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Schematic Mapping for Railroads

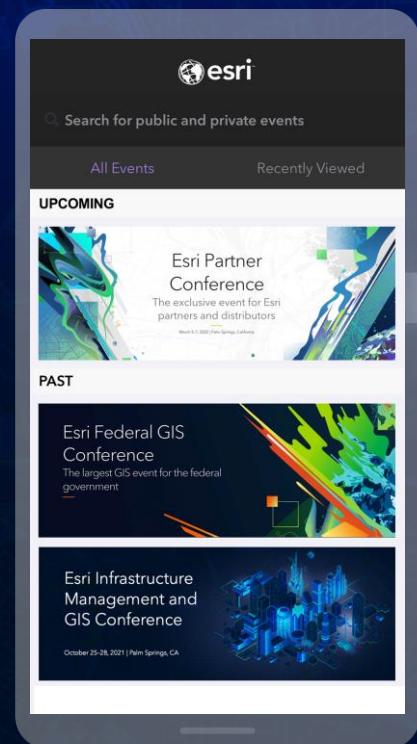
Jim Barry

 @JimBarry

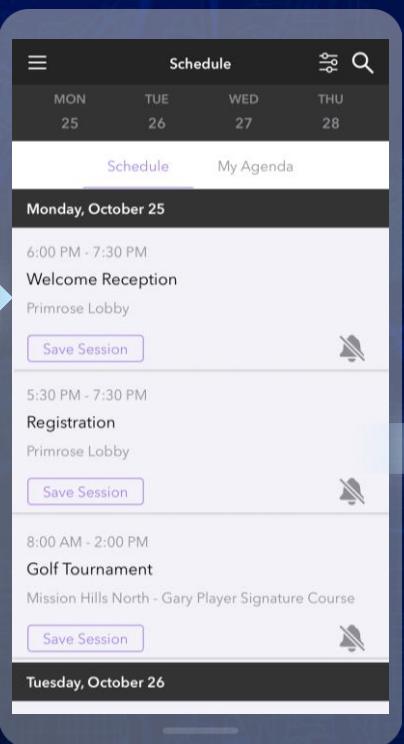


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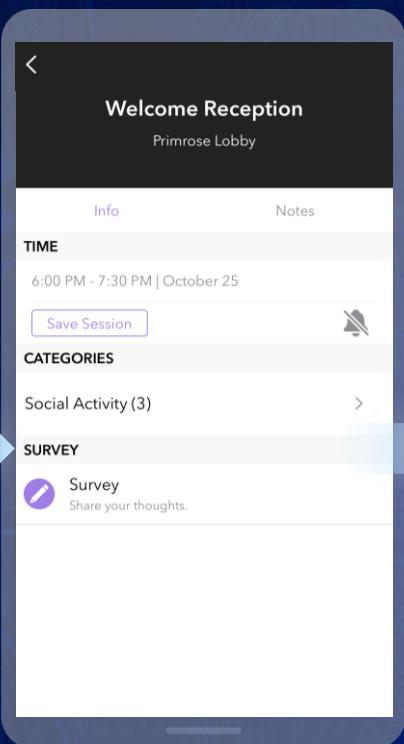
Download the Esri Events app and find your event



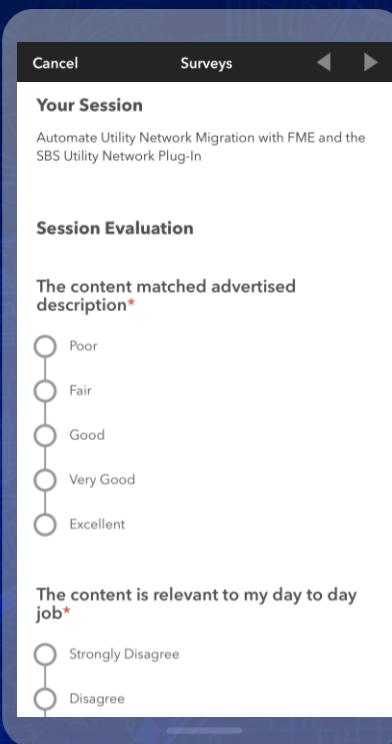
Select the session you attended



Scroll down to "Survey"



Log in to access the survey



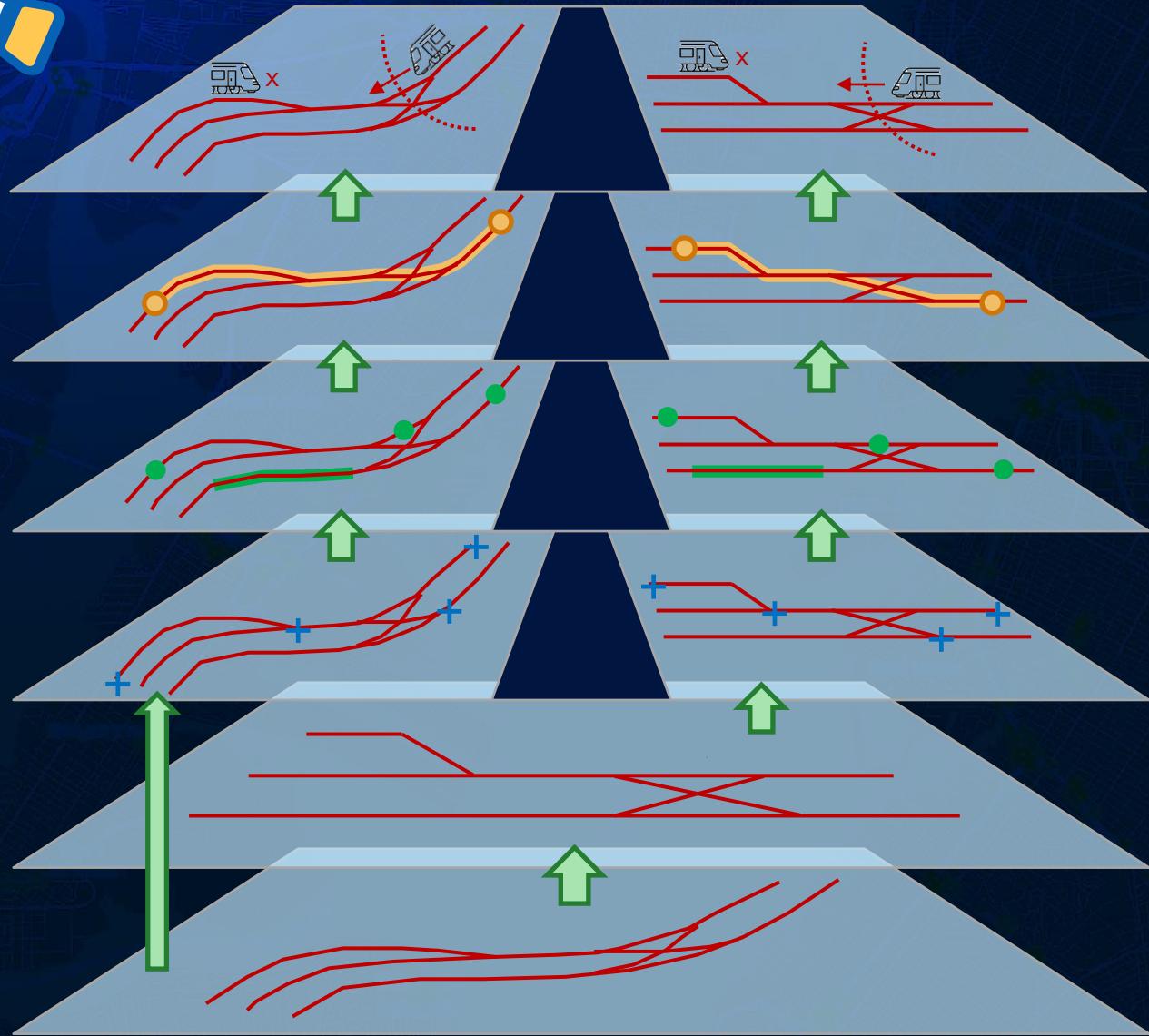
Schematic Mapping for Railroads

Agenda

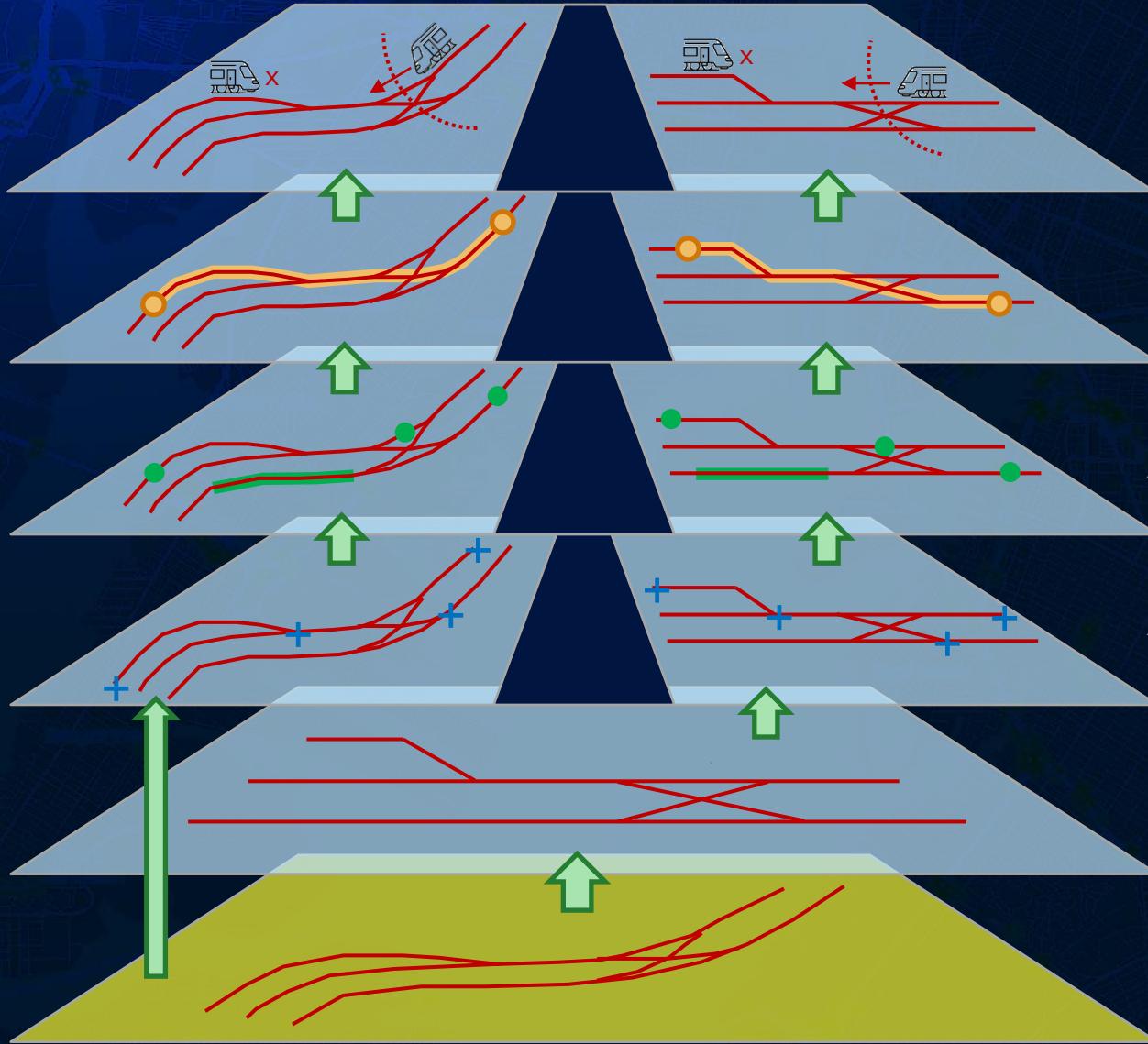
- Why schematic maps for rail?
- Track Charts
- Trace Networks
- Network Diagram Layout tools
- Editing schematic maps
- Linear Referencing
- Resources for your success



Railroads and ArcGIS



Railroads and ArcGIS



Live train movement and geofences

Routing and tracing using Utility Network



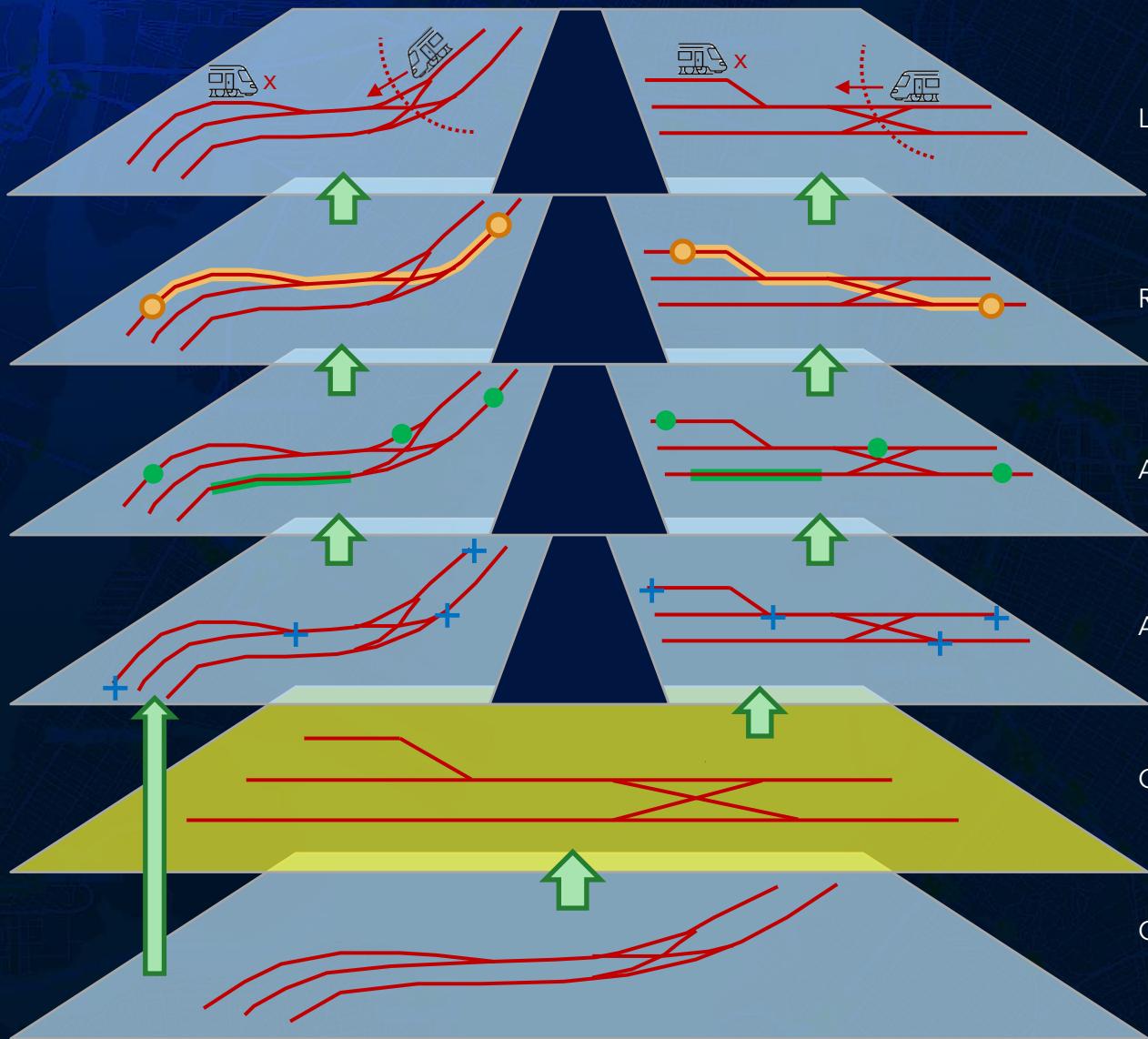
Add and manage point and linear events on the LRS

