JOINT UTILITIES
OF NEW YORK

Hosting Capacity Training Session – Beginner

(November 21, 2025)

Welcome to the HC Stakeholder Training Session!

Thank you for joining!

- We're excited to have you here as we walk through today's training materials.
- A few housekeeping items:
  - This session will be recorded for reference and for those unable to attend live.
  - Slides and materials will be shared following the session.
  - Please stay muted unless speaking to minimize background noise.
  - Please send your questions through the chat. We will address all submitted questions during the Q&A at the end of the training.

Disclaimer: *This training reflects the status of the hosting capacity maps and related processes as of* ***November 21, 2025****. Content is subject to change as the maps continue to evolve in response to regulatory updates, utility refinements, and stakeholder feedback.*

Agenda

- Introduction
- Survey
- Use-cases
- Interface, Layers, Legends
- Live Demo
- Q&A

Review of Utility Data Portals

Each utility provides links to a publicly-available data portal which includes hosting capacity map data.

Hosting capacity tools support the advancement of DER integration and DER market growth by guiding the DER investment to grid locations where the cost of interconnection is potentially lower.

These portals provide three maps: a PV Hosting Capacity Map, a Storage Hosting Capacity Map, and an Electrification Capacity Map.

Each map type provides the location and specific information for selected electric distribution lines and associated substations within the utility electric service areas. Users can access information such as:

- feeder-level data values showing the minimum and maximum hosting capacity value,
- queued generation, and
- connected generation.

Additional data layers exist to assist developers in the application of DER in a service territory.

These layers incorporate system data like peak and minimum load duration curves, locational system relief values (LSRVs), forecasted 8760 load data, and maps for network and non-network sections of service territories.

Others offer features such as the REST API interface to enable developers to integrate utility data with their own GIS systems and mapping tools.

What Each Map Shows

Map Type	Purpose	Granularity
PV Hosting Capacity	Available capacity for new solar systems	Sub-feeder (3-phase segments)
Storage Hosting Capacity	Where batteries can connect & operate (charge/discharge)	Sub-feeder (3-phase segments)
Electrification Capacity	Headroom for new electric load (e.g., EVs, heat pumps)	Feeder or network transformer

- ✓ Values shown in megawatts (MW)
- ✓ Color-coded for quick interpretation
- ✓ Pop-up details when clicking on feeders/segments

Training Survey – Responses Summary

- Drawing from survey feedback, the JU created beginner and advanced hosting capacity trainings.
- These trainings focus on hosting capacity for PV, energy storage systems, and electric vehicles, showcasing the functionalities in these maps and how they can help direct DER investments to grid locations with potentially lower interconnection costs.
- The sessions are designed to help users interpret the various data layers on utility maps and navigate their functionalities effectively.

Would you be interested in separate sessions for beginner and advanced users?

Prioritize the aspects of the maps you would like the training to cover, (1 being the most important, 6 being the least).

Training Survey – Responses Summary

Prioritize the aspects of the maps you would like the training to cover, (1 being the most important, 6 being the least).

Training Survey – Responses Summary

- **Developers**: seek practical, actionable insights
- **Regulators**: prioritize consistency and process alignment
- **Advocacy groups**: focus on stakeholder education
- **Education/Consulting**: emphasize advanced, detailed analyses

Prioritize the aspects of the maps you would like the training to cover, (1 being the most important, 6 being the least).

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Training Survey – Responses Summary

Which aspect of the hosting capacity maps do you find most challenging to understand or use?

Data Interpretation and Clarity	Data Completeness and Relevance	Alignment and Updates
• Difficulties interpreting data fields. • Unclear or shifting attribute labels and meanings in pop-up fields. • Non-functional or confusing map legends.	• Limited availability or insufficient detail for sub-transmission system data. • Understanding distinctions between nighttime storage (ESS) capacity and daytime PV generation capacity.	• Misalignment between hosting capacity data and interconnection screening/study processes. • Concerns over data update frequency and timeliness.

Training Survey – Responses Summary

How do you (plan to) use which maps in your work?

- Solar Project Siting (most frequently cited):
  - Identifying viable locations and substations for solar projects.
  - Advocating for larger-scale solar installations.
  - Assisting local stakeholders in selecting least-conflict sites.
  - Educating municipal officials and landowners on local capacity for solar.
- Combined Solar and Storage Facilities:
  - Evaluating sites suitable for combined PV and energy storage systems.
- Early-Stage Planning and Development:
  - Conducting initial feasibility assessments and evaluations for new projects.
  - Guiding customer discussions around project viability.
- Training and Outreach:
  - Integrating HC maps into training programs with municipalities and stakeholders.

Use-Cases

Understanding and using the Joint Utilities' Hosting Capacity and Electrification Maps enables smarter, faster, and more strategic decisions across New York's clean energy transition.

Use Case 1: Siting Solar Projects

- Identify feeders or segments with **available hosting capacity** for PV.
- Avoid costly delays or upgrades by targeting **grid-ready** locations.
- Accelerate interconnection with data-informed proposals.

Use Case 2: Siting Energy Storage

- Assess where the grid can support **battery systems** for charging *and* discharging.
- Support reliability, time-shifting, and clean energy goals with minimal grid impact.
- Compare sites to find **optimal value and feasibility**.

Use Case 3: Electrification Planning

- Pinpoint areas with **available capacity for new load**, such as:
  - Electric vehicle charging hubs
  - Building electrification (heat pumps, electric stoves, etc.)
- Compare **summer vs. winter capacity** to align with seasonal needs.
- Inform municipal planning, program targeting, and equitable infrastructure expansion.

