Central Hudson – Hosting Capacity Maps

Triana Cano, Assistant Engineer

Central Hudson – Distribution Planning & Interconnections

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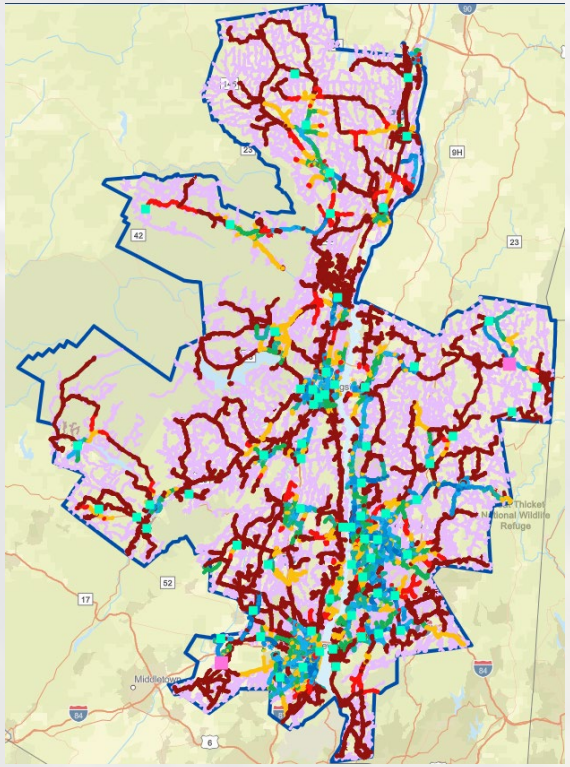
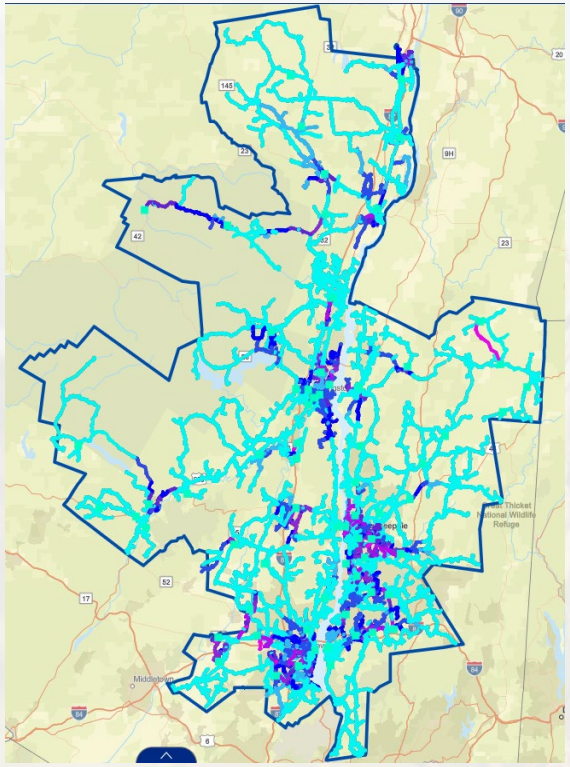
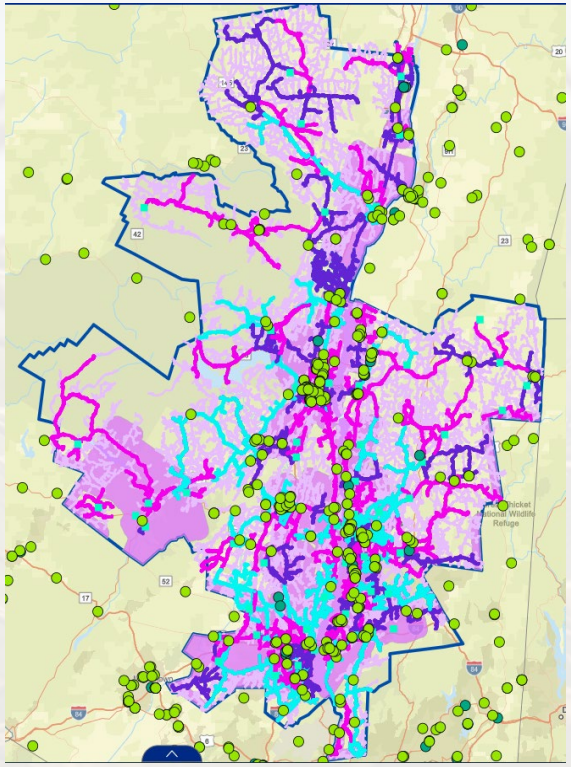
Hosting Capacity Maps