Apply and update LRS onto the Geographic and Schematic

Generate schematic diagram, using network attributes, templates

Geographic data, edit, visualize, analyze

Railroads and ArcGIS



Live train movement and geofences

Routing and tracing using Utility Network

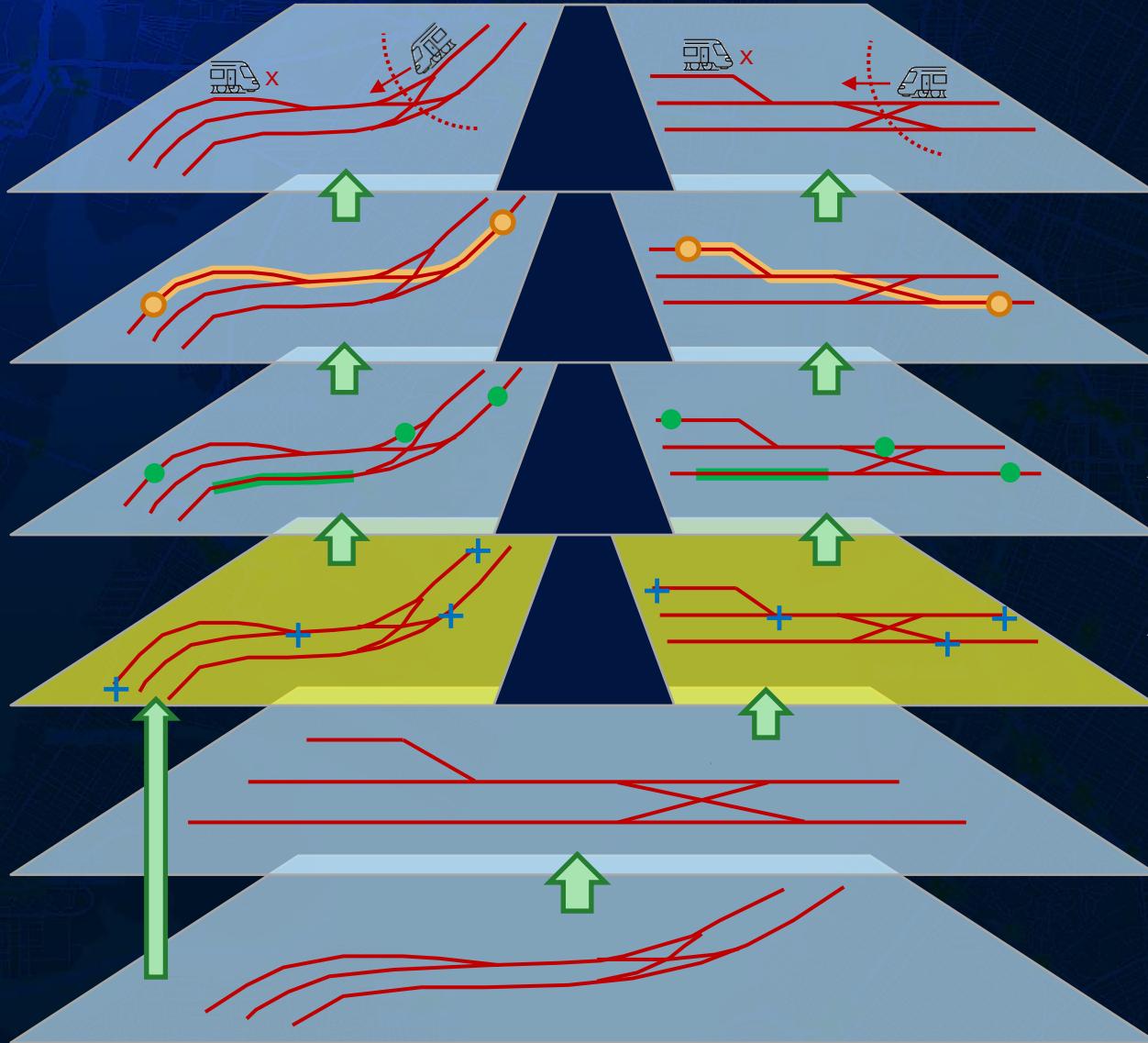
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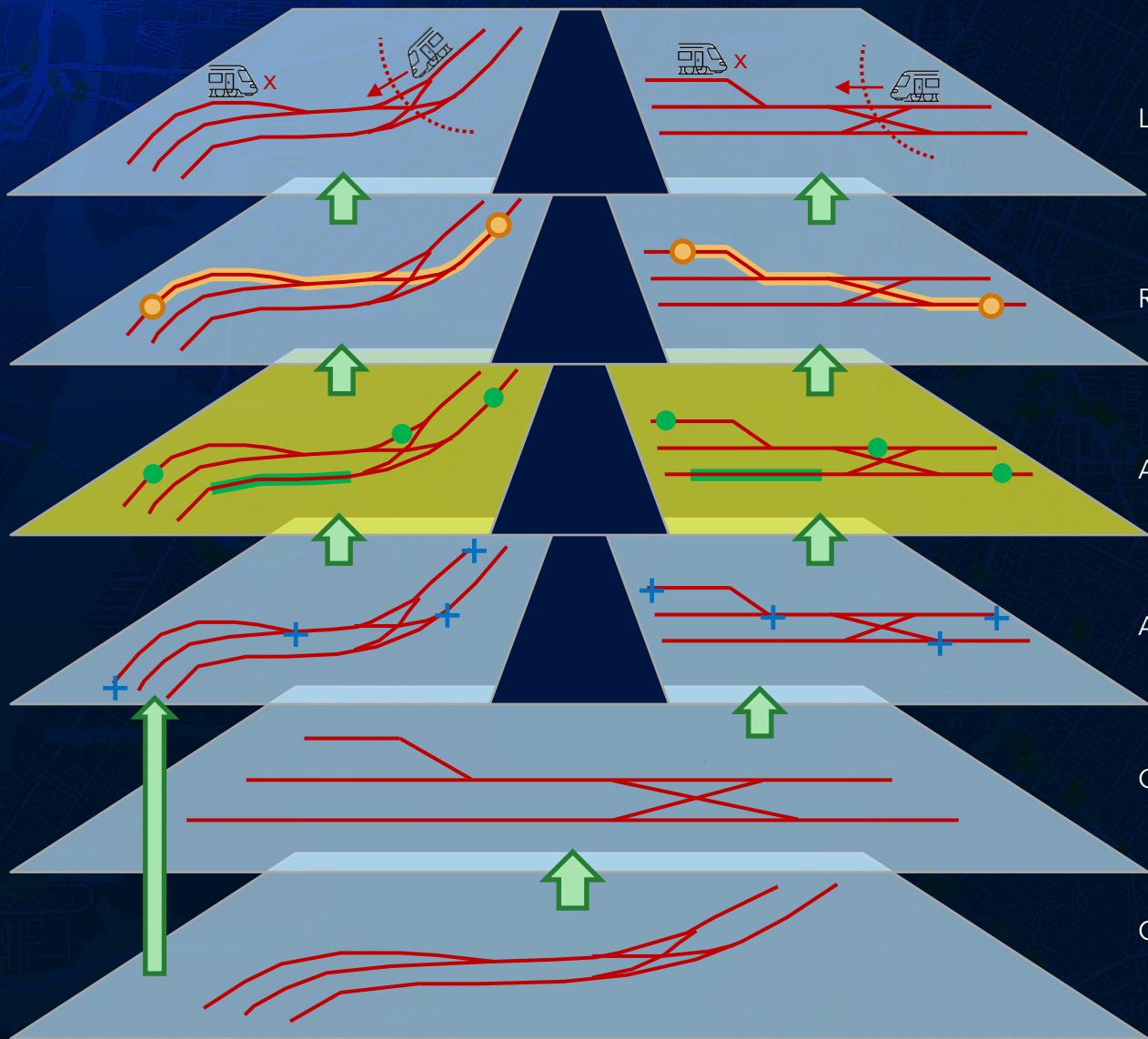
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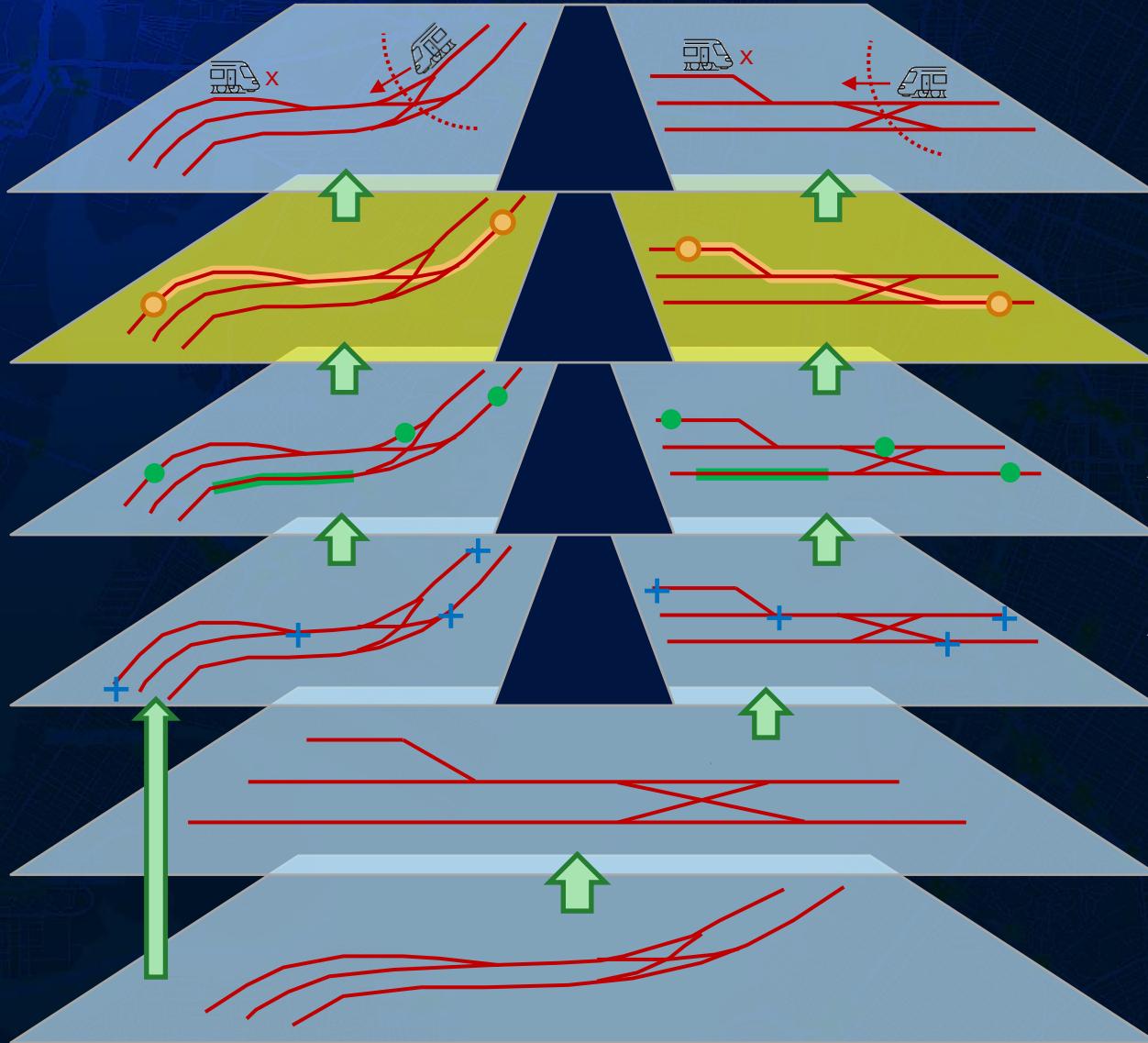
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Live train movement and geofences

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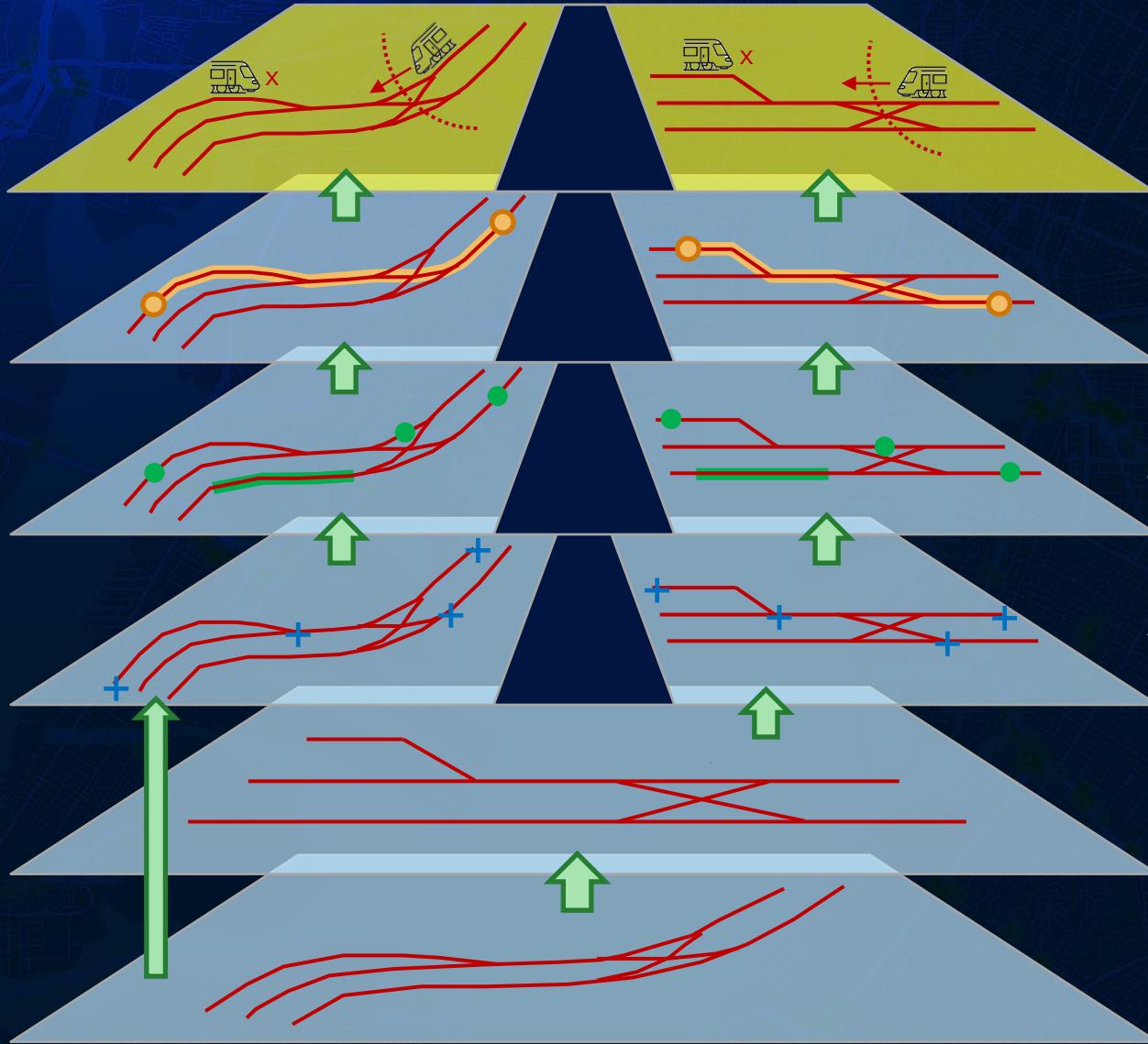
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Apply and update LRS onto the Geographic and Schematic

Generate schematic diagram, using network attributes, templates

Geographic data, edit, visualize, analyze

Railroads and ArcGIS



Live train movement and geofences

Routing and tracing using Utility Network



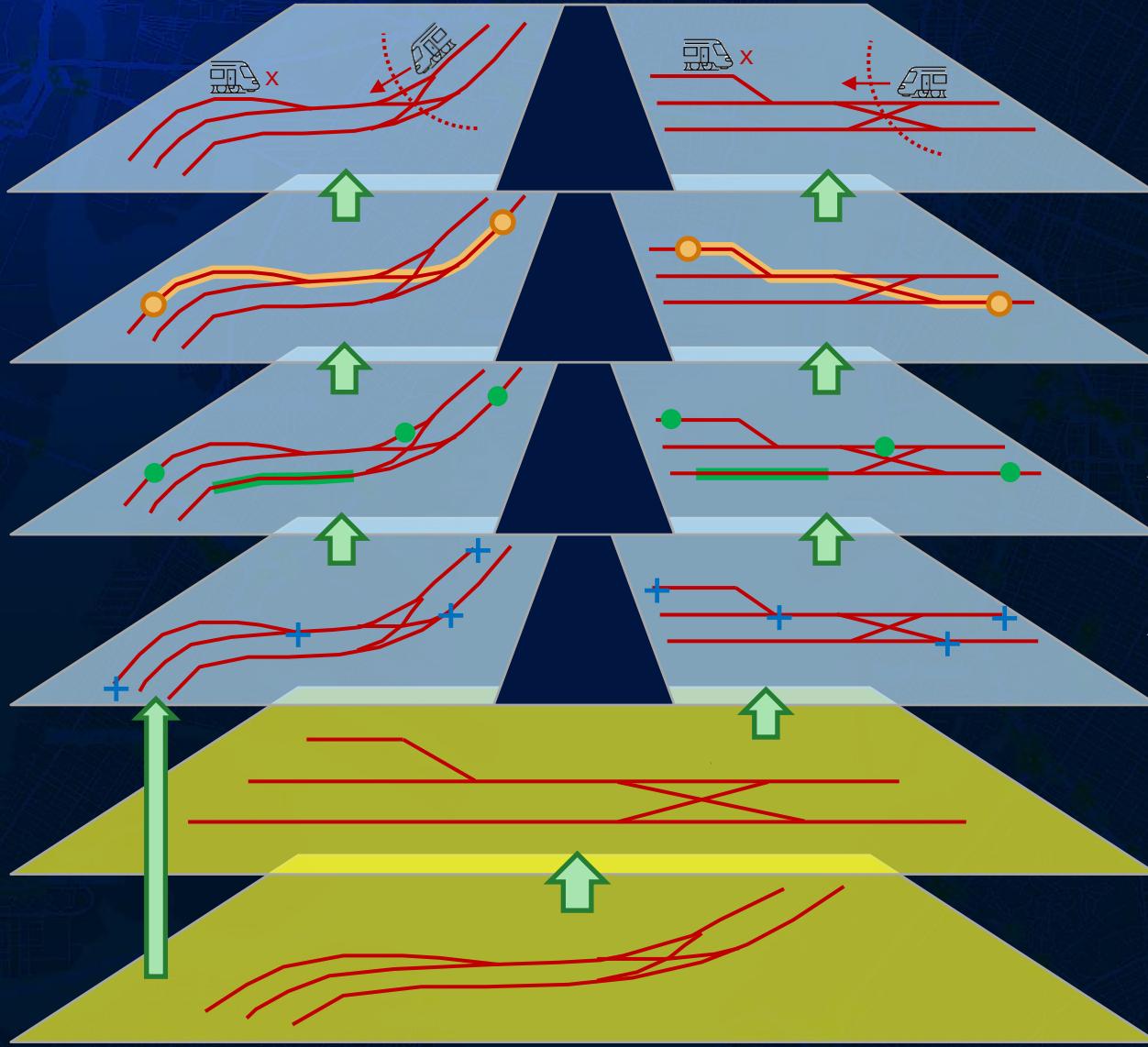
Add and manage point and linear events on the LRS