Navigation & Interface – PV Maps

Search by Address to Find Specific Locations

Zoom & Pan Controls: Zoom in/out and pan to explore.

- Maps provide +/− buttons and a home icon for full view reset.

Clickable Segments

- Pop-ups show hosting capacity, substation, and feeder details.

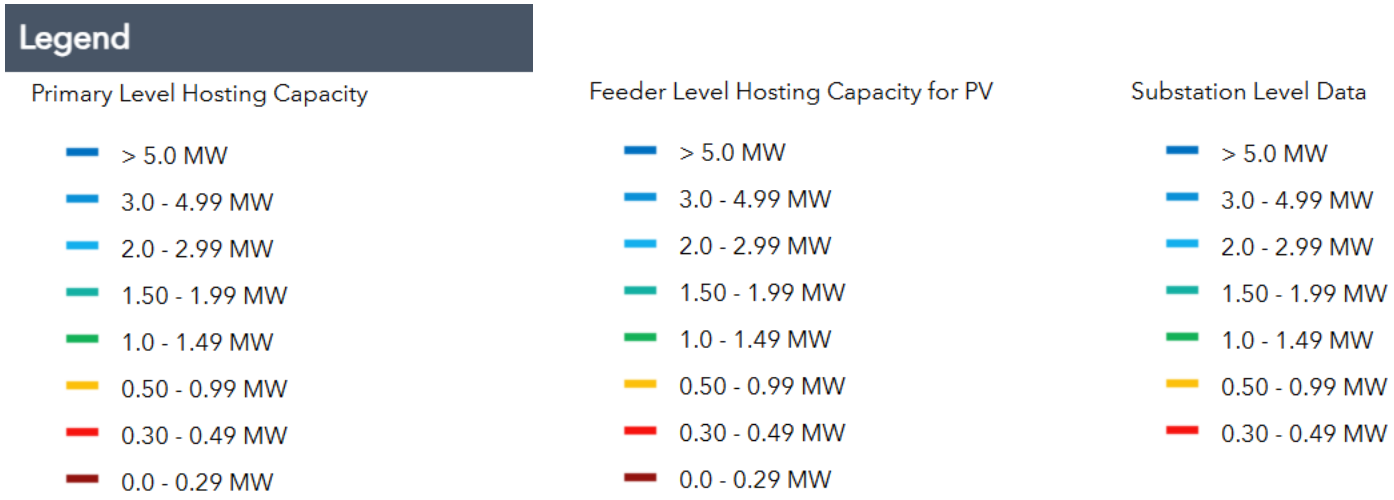
Con Edison: Network vs. Non-Network Views

- Con Edison's map distinguishes between **Network** (underground grids in dense urban areas like Manhattan) and **Non-Network** (overhead radial systems).
- **Network View:** Displays color-coded blocks representing underground transformer zones and aggregated capacity.
- **Non-Network View:** Shows individual feeder lines with color-coded hosting capacity.
  Tip: Use the *Network* tab for Manhattan and other underground areas; use *Non-Network* for outer boroughs and overhead feeders.

Navigation & Interface – PV Maps

Color-Coded Feeders: Lines Colored by Available Capacity

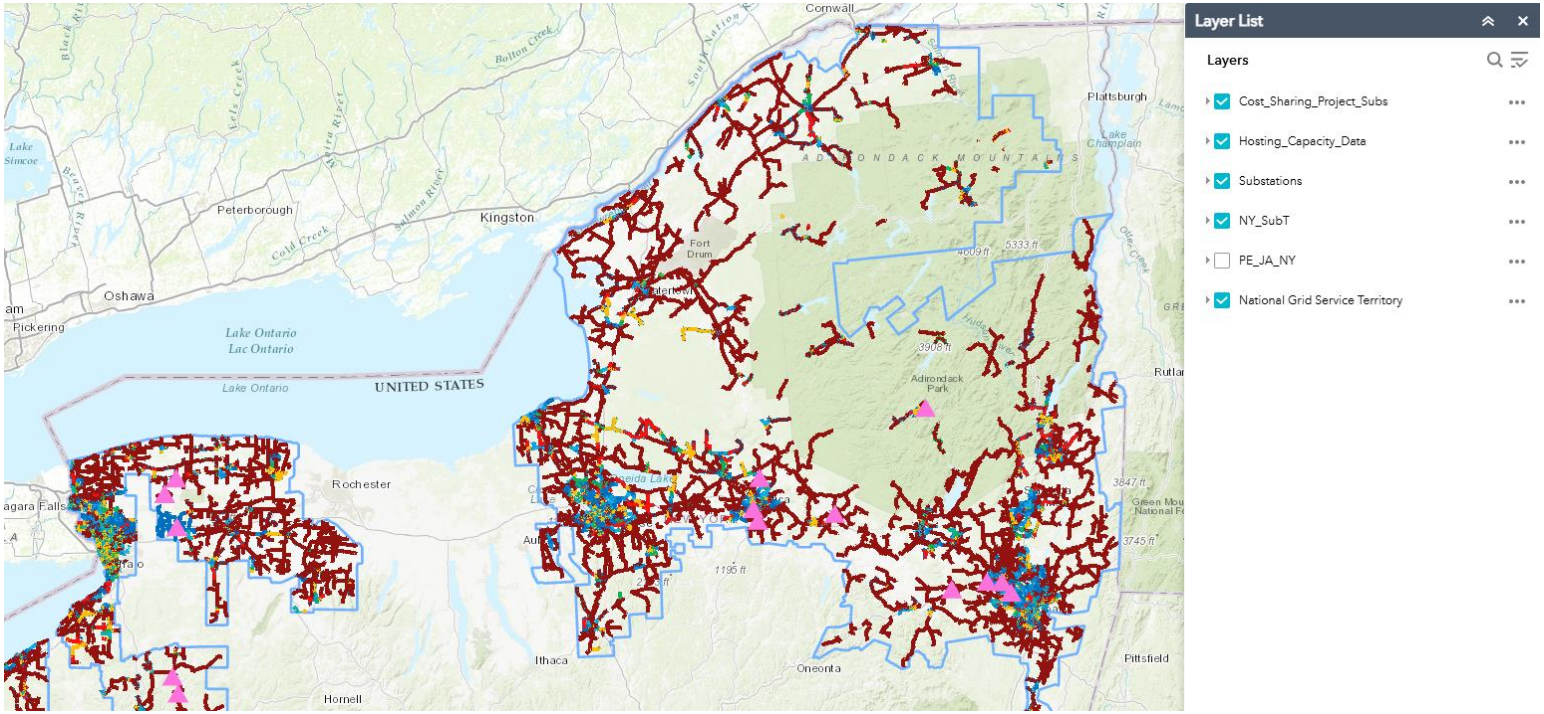
- Blue = ample hosting capacity
- Yellow/Orange = moderate capacity
- Red = limited capacity