Solar PV



Energy Storage



Electrification

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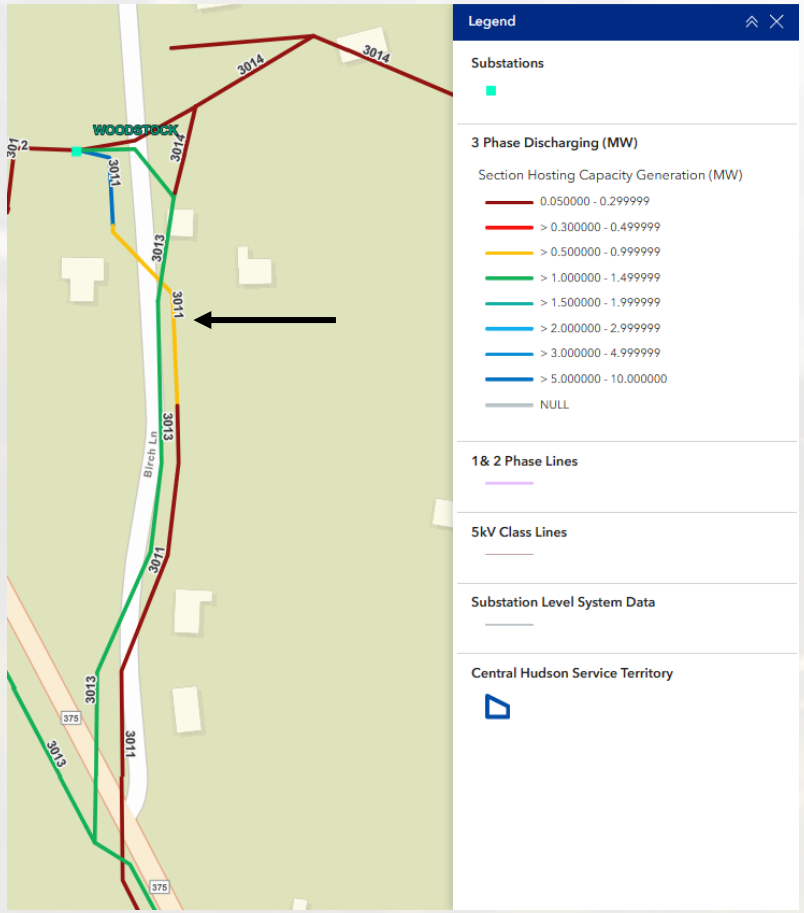
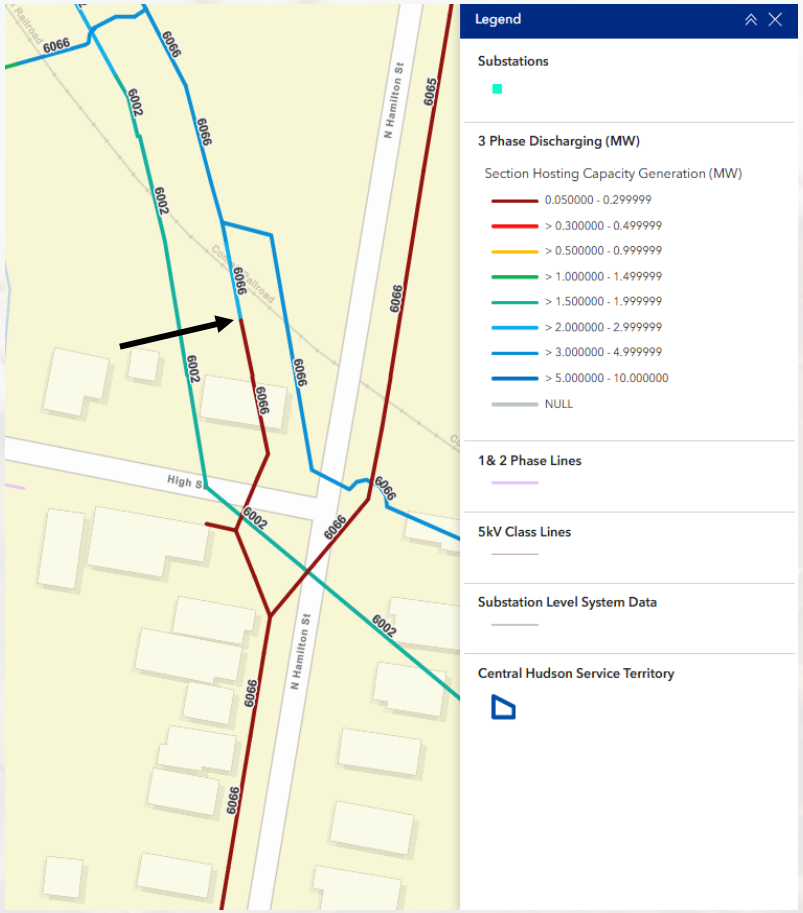
Impacts on Hosting Capacity