Apply and update LRS onto the Geographic and Schematic

Generate schematic diagram, using network attributes, templates

Geographic data, edit, visualize, analyze

Railroads and ArcGIS



Live train movement and geofences

Routing and tracing using Utility Network

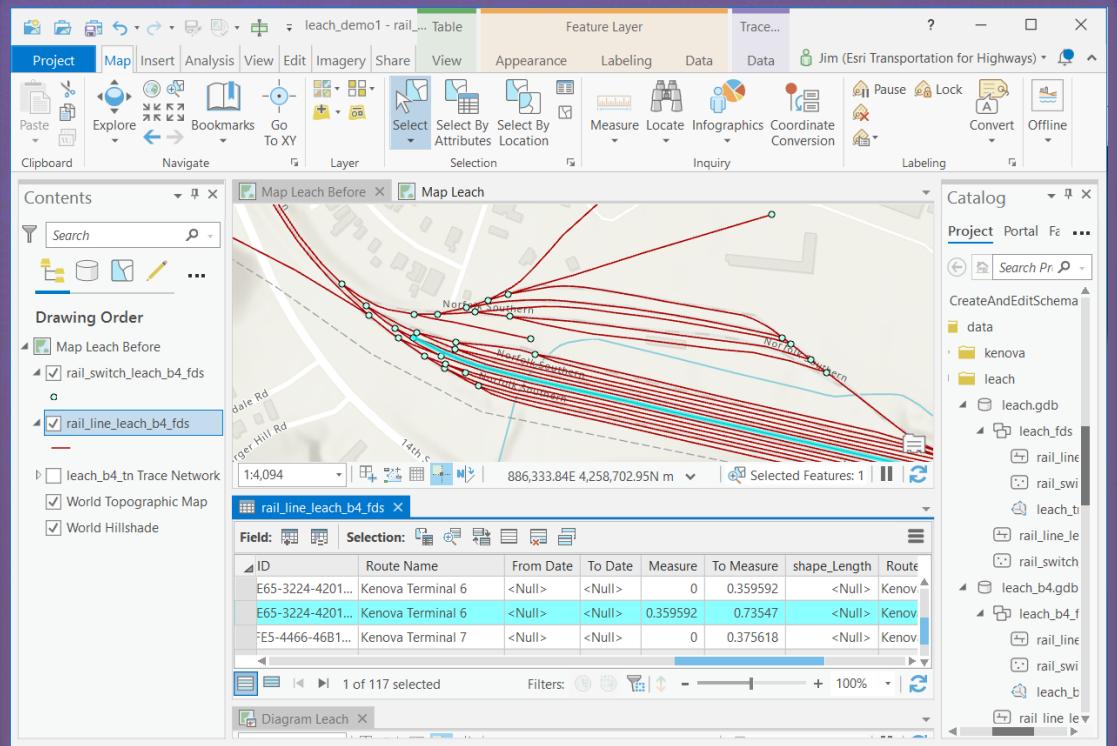
Add and manage point and linear events on the LRS

Apply and update LRS onto the Geographic and Schematic

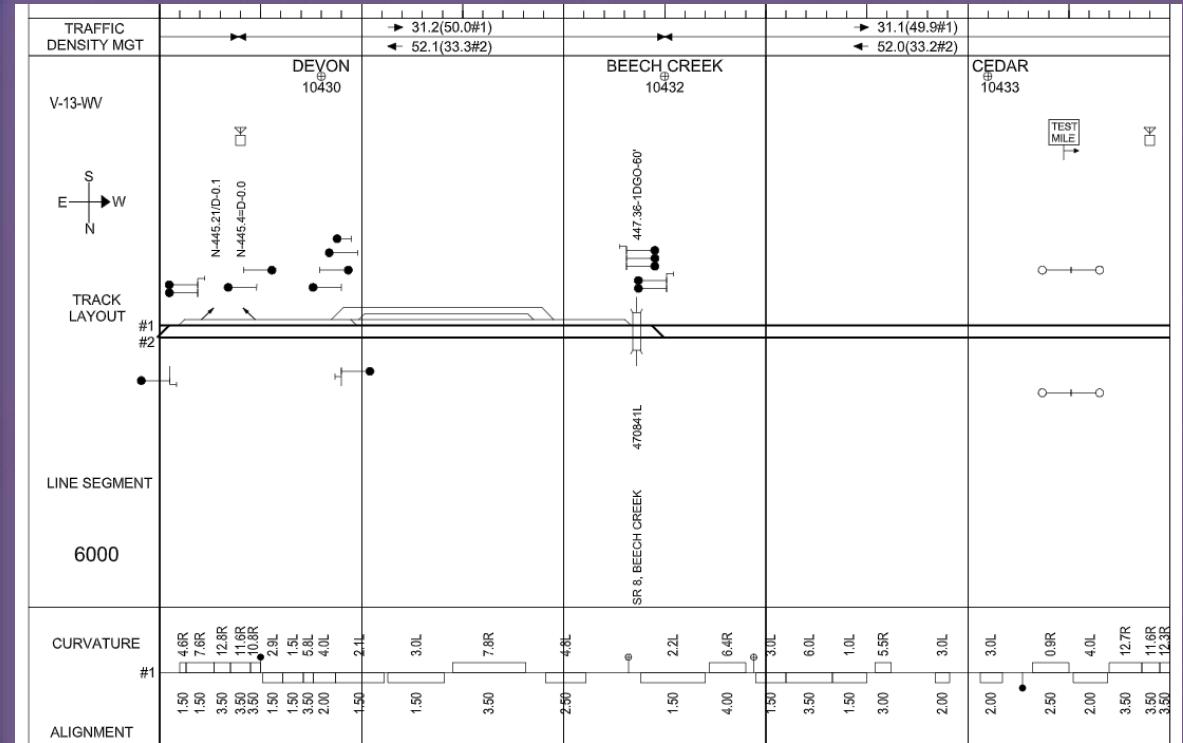
Generate schematic diagram, using network attributes, templates

Geographic data, edit, visualize, analyze

Geographic



Schematic

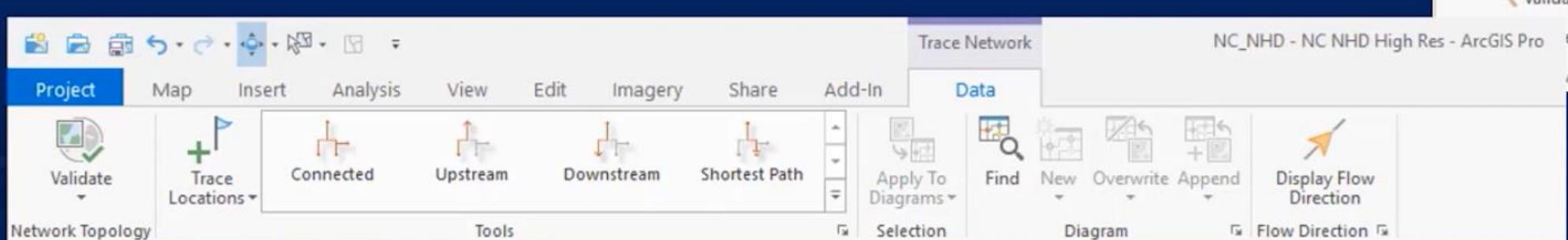
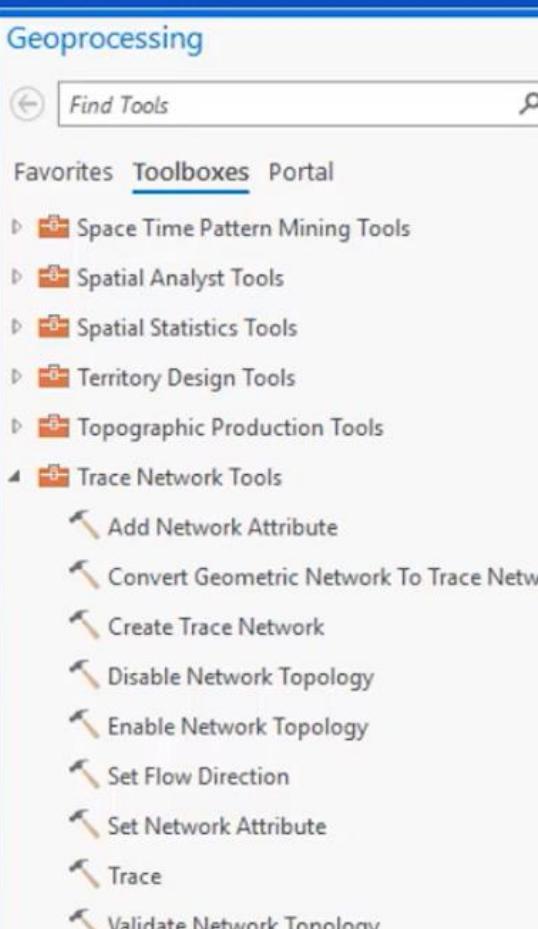


ArcGIS Pro

Track Charts

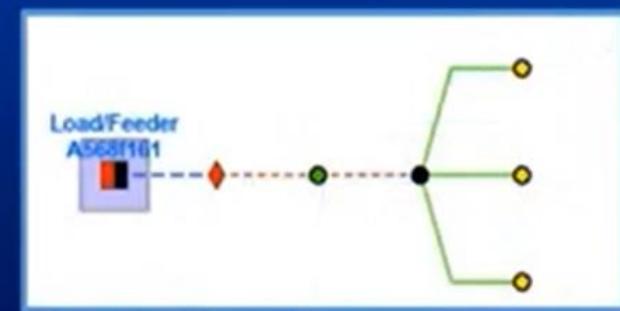
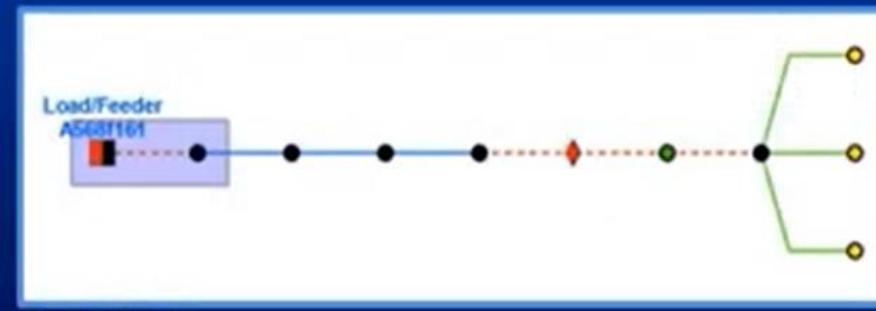
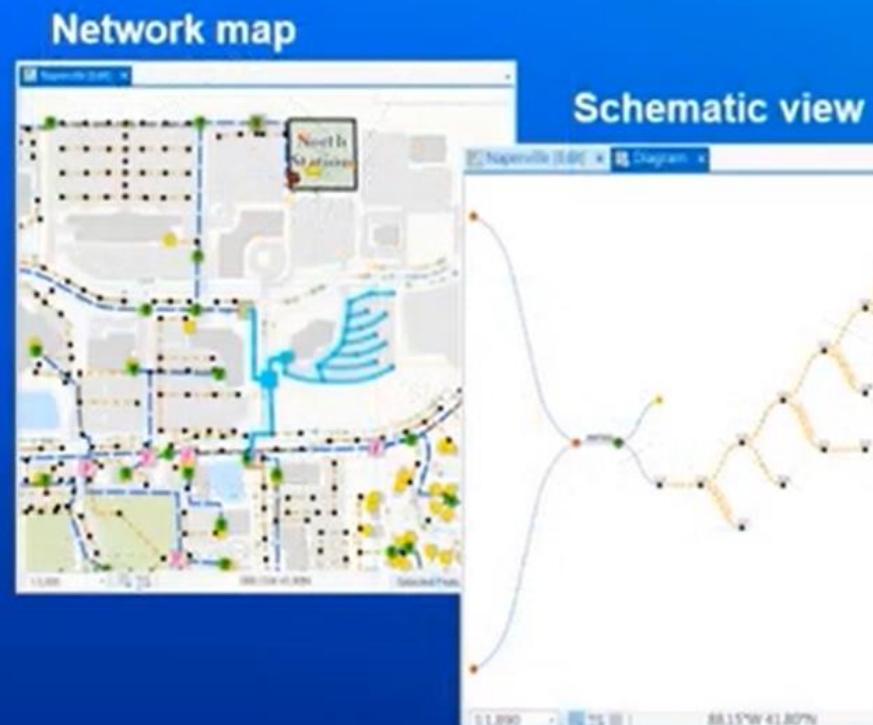
Trace Network

- Simplified network experience for non-utility customers
 - Beta tested with USGS and other government agencies for hydrology
 - Also applicable for rail, social network models, and other non-utility disciplines
- Path forward for geometric network users looking to move to ArcGIS Pro
 - Designed to address the most common geometric network workflows while also providing additional capabilities



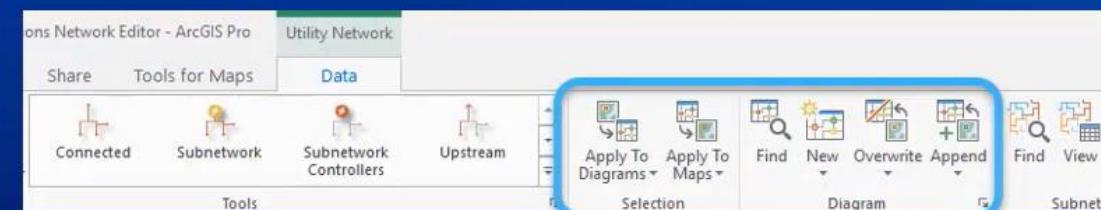
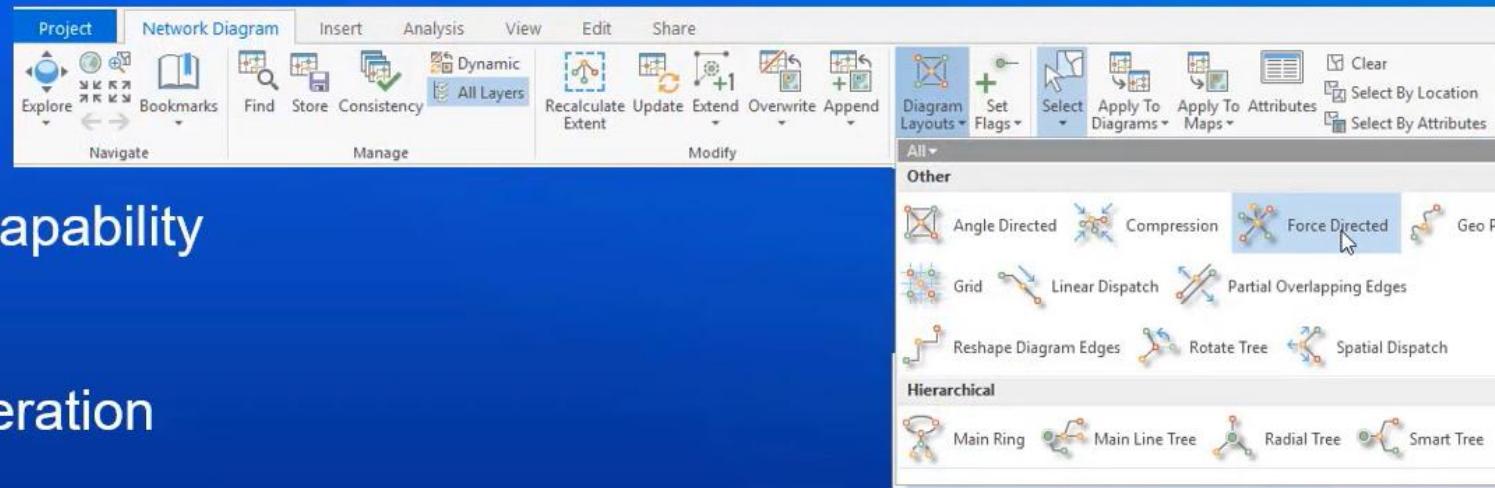
About Network Diagrams

- Allows users to easily create simplified views of the network
- Available as part of the Utility Network and Trace Network
- Consumes the network topology



Network Diagrams in Utility Networks and Trace Networks

- Use layout algorithms
- Allow manual editing
- Use layer appearance and labelling capability
- Stored in the database
- Created from traces executed at generation and update
- Updated based on the data changes while preserving layout



Trace Network

leach_demo1 - Map Leach Before - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share Data Selection Inquiry Labeling Offline

Cut Copy Paste Copy Path Clipboard Navigate Layer

Add Preset Add Graphics Layer Basemap Go To XY Bookmarks Explore Select By Attributes Select By Location Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Sync Remove

Contents Search Drawing Order

- Map Leach Before
- Light Gray Reference
- rail_switch_leach_b4_fds
- rail_line_leach_b4_fds
- Light Gray Base

Map Leach Before X Map Leach

Window Snip

DEM

1:29,065 82.5505620°W 38.3658134°N Selected Features: 0

Leach Schematic X

Catalog Project Portal Favorites

Search Project

- Maps
- Toolboxes
- Databases
- Styles
- Folders
 - demo1
 - CreateAndEditSchematic2
 - data
 - json_exports
 - kenova
 - leach
 - leach.gdb
 - leach_fds
 - leach_tn
 - rail_line_leach_fds
 - rail_switch_leach_fds
 - leach_lines_exported
 - leach_switch_exported
 - rail_line_leach_base
 - rail_switch_leach_base
 - leach_b4.gdb
 - restore
 - projects

Catalog Geoprocessing

The screenshot shows a map titled "Map Leach Before" in ArcGIS Pro. The map displays a network of roads and railroads. A prominent red line represents a rail route, with several green circular markers along its path, likely indicating specific locations of interest or data points. A large red text overlay "DEMO" is centered on the map. The ArcGIS Pro ribbon menu is visible at the top, with "Trace Network" selected. The "Data" tab is active, showing various selection and analysis tools. The "Catalog" pane on the right lists project items like "Maps", "Toolboxes", and "Databases", along with specific layers such as "rail_switch_leach_b4_fds" and "rail_line_leach_b4_fds". The bottom status bar shows coordinates (82.5505620°W, 38.3658134°N) and a scale of 1:29,065.

leach_demo1 - rail_line_leach_b4_fds - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share View Data Trace Network

Cut Copy Paste Copy Path Clipboard Explore Bookmarks Go To XY Basemap Add Preset Add Graphics Layer Select By Attributes Select By Location Select Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Sync Remove Offline

Contents Search Drawing Order Map Leach Before rail_switch_leach_b4_fds rail_line_leach_b4_fds Light Gray Base

Map Leach Before Map Leach

1:5,000 82.5928836°W 38.3476206°N Selected Features: 0

Field: Add Calculate Selection: Select By Attributes Zoom To Switch Clear Delete Copy

id	To Measure	shape_Length	RouteName2	NetAttribs	Flow direction	Flow direction	Flow direction	Shape_Length	Flow direction	Flow direction	
0	0.043326	<Null>	NS62 Main 1 7.97 Spur 5		6	With digitized	With digitized	With digitized	69.727166	With digitized	With digitized
6	0.241964	<Null>	NS62 Main 1 7.97 Spur 5		7	With digitized	With digitized	With digitized	319.676249	With digitized	With digitized
4	0.428237	<Null>	NS62 Main 1 7.97 Spur 5		7	With digitized	With digitized	With digitized	299.778517	With digitized	With digitized
0	0.015886	<Null>	Braskem PP Spur Cross...		8	With digitized	With digitized	With digitized	25.565921	With digitized	With digitized
8	0.214466	<Null>	NS62 Main 1 7.97 Spur 6		9	With digitized	With digitized	With digitized	319.484103	With digitized	With digitized
6	0.386057	<Null>	NS62 Main 1 7.97 Spur 6		9	With digitized	With digitized	With digitized	276.149175	With digitized	With digitized
0	0.015948	<Null>	NS62 Main 1 7.97 Spur 6		8	With digitized	With digitized	With digitized	25.665955	With digitized	With digitized
0	0.040387	<Null>	Braskem PP Spur Cross...		10	With digitized	With digitized	With digitized	64.996232	With digitized	With digitized
0	0.024146	<Null>	Braskem PP Spur Cross...		12	With digitized	With digitized	With digitized	38.858707	With digitized	With digitized
1	0.25642	<Null>	NS62 Main 1 7.97 Spur 8		11	With digitized	With digitized	With digitized	216.729108	With digitized	With digitized
2	0.452953	<Null>	NS62 Main 1 7.97 Spur 8		11	With digitized	With digitized	With digitized	316.290115	With digitized	With digitized
0	0.019002	<Null>	Braskem Spur Crossover...		12	With digitized	With digitized	With digitized	30.580328	With digitized	With digitized
5	0.436875	<Null>	NS62 Main 1 7.97 Spur 9		13	With digitized	With digitized	With digitized	288.265514	With digitized	With digitized

0 of 117 selected Filters: - + 100% |

Leach Schematic

Catalog Project Portal Favorites Search Project Maps Toolboxes Databases Styles Folders demo1 CreateAndEditSchematic2 data json_exports kenova leach leach.gdb leach_b4.gdb leach_b4_fds rail_line_leach_b4_base rail_switch_leach_b4_base restore projects mapdata Locators Catalog Create F... Geopro... Modify...

