Item 4.2: GridGeo Overview

Joel Koepke
Manager of Grid Coordination Applications and Development

Board of Directors Meeting

ERCOT Public
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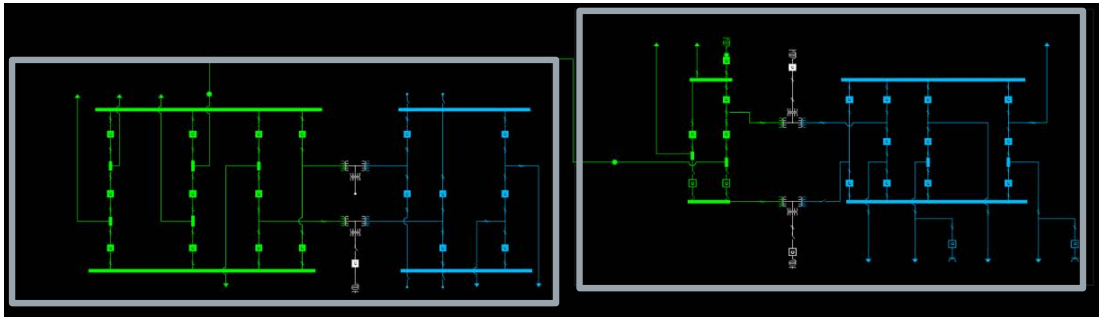
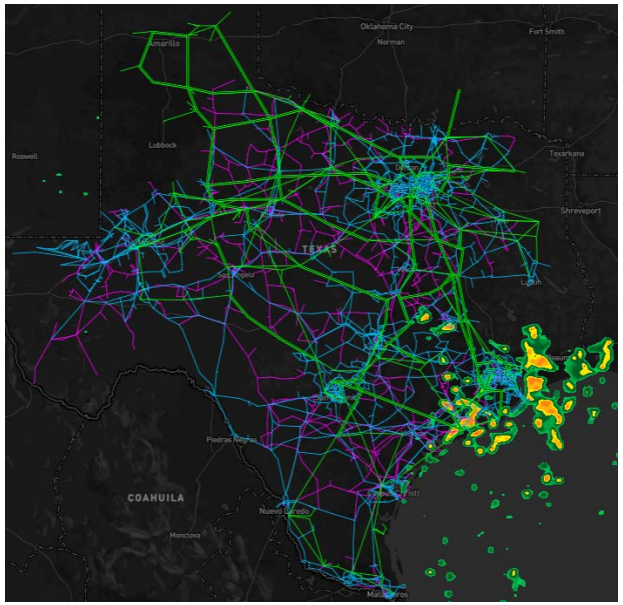
GridGeo Platform – Overview

- GridGeo is an ERCOT-developed, browser-based platform allowing for improved situational awareness.
- GridGeo is used by the control room operators, control room support staff, and operations training.
- GridGeo provides a combined view of the network operations model, real-time and historical information from reliability systems.



Multi-Station One-Line

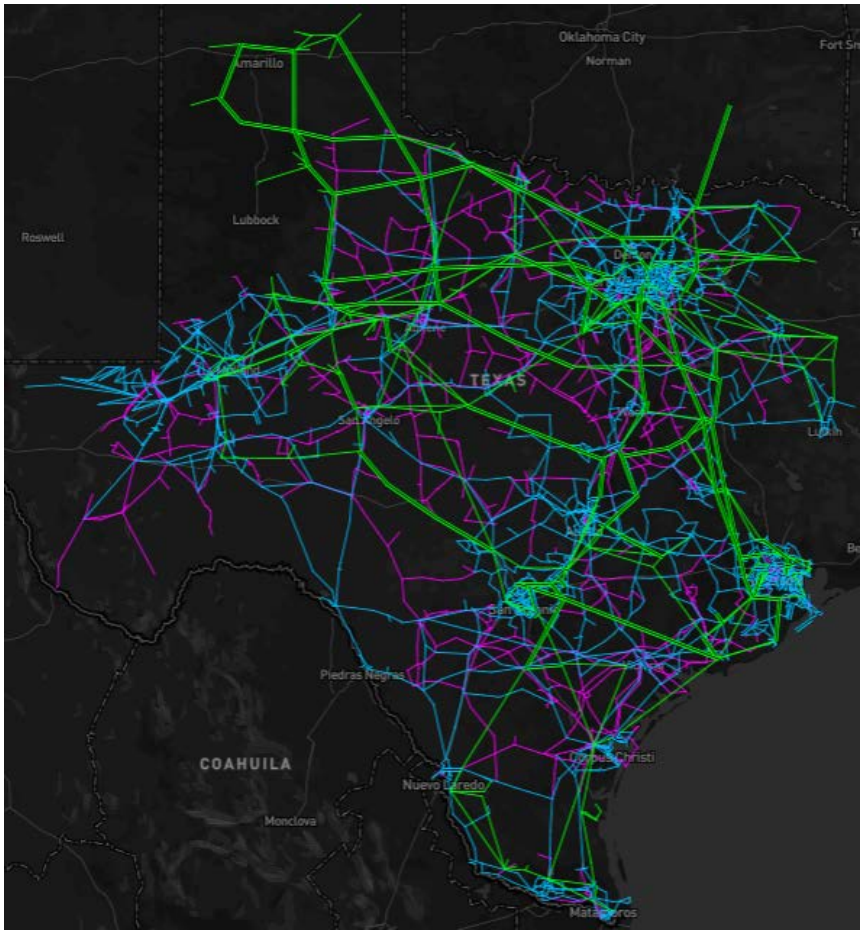


Texas Grid Map

GridGeo Platform - Applications

The GridGeo platform currently has three applications:

Texas Grid Map



GridGeo Platform - Applications

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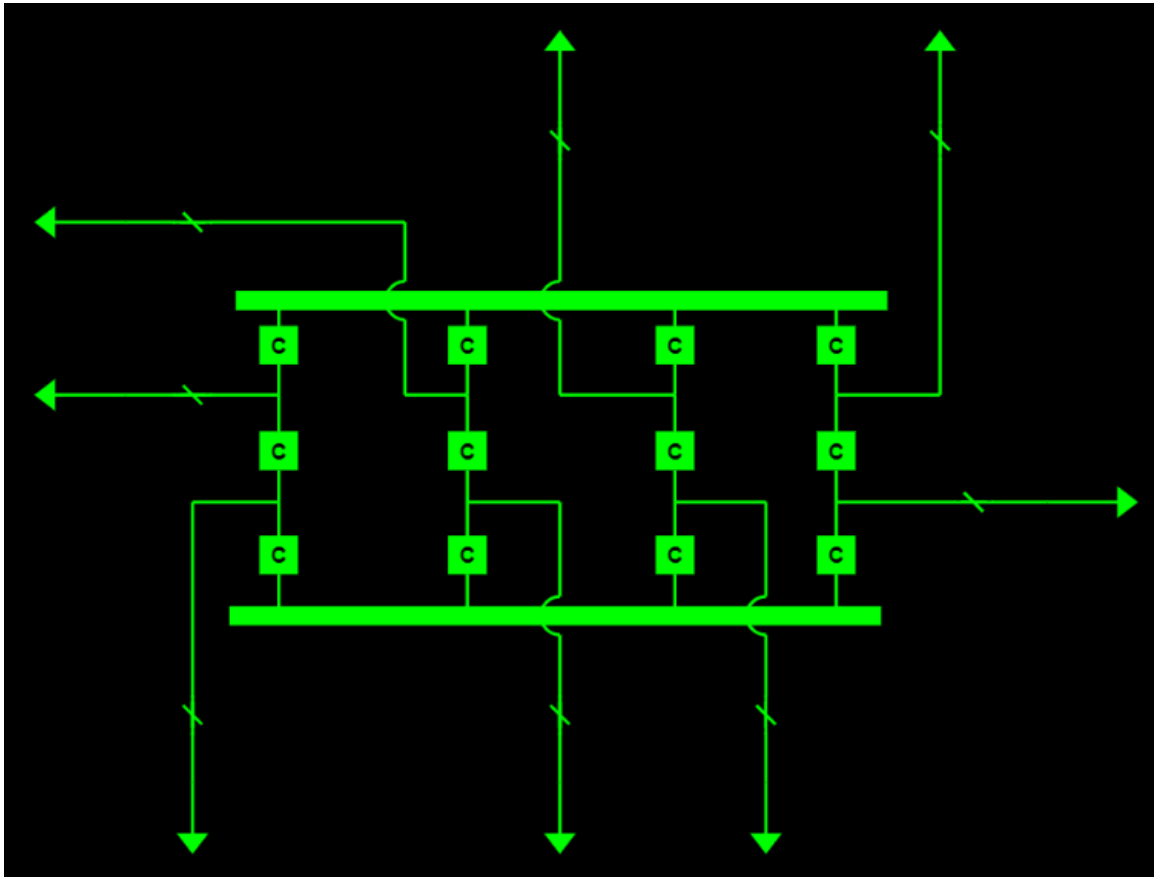
Substation One-Lines



