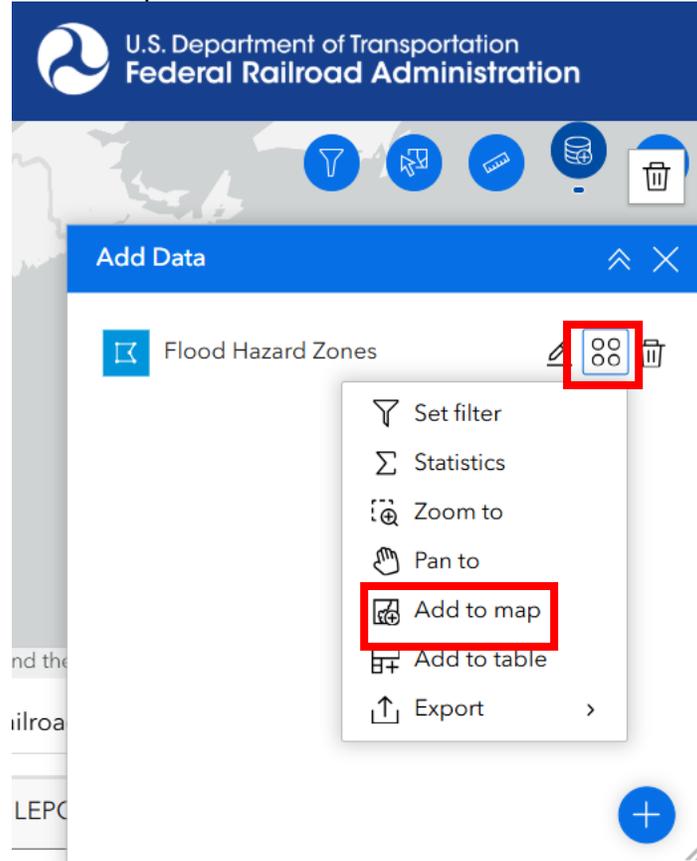
This example adds the FEMA Flood Hazard Zone Layer to the map. To add the FEMA Flood Zone Layer:

- 1) Locate the URL for the FEMA Flood Hazard Zone Service. This can typically be found using FEMA's Flood Data Viewers and Geospatial Data website.
- 2) Copy the URL
- 3) Open the application you would like to add the layer to.
- 4) As shown in previous steps, select the Add Data button, then the URL button

5) Paste the URL you copied in the URL box, then press Add and Done.

The image shows a screenshot of the 'Add data' dialog in ArcGIS. The dialog has a title bar with 'Add data' and a close button. Below the title bar are three tabs: 'Search', 'URL', and 'File'. The 'URL' tab is selected. Under the 'Type' section, a dropdown menu shows 'ArcGIS Server Web Serv...'. The 'URL' field contains the text: `https://nazaras.tema.gov/arcgis/rest/services/FIRMette/NFHLREST_FIRMette/MapServer/20`. Below the URL field is a blue 'Add' button. Underneath, there is a 'Sample URL' section with the text: `https://services.arcgis.com/P3ePLMYs2RVChkIx/arcgis/rest/services/World_Cities/FeatureServer/0`. At the bottom of the dialog, it says '1 Selected' and there is a blue 'Done' button. The background shows the 'U.S. Department of Transportation Federal Railroad Administration' interface with an 'Add Data' panel that says 'There is currently no added data.' and a '+ Click to add data' button.

- 6) Your layer should now appear under the Add Data Panel. Select the four dots, then select Add to map



- 7) The Flood Hazard Zones layer should now be visible in your Map Layers panel but you may need to zoom in to view it on the map.

