

NYSEG/RGE

2015 Local Transmission Plan

System Planning

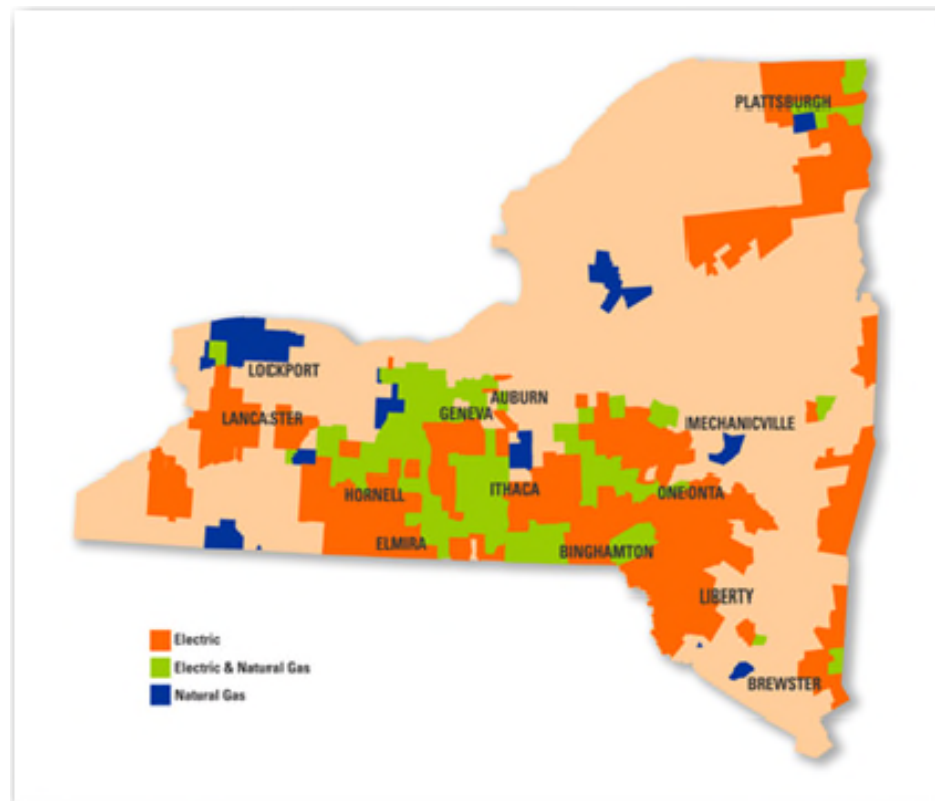
November 10, 2015

Tim Lynch – Manager, System Planning



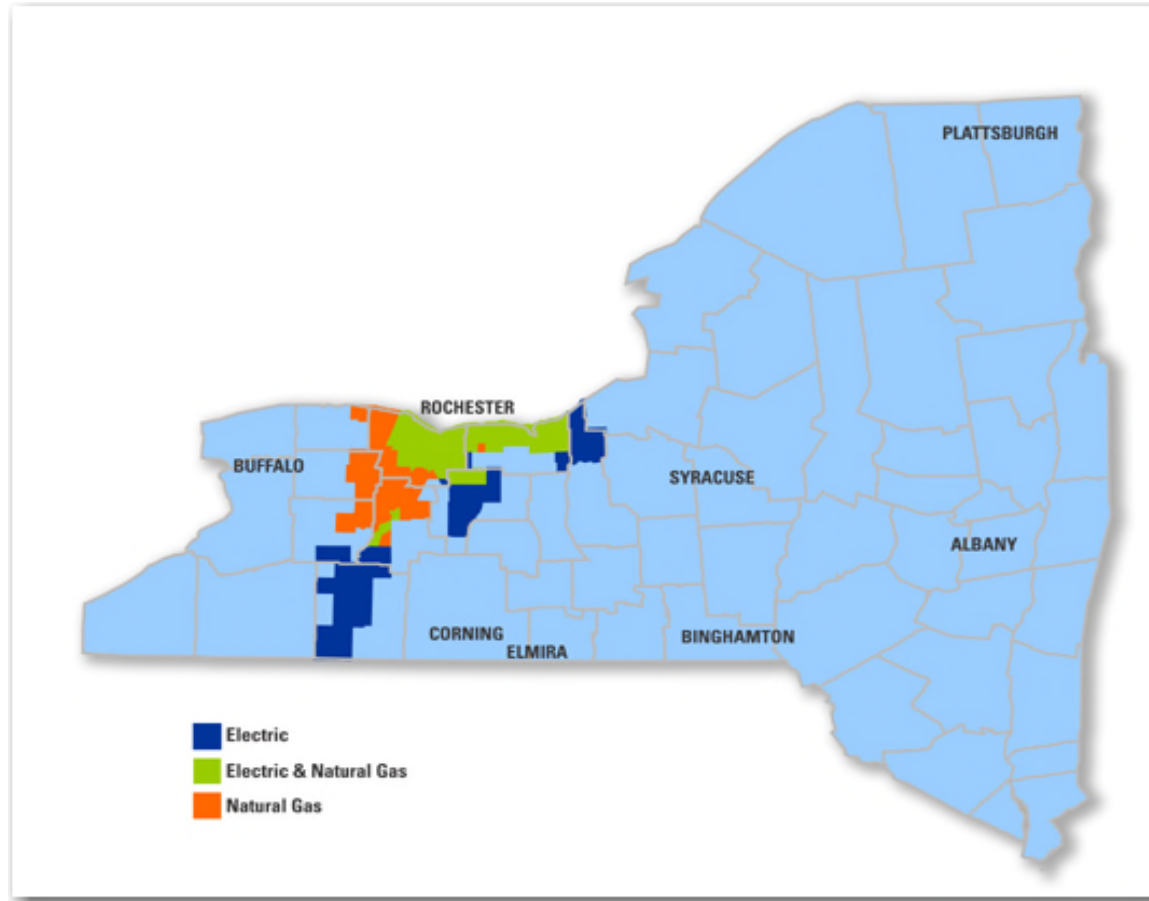
New York State Electric & Gas (NYSEG)

NYSEG serves 881,000 electricity customers across 18,400 square miles of upstate New York. It operates and maintains an electricity delivery system that consists of 4,500 miles of transmission lines and 34,000 miles of distribution lines.



Rochester Gas & Electric (RGE)

RGE serves 371,000 electricity customers in the metropolitan Rochester area and surrounding region, covering an area of 2,700 square miles.



Local Transmission Plans

- NYSEG – Local transmission facilities include 115kV, 69kV, 46kV, and 34.5kV. Some 34.5kV is dedicated to serving customer load and is considered distribution; some is dual purpose.
- RGE – Local transmission facilities include facilities between 115kV and 34.5kV, as well as 11kV facilities that are operated in parallel with the 115kV and 34.5kV systems and are thus considered an extension of the transmission system.
- Local transmission plans are developed to address reliability issues and accommodate forecasted load growth. Equipment replacements due to asset condition are not included.