Trace Network

leach_demo1 - Map Leach Before - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share Data Selection Inquiry Labeling Offline

Cut Copy Paste Copy Path Clipboard Explore Bookmarks Go To XY Basemap Add Preset Add Graphics Layer Select By Attributes Select By Location Attributes Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Sync Remove

Contents Search Drawing Order

Map Leach Before Light Gray Reference rail_switch_leach_b4_fds rail_line_leach_b4_fds Light Gray Base

Map Leach

Geoprocessing Find Tools Favorites Toolboxes Portal Update Diagram Parcel Tools Server Tools Space Time Pattern Mining Tools Spatial Analyst Tools Spatial Statistics Tools Territory Design Tools Topographic Production Tools Trace Network Tools Trace Configuration Add Network Attribute Convert Geometric Network To Trace Create Trace Network Disable Network Topology Enable Network Topology Set Flow Direction Set Network Attribute Trace Validate Network Topology Utility Network Tools Workflow Manager Tools

Leach Schematic

1:4,889 82.5941617°W 38.3477280°N Selected Features: 0 Catalog Geoprocessing

A large red 'X' is drawn across the central map area and both the 'Geoprocessing' and 'Toolbars' panes, indicating a significant issue or bug in the software's functionality.

leach_demo1 - Map Leach - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share Appearance Labeling Data Data

Cut Copy Paste Copy Path Clipboard Explore Bookmarks Go To XY Basemap Add Preset Add Graphics Layer Select Select By Attributes Select By Location Attributes Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Sync Remove

Contents Map Leach Before Map Leach X

Search Drawing Order NetAttrs

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

leach_tn Trace Network

Point Errors

Line Errors

System Junctions

Dirty Areas

Point Errors

Line Errors

System Junctions

Dirty Areas

Map Leach Before

Map Leach X

Geoprocessing

Find Tools

Favorites Toolboxes Portal

- Update Diagram
- Parcel Tools
- Server Tools
- Space Time Pattern Mining Tools
- Spatial Analyst Tools
- Spatial Statistics Tools
- Territory Design Tools
- Topographic Production Tools
- Trace Network Tools
 - Trace Configuration
 - Add Network Attribute
 - Convert Geometric Network To Trace
 - Create Trace Network
 - Disable Network Topology
 - Enable Network Topology
 - Set Flow Direction
 - Set Network Attribute
 - Trace
 - Validate Network Topology
- Utility Network Tools
- Workflow Manager Tools

Selected Features: 0

1:5,000 884,884.85E 4,253,363.39N m

Leach Schematic X

Catalog Geoprocessing

A screenshot of the ArcGIS Pro application interface. The main window displays a map titled 'Map Leach' with several network layers shown as colored lines (blue, green, orange, pink) and nodes. A red arrow points from the 'Point Errors' section in the legend on the left to a specific location on the map where a blue line segment has a red dot indicating an error. The 'Trace Network' tools section in the geoprocessing pane is also circled in red.

leach_demo1 - Map Leach - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share Appearance Labeling Data Data

Cut Copy Paste Copy Path Clipboard Explore Bookmarks Go To XY Basemap Add Preset Add Graphics Layer Select Select By Attributes Select By Location Attributes Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Sync Remove

Contents Map Leach Before Map Leach

Search Drawing Order NetAttrs

1
2
3
4
5
6
7
8
9
10
11
12
13
14

leach_tn Trace Network

- Point Errors
- Point Errors
- Line Errors
- Line Errors
- System Junctions
- System Junctions
- Dirty Areas
- Dirty Areas
- World Topographic M...

1:5,000 885,116.63E 4,253,340.11N m Selected Features: 55

Leach Schematic

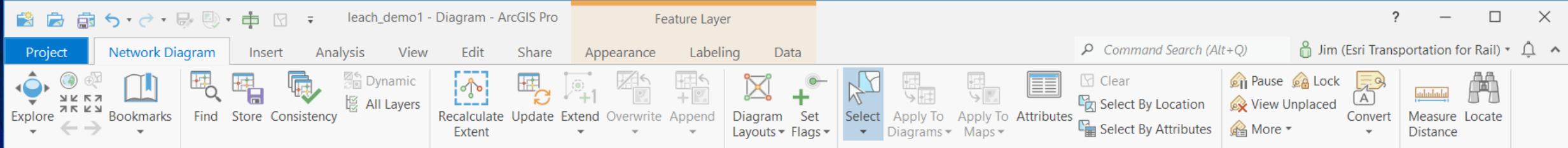
Geoprocessing Find Tools

Favorites Toolboxes Portal

- Update Diagram
- Parcel Tools
- Server Tools
- Space Time Pattern Mining Tools
- Spatial Analyst Tools
- Spatial Statistics Tools
- Territory Design Tools
- Topographic Production Tools
- Trace Network Tools
 - Trace Configuration
 - Add Network Attribute
 - Convert Geometric Network To Trace
 - Create Trace Network
 - Disable Network Topology
 - Enable Network Topology
 - Set Flow Direction
 - Set Network Attribute
 - Trace
 - Validate Network Topology
- Utility Network Tools
- Workflow Manager Tools

Catalog Geoprocessing

The screenshot shows a detailed map titled "Map Leach" with a cyan-colored trace network overlaid on a base map. The map includes labels for "Sandy River Rd", "Route 52", "Nevadale Dr", and "Buckeye Industrial Dr". A legend on the left side, titled "Drawing Order NetAttrs", lists items from 1 to 14. A geoprocessing pane on the right lists various tools under the "Trace Network Tools" category.



Contents Map Leach Before Map Leach Diagram X

Search

Drawing Order

- Diagram
- Temporary Diagram
 - rail_switch_leach_fds
 -
 - rail_line_leach_fds

Map Leach Before

Map Leach

Diagram X

1:19,640 | | 82.6037471°W 38.3615337°N | Selected Features: 0 | Catalog Geoprocessing Symbology

Apply Relative Mainline Layout

Schematic diagram mapping tool designed specifically for railroads.

Geoprocessing

Find Tools

Favorites Toolboxes Portal Configuration

Layout

- Apply Angle Directed Layout
- Apply Compression Layout
- Apply Force Directed Layout
- Apply Geo Positions Layout
- Apply Grid Layout
- Apply Linear Dispatch Layout
- Apply Main Ring Layout
- Apply Mainline Tree Layout
- Apply Partial Overlapping Edges Layout
- Apply Radial Tree Layout
- Apply Relative Mainline Layout**
- Apply Rotate Tree Layout
- Apply Smart Tree Layout
- Apply Spatial Dispatch Layout
- Apply Template Layouts
- Reshape Diagram Edges Layout
- Alter Diagram Properties
- Append To Diagram
- Change Diagrams Owner
- Create Diagram

Project Map Insert Analysis View Imagery Share Data

Cut Copy Paste Copy Path

Clipboard

Explore Basemap Add Preset Add Graphics Layer

Add Data

Select By Attributes Select By Location

Select By Measure Locate Infographics Coordinate Conversion

Clear Pause Lock View Unplaced Convert Download Map

More

Navigate Layer Selection Inquiry Labeling Offline

Contents

Search

Drawing Order

HUC_12

NHDPoint

NHDLINE

NHDflowline

FType

- Connector
- CanalDitch
- Underground Conduit
- Pipeline
- StreamsRiver
- ArtificialPath
- Coastline
- <all other values>

NHDWaterbody

NHDArea

HYDRO_NET Trace Network

Live Stream Gauges (Flooding)

Watershed Boundaries

USGS National Map

World Topographic Map

HUC_12 X

1:14,400

538,102.70E 4,890,179.90N m

Selected Features

Network attributes in the trace network

- Associated with feature attributes in your network and stored in the network topology.
- Used to model cost and traversability.

leach_demo1 - rail_line_leach_b4_fds - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share View Data

Cut Copy Paste Copy Path Clipboard Explore Bookmarks Go To XY Basemap Add Preset Add Graphics Layer Select By Attributes Select By Location Select Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Offline

Contents Search Drawing Order Map Leach Before Map Leach

Map Leach Before

Light Gray Reference rail_switch_leach_b4_fds rail_line_leach_b4_fds Light Gray Base

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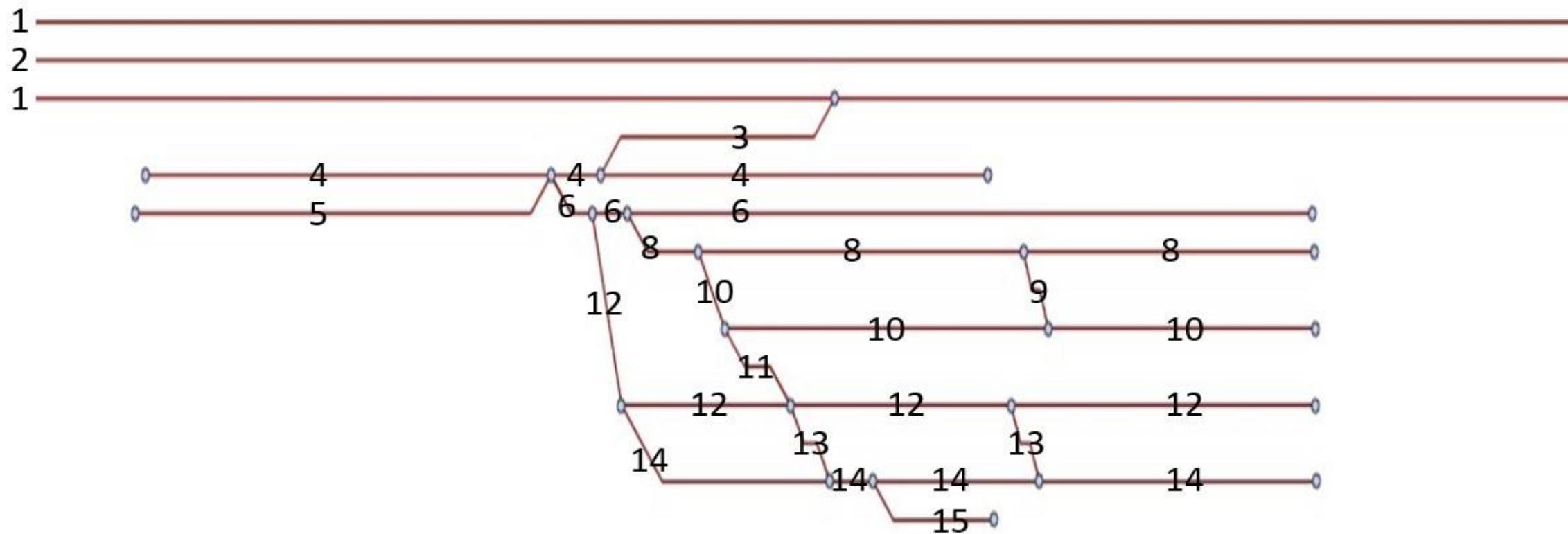
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id	To Measure	shape_Length	RouteName2	NetAtribs	Flow direction	Flow direction	Flow direction	Shape_Length	Flow direction	Flow direction
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4	0.428237	<Null>	NS62 Main 1 7.97 Spur 5		7	With digitized	With digitized	299.778517	With digitized	With digitized
0	0.015886	<Null>	Braskem PP Spur Cross...		8	With digitized	With digitized	25.565921	With digitized	With digitized
8	0.214466	<Null>	NS62 Main 1 7.97 Spur 6		9	With digitized	With digitized	319.484103	With digitized	With digitized
6	0.386057	<Null>	NS62 Main 1 7.97 Spur 6		9	With digitized	With digitized	276.149175	With digitized	With digitized
0	0.015948	<Null>	NS62 Main 1 7.97 Spur 6		8	With digitized	With digitized	25.665955	With digitized	With digitized
0	0.040387	<Null>	Braskem PP Spur Cross...		10	With digitized	With digitized	64.996232	With digitized	With digitized
0	0.024146	<Null>	Braskem PP Spur Cross...		12	With digitized	With digitized	38.858707	With digitized	With digitized
1	0.25642	<Null>	NS62 Main 1 7.97 Spur 8		11	With digitized	With digitized	216.729108	With digitized	With digitized
2	0.452953	<Null>	NS62 Main 1 7.97 Spur 8		11	With digitized	With digitized	316.290115	With digitized	With digitized
0	0.019002	<Null>	Braskem Spur Crossin...		12	With digitized	With digitized	30.580328	With digitized	With digitized
5	0.436875	<Null>	NS62 Main 1 7.97 Spur 9		13	With digitized	With digitized	288.265514	With digitized	With digitized

0 of 117 selected Filters: 100% |

Leach Schematic

Catalog Project Portal Favorites Search Project Maps Toolboxes Databases Styles Folders demo1 CreateAndEditSchematic2 data json_exports kenova leach leach.gdb leach_b4.gdb leach_b4_fds rail_line_leach_b4_ rail_switch_leach_b4_ rail_line_leach_b4_base rail_switch_leach_b4_t restore projects mapdata Locators Catalog Create F... Geopro... Modify...



Trace Network leach_demo1 - Map Leach - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share Data

Cut Copy Paste Copy Path Clipboard

Explore Bookmarks Go To XY Basemap Add Preset Add Graphics Layer Select By Attributes Select By Location Clear Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Remove Offline

Contents Search Drawing Order

- Map Leach
- Light Gray Reference
- Leach Exported
- leach_fds
 - rail_switch_leach_fds
 -
- rail_line_leach_fds

NetAttrs

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

leach_tn Trace Network

Light Gray Base

Map Leach Before Map Leach Leach Schematic

1:5,000 884,904.96E 4,253,622.68N m Selected Features: 0

1:5,000 82.5805814°W 38.3524753°N Selected Features: 0

Catalog Project Portal Favorites

Search Project

- Maps
- Toolboxes
- Databases
- Styles
- Folders
 - demo1
 - CreateAndEditSchematic2
 - data
 - json_exports
 - kenova
 - leach
 - leach.gdb
 - leach_fds
 - rail_line_leach_fds
 - rail_switch_leach_fds
 - leach_tn
 - leach_lines_export
 - leach_switch_export
 - rail_line_leach_base
 - rail_switch_leach_base
 - leach_b4.gdb
 - restore

Create F... Geopro... Modify...

leach_demo1 - Map Leach - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share Layer Trace Network Appearance Data

In Beyond <None> Transparency 60.7% Swipe
Out Beyond <None> Layer Blend Normal
Clear Limits Feature Blend Normal

Visibility Range Effects Compare Drawing Symbology

Contents Search Drawing Order

Map Leach Before Map Leach

Map Leach
Leach Exported
leach_fds
rail_switch_leach_fds
rail_line_leach_fds

NetAttributes

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

leach_tn Trace Network
World Topographic Map

1:6,000 884,991.11E 4,253,175.01N m Selected Features: 0

Catalog Project Portal Favorites

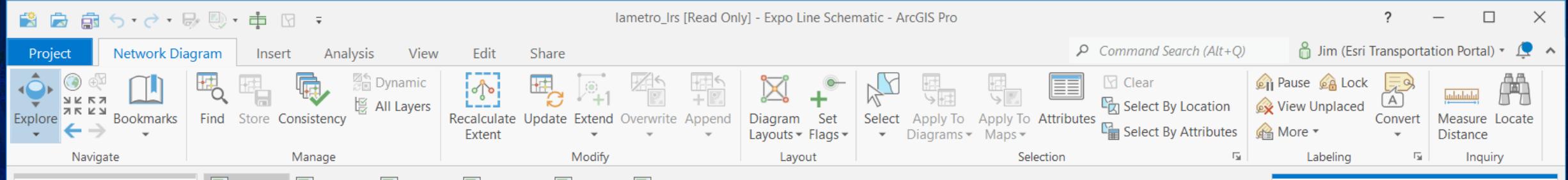
Search Project Maps Toolboxes Databases Styles Folders demo1 CreateAndEditSchematic2 data json_exports kenova leach leach_fds rail_line_leach_fc rail_switch_leach leach_tn leach_lines_export leach_switch_export rail_line_leach_base rail_switch_leach_base leach_b4.gdb restore

Leach Schematic

Jim (Esri Transportation Portal)

Leach Schematic X

The screenshot displays a complex rail network analysis in ArcGIS Pro. The main map view, titled 'Map Leach', shows a dense network of rail lines (represented by colored lines) and a 'Leach Station' (a purple polygon). The network spans across state boundaries for Kentucky and West Virginia. A legend titled 'NetAttributes' on the left side lists 14 categories, each associated with a specific color. The 'Drawing Order' panel on the left indicates which layers are currently visible. The 'Catalog' pane on the right provides a hierarchical view of the project's contents, including maps, toolboxes, databases, styles, and various folder structures like 'demo1' and 'CreateAndEditSchematic2'. The 'Appearance' tab in the ribbon is selected, showing transparency, layer blend, and feature blend settings. The bottom status bar shows the map scale (1:6,000) and coordinates (884,991.11E, 4,253,175.01N m).