FRA Rail Network

[About](#) [User Guide](#)

[Map Layer](#) [Basemap Gallery](#) [Legend](#)

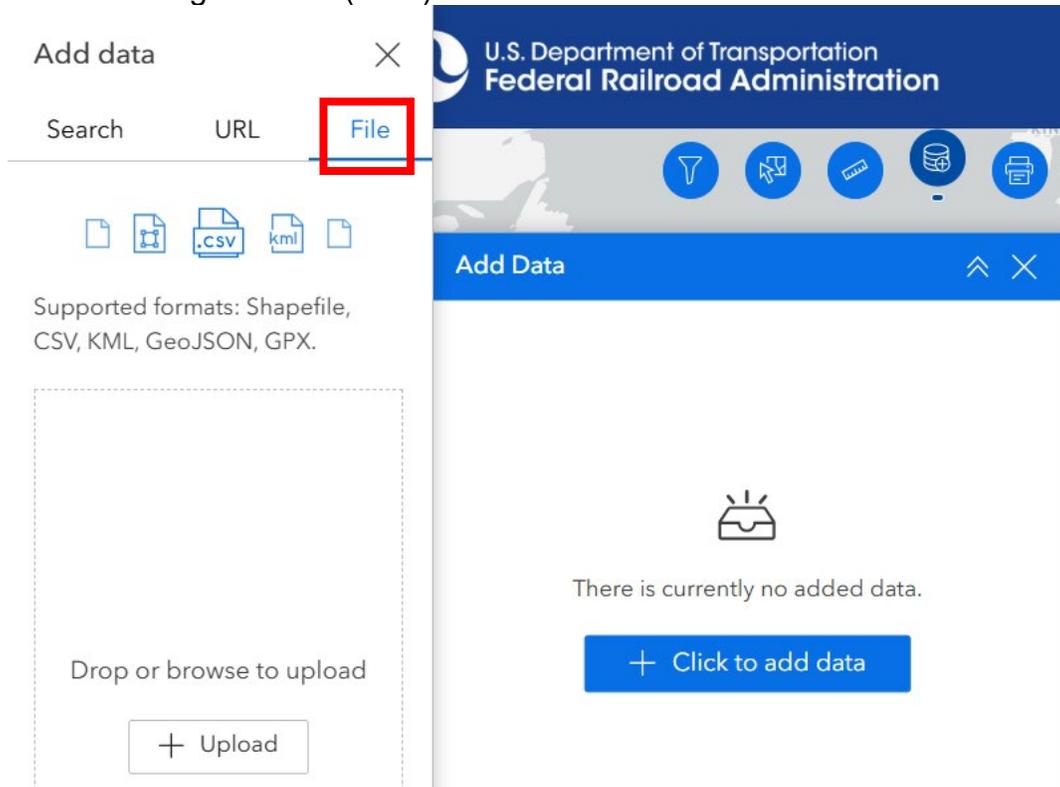
- Flood Hazard Zones ...
- STRACNET  ...
- > Mileposts ...
- NTAD Amtrak Stations ...
- NTAD Rail Yards ...
- Railroad Grade Crossings ...
- > FreightStations ...
- North American Rail Network Main Lines ...
- Class I Freight Railroads ...
- Passenger Rail ...

File

Add data by dragging files to the widget or by browsing local storage. Currently, you can upload data in the following formats: CSV, GeoJSON, KML, GPX, and shapefile.

The layer will be added to the Map Content. Locate the file you want to import.

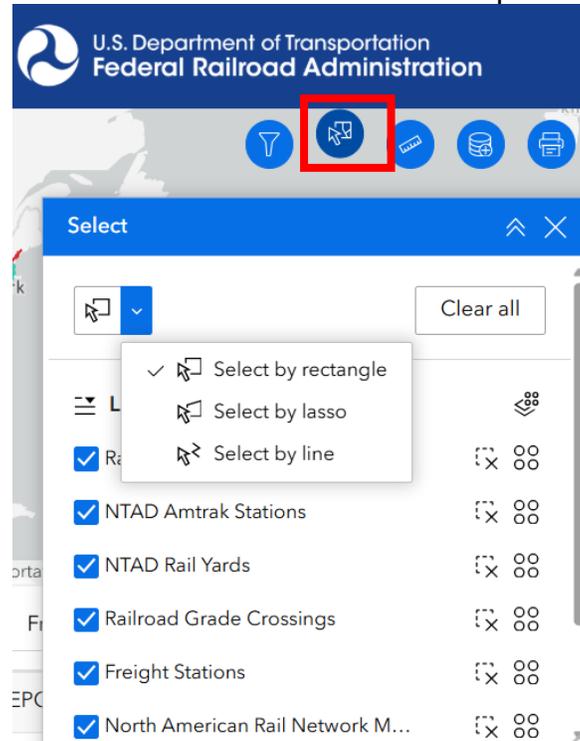
- Zipped Shapefile
- CSV up to 10 MB
- KML
- GeoJSON
- GPS Exchange Format (GPX)