Planning Criteria and Assumptions

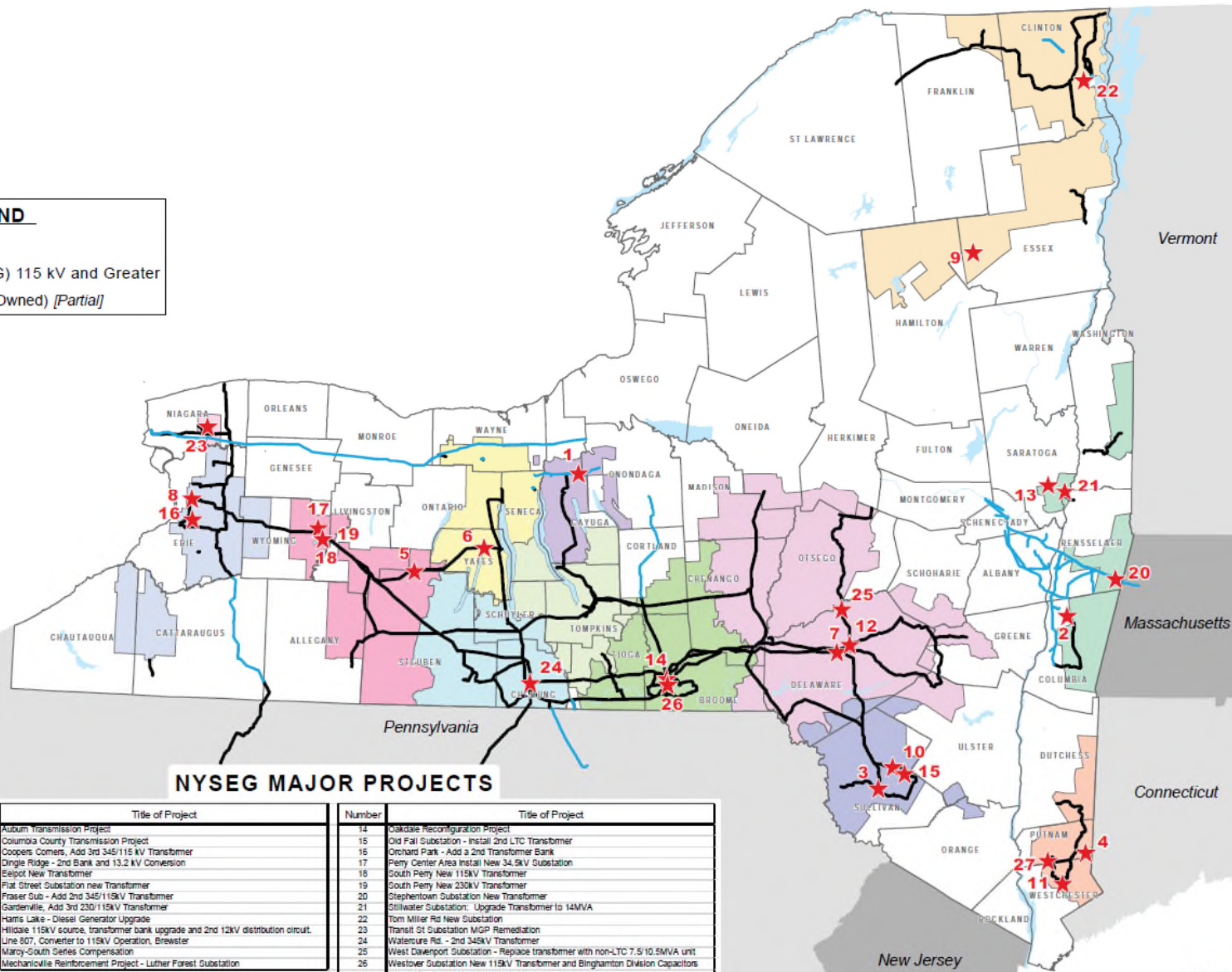
- For all voltage levels of the Bulk Power System, Bulk Electric System and Local Transmission System, the planning criteria used in this LTP are described in the Iberdrola USA Electric Transmission Planning Manual – Criteria and Processes, dated November 2014.
- The load flow simulations were monitored for thermal and voltage violations under system normal and applicable contingencies.
- Study cases include system models for Year 2016, 2020, and 2025.
- A non-coincident peak load forecast is developed for RGE and each NYSEG Division using a regression analysis of past actual non-coincident peaks and other considerations, such as proposed block load.
- PSS/e Power Flow software (Version 33) was used for this LTP.