Map Layers & Legend – PV Maps

Users can toggle key data layers on or off.

- Activate the Hosting Capacity layer to view color-coded feeders.
- Optional layers include substations, voltage level, and existing DER sites.
- The map updates dynamically as layers are selected.



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Navigation & Interface – Energy Storage

Basic Navigation: The storage maps use the same interface and controls as the PV maps.

- You can search addresses, zoom in/out, and click lines for details in exactly the same way.
- For any given location, this map tells you the feasible size of a battery system that could be added.

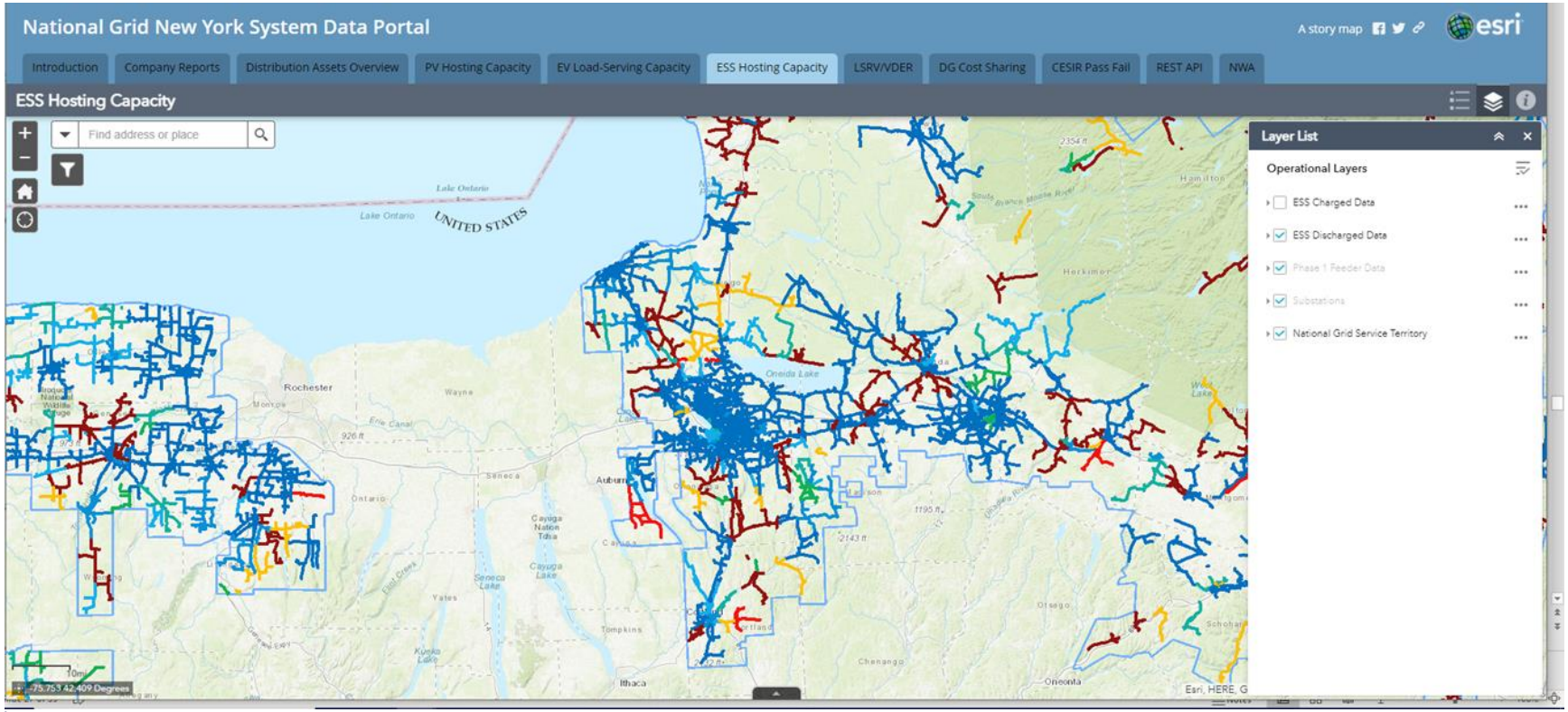
Charge vs. Discharge Capacity Layers: A unique aspect of storage maps is that they account for two operating modes of batteries.