Contents Search

Drawing Order

- Expo Line Schematic
- Expo Line Schematic
 - expo_switches_lrs_infds
 - expo_tracks_lrs_infds

NetAttrs

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Geoprocessing Find Tools

Favorites Toolboxes Portal

- Add Network Attribute (Trace Network)
- Create Trace Network (Trace Network)
- Disable Network Topology (Trace Network)
- Enable Network Topology (Trace Network)
- Set Network Attribute (Trace Network)
- Validate Network Topology (Trace Network)
- Apply Relative Mainline Layout (Network Analyst)
- Feature Class To Feature Class (Conversion)
- Project (Data Management Tools)

Recent

- Generate Routes (Location Referencing)
- Generate Calibration Points (Location Referencing)
- Append Routes (Location Referencing)
- Remove Join (Data Management Tools)
- Calculate Field (Data Management Tools)
- Add Join (Data Management Tools)
- Summary Statistics (Analysis Tools)
- Create LRS Event (Location Referencing)
- Create LRS Network (Location Referencing)
- Create LRS (Location Referencing Tools)

1:5,000 6,422,943.41E 1,834,045.83N ftUS | Selected Features: 0 | Exposition Blvd | Centinela A | Selected Features: 0 | 118.4664006°W 34.0338094°N | 1:5,000 | Selected Features: 0 | Exposition Blvd | Centinela A | Selected Features: 0 | 118.4664006°W 34.0338094°N

Catalog Geoproc... Trace Loca... History

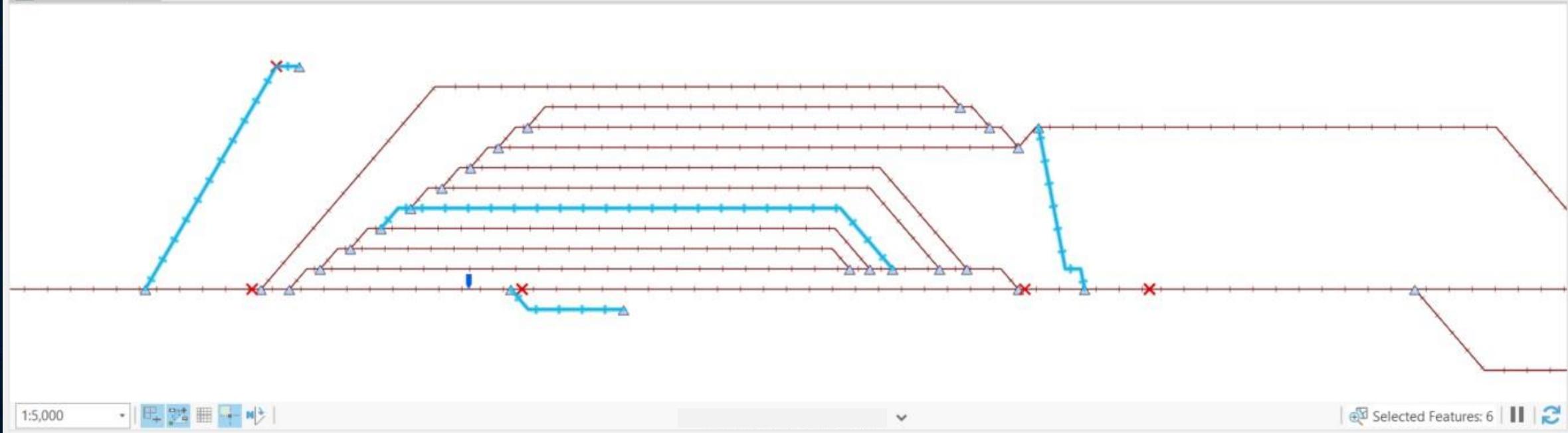
This screenshot shows the ArcGIS Pro interface for a project titled 'lametro_lrs [Read Only] - Expo Line Schematic'. The main workspace displays a map of the Expo Line Schematic, featuring a network of colored lines (Blue, Gold, Green, Red) representing rail tracks. The map includes street names like 'Exposition Blvd' and 'Centinela A'. A legend on the left identifies the 'NetAttrs' for each line color. The 'Geoprocessing' pane on the right lists various network analysis tools, with most items marked as available ('green checkmark'). The ribbon menu at the top has the 'Network Diagram' tab selected, providing access to tools for recalculating extent, updating, extending, overwriting, appending, diagram layouts, setting flags, selecting features, applying to diagrams, applying to maps, and managing attributes. The bottom of the screen shows standard ArcGIS Pro navigation controls for zooming, panning, and orientation.

Geographic Map X

show others



Schematic Map X



Feature Layer Linear Referencing

Project Layout Insert Analysis View Share Appearance Labeling Data Data

Clipboard Navigate Elements Page Setup Show Map Review

TrackChartTest_1/Layout - ArcGIS Pro ? - X

Cut Copy Select All Clear Selection Delete Paste Navigate Select Orientation Map Series Rulers Guides Margins Activate Zoom To Map View Bookmarks Check Spelling ABC

Contents Search

Drawing Order

- TrackChartTest_1/Layout
 - Map Frame 2
 - Text 9
 - Map Frame 1
 - Map Frame 4
 - Text 8
 - Text 6
 - Text 1
 - Text
 - MP_5
 - MP_4
 - MP_3
 - MP_2
 - MP_1
 - MP_0
 - Line 62
 - Line 61
 - Map Frame
 - Line 7
 - Line 6
 - Line 5
 - Line 4

Map2 Diagram4 Layout5 TrackChartTest_1 Diagram15 TrackChartTest_1/Layout ESRI_Test

RAILROAD PAGE: 8 of 8 SUBDIVISION
Track Chart Last Revised Date: 10/20/2022 MP 45 to 47

L Rail 110RE
R Rail 110RE
Traffic MGT 4.065
Speed 10 mph
Method of Operation OTM

MAIN LINE DEGREE OF CURVE HORIZONTAL ALIGNMENT SUPERELEVATION GRADE (%)

*For General Reference Only - Not for Operational Purposes

Export Layout

Properties Security Accessibility Map Series

Name kCharts\TrackChartTest\TrackChartTe

Clip to graphics extent

Compression Output as image Image compression Adaptive Quality Low Compress vector graphics

Resolution Vector resolution 300 DPI Raster resample Ratio 1: 1 300 DPI

Fonts Current Font Export

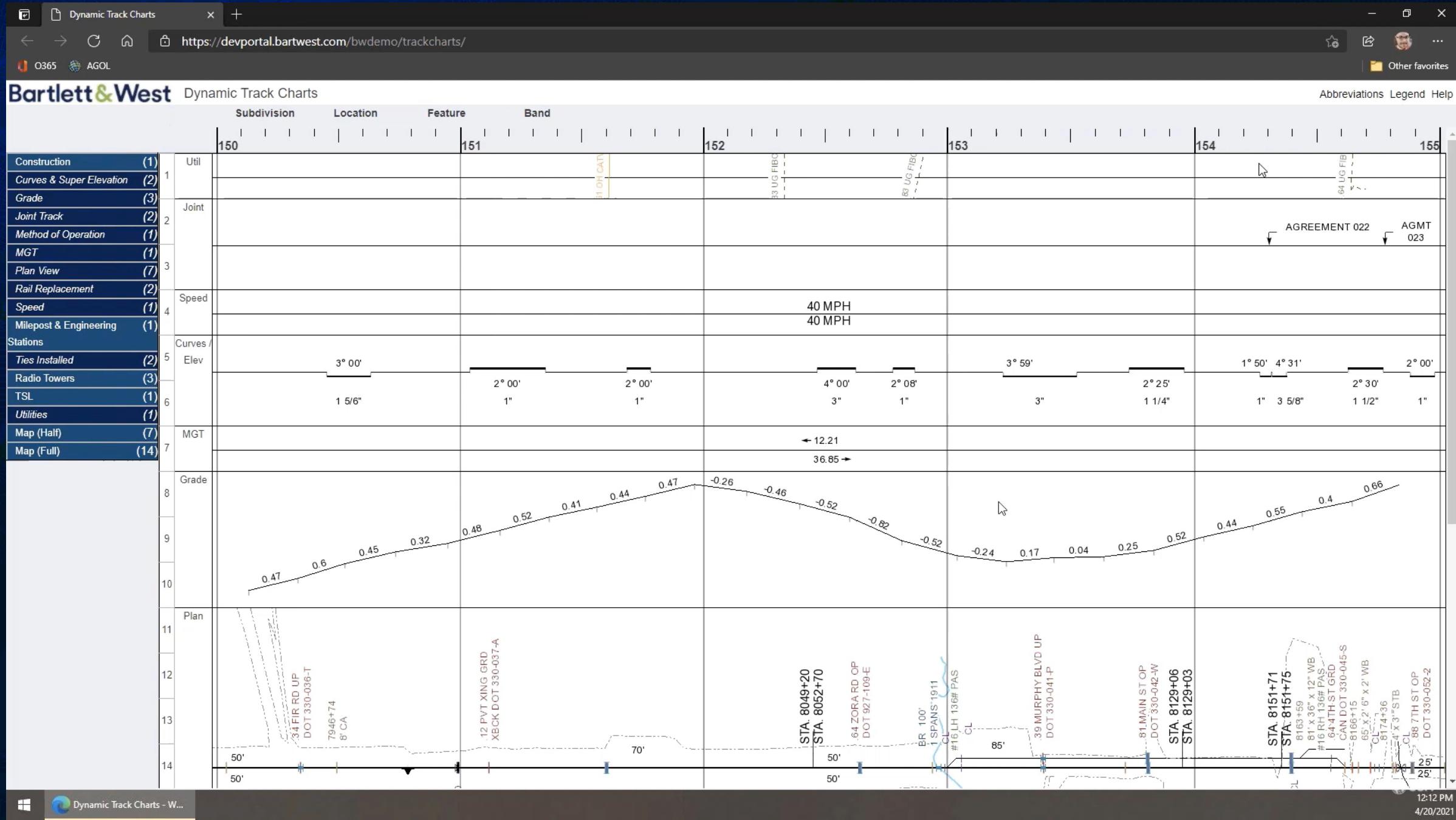
Export Completed View exported file

9:12 AM 6/7/2022

Type here to search

1:36,000 68% 5,653, 5,408

Windows Start Task View File Home Insert Tools Options Help



- Intermediate - Editing - ArcGIS Pro

Utility Network

Project Map Insert Analysis View Edit Imagery Location Referencing Share Data

Global Local Convert Link Views Reset Panes Catalog Pane Catalog Contents Geoprocessing Python window Tasks Reviewer Rules Workflow Manager Aviation Indoors

Add Remove Enable Location Depth Priority Drawing Mode Mode Distance

Animation Device Location Scene View Clipping Navigation

Rail (Esri Transportation Portal)

Map

View Link

Windows

Contents Terminal_NetworkDiagram Intermediate - Editing

Search

Drawing Order

- Redline
- Timber Surface
- Max Speed
 - 10 mph
 - 15 mph
 - 30 mph
 - 35 mph
 - 40 mph
 - 45 mph
 - 50 mph
- Control
- Curvature
- Rail Network
- Rail Centerline
 - Unknown
 - Main Line
 - Secondary

Norfolk Southern

Norfolk Southern

52

52

1:716

82.5887424°W 38.3420441°N

Selected Features: 0

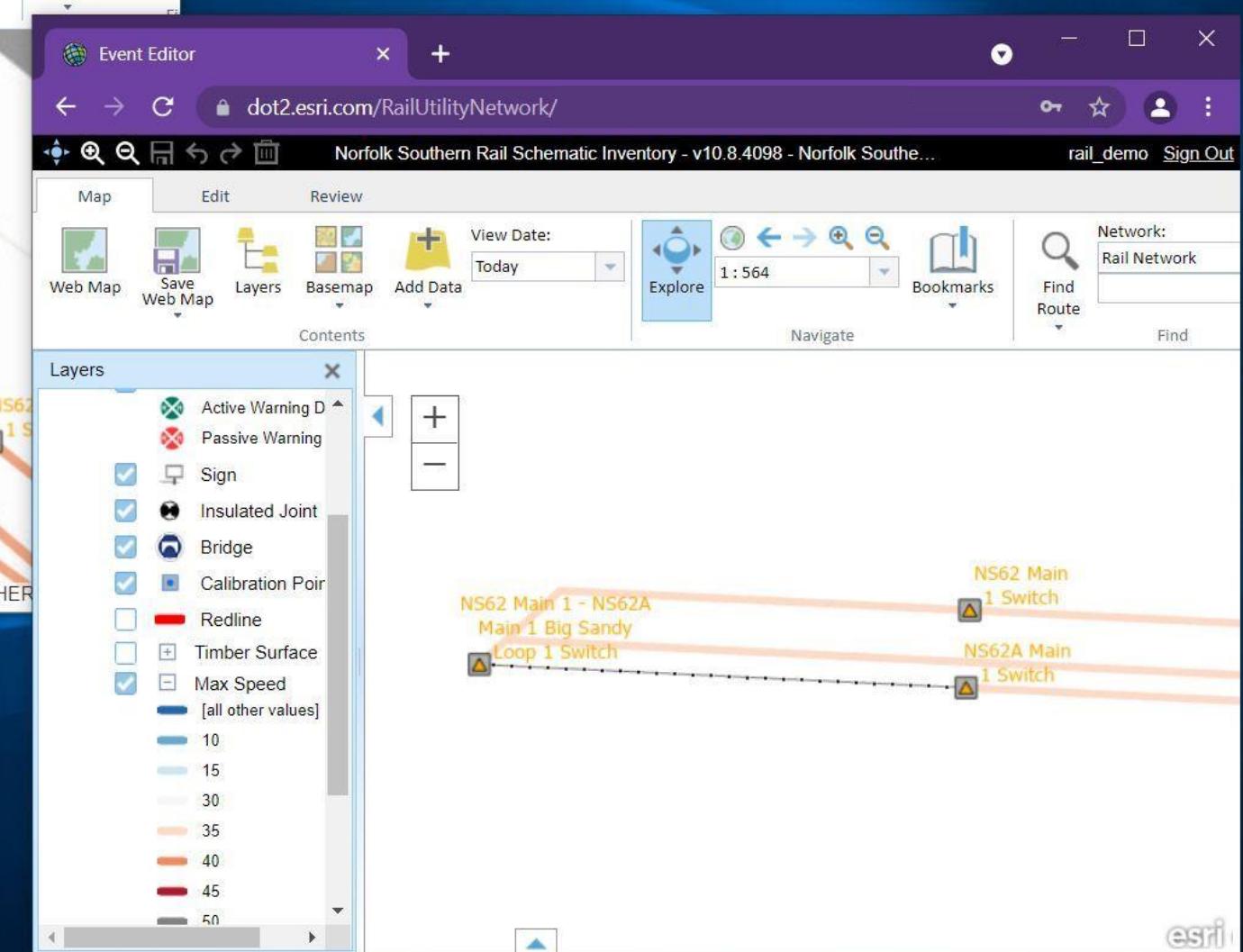
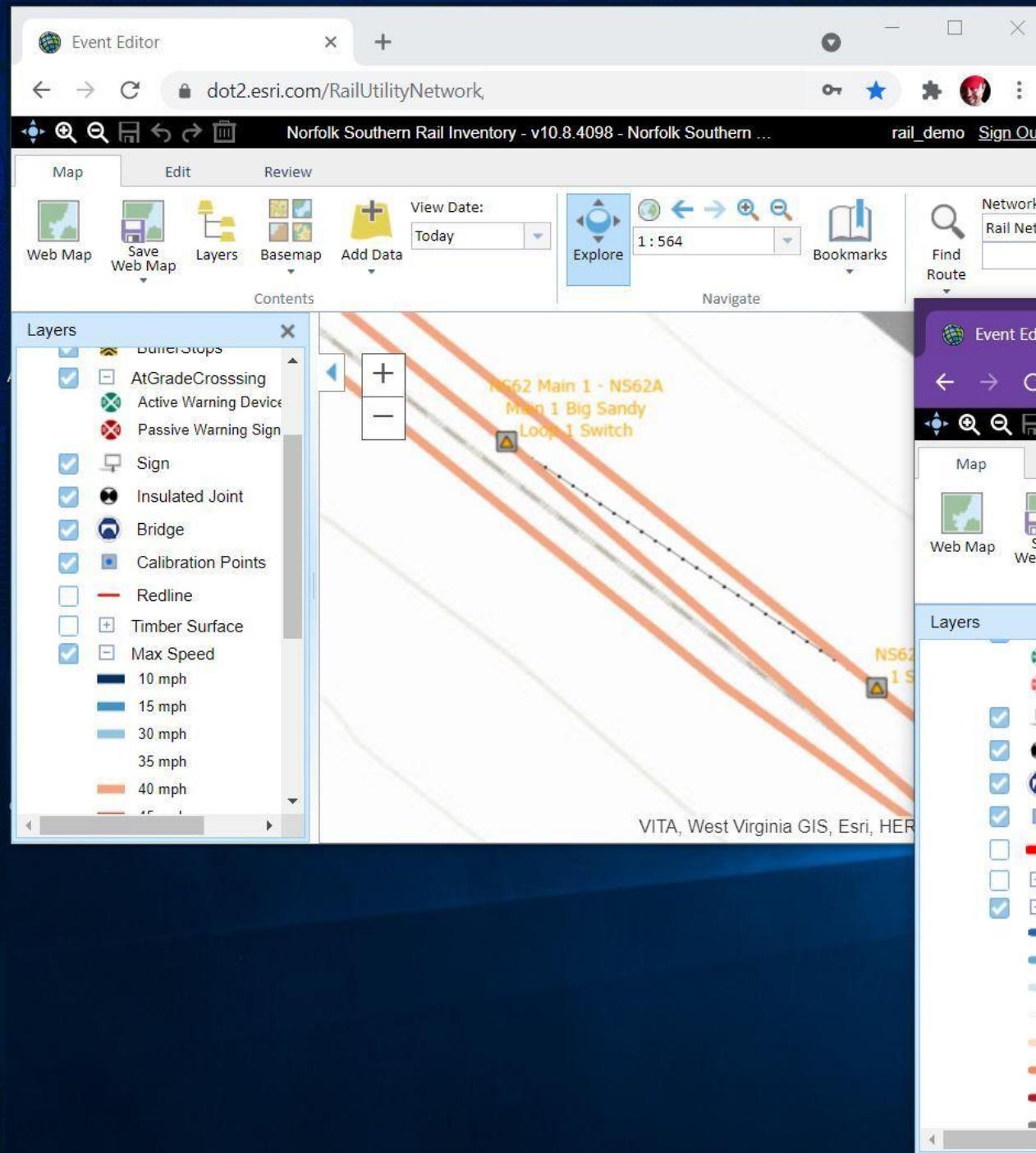
Trace Loca... Geoproc... Modify Ter... Catalog

Catalog

Project Portal Favorites

Search Project

- Maps
- Toolboxes
- Notebooks
- Databases
- Styles
- Folders
- Locators



Event Editor

dot2.esri.com/RailUtilityNetwork/

Norfolk Southern Rail Schematic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS E...