Proposed Projects

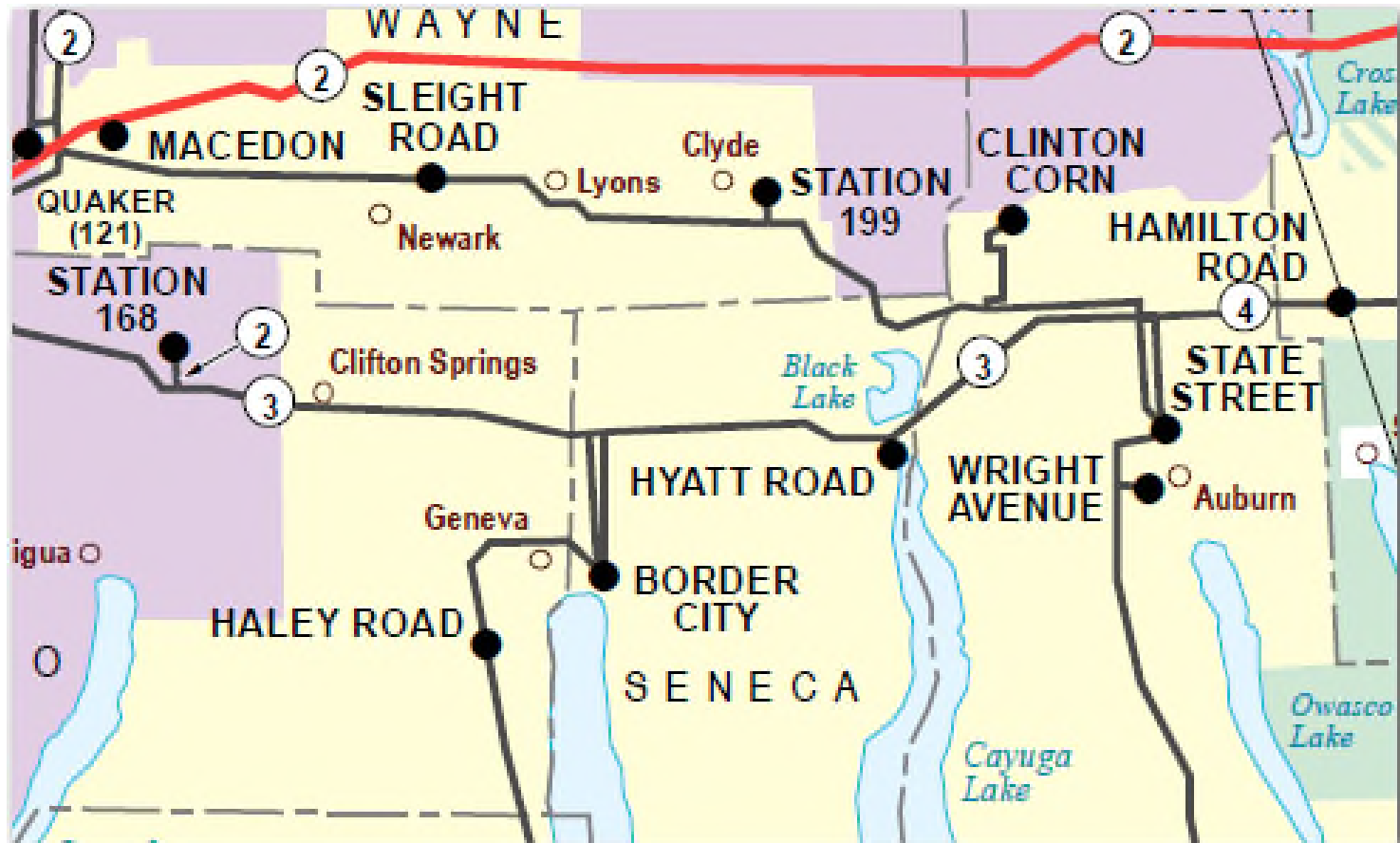
- Projects cover a 10-year horizon.
- Project status definitions:
 - Conceptual – new projects which will be developed through further study
 - Planned – projects that are needed
 - In Progress – budgeted and approved; can be in any stage of engineering/design
 - In Construction – project is under construction
- Any projects that may be needed pursuant to the new BES/TPL requirement are under development.

LEGEND

- ★ Projects
- Transmission (NYSEG) 115 kV and Greater
- Transmission (Foreign Owned) [Partial]