- Charging (drawing load from the grid)
- Discharging (exporting power to the grid).

Layer 1: Discharging [Energy Storage]

The ESS Hosting Capacity has two layers.

- Discharging is for exporting Power onto the Grid
- The data is color coded to the maximum feeder ESS Discharging Hosting Capacity.
- The minimum Hosting Capacity is provided in the popup.



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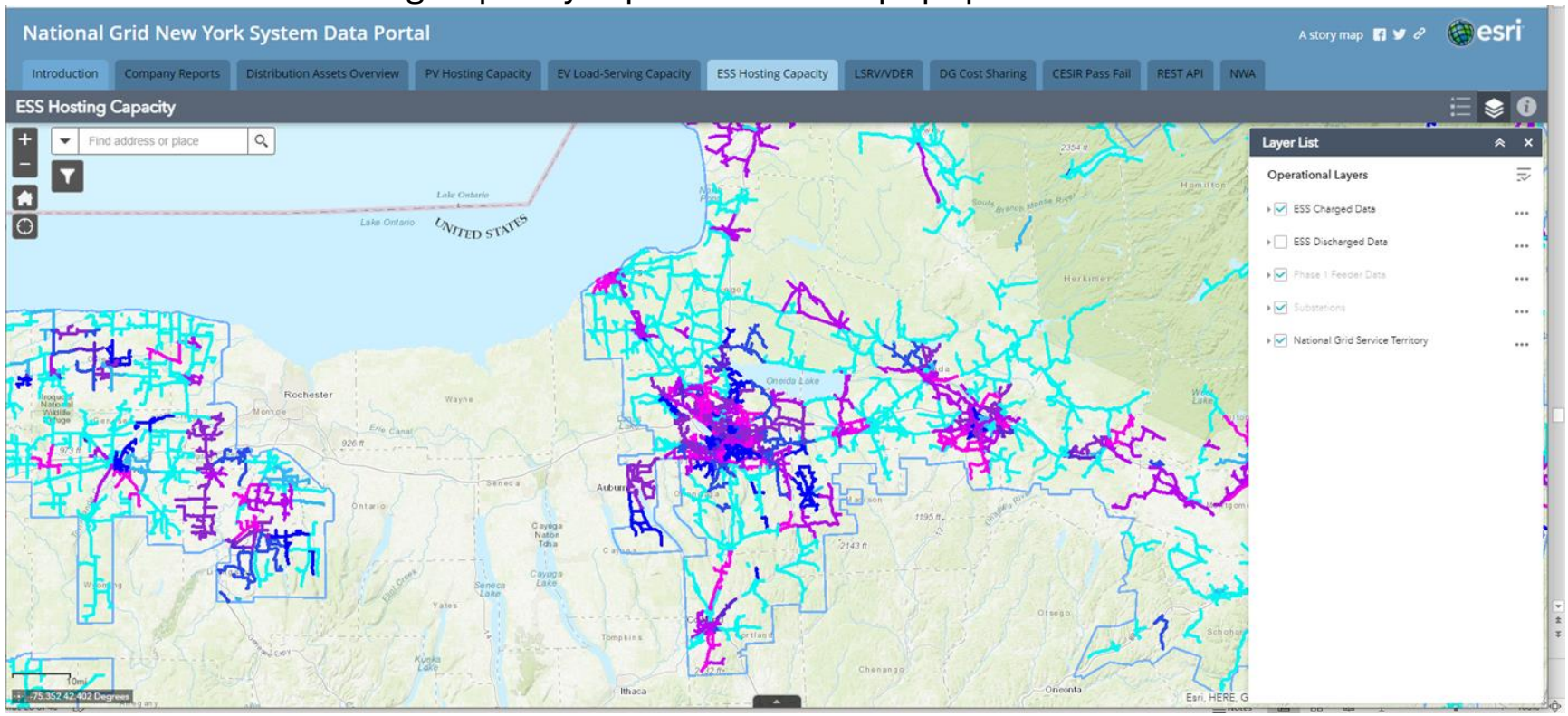
Layer 2: Charging [Energy Storage]

The ESS Hosting Capacity has two layers.

- This layer is for using the Grid to charge an Energy Storage System.
- The data is color coded to the maximum feeder ESS Charging Hosting Capacity.
- The minimum Hosting Capacity is provided in the popup.