- Circuit Loading
  - More load on a circuit helps hosting capacity for PV and ESS discharging but hurts ESS charging
- Existing DG
  - More DG on a circuit will hurt hosting capacity, less DG will help
- Distribution Equipment
  - Depending on the equipment, the devices can help or hurt hosting capacity
  - Hosting capacity takes into account regulation equipment for excessive operation
- Conductors
  - A conductor of a larger size will help hosting capacity, but smaller sizes will hurt it due to the conductor's rating causing thermal concerns

Effects of Distribution Equipment



Regulators



Step-Down Transformer

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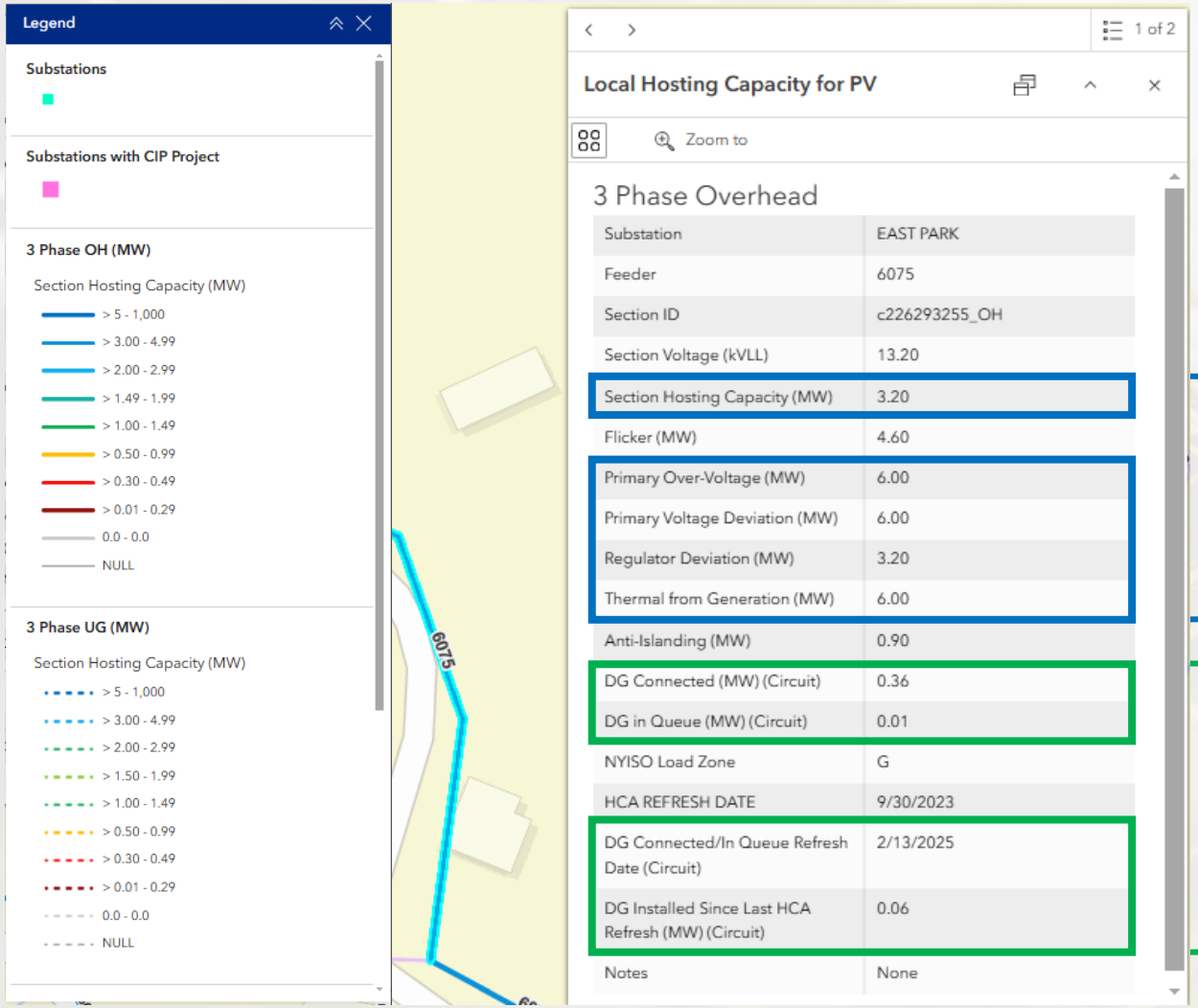
Solar PV Map Tab



All fields are updated annually or semiannually with each hosting capacity analysis

Section Hosting Capacity is determined by

- Primary Over-Voltage
- Primary Voltage Deviation
- Regulator Deviation
- Thermal from Generation