WORKING WITH THE LAYERS

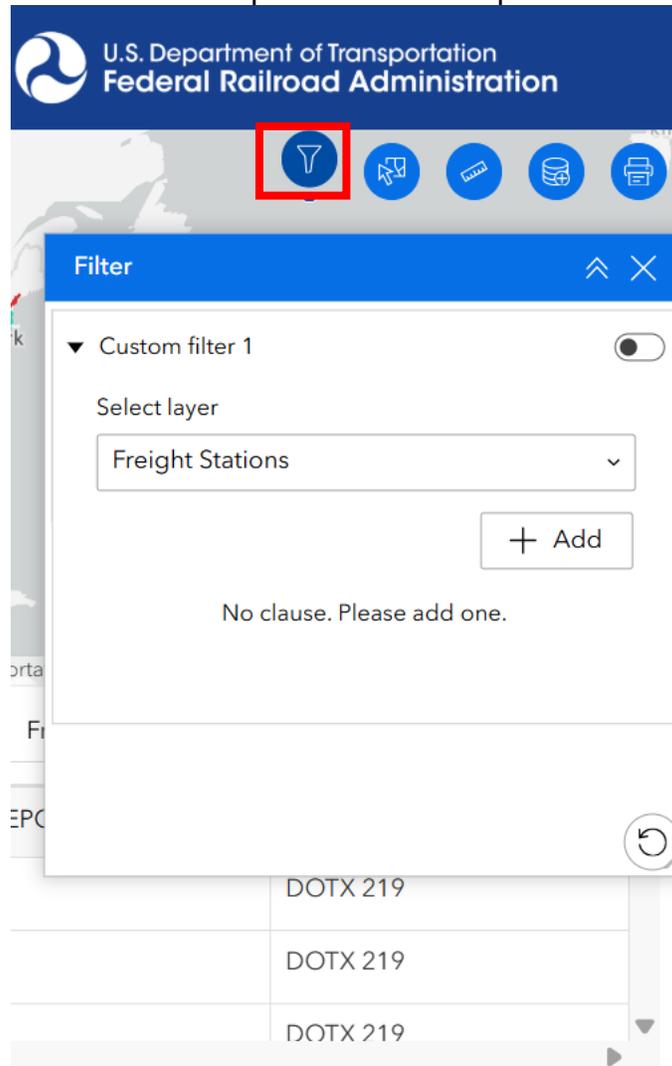
Select Tool

The Select tools users allows to select features on the map.