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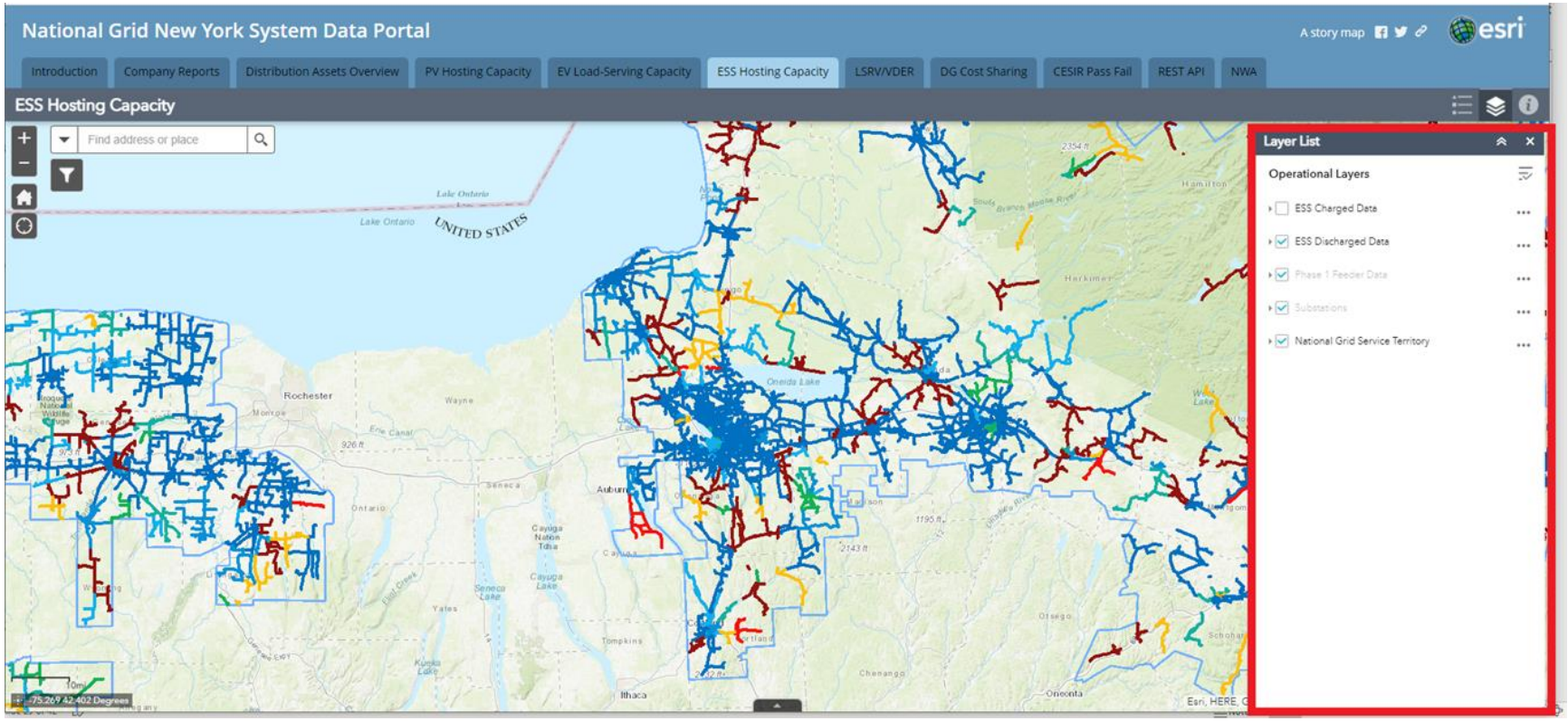
To toggle between displays [Energy Storage]

Go to the layer list and select which mode you which to view charge or discharge.



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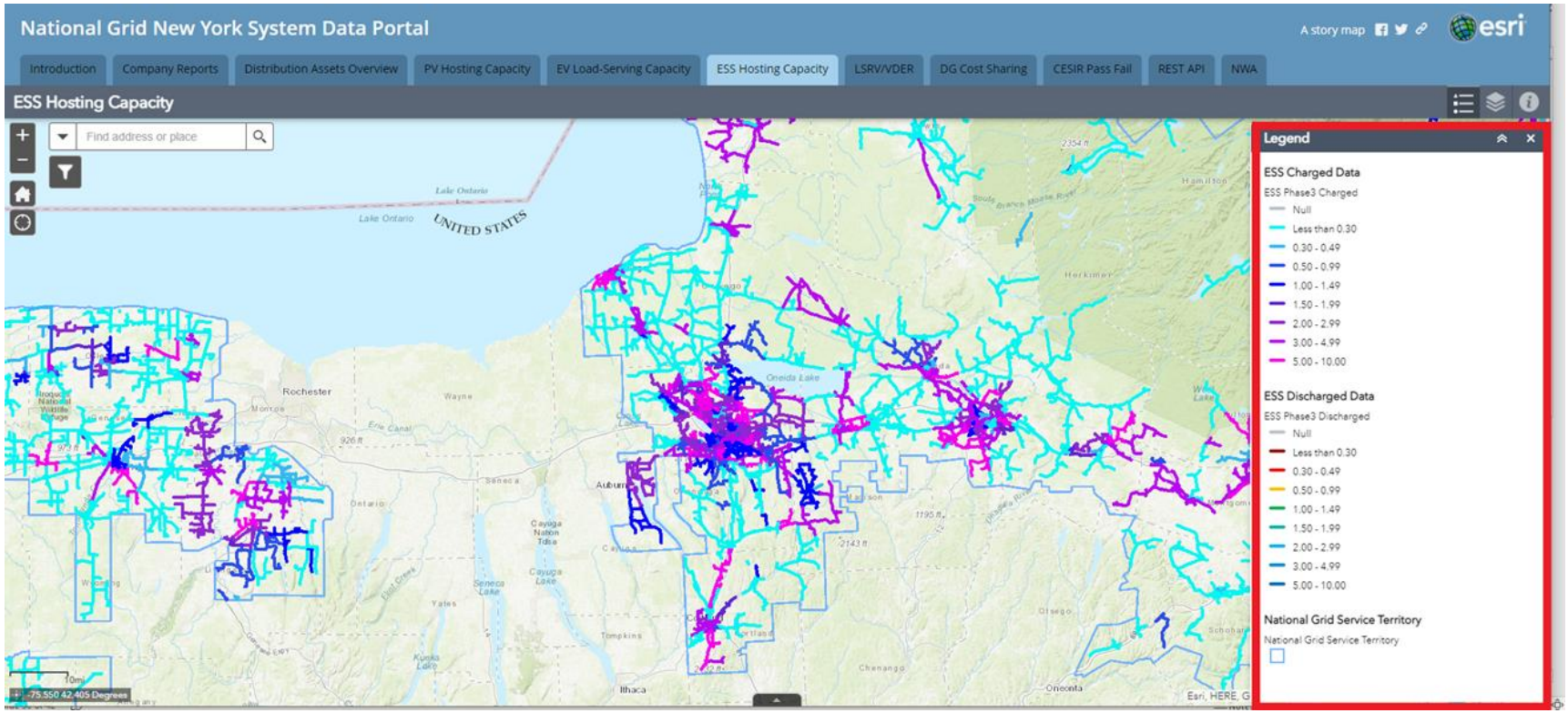
Color Schemes [Energy storage]

Different color schemes were selected to differentiate between the modes of operation.