Updated monthly with queue data

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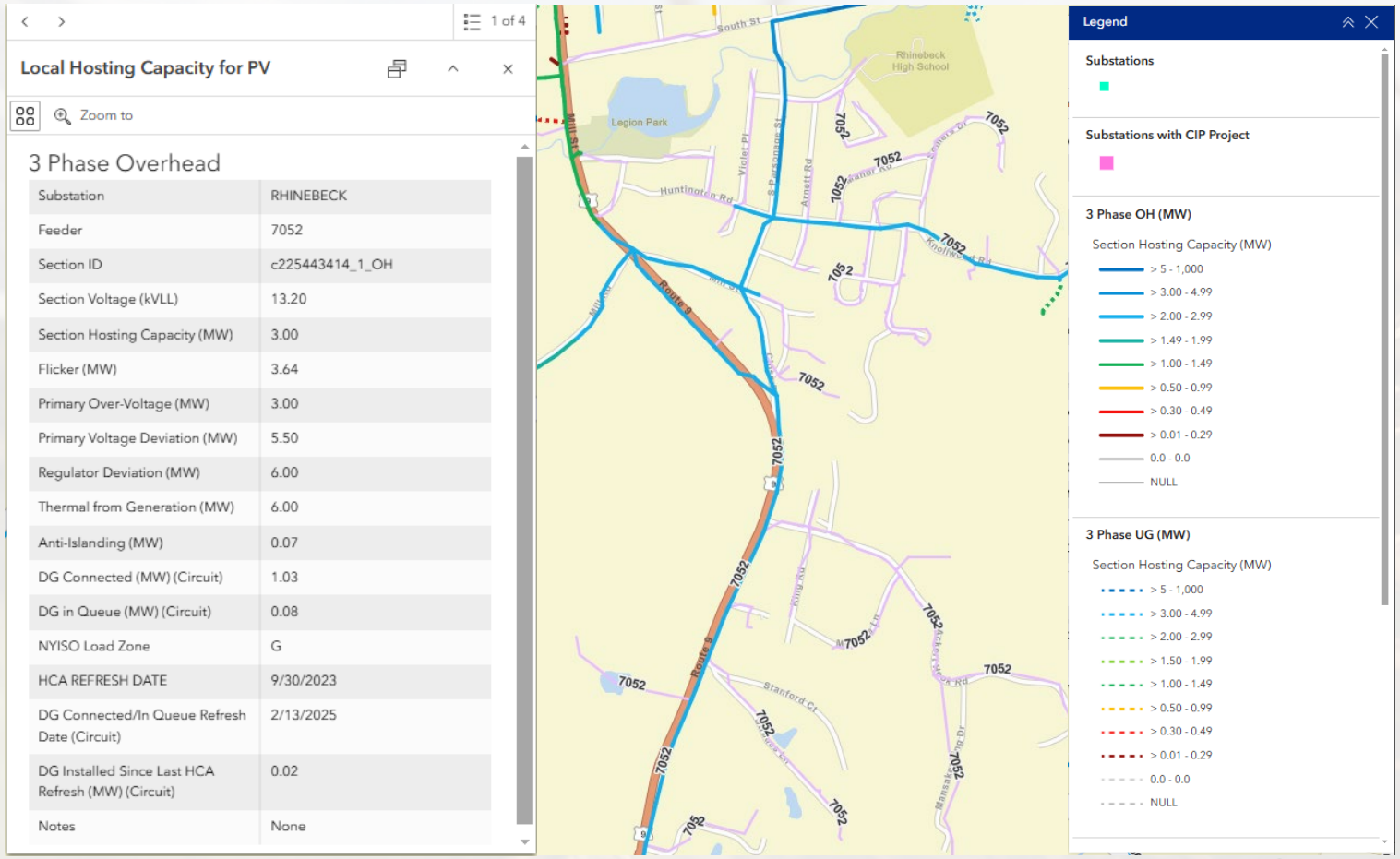
Ideal Feeder Option for Solar PV

- Gradual decrease in hosting capacity downstream of substation
- High hosting capacity at feeder
- High section hosting capacity

Attempting to interconnect a large DER system to a circuit similar to this would likely result in lower upgrade costs and would be less likely to be downsized