GridGeo Platform - Applications

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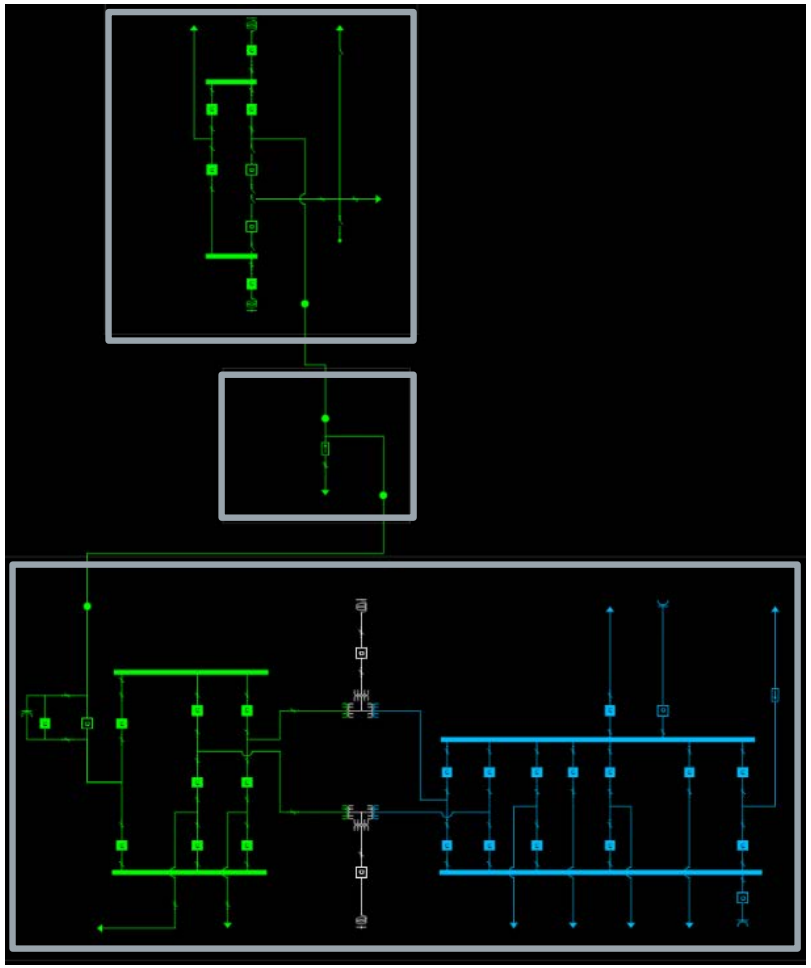

Texas Grid Map

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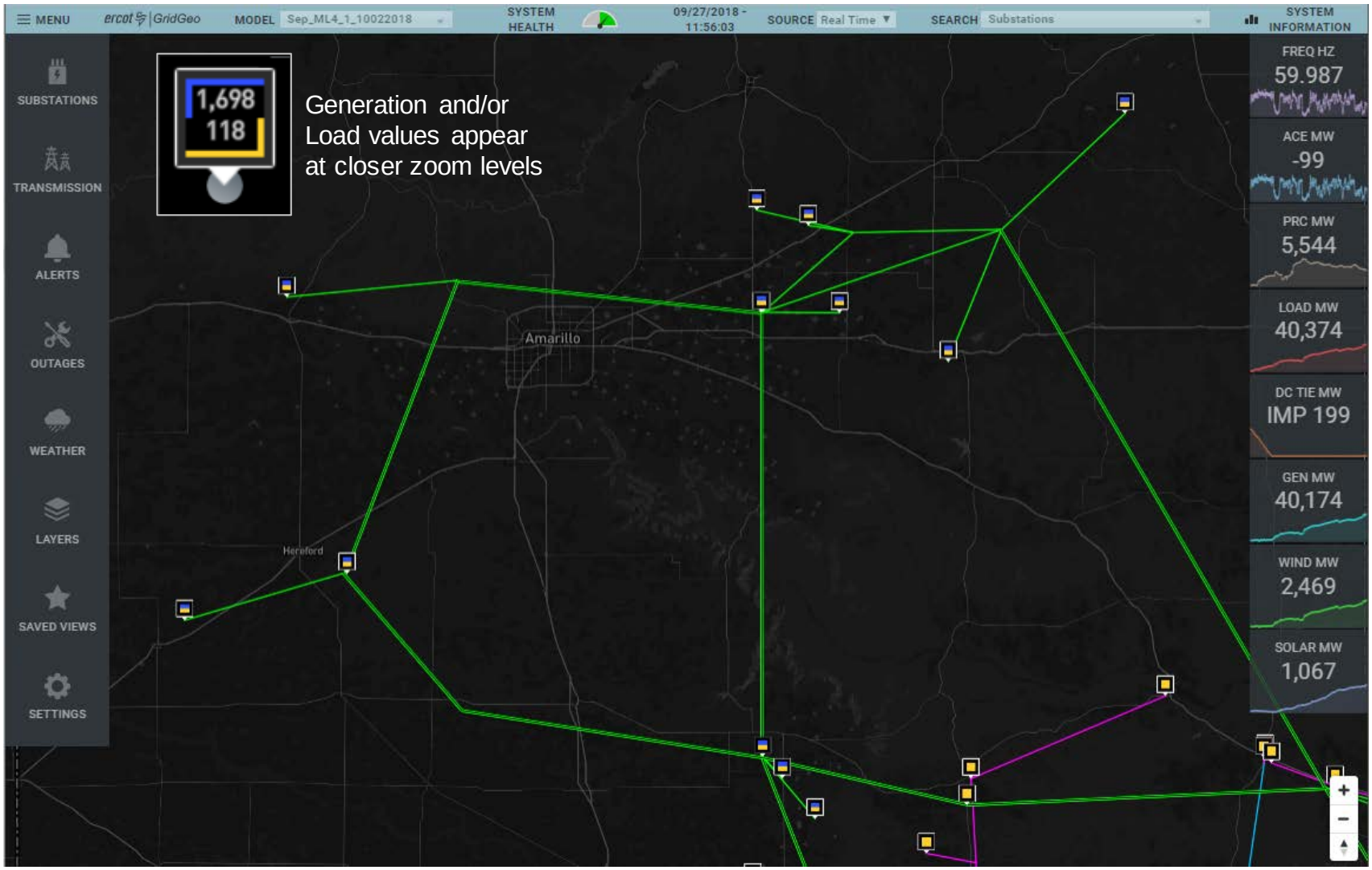
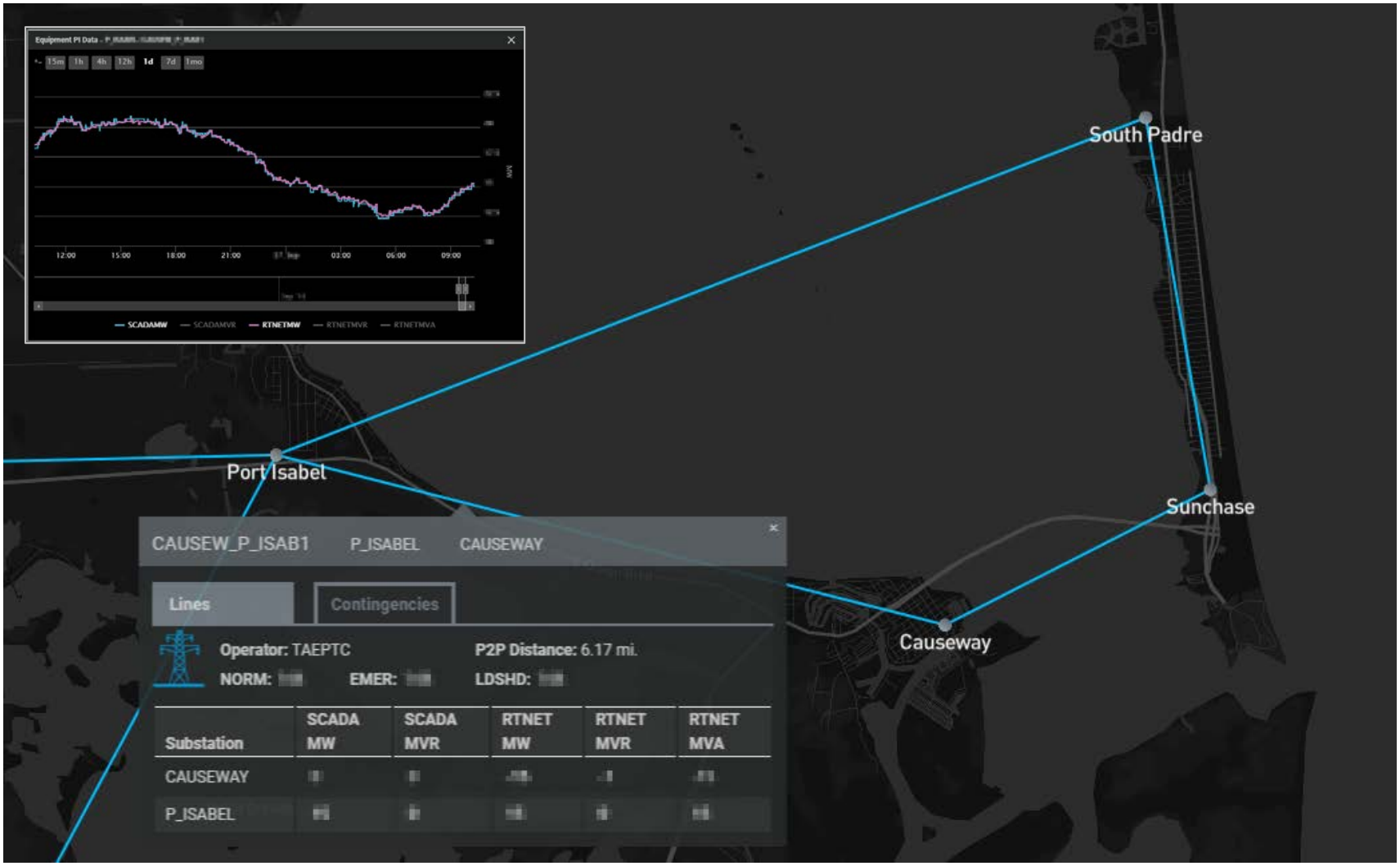


Texas Grid Map with Load and Generations Locations Identified.