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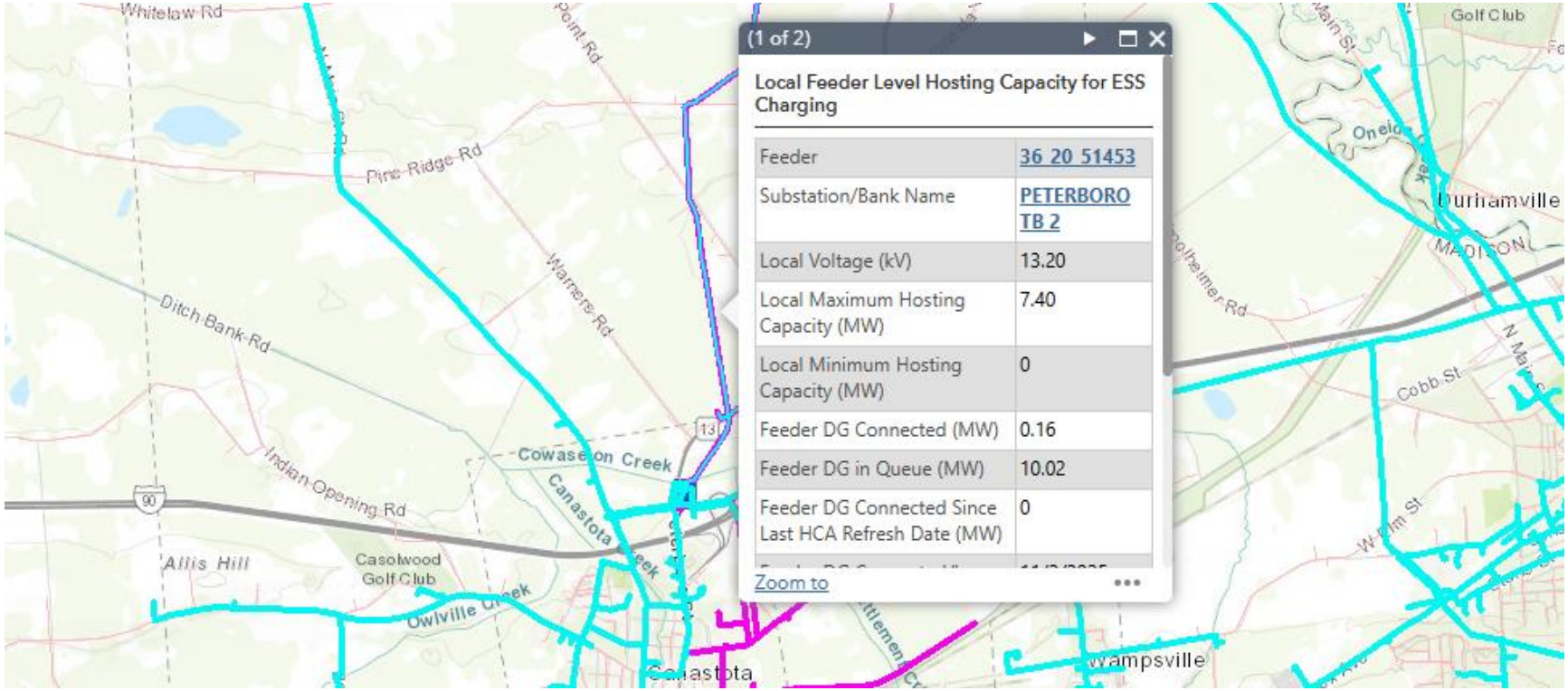
Breakpoints and Color [Energy Storage]

Breakpoints	Discharging Color	Charging Color
> 5.00 MW		
3.00 – 4.99 MW		
2.00 – 2.99 MW		
1.50 – 1.99 MW		
1.00 – 1.49 MW		
0.50 – 0.99 MW		
0.30 – 0.49 MW		
0.00 – 0.29 MW		
ESRI Base Layer		

The breakpoints are the same as the PV maps.

Pop-Up Data [Energy Storage]

Popup data is provided for feeder for more information.