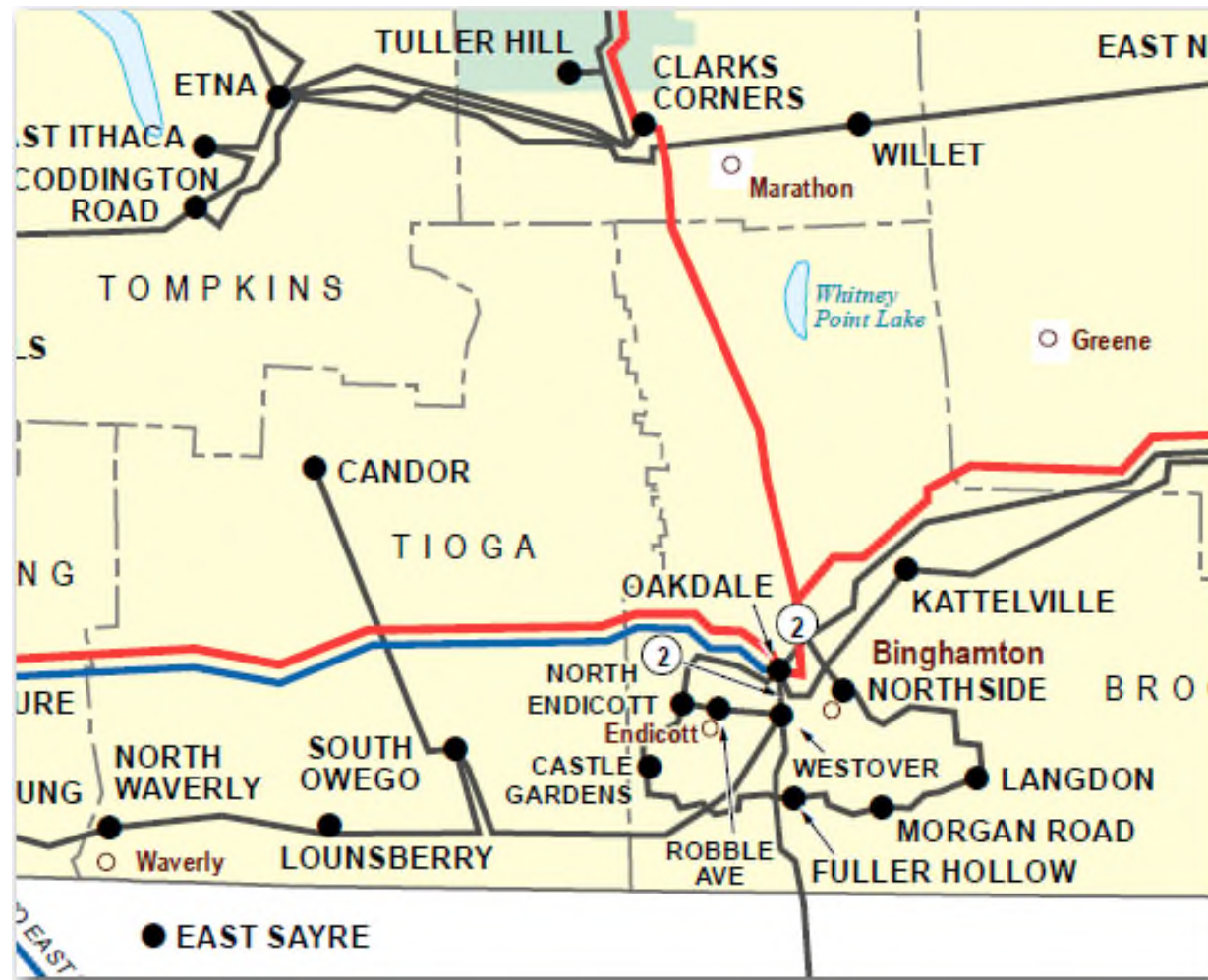
NYSEG – Auburn Division



Auburn – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Auburn Transmission Project	System Capacity	1/2017	In Progress
State Street New 2nd 115/34.5kV Transformer	Reliability		Conceptual
Marcellus New 34.5kV 2.4 MVAR Capacitor Bank	Reliability		Conceptual