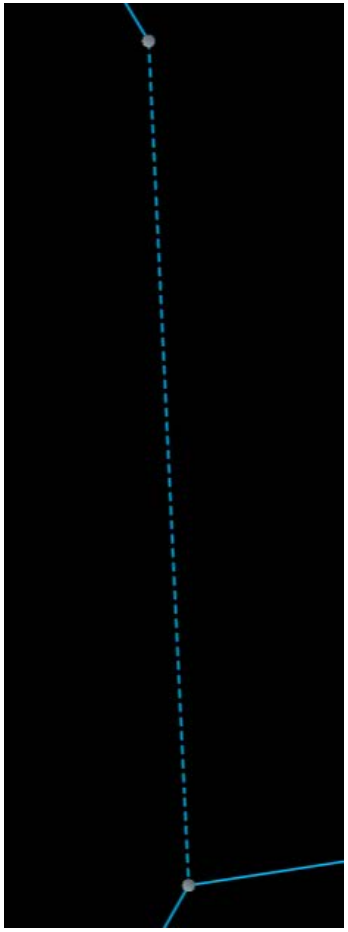
Texas Grid Map – Line Popups



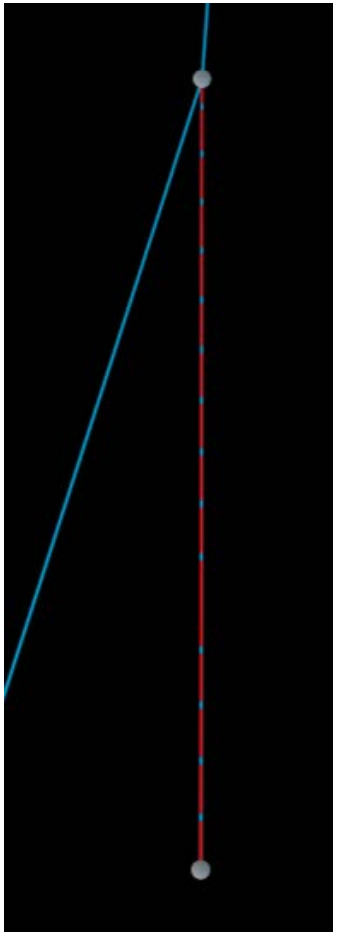
Selecting a transmission line shows additional information.

Texas Grid Map – Outage Identification

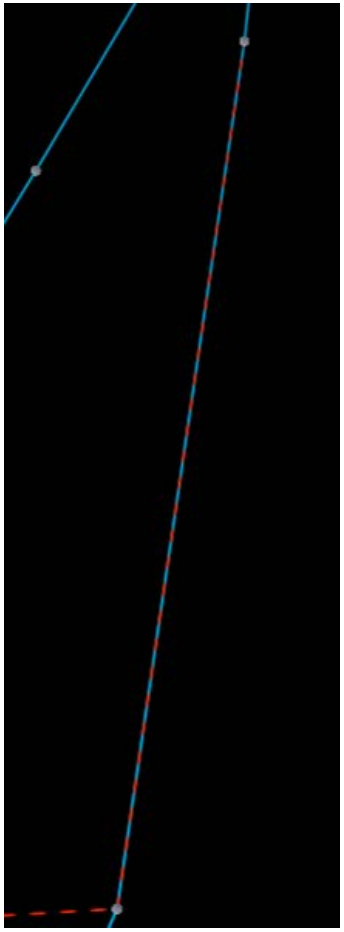
GridGeo has implemented a color scheme to help identify outaged equipment while still providing insight into voltage level.