Filter Tool

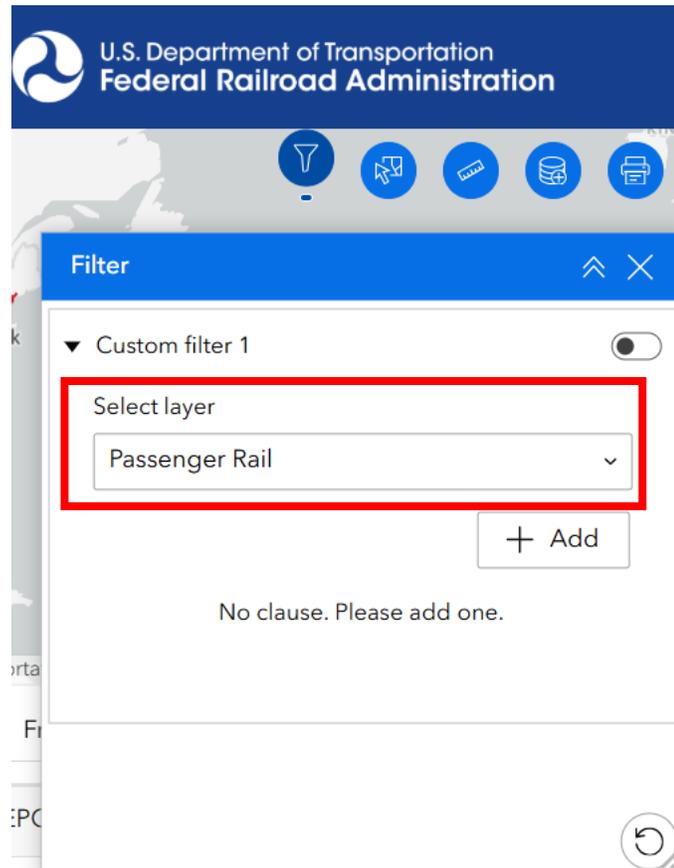
Users can select a specific layer and query specific attributes of that layer. The user also has the ability to add additional queries for more specific information.



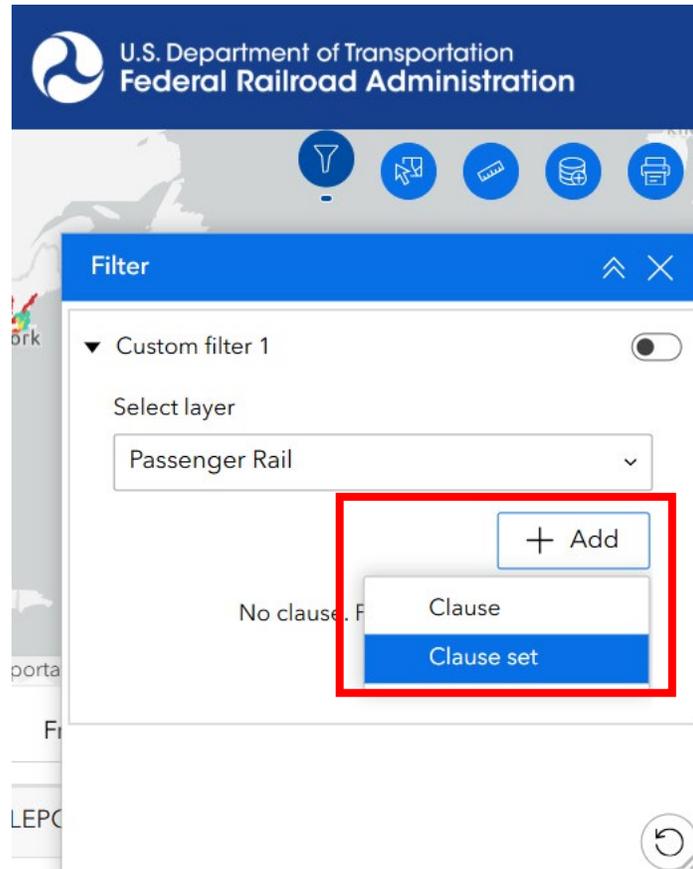
Filtering a layer example

This example filters the Passenger Rail layer. Let's say instead of viewing all Passenger Rail lines on the map, you only wanted to view the lines that are in FRA District 1 or District 2. To do that, follow the steps below:

- 1) As shown in the previous image, press the filter button
- 2) In the filter box, use the drop-down arrow to change the Select layer to Passenger Rail



- 3) Select the Add button then select Add Clause Set. (We add a clause set because we want to see Passenger Rail lines in District 1 or District 2. If we only wanted to see Passenger Rail lines in District 1, we would select Add a Clause instead).



- 4) In the Filter box, change AND to OR. For both clauses, use the drop-down to change the filtered field to FRADistrict, and change the Source type to Unique.