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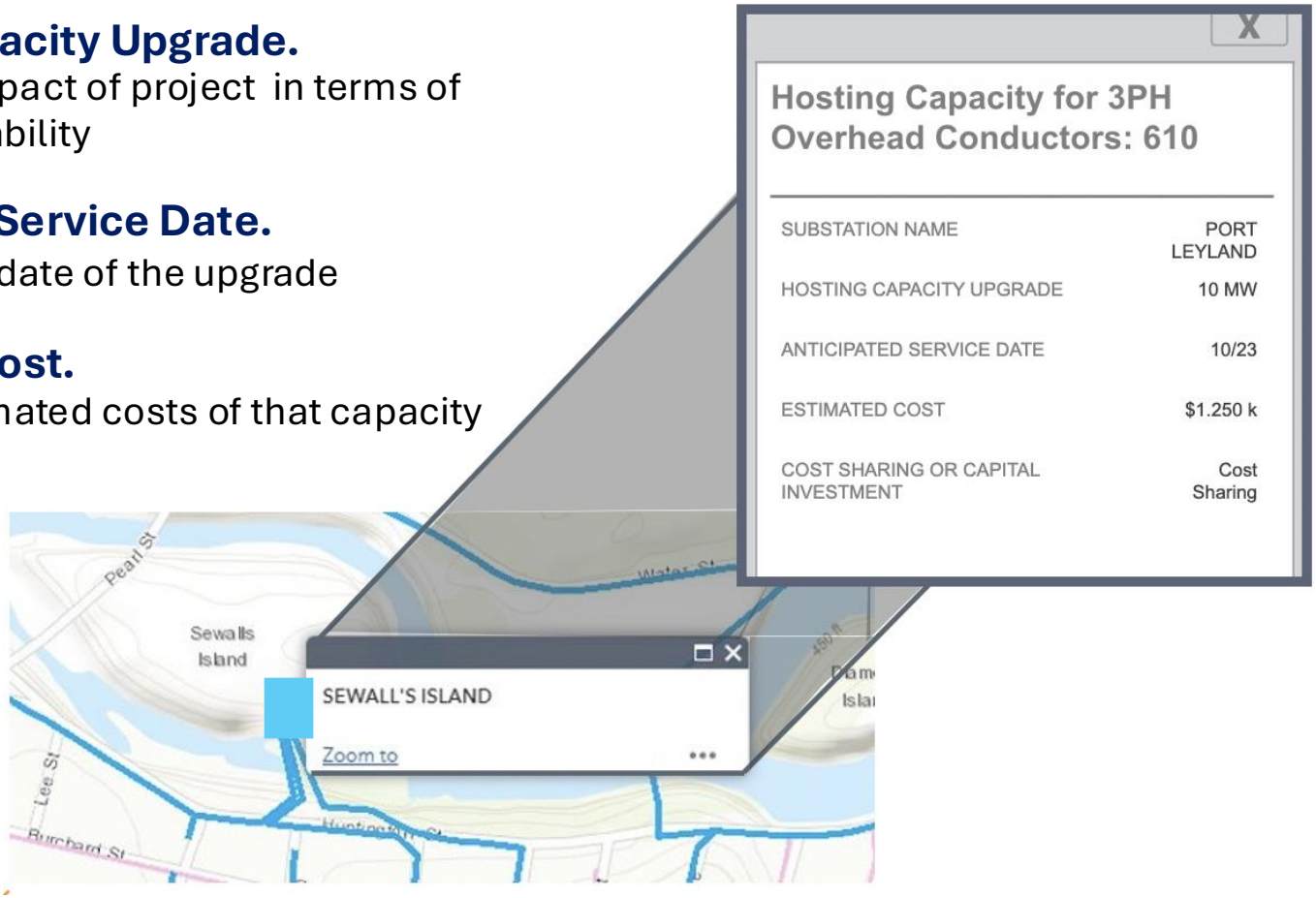
Cost-Sharing Mechanism: Additional Draw-down Items [PV & Energy Storage]

Substation.
A planned upgrade's location

Hosting Capacity Upgrade.
Anticipated impact of project in terms of capacity availability

Anticipated Service Date.
The in-service date of the upgrade

Estimated Cost.
Known or estimated costs of that capacity



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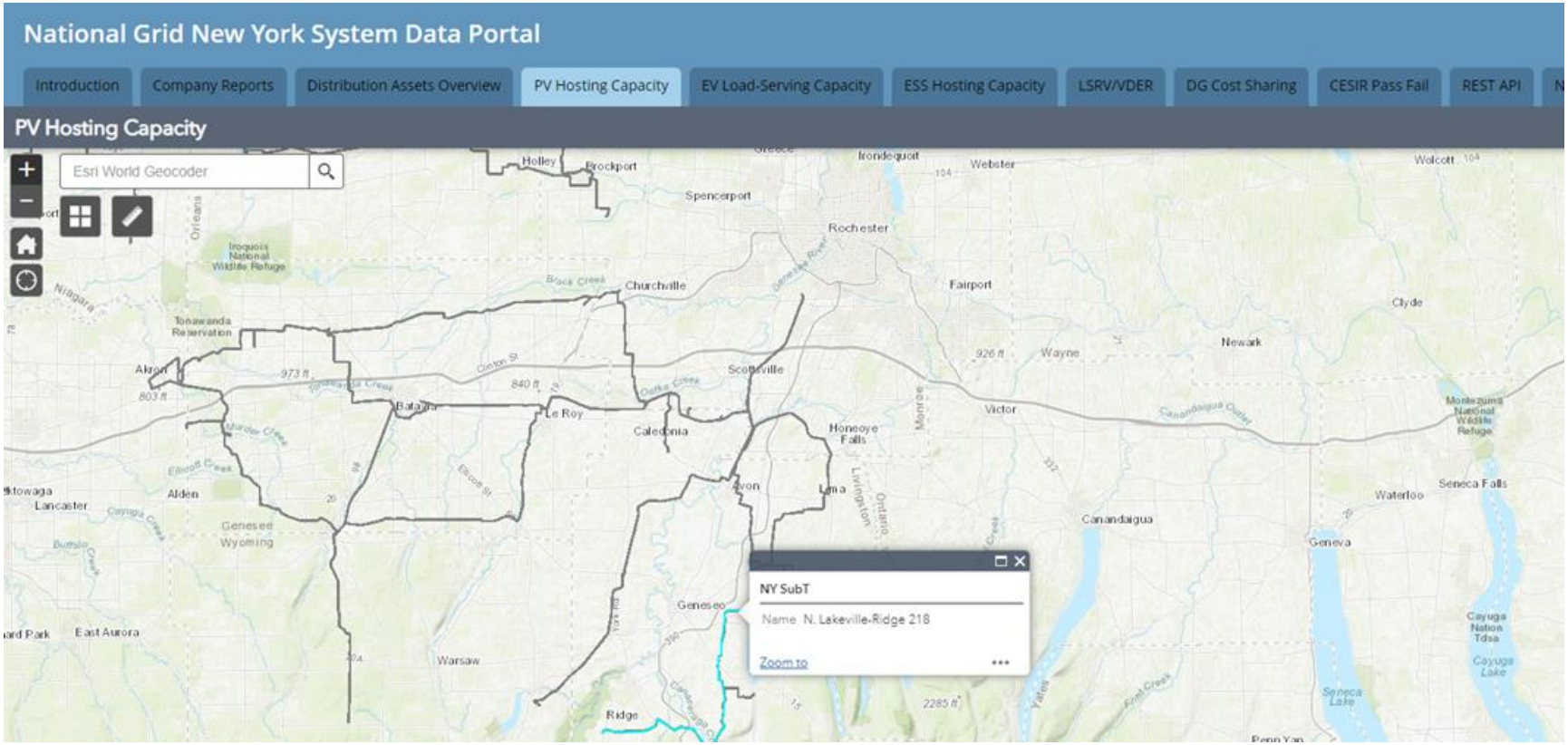
Additional Data: Sub-Transmission Lines [PV & Energy Storage]