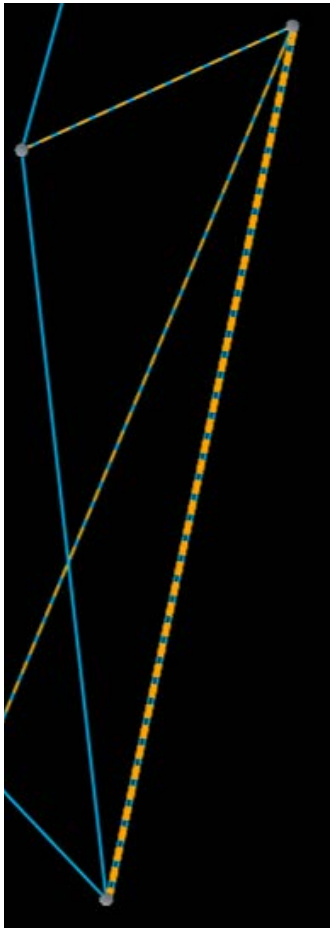
Scheduled Outage



Unscheduled Outage

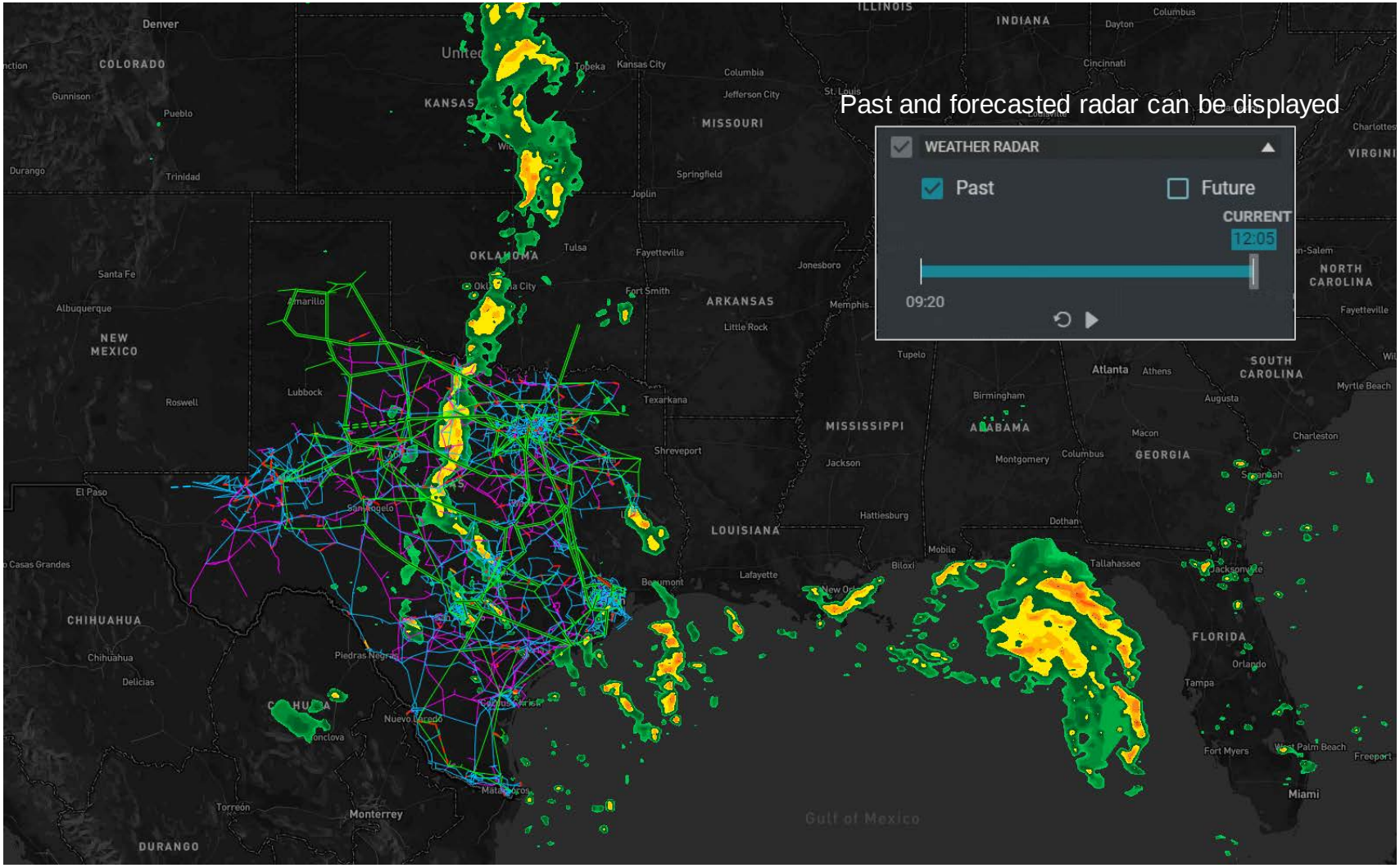


Partially Energized Line



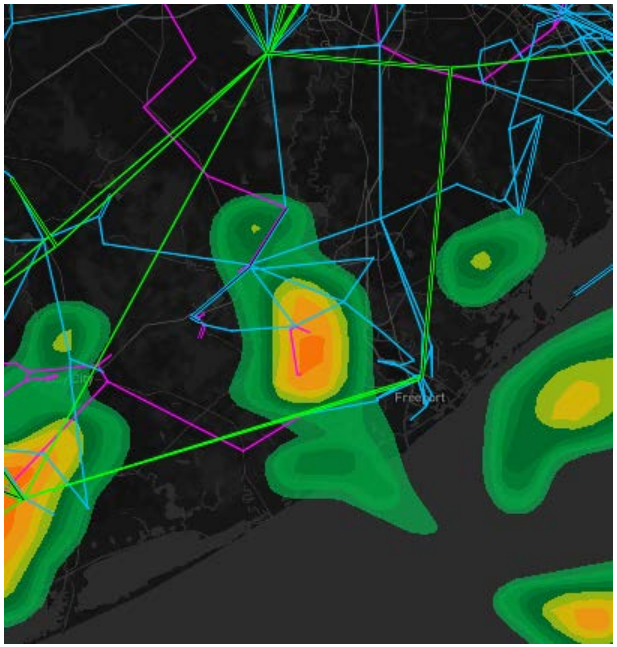
New Equipment Outage

Texas Grid Map – Radar Layer

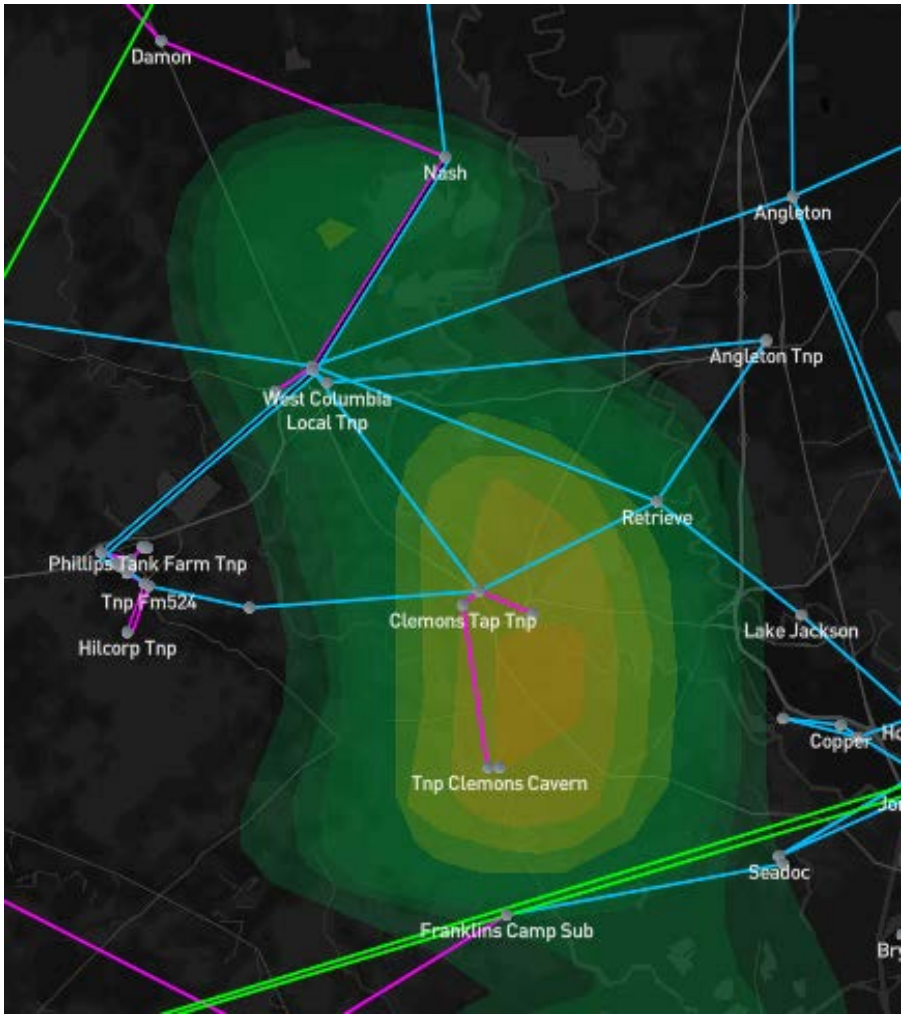


The GridGeo 3.0 release introduced weather layers, including radar, to the TGM.

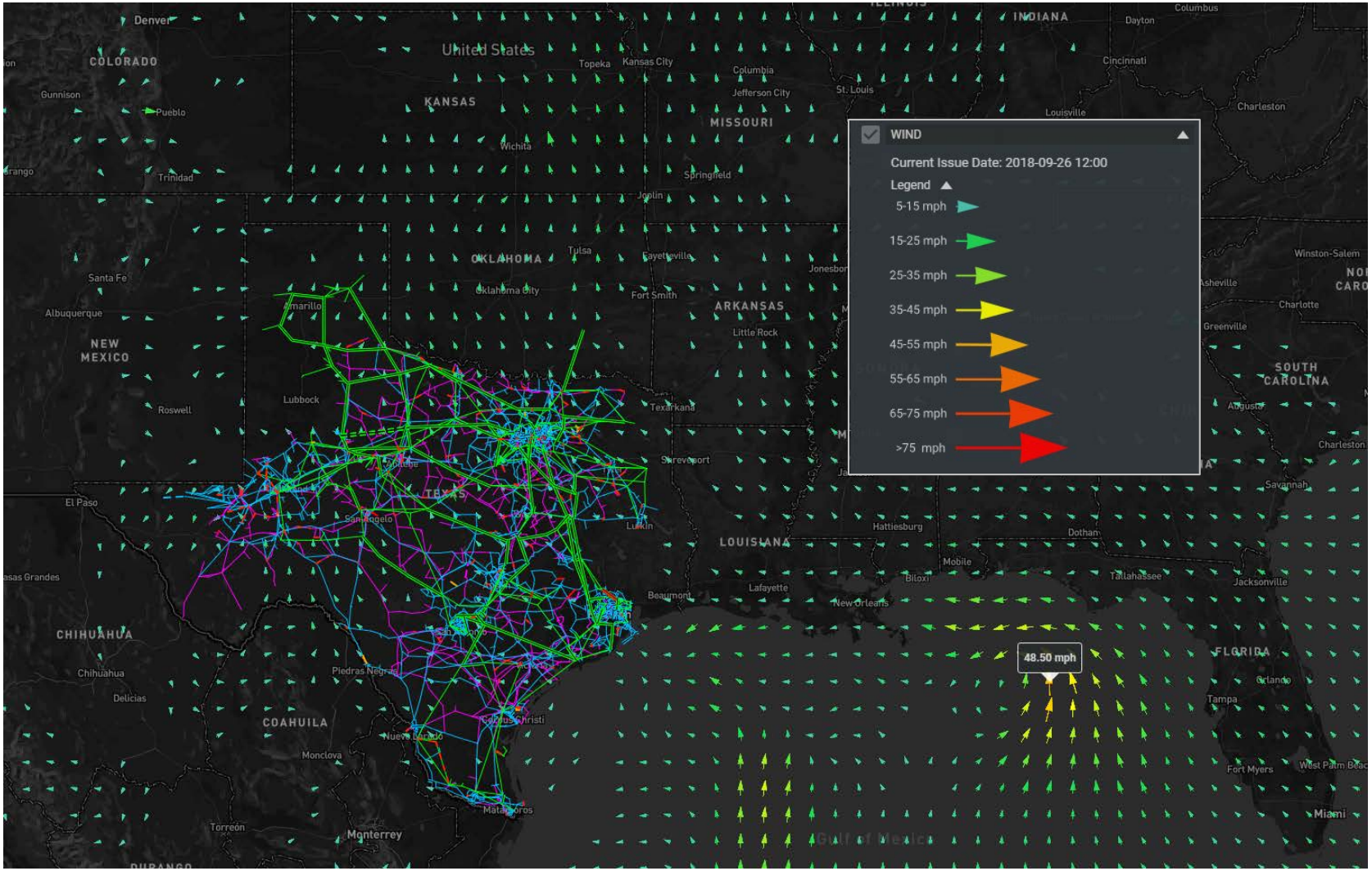
Texas Grid Map – Radar Layer



Radar becomes more transparent as the Operator zooms in.