NYSEG - Binghamton Division



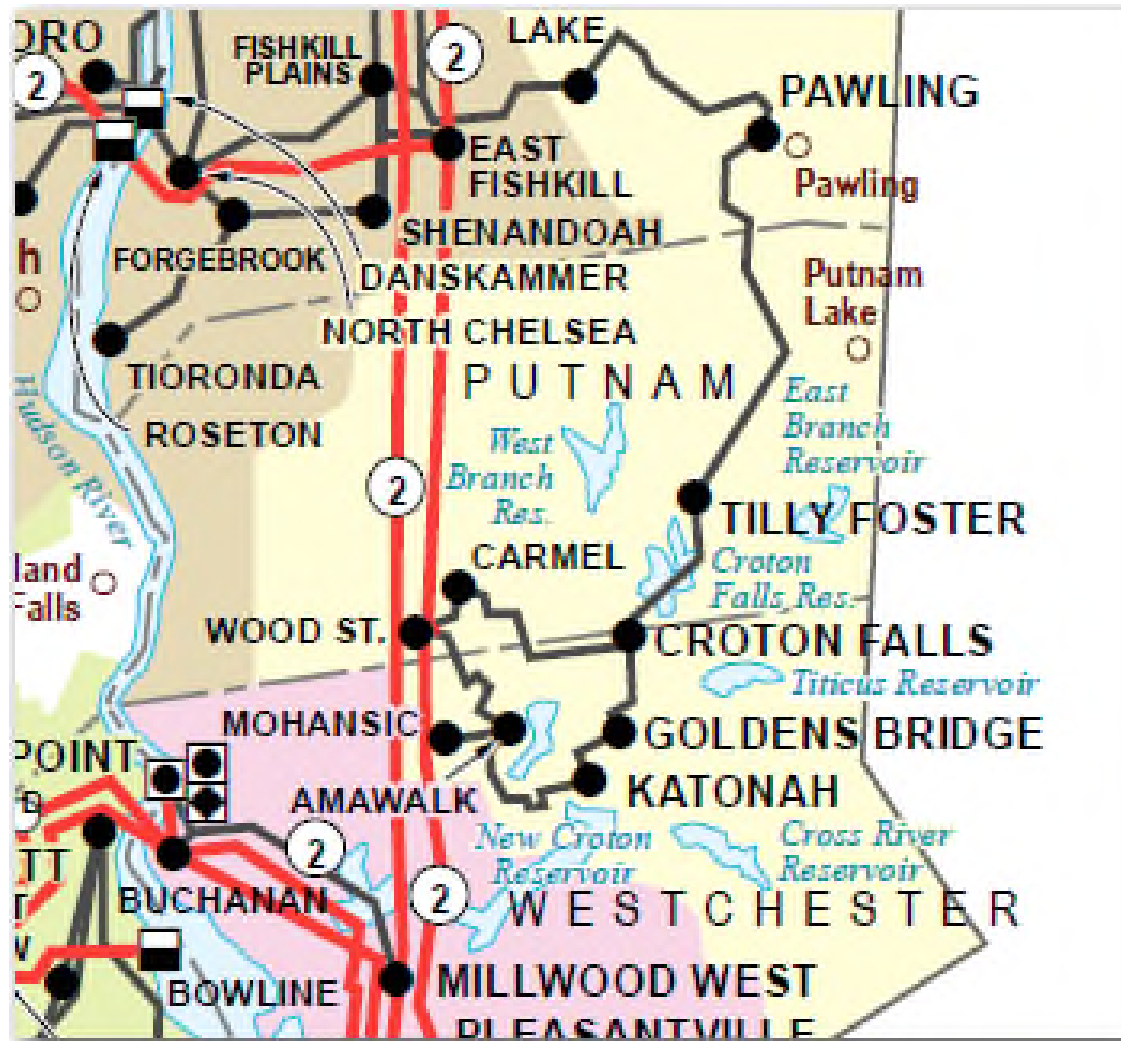
Binghamton - Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Willet Substation New 2nd 115/34.5kV Transformer	Reliability	4/2017	In Progress
Northside 115/34.5kV Transformer B2 Replacement	System Capacity	2018	Planned
Oakdale 345kV and 115kV Reconfiguration and New 3rd 345/115kV Transformer Project	Reliability	2022	In Progress
Oakdale - Westover 115kV Line 939 Upgrade	System Capacity	2025	Planned
Oakdale - North Endicott 115kV Line 938 Upgrade	Reliability	2025	Planned
North Endicott 115/34.5 kV Transformer B1 and Transformer B2 Replacement	Reliability	2025	Planned
Bevier Street - Burr Avenue 34.5kV Line 453 Upgrade	Reliability	2025	Planned
Vestal - Rano 34.5kV Line 510 Updgrade and Vestal - Westover 34.5kV Line 512 Upgrade	Reliability	2025	Planned
Oakdale - Westover 34.5kV Line 407 and Line 408 Upgrade	Reliability	2025	Planned

Binghamton – continued

Project	Driver	Proposed In-Service Date	Status
Westover - Wilson 34.5kV Line 357 Upgrade	Reliability	2025	Planned
So. Owego 115kV Bus Reconfiguration	Reliability	2025	Planned
Northside - Morningside Heights 34.5kV Line 455 Upgrade	Reliability		Conceptual
North Endicott - Clark Street 34.5kV Line 350 Upgrade	Reliability		Conceptual
High Street New 34.5kV, 5 MVAR Switched Capacitor Bank	Reliability		Conceptual
Westover - SUNY 34.5kV Line 442 Upgrade	Reliability		Conceptual
Wilson - CFJ - Glenwood 34.5kV Line 357 Upgrade	Reliability		Conceptual
Northside 115/34.5kV Transformer B2 Replacement	Reliability		