Map Edit Review

Web Map Save Web Map Layers Basemap Add Data

View Date: Today 1:564

Explore Bookmarks Find Route

Network: Rail Network

Identify

Layers

- Insulated Joint
- Bridge
- Calibration Point
- Redline
- Timber Surface
- Max Speed [all other values]
- 10
- 15
- 30
- 35
- 40
- 45
- 50
- Control
- Curvature
- Rail Network
- Centerline
- Blank White Vector Base

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

NS62 Main 1 Switch

NS62A Main 1 Switch

POWERED BY esri

The screenshot shows a map interface for rail network management. The top navigation bar includes a back/forward button, a refresh icon, and a search bar with the URL "dot2.esri.com/RailUtilityNetwork/". The title bar reads "Norfolk Southern Rail Schematic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS E...". The top menu bar has tabs for "Map", "Edit", and "Review". Below the menu are buttons for "Web Map", "Save Web Map", "Layers", "Basemap", and "Add Data". A "View Date" dropdown is set to "Today" with a scale of "1:564". The "Explore" button is highlighted. To the right are "Bookmarks", "Find Route", and a "Network" dropdown set to "Rail Network". On the far right are "Identify" and "Find" buttons. The main area is titled "Layers" and contains a list of checked items: Insulated Joint, Bridge, Calibration Point, Redline, Timber Surface, Max Speed [all other values], and several speed limit options (10, 15, 30, 35, 40, 45, 50). Below these are Control, Curvature, Rail Network, Centerline, and Blank White Vector Base. The map itself shows rail lines with labels like "NS62 Main 1 - NS62A", "Main 1 Big Sandy", and "Loop 1 Switch". The map background is dark blue with green and yellow rail lines.

Event Editor

← → C dot2.esri.com/RailUtilityNetwork/NorfolkS...

Norfolk Southern Rail Schematic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS Event Editing

Map Edit Review

Save Edits Undo Redo Discard Edits Versioning Layer: Max Speed Return attribute set Attribute Set: NS Schematic Route Editing

Point Events Line Events Event Replacement Selection

Layers Add Linear Events

New Edit Next Edit

Network: Rail Network

Route Name: NS62A Main 1 Ke...

From Method: Rail Network Measure: 0 Miles

To Method: Rail Network Measure: 0.355631 Miles

Dates Start Date: 7/2/2021 Use route start date End Date: Use route end date

NS62 Main 1 - NS62A Main 1 Big Sandy Loop I Switch NS62 Main 1 Switch NS62A Main 1 Switch

POWERED BY esri

The screenshot shows a rail network editing interface. The main workspace displays a rail line with several nodes labeled "NS62 Main 1" and "Switch". A red "X" is placed over the first node, and a green "+" sign is placed over the second node. The "Add Linear Events" dialog box is open on the left, showing route search parameters and a list of events. The toolbar at the top includes various edit tools like Select, Rectangle, Point Events, Line Events, and Event Replacement.

Event Editor

dot2.esri.com/RailUtilityNetwork/NorfolkS...

Norfolk Southern Rail Schematic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS Event Editing

rail_demo Sign Out

Map Edit Review

Save Edits Undo Redo Discard Edits

Versioning

Layer: Max Speed

Return attribute set

Select Rectangle

Point Events Line Events Event Replacement

Attribute Set: NS Schematic Route Editing

Layers

Add Linear Events

	Orientation	Start	End
	Elevation	<null>	
	Status	<null>	
<input checked="" type="checkbox"/> Max Speed	D Curve Function	Tangent (Straight)	
	D Track	001	
	Speed	45 mph	
	Status	<null>	
<input type="checkbox"/> Timber Surface	Status	<null>	
	Surface Month	<null>	
	Surface Year	<null>	
	Timber Surface Month	<null>	

Show network names

NS62 Main 1 Switch
NS62 Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch
NS62A Main 1 Switch

POWERED BY esri

Event Editor

dot2.esri.com/RailUtilityNetwork/NorfolkS...

Norfolk Southern Rail Schematic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS Event Editing

rail_demo Sign Out

Map Edit Review

Version: sde.DEFAULT Layer: Max Speed Attribute Set: NS Schematic Route Editing

Save Edits Undo Redo Discard Edits Select Rectangle Point Events Line Events Event Replacement

Manage Edits Versioning Selection Edit Events

Layers

- Active Warning Device
- Passive Warning Sign
- Sign
- Insulated Joint
- Bridge
- Calibration Points
- Redline
- Timber Surface
- Max Speed
 - [all other values]
- 10
- 15
- 30
- 35
- 40
- 45
- 50
- Control

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

NS62 Main 1 Switch

NS62A Main 1 Switch

POWERED BY esri

The screenshot shows the Event Editor interface for the Norfolk Southern Rail Schematic Inventory. The top navigation bar includes tabs for Map, Edit (selected), and Review, along with versioning and editing tools like Save Edits, Undo, Redo, and Discard Edits. The main toolbar features selection tools (Select, Rectangle, Point Events, Line Events, Event Replacement) and edit tools (Edit Events). A layer panel on the left lists various rail components and speed limit layers, with 'Max Speed' currently selected. The map view displays a rail network with several tracks and switches, specifically labeled as 'NS62 Main 1 - NS62A', 'Main 1 Big Sandy', 'Loop 1 Switch', 'NS62 Main 1 Switch', and 'NS62A Main 1 Switch'. The map background shows a grid and some terrain features.

Event Editor

dot2.esri.com/RailUtility

Norfolk Southern Rail Inventory - v10.8.4098 - Norfolk South...

Map Edit Review

Web Map Save Web Map Layers Basemap Add Data View Date: Today Explore 1:564 Bookmarks Find Route

Layers

- Bridge
- Calibration Points
- Redline
- Timber Surface
- Max Speed
 - 10 mph
 - 15 mph
 - 30 mph
 - 35 mph
 - 40 mph
 - 45 mph
 - 50 mph
- Control
- Curvature
- Rail Network
- Rail Centerline
 - Main Line
 - Secondary
- Norfolk Southern Project Ext...
- World Topographic Map
- Citations

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

VITA, West Virginia GIS, Esri, HE... esri

45
50
Control

aaa2.MP4

Norfolk Southern Schematic LRS Event Editing

rail_demo Sign Out

Layer: Max Speed Return attribute set Attribute Set: NS Schematic Route Edging

Rectangle Point Events Line Events Event Replacement Selection Edit Events

NS62 Main 1 Switch
Main 1 Big Sandy
Loop 1 Switch

NS62A Main 1 Switch

POWERED BY esri



Synchronize Geographic LRS from Schematic LRS

This Python script automates the process of synchronizing the Geographic LRS from the schematic LRS using the Append Events operation. The script executes a select query on the input feature service and checks for all features edited within the last 5 minutes using Editor tracking timestamps and it also check to make sure the LRS managed "ToDate" field is null and the "LocError" field is reporting no errors.

In [1]:

```
1 #Import Arcpy Module
2 import arcpy
3
4 #Clear data in memory from previous runs
5 arcpy.env.overwriteOutput = True
6
7 # Target event is in a feature service. Sign in to portal is required to access the feature service.
8 arcpy.SignInToPortal('https://dot.esri.com/portal', 'rail_demo', 'ArtcIsGr3at!')
9
10 def syncEvents(inputEvents, targetEvents, fldMapping, operation):
11     #Check out a Location Referencing License
12     arcpy.CheckOutExtension("LocationReferencing")
13
14     if (operation == 'ADD'):
15         arcpy.CalculateField_management(inputEvents,'SYNC_STATUS', 1, 'PYTHON3')
16     else:
17         arcpy.CalculateField_management(inputEvents,'SYNC_STATUS', 2, 'PYTHON3')
18         arcpy.locref.AppendEvents(inputEvents, targetEvents, fldMapping, operation)
19
20     # Check in license
21     arcpy.CheckInExtension('LocationReferencing')
```

SyncGeographicLRS_from_SchematicLRS

Edit View Insert Cell Help

ArcGISPro

Begin Synchronizing Geographic LRS from Schematic LRS

Begin Append Events Routine.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/2

No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/3

No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/4

No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/5

No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/6

No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/9

No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/10

Appending 1 records.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/> /FeatureServer/11

No records to append, moving to the next feature service.

Event Editor

dot2.esri.com/RailUtilityNetwork

Norfolk Southern Rail Inventory - v10.8.4098 - Norfolk South...

Map Edit Review

Web Map Save Web Map Layers Basemap Add Data View Date: Today Explore Bookmarks Find Route

Layers

- Bridge
- Calibration Points
- Redline
- Timber Surface
- Max Speed
 - 10 mph
 - 15 mph
 - 30 mph
 - 35 mph
 - 40 mph
 - 45 mph
 - 50 mph
- Control
- Curvature
- Rail Network
- Rail Centerline
- Unknown
 - Main Line
 - Secondary
- Norfolk Southern Project Extent
- World Topographic Map Citations

1:564

Explore

Find Route

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

NS62A Main 1 Switch

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

NS62A Main 1 Switch

VITA, West Virginia GIS, Esri, H...

45

50

Control

Network Rail N

Automatic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS Event Editing

rail_demo Sign Out

Layer: Max Speed

Return attribute set

Rectangle

Point Events

Line Events

Event Replacement

Attribute Set: NS Schematic Route Edging

Edit Events

POWERED BY esri

Event Editor

dot2.esri.com/RailUtilityNetwork/ Norfolk Southern Rail Inventory - v10.8.4098 - Norfolk South... rail_demo Sign Out

Map Edit Review

Save Edits Undo Redo Discard Edits

Versioning

Layer: Sign

Select Rectangle

Point Events Line Events Replace

Layers

Add Point Events

New Edit Next Edit

Event Layer: Sign

Network: Rail Network

Route Name: NS62A Main 1

Location

Method: Rail Network

Measure: 39.52389 Miles

Dates

Start Date: 7/2/2018 Use route start date

End Date: Use route end date

Prevent measures not on route

Next >

NS62 Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch

NS62A Main 1 Switch

The screenshot shows the Event Editor window from Esri's Rail Utility Network application. The main map view displays a rail network with several tracks. A specific route, 'NS62A Main 1', is highlighted in orange. A cyan line segment is drawn across the tracks, indicating a measurement or selection. A red 'X' mark is placed on the map near the intersection of the cyan line and the rail tracks. On the right side of the map, there are two yellow text labels: 'NS62 Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch' and 'NS62A Main 1 Switch'. The left panel of the interface is titled 'Add Point Events' and contains fields for setting the event layer (Sign), network (Rail Network), and route name (NS62A Main 1). It also includes sections for location, method (Rail Network), measure (39.52389 Miles), and dates (Start Date: 7/2/2018, End Date: blank). A checkbox for preventing measures not on the route is checked. A 'Next >' button is visible at the bottom of this panel.

Event Editor

dot2.esri.com/RailUtilityNetwork/| rail_demo Sign Out

Norfolk Southern Rail Inventory - v10.8.4098 - Norfolk South...

Map Edit Review

Save Edits Undo Redo Discard Edits

Manage Edits Versioning Layer: Sign

Select Rectangle Return attribute set

Point Events Line Events Replace

Layers

Add Point Events

Attribute	Value
Sign Type	Station Sign
Sign Text	42 Miles to Kenova Station
Synchronization Status	

Show network name

< Back Save

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

NS62A Main 1 Switch

VITA, West Virginia GIS, Esri, H... esri

The screenshot shows the Event Editor interface for the Norfolk Southern Rail Inventory. The main window displays a map of a rail network with several tracks. A red 'X' is overlaid on one of the tracks, indicating an error or a point of interest. Two specific locations on the network are highlighted with yellow labels: 'NS62 Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch' and 'NS62A Main 1 Switch'. To the left, a dialog box titled 'Add Point Events' is open, showing attributes for a 'Station Sign' with the text '42 Miles to Kenova Station'. The interface includes standard editing tools like Save Edits, Undo, and Redo, as well as a Layers panel and various selection and modification tools.

Event Editor

dot2.esri.com/RailUtilityNetwork/

Norfolk Southern Rail Inventory - v10.8.4098 - Norfolk South...

Map Edit Review

Web Map Save Web Map Layers Basemap Add Data View Date: Today Explore 1:564 Bookmarks Find Route

Layers

- Bridge
- Calibration Points
- Redline
- Timber Surface
- Max Speed
 - 10 mph
 - 15 mph
 - 30 mph
 - 35 mph
 - 40 mph
 - 45 mph
 - 50 mph
- Control
- Curvature
- Rail Network
- Rail Centerline
 - Unknown
 - Main Line
 - Secondary
- Norfolk Southern Project Extent
- World Topographic Map
- Citations

NS62 Main 1 - NS62A
Main 1 Big Sandy
Loop 1 Switch

NS62A
Main 1
Switch

VITA, West Virginia GIS, Esri, H... esri

A screenshot of a web-based GIS application for rail inventory management. The main view shows a rail network with several tracks. One track is highlighted with a thick orange line. A specific location on this track is circled in red, with a red arrow pointing towards it from the left side of the screen. The application's interface includes a top navigation bar with links like 'Event Editor', 'Map', 'Edit', 'Review', and user information ('rail_demo', 'Sign Out'). Below the navigation is a toolbar with icons for 'Web Map', 'Save Web Map', 'Layers', 'Basemap', 'Add Data', 'View Date: Today', 'Explore' (which is selected), '1:564', 'Bookmarks', 'Find Route', and zoom controls. To the left is a 'Layers' panel listing various data layers such as 'Bridge', 'Calibration Points', 'Redline', 'Timber Surface', 'Max Speed' (with sub-options for speeds from 10 to 50 mph), 'Control', 'Curvature', 'Rail Network', 'Rail Centerline' (with sub-options for 'Unknown', 'Main Line', and 'Secondary'), 'Norfolk Southern Project Extent', 'World Topographic Map', and 'Citations'. The bottom right corner features the Esri logo.

Event Editor

dot2.esri.com/RailUtilityNetwork/ Norfolk Southern Rail Inventory - v10.8.4098 - Norfolk South... rail_demo Sign Out

Map Edit Review

Web Map Save Web Map Layers Basemap Add Data View Date: Today Explore Bookmarks Find Route

Layers

- Bridge
- Calibration Points
- Redline
- Timber Surface
- Max Speed
 - 10 mph
 - 15 mph
 - 30 mph
 - 35 mph
 - 40 mph
 - 45 mph
 - 50 mph
- Control
- Curvature
- Rail Network
- Rail Centerline
- Unknown
- Main Line
- Secondary
- Norfolk Southern Project Extent
- World Topographic Map Citations

Explore 1:564 Bookmarks Find Route

NS62 Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch

NS62A Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch

NS62A Main 1 - NS62A Main 1 Switch

VITA, West Virginia GIS, Esri, H... esri

45 50 Control

Network: Rail Network

Identify

Automatic Inventory - v10.8.4098 - Norfolk Southern Schematic LRS Event Editing rail_demo Sign Out

Explore 1:564 Bookmarks Find Route

NS62 Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch

NS62A Main 1 - NS62A Main 1 Big Sandy Loop 1 Switch

NS62A Main 1 - NS62A Main 1 Switch

POWERED BY esri

The image displays two side-by-side screenshots of a rail network management application. The left screenshot shows a detailed map view with rail lines, speed limit markers (10, 15, 30, 35, 40, 45, 50 mph), and various network components like bridges, calibration points, and rail centerlines. The right screenshot shows a schematic or event editing view of the same network, highlighting specific segments and switches. Both views include navigation tools, user authentication (rail_demo, Sign Out), and network selection (Rail Network).

SyncGeographicLRS_from_SchematicLRS X

Edit View Insert Cell Help

+ % & Run Code

Synchronize Geographic LRS from Schematic LRS

This Python script automates the process of synchronizing the Geographic LRS from the schematic LRS using the Append Events operation. The script executes a select query on the input feature service and checks for all features edited within the last 5 minutes using Editor tracking timestamps and it also check to make sure the LRS managed "ToDate" field is null and the "LocError" field is reporting no errors.

```
In [1]: 1 #Import Arcpy Module
2 import arcpy
3
4 #Clear data in memory from previous runs
5 arcpy.env.overwriteOutput = True
6
7 # Target event is in a feature service. Sign in to portal is required to access the feature service.
8 arcpy.SignInToPortal('https://dot.esri.com/portal', 'rail_demo', 'ArtcIsGr3at!')
9
10 def syncEvents(inputEvents, targetEvents, fldMapping, operation):
11     #Check out a Location Referencing License
12     arcpy.CheckOutExtension("LocationReferencing")
13
14     if (operation == 'ADD'):
15         arcpy.CalculateField_management(inputEvents, 'SYNC_STATUS')
16     else:
17         arcpy.CalculateField_management(inputEvents, 'SYNC_STATUS')
18         arcpy.locref.AppendEvents(inputEvents, targetEvents, fldMapping)
19
20     # Check in License
21     arcpy.CheckInExtension('LocationReferencing')
```

SyncGeographicLRS_from_SchematicLRS X

Edit View Insert Cell Help

+ % & Run Code

Begin Synchronizing Geographic LRS from Schematic LRS

Begin Append Events Routine.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/2>
No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/3>
No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/4>
No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/5>
No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/6>
No records to append, moving to the next feature service.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/9>
No records to append, moving to the next feature service.

Appending 1 records.

Updating <https://dot2.esri.com/arcgis/rest/services/Geo2Schematic/NorfolkSouthern/FeatureServer/11>
No records to append, moving to the next feature service.