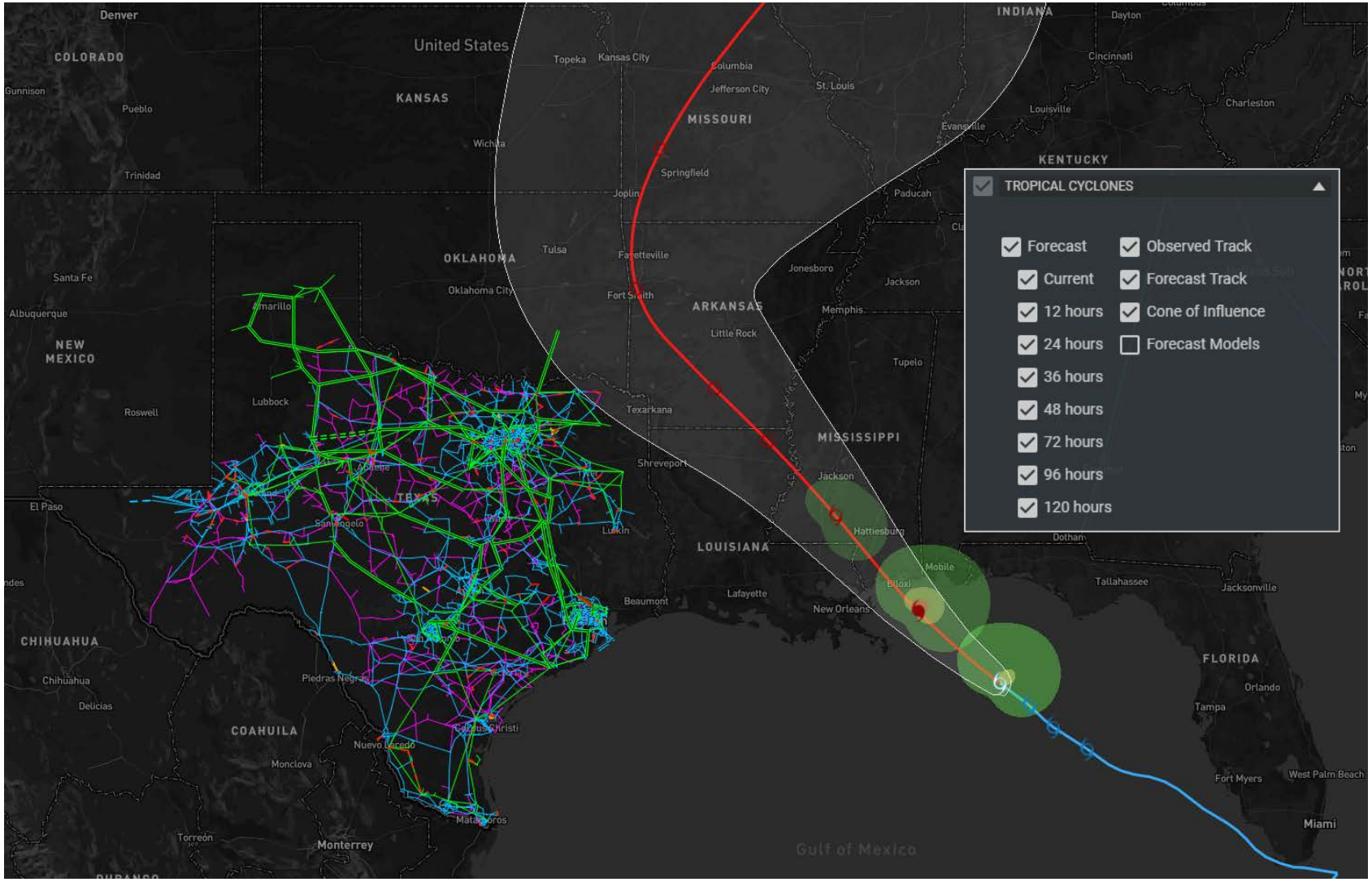


Texas Grid Map – Wind Layer



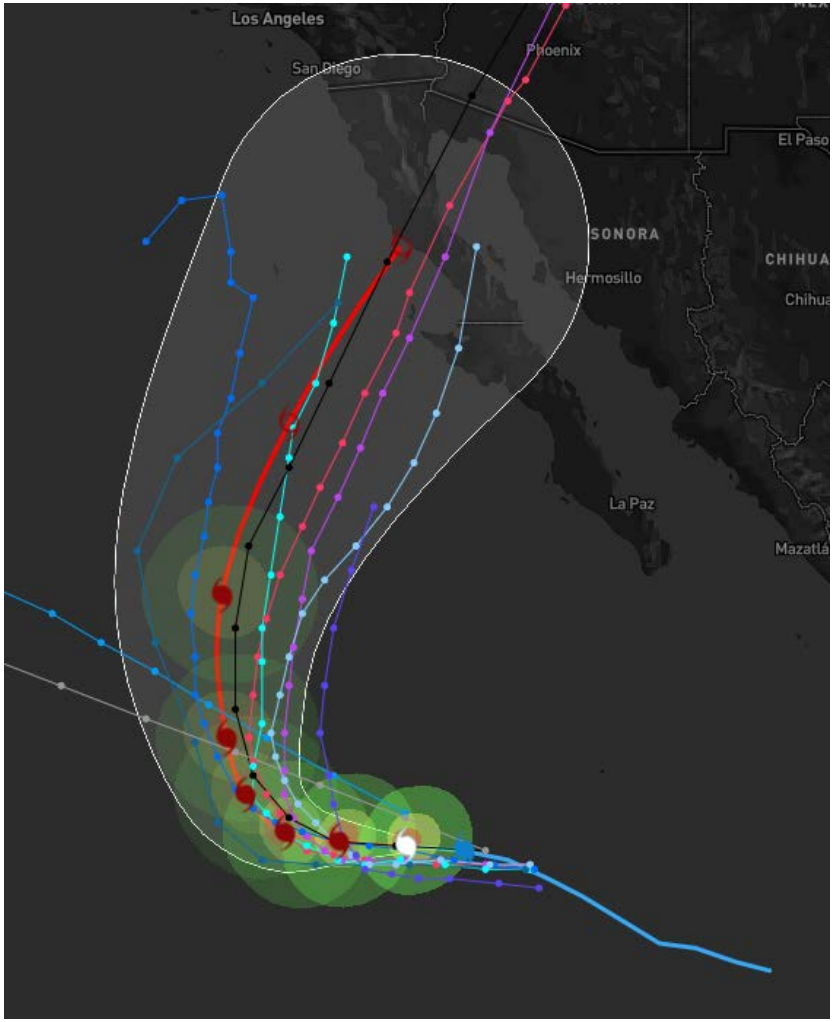
Wind layer displayed on TGM.

Texas Grid Map – Cyclone Layer



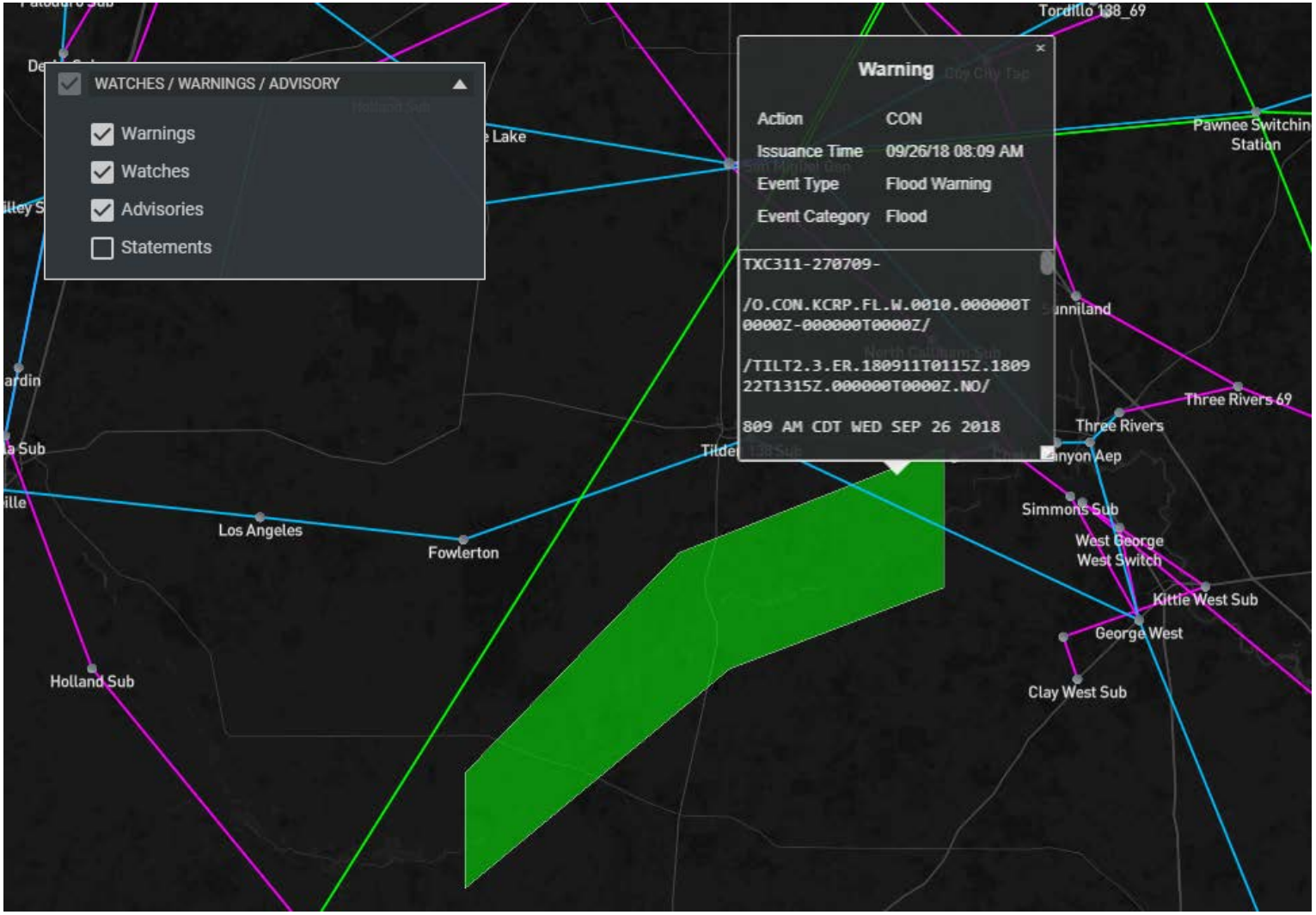
Cyclone layer displayed on TGM.