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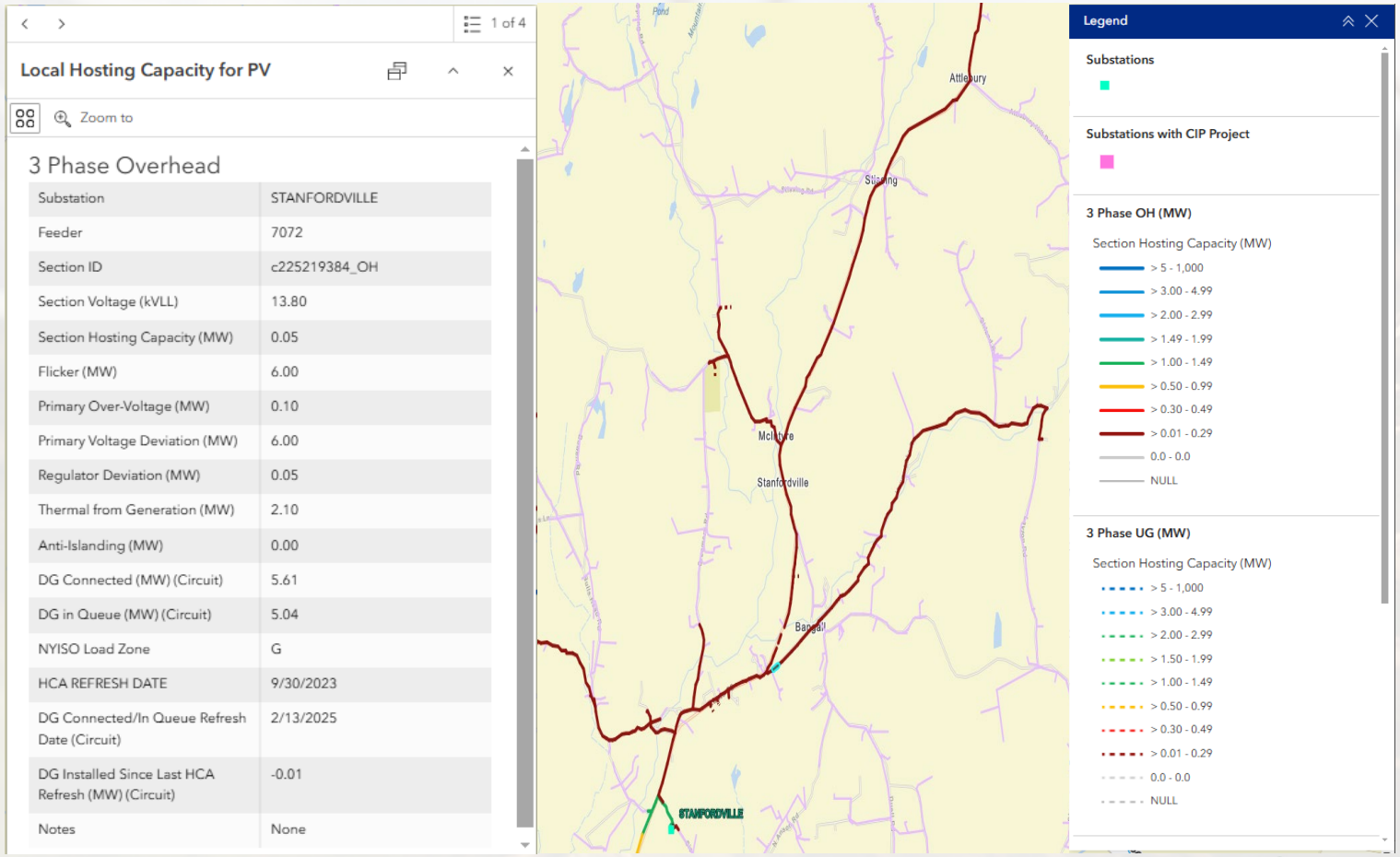
Weak Feeder Option for Solar PV

- Drastic decrease in hosting capacity downstream of substation
- Low hosting capacity at feeder
- Low section hosting capacity

Attempting to interconnect a large DER system to a circuit similar to this would likely result in high upgrade costs and possible downsizing or a dedicated feeder