The Sub-Transmission lines available for interconnection have been added to our Hosting Capacity maps.



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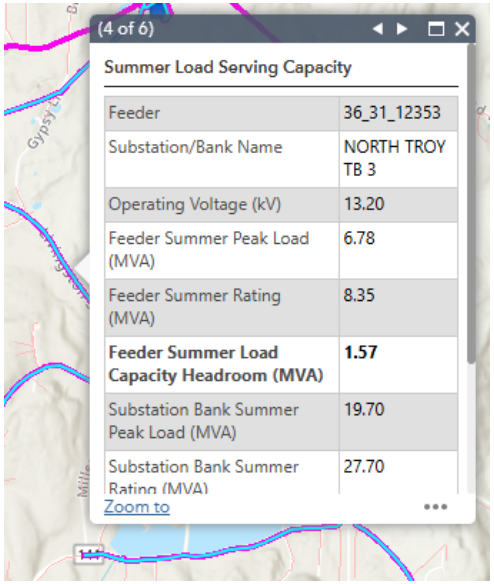
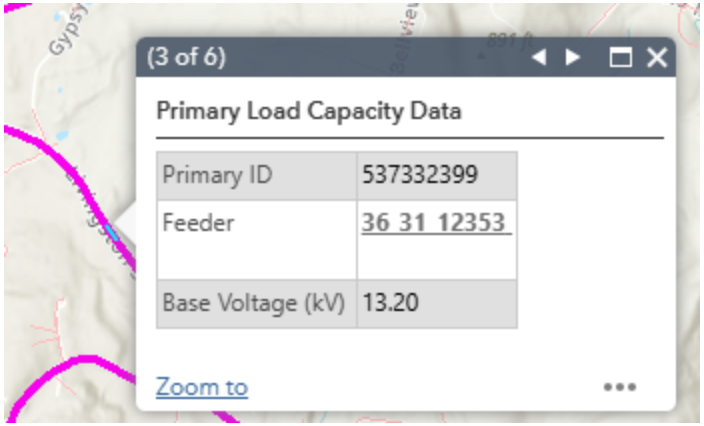
Electrification Maps

The Maps were published January 16, 2024, and show the following.

- Feeder level data with capability of showing the winter peak and summer peak circuit and substation level data.
- Sub-feeder level data showing section voltage.
- Environmental Justice locations.
- For both summer and winter views, the Electrification Maps shows the same color scheme and breakpoints.





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Summer & Winter View [Electrification Maps]

The winter view will be most valuable for those engaged in building electrification use-cases. The view most valuable for EV stakeholders will likely be whichever (summer vs winter) is more constrained.

(1 of 3)

Summer Load Serving Capacity

Feeder	36_31_12353
Substation/Bank Name	NORTH TROY TB 3
Operating Voltage (kV)	13.20
Feeder Summer Peak Load (MVA)	6.78
Feeder Summer Rating (MVA)	8.35
Feeder Summer Load Capacity Headroom (MVA)	**1.57**
Substation Bank Summer Peak Load (MVA)	19.70
Substation Bank Summer Rating (MVA)	27.70
Substation Bank Summer Load Capacity Headroom (MVA)	8.00
Refresh Date	3/31/2025
Notes	

(2 of 3)

Winter Load Serving Capacity

Feeder	36_31_12353
Substation/Bank Name	NORTH TROY TB 3
Operating Voltage (kV)	13.20
Feeder Winter Peak Load (MVA)	5.59
Feeder Winter Rating (MVA)	9.28
Feeder Winter Load Capacity Headroom (MVA)	**3.69**
Substation Bank Winter Peak Load (MVA)	5.10
Substation Bank Winter Rating (MVA)	31.40
Substation Bank Winter Load Capacity Headroom (MVA)	26.30
Refresh Date	3/31/2025
Notes	

Color Scheme [Electrification Maps]

Breakpoints	Color
>1.5 MW Capacity Remaining 3P Lines	
600 kW to 1.5 MW Capacity Remaining 3P Lines	
< 600 kW Capacity Remaining 3P Lines	
One- and Two-Phase Lines	
ESRI Base Layer	