Texas Grid Map – Cyclone Forecast Models



Forecast models are available but off by default.

Texas Grid Map – Watches, Warnings, and Advisories

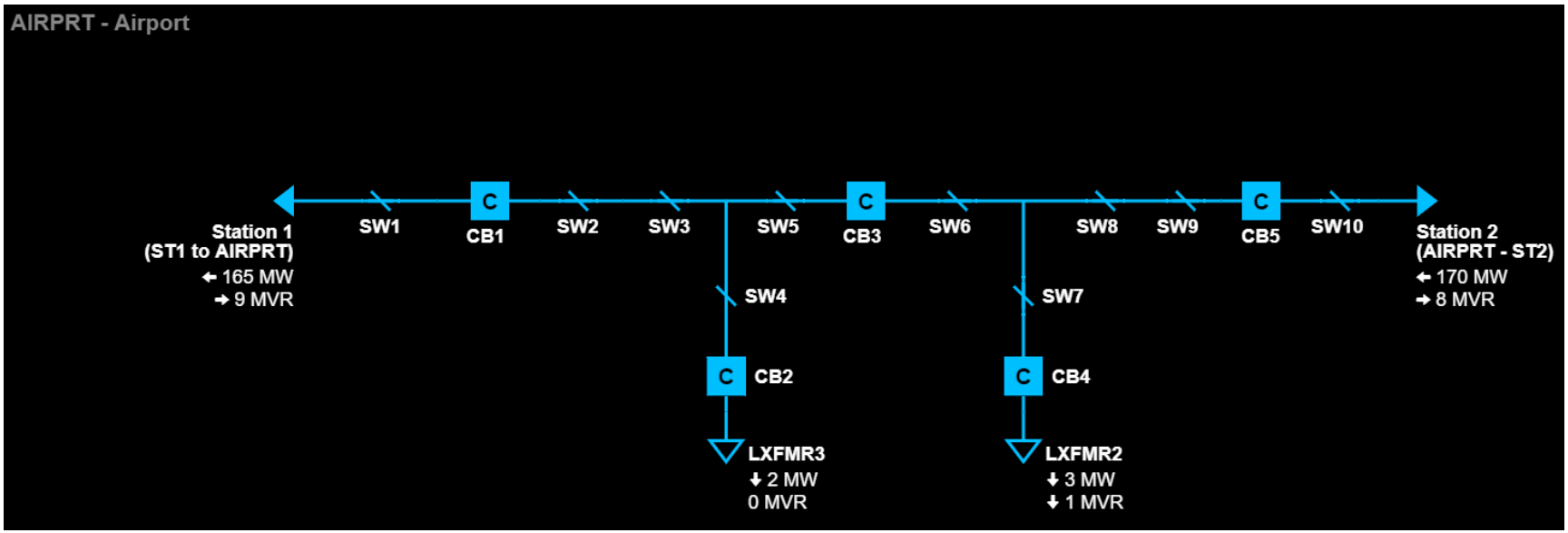


A Weather Warning displayed on the TGM.

Substation One-Lines

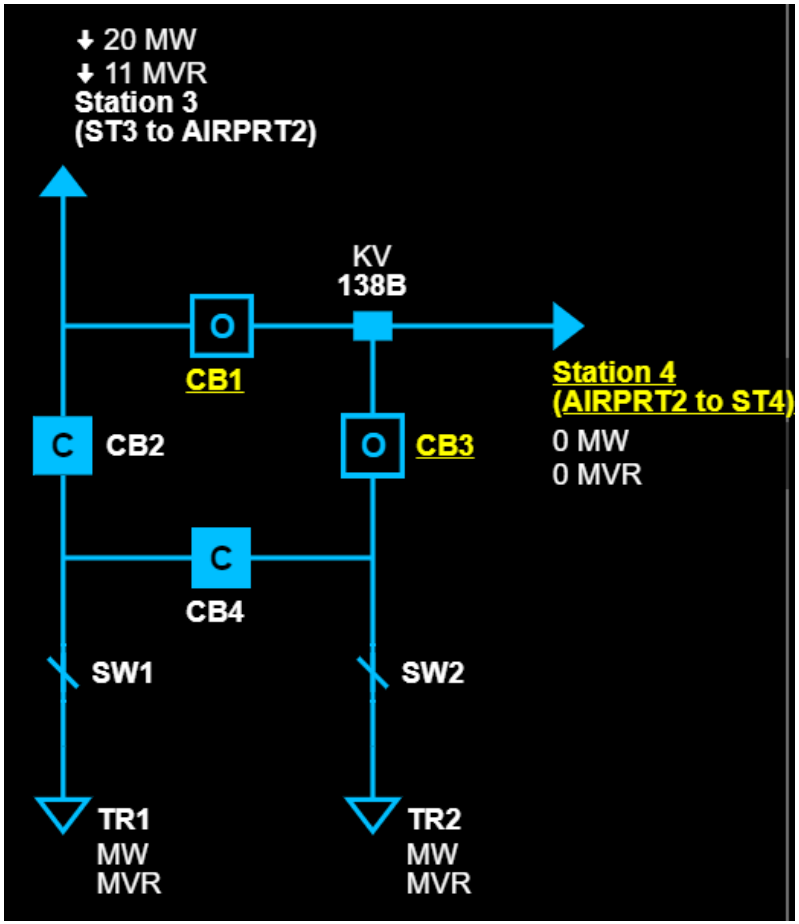
Substation One-Lines

Clicking on the substation icon displays the substation one-line.

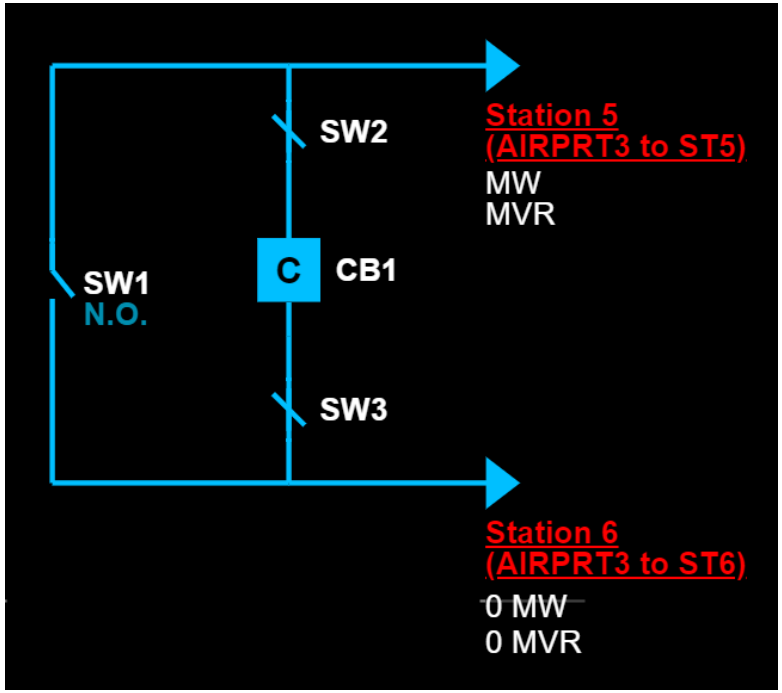


Substation one-lines match EMS layout.

Substation One-Lines – Outage Highlighting

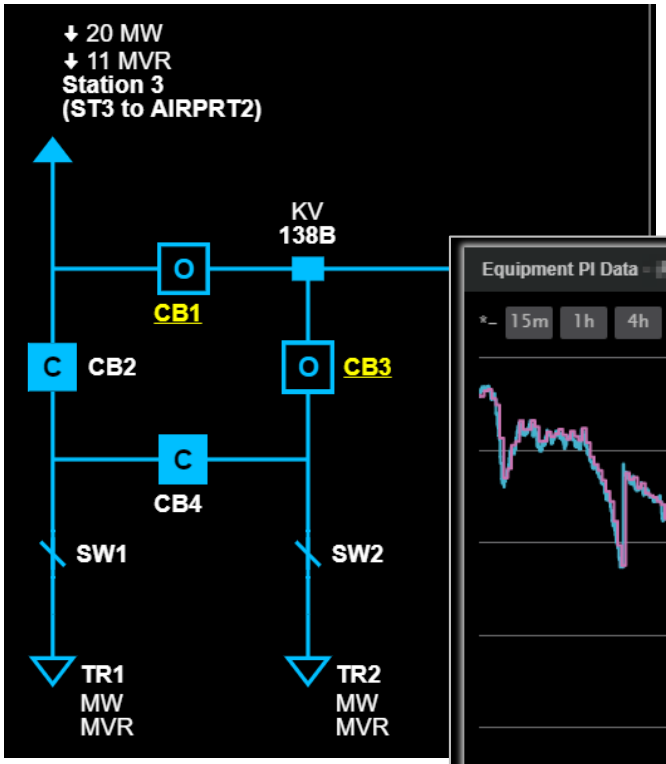


One-line with scheduled outages highlighted.