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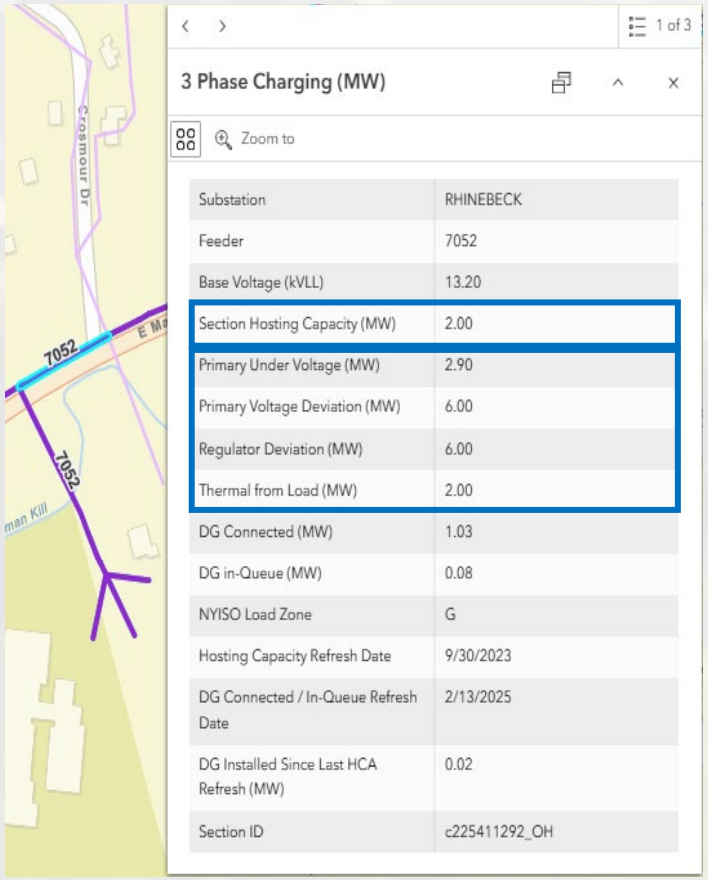