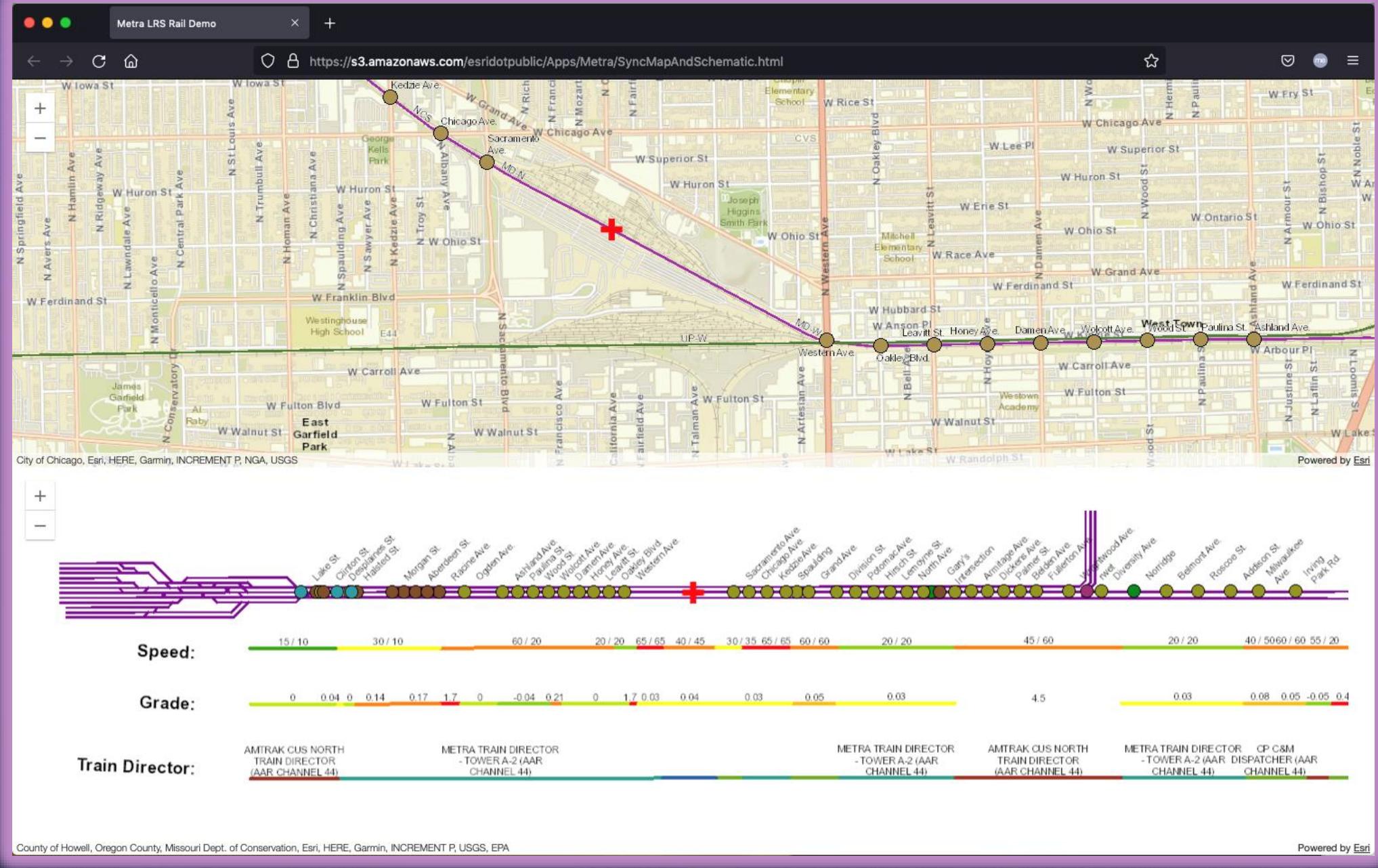
The screenshot displays two overlapping windows from the Norfolk Southern Rail Inventory v10.8.4098 application.

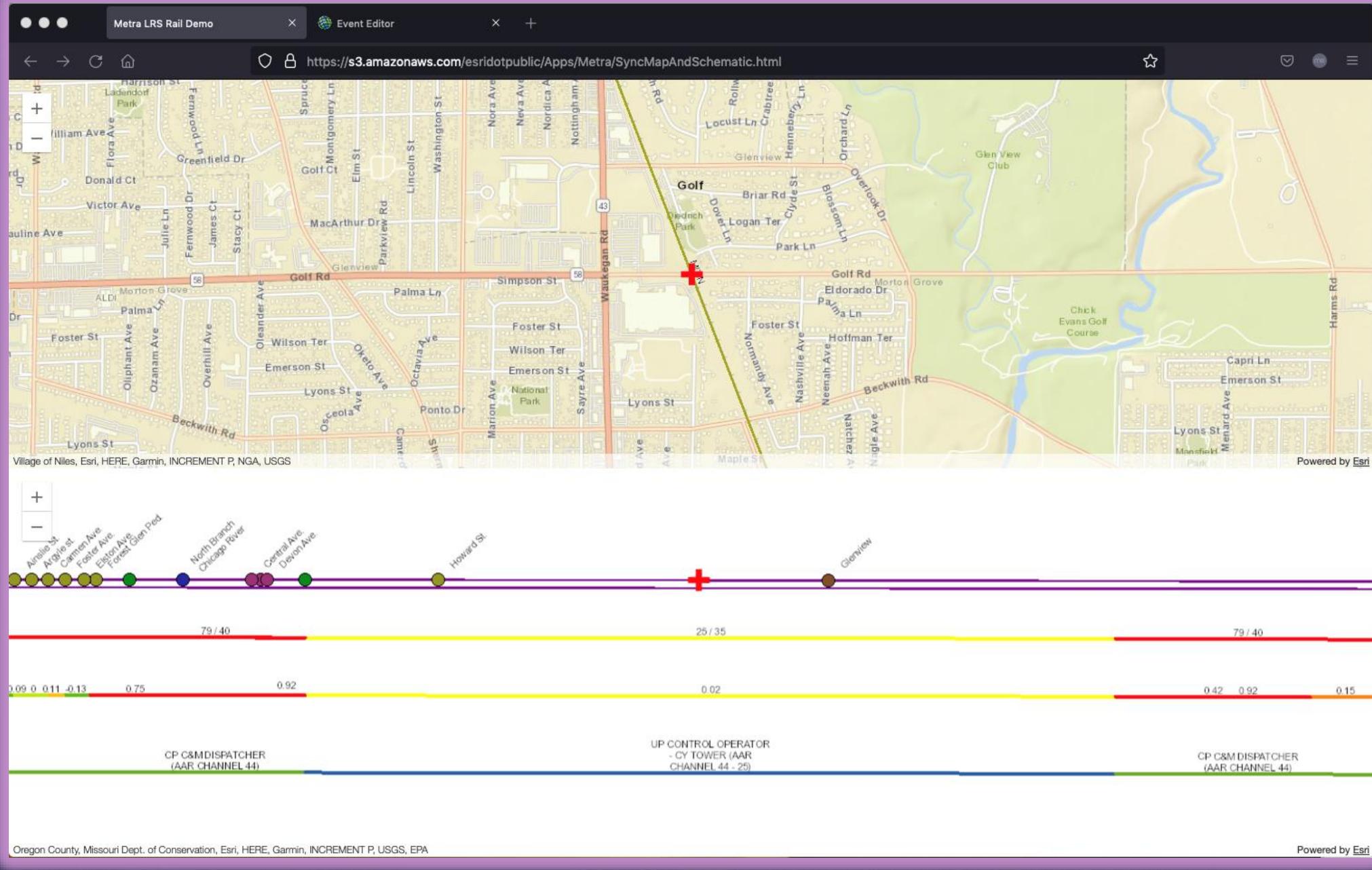
Left Window (Event Editor):

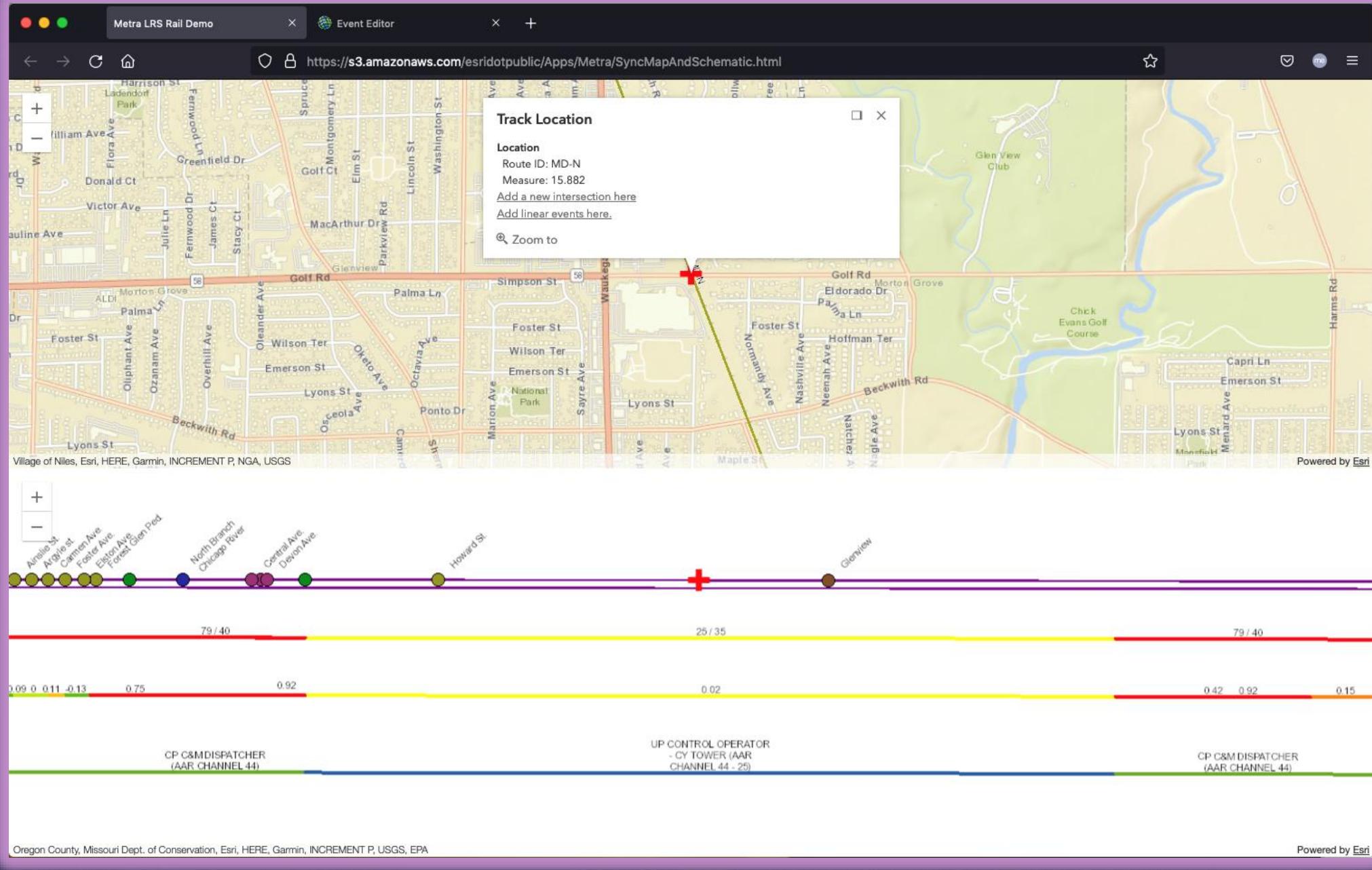
- Toolbar:** Map, Edit, Review, Web Map, Save Web Map, Layers, Basemap, Add Data, View Date: Today, Explore, Bookmarks, Find Route.
- Layers Panel:** Mediated Point, Bridge, Calibration Points, Redline, Timber Surface, Max Speed (with sub-options: 10 mph, 15 mph, 30 mph, 35 mph, 40 mph, 45 mph, 50 mph), Control, Curvature, Rail Network, Rail Centerline, Unknown, Main Line, Secondary, Norfolk Southern Project Extension, World Topographic Map, Citations.
- Map View:** Shows a rail network with several tracks. A red circle highlights a point on a track, with a red arrow pointing to the same location in the right window.
- Legend:** 45, 50, Control.

Right Window (Rail Network Editor):

- Toolbar:** Layer: Max Speed, Selection, Edit Events.
- Tool Buttons:** Rectangle, Point Events, Line Events, Event Replacement.
- Map View:** Shows the same rail network as the left window. A red circle highlights a point on a track, with a red arrow pointing to the same location in the left window.







Metra LRS Rail Demo

Event Editor

Rail Event Editor - v10.7.1.3052 - Metra LRS Event Editor Map

jimba@esri.com Sign Out

Map Edit Review

Versioning Selection

Add Point Events

Attribute	Value
IntersectionType	Road
IntersectionGrade	At-grade
CrossingName	Golf Rd

Show network name

< Back Save

Reconcile Select Rectangle Layer: Grade Return attribute set Attribute Set: Default

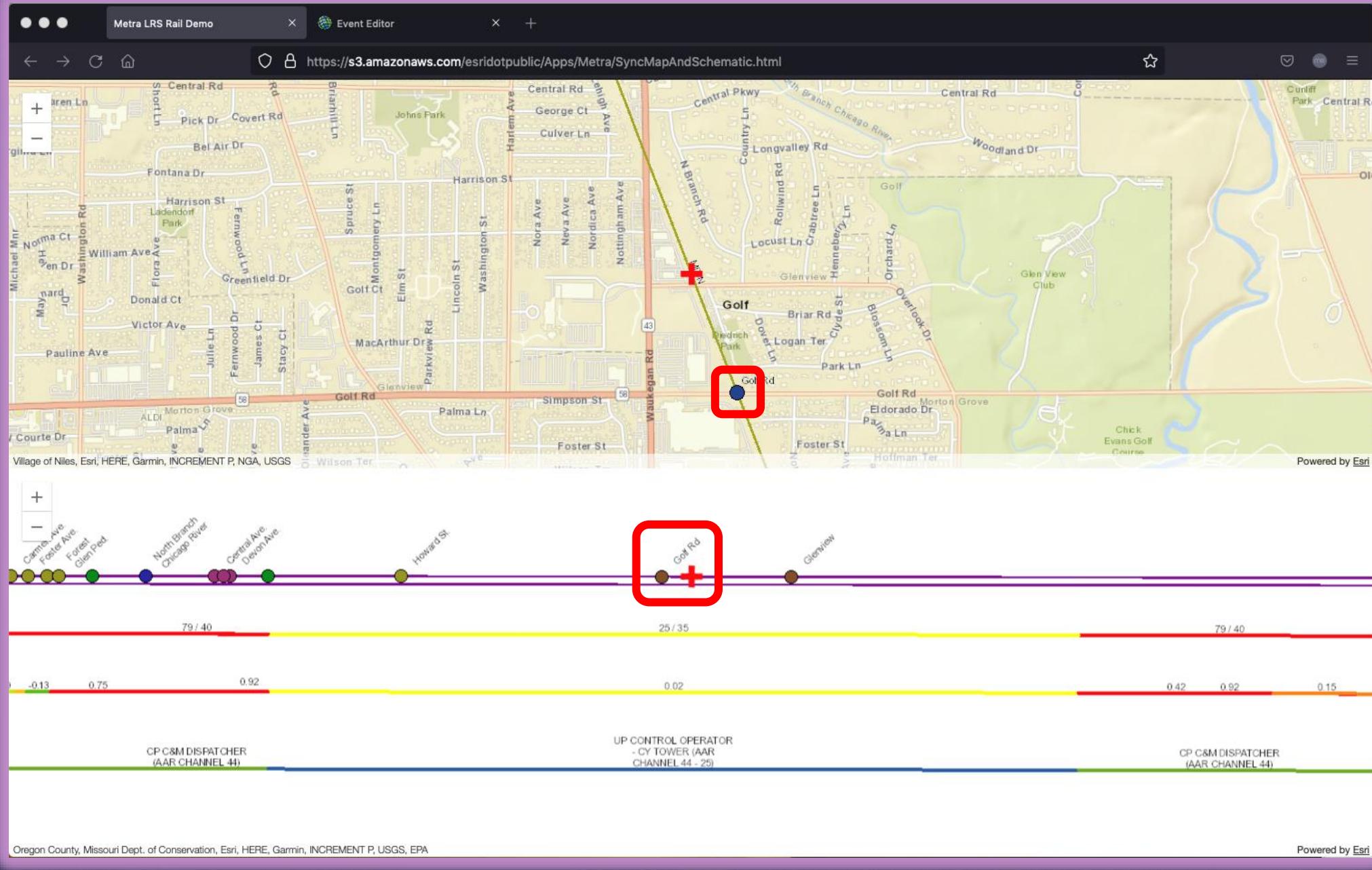
Point Events Line Events Event Replacement

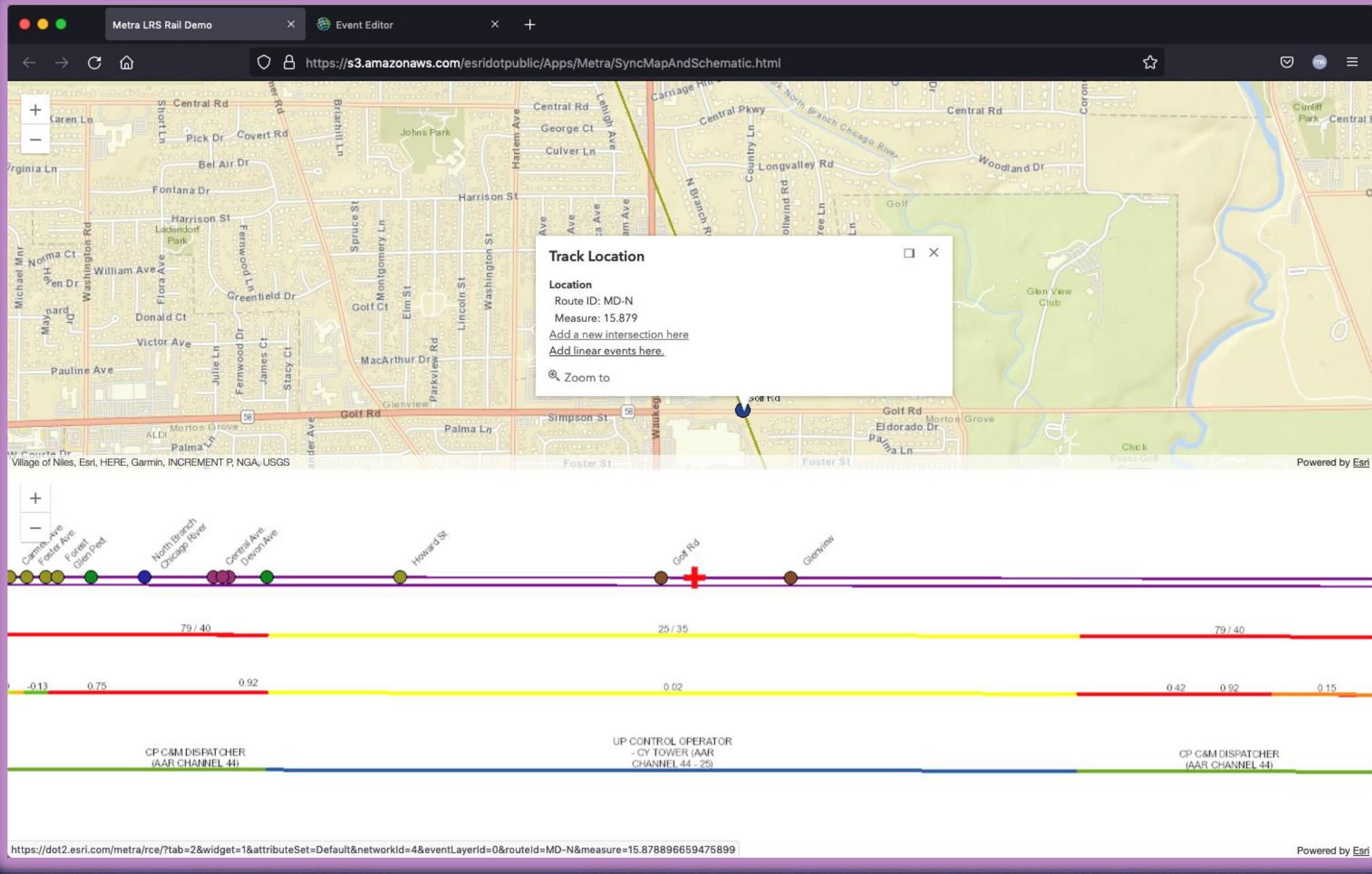
Map showing rail lines and roads in the Chicago metropolitan area. A red box highlights the 'Add Point Events' dialog box in the bottom-left corner.