One-line with FOD-detected outages highlighted.

Substation One-Lines – Historical Values



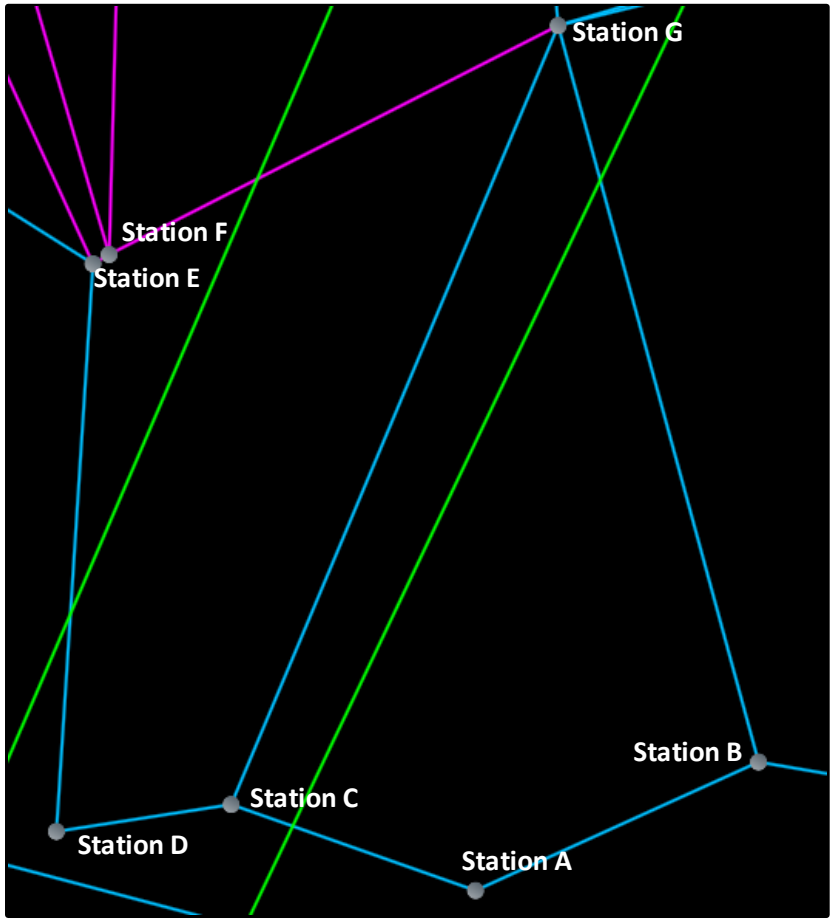
User can click on values on one-lines to see historical flows.

Multi-Station One-Lines

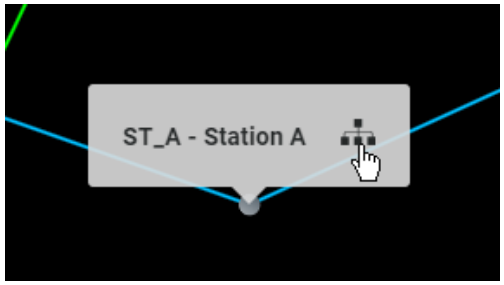
GridGeo – Multi-Station One-Lines

Multi-Station One-Lines allow Operators to see multiple one-lines in a single display.

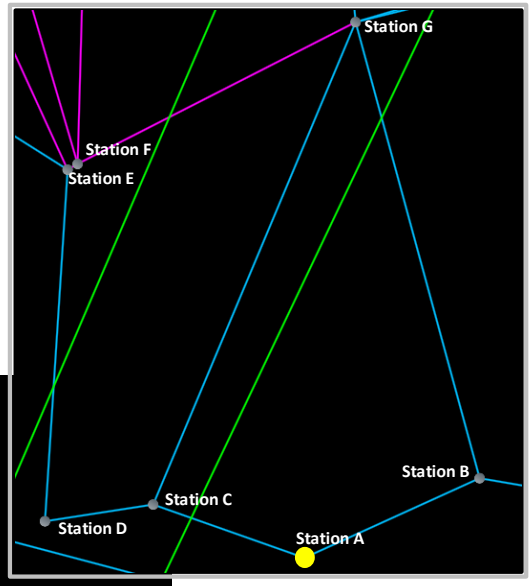
Example: Create a MS1L with the following substations.

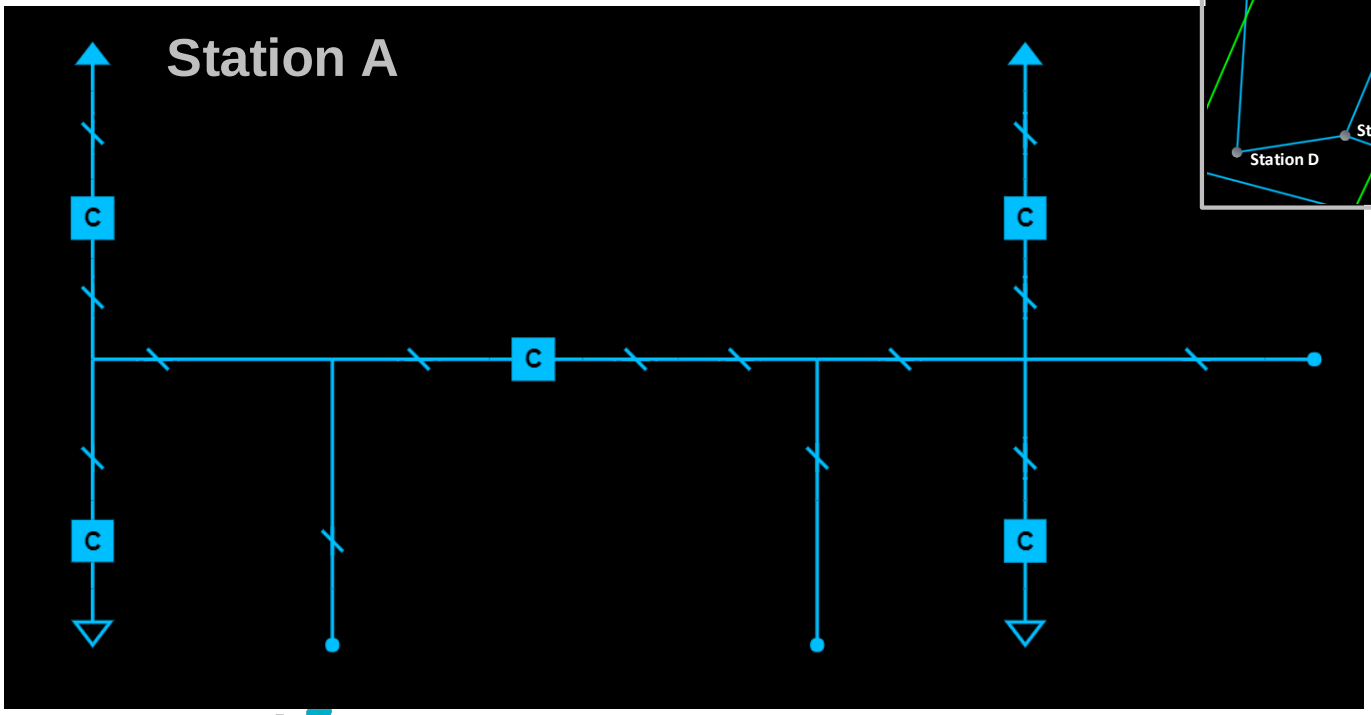


GridGeo - Multi-Station One-Lines (MS1L)

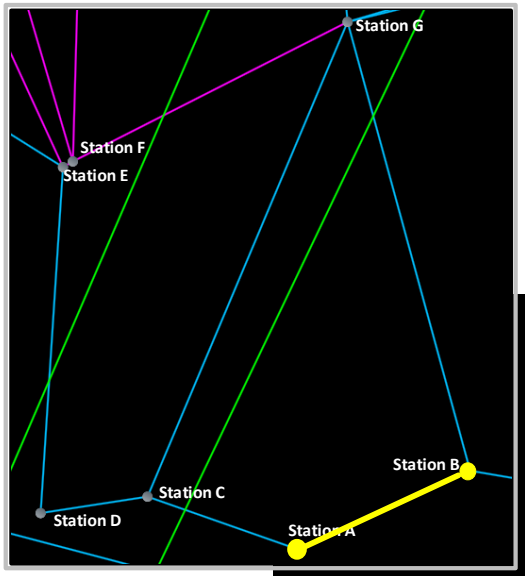


First, the user navigates to a one-line.