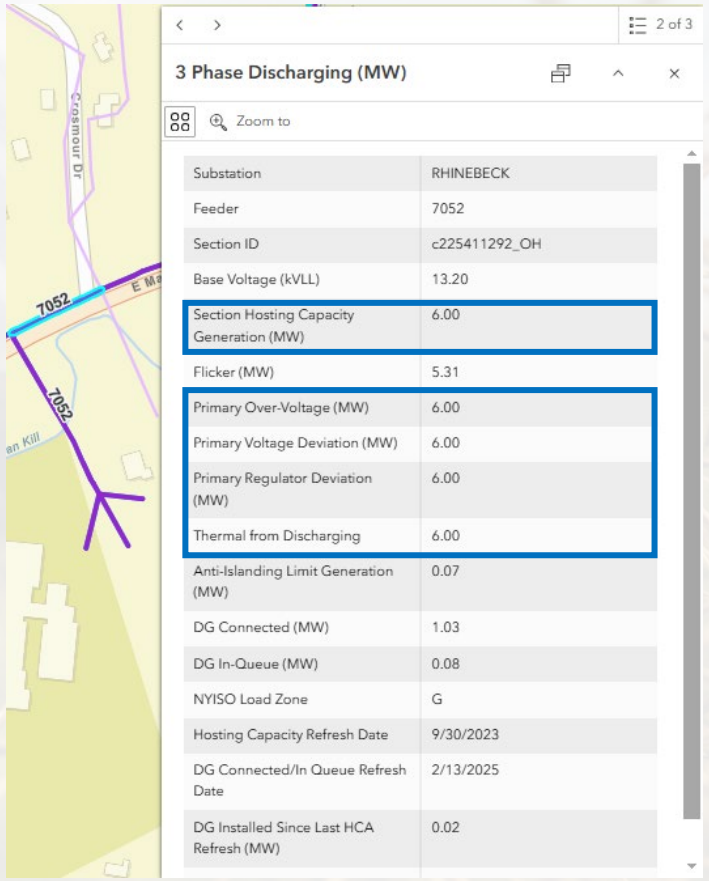
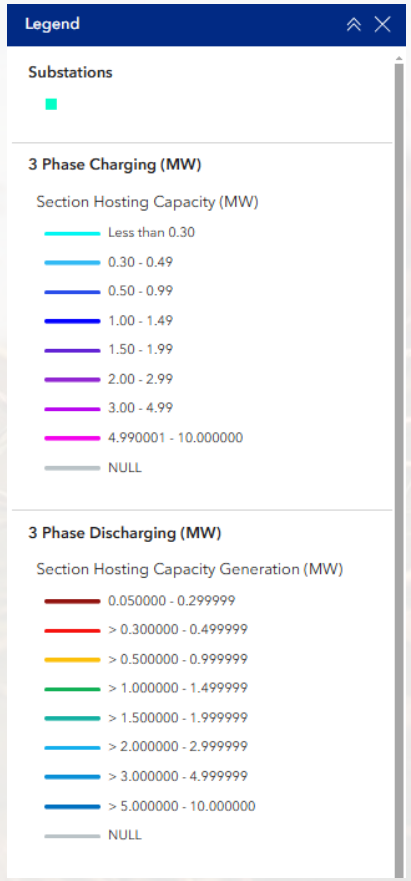
Energy Storage Map Tab