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Filter

Passenger Rail

+ Add

AND OR

123 FRADISTRCT is

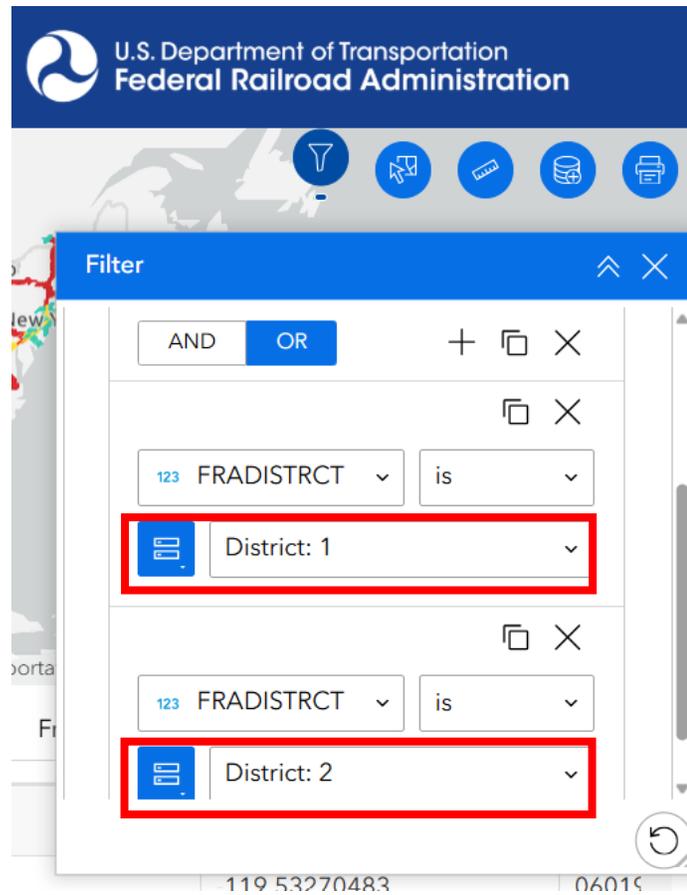
- All -

Select source type

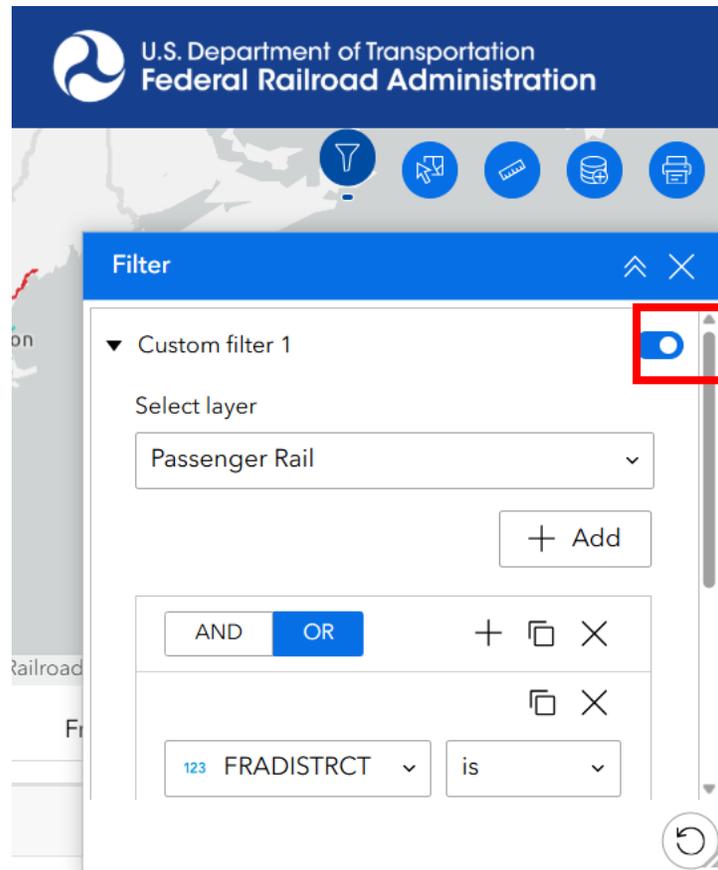
- User input
- Field
- ✓ Unique

270483	06015
643189	06015

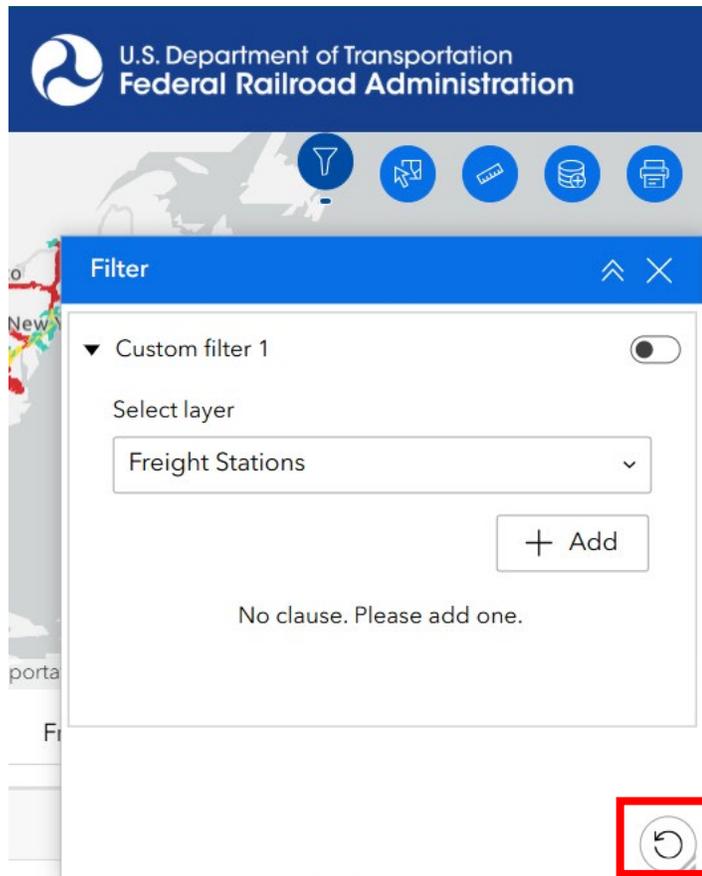
- 5) For the first clause, change All to District: 1 and for the second clause, change All to District: 2



- 6) Scroll back up to the top of the filter box and apply your filter by toggling the button on. Your map should now only display Passenger Rail lines that are in FRA District 1 or 2.



- 7) To delete your filter, press the Reset all filters button in the lower right-hand corner.



WORKING WITH THE DATA

The table at the bottom of the application displays all data by default, but if specific data is selected or filtered, it shows only that data.

OBJECTID	COLLDATE	RAILROAD	MILEPOST	SOURCE
1	20150701	SJVR	224	DOTX 219
2	20150701	SJVR	214	DOTX 219
3	20150701	SJVR	207	DOTX 219
4	20150701	SJVR	209	DOTX 219

Total: 144,337 | Selection: 0

a. Options with the Data

- a. Refresh
- b. Show/Hide Columns
- c. Filter by the connected map extent
- d. Statistics
- e. Zoom to
- f. Pan to
- g. Export:
 - JSON,
 - CSV,
 - GeoJSON
 - Item.

Please note that the Freight Stations and the Mileposts are not downloadable for copyright reasons.

- h. Selected
 - Statistics
 - Zoom to
 - Pan to
 - Show on map
 - Show pop-up
 - View in table
 - Export

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Selected (1)

- Statistics
- Zoom to
- Pan to
- Show on map
- Show pop-up
- View in table
- Export
- All data (241762)
- Statistics
- Zoom to

Rail Mileposts **Railroad Grade Crossings** Freight Stations North American Rail Network Main Lines

AAADT	AAADTYEAR	ACC_LINK	CITYCD	CITYNAME
		View	010732510	PLEASANT GROVE
		View	010731717	HUEYTOWN
		View	010732180	MULGA
		View	010732510	PLEASANT GROVE

Total: 241,762 | Selection: 1