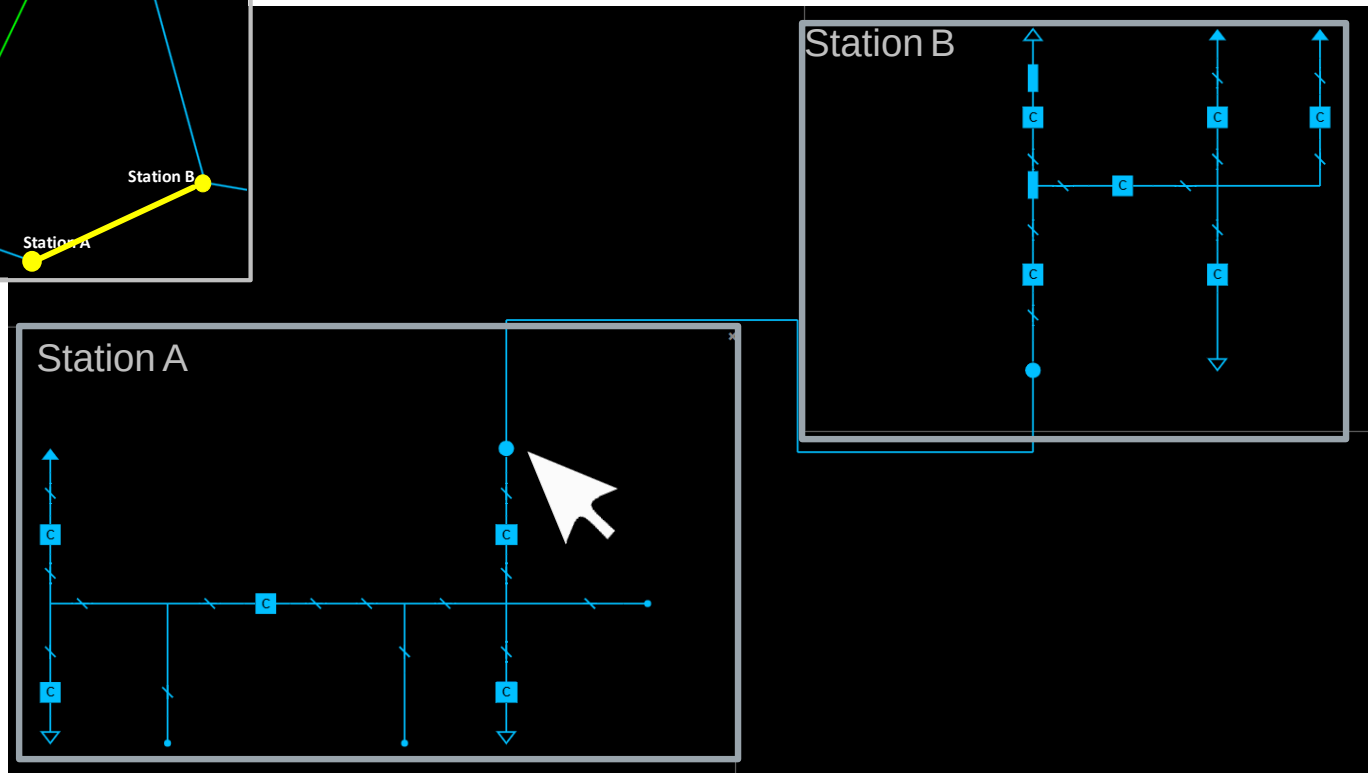




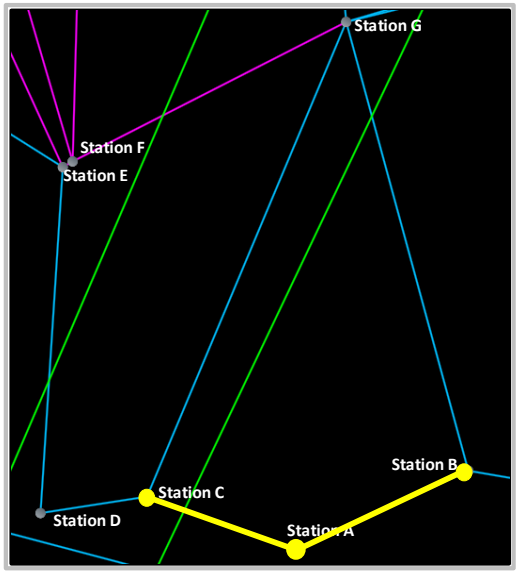
GridGeo - Multi-Station One-Lines (MS1L)



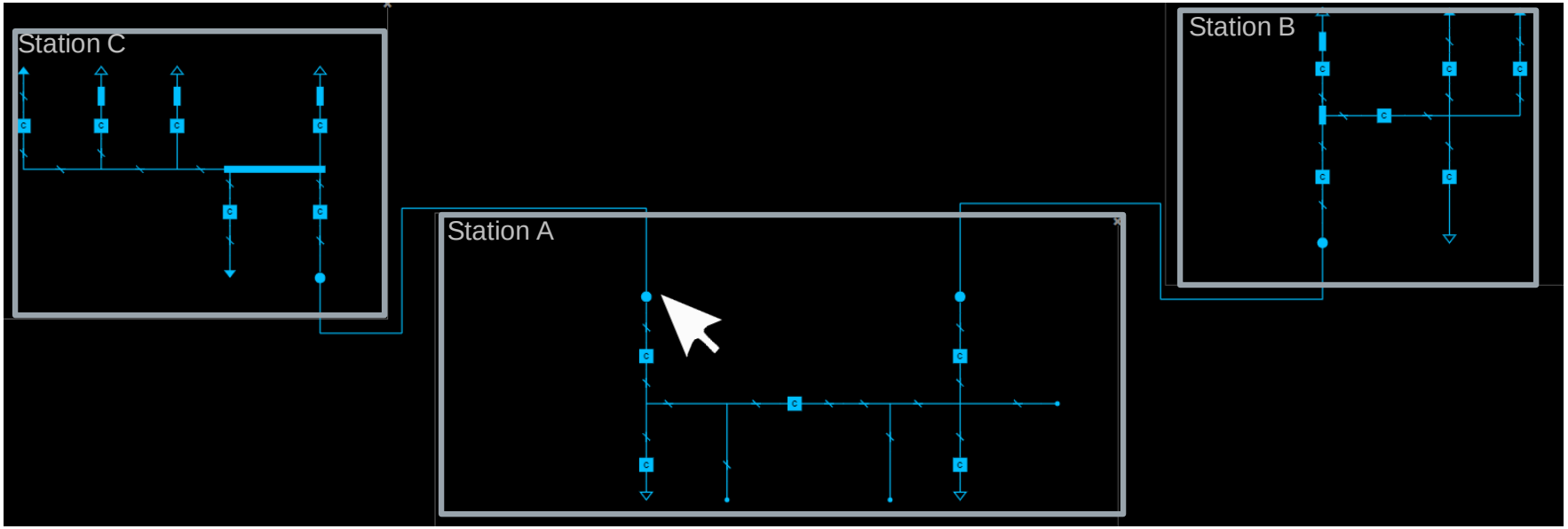
Within the one-line, the user clicks on a line to add a new substation.



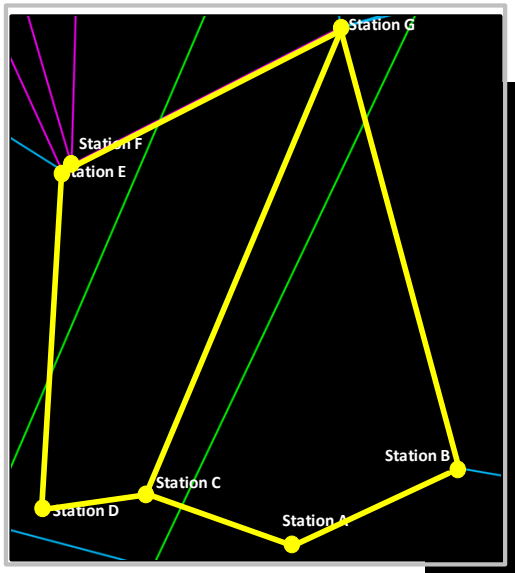
GridGeo - MS1L



An additional substation can be added by clicking on a different line.

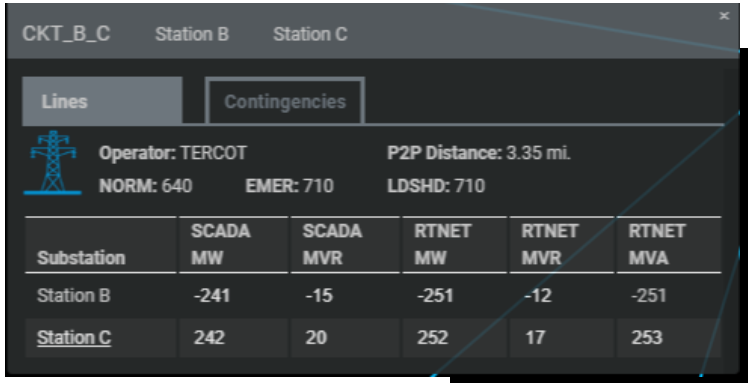


GridGeo - MS1L



The process can be repeated to add many substations.

GridGeo - MS1L



The user can click on any equipment to get additional information.