Charging



Discharging



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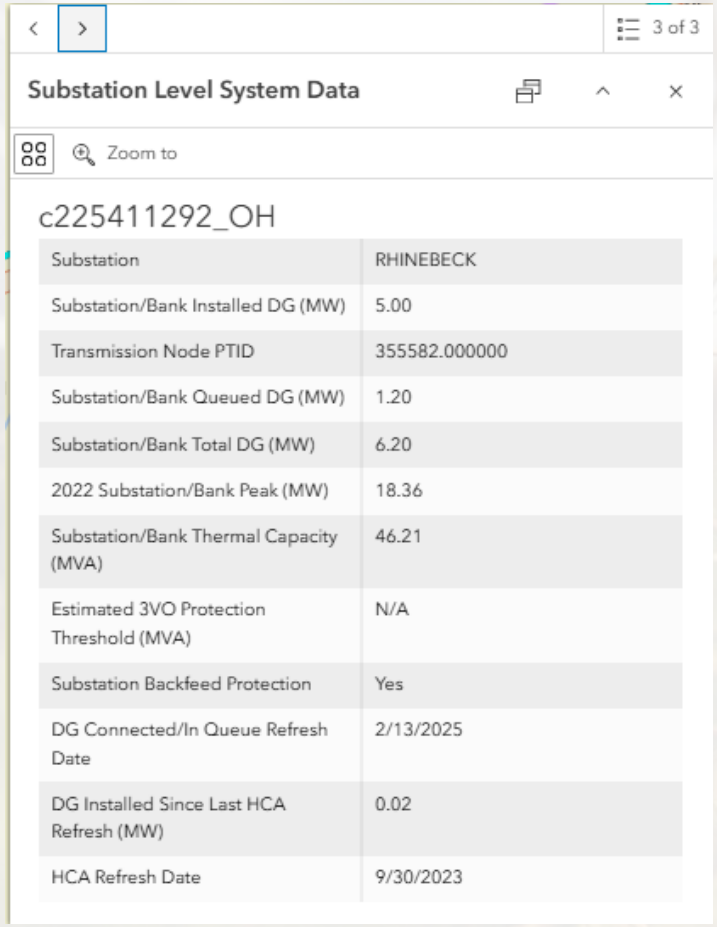
Substation Data Tab



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Summarized Hosting Capacity Maps Tips

- Locations closer to a substation will result in higher hosting capacity and likely fewer upgrades
- Check the DG interconnected and in queue on the feeder to get an idea of how much hosting capacity may be left
- Avoid circuits with drastic drops in hosting capacity, they may have a strict limiting factor
- Location will determine POI, circuit, and substation

Hosting Capacity Map Status Updates

- Implemented a new load flow software
- New ESRI GIS map
- Anticipate map update in April that may differ slightly from the current version

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Relevant Sources

Central Hudson - Solar Energy & Distributed Generation Homepage

Central Hudson - Hosting Capacity Maps

Central Hudson - Solar PV Hosting Capacity Map

Central Hudson - Energy Storage Hosting Capacity Map

Joint Utilities - Hosting Capacity

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Thank you!

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