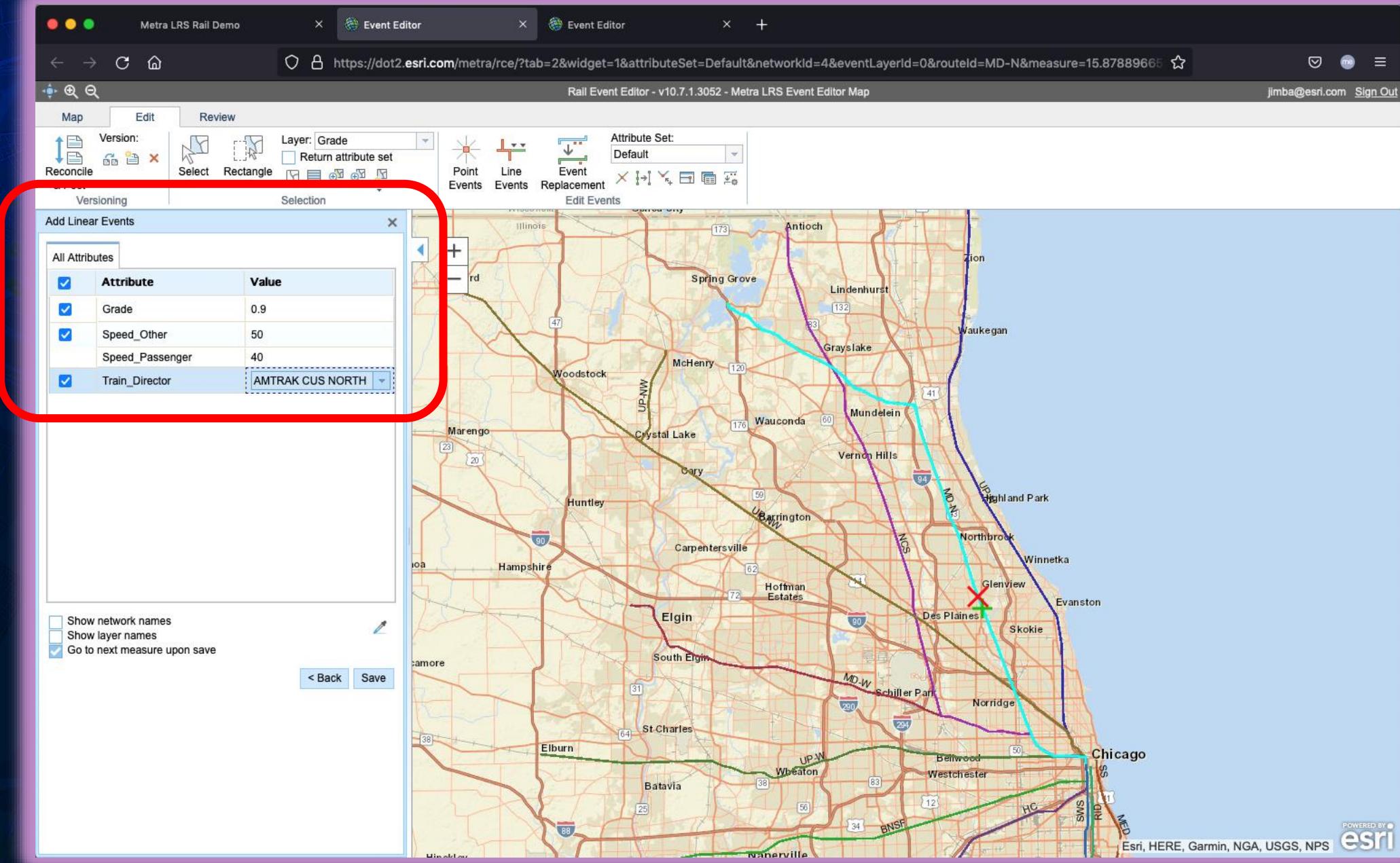
The map displays several rail lines in different colors: purple, cyan, green, and blue. Major roads are shown in red, and local streets in orange. Towns and cities labeled include Antioch, Spring Grove, Lindenhurst, Waukegan, Woodstock, McHenry, Grayslake, Mundelein, Vernon Hills, Winnetka, Glenview, Des Plaines, Skokie, Evanston, Elgin, South Elgin, Hampshire, Huntley, Carpentersville, Hoffman Estates, Elburn, St. Charles, Batavia, Wheaton, Bellwood, Westchester, and Chicago. Interstate highways 90, 94, 290, and 390 are also visible.

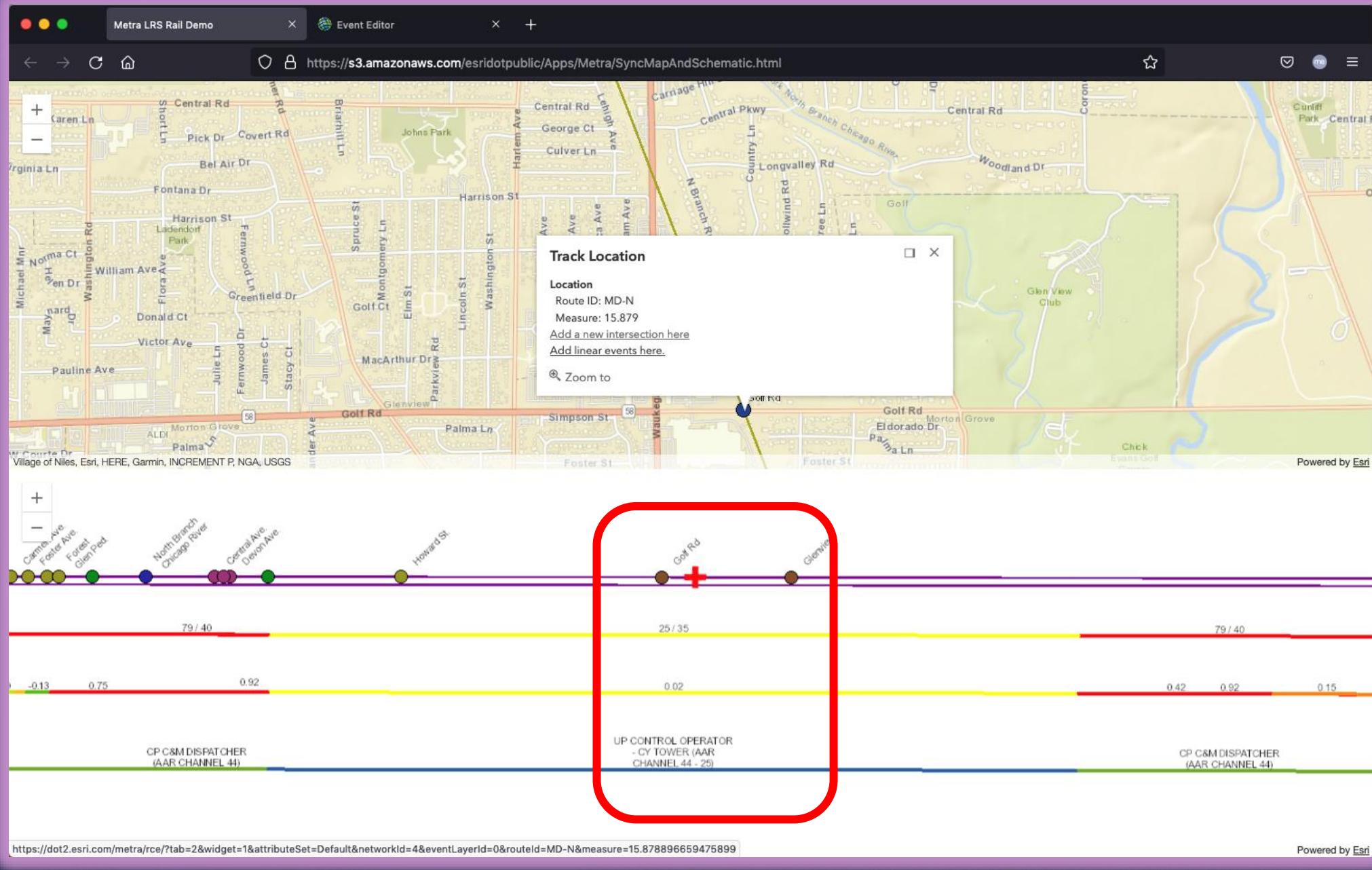
POWERED BY esri

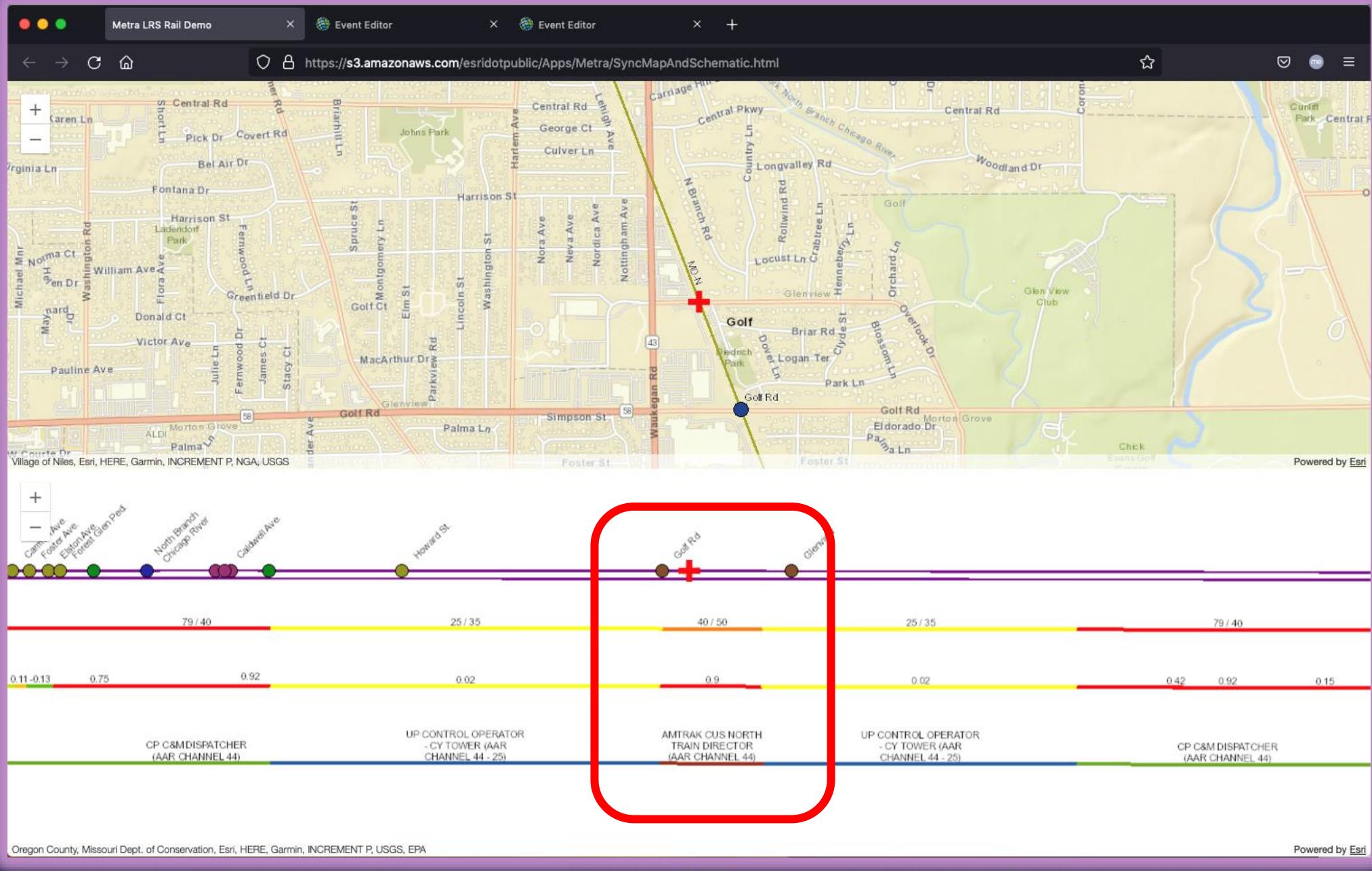
Esri, HERE, Garmin, NGA, USGS, NPS





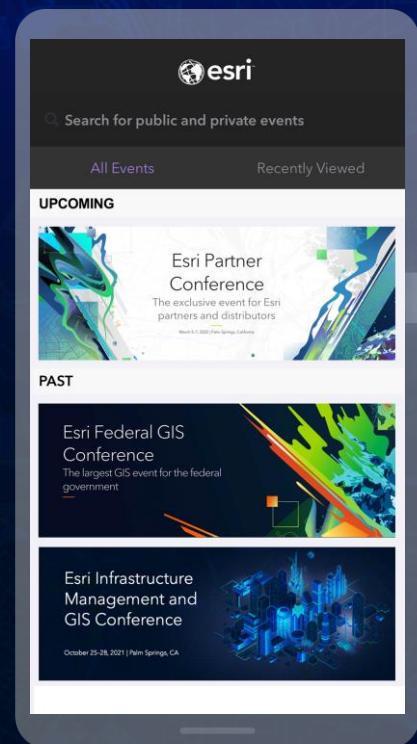




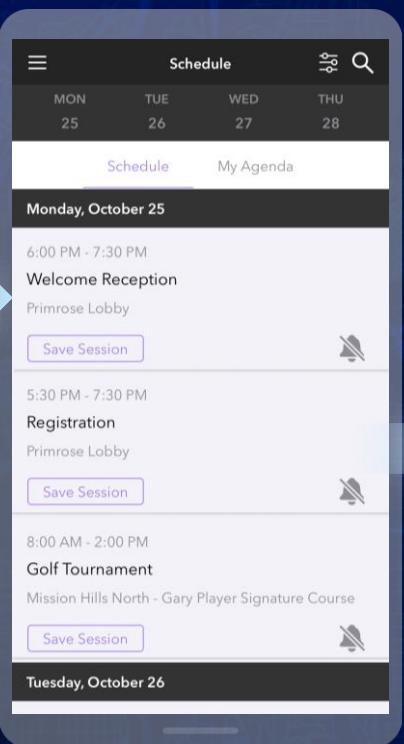


Please Share Your Feedback in the App

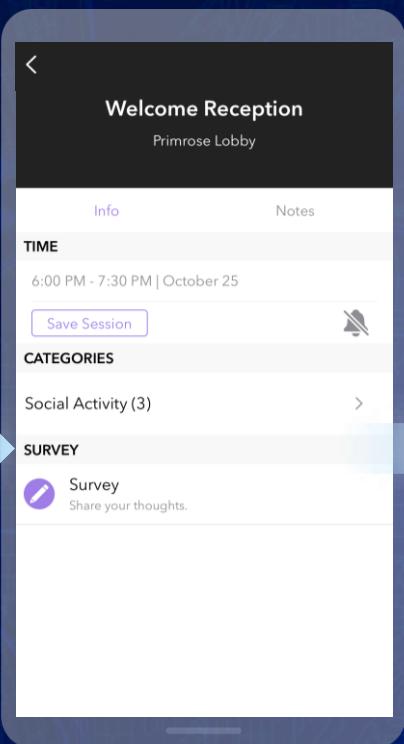
Download the Esri Events app and find your event



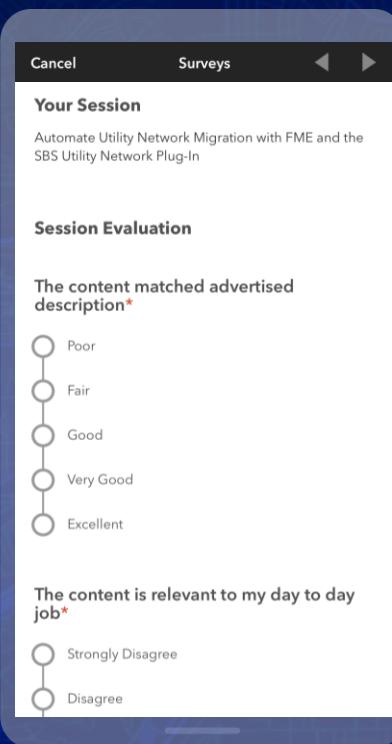
Select the session you attended



Scroll down to "Survey"



Log in to access the survey



Thanks!!

Questions?

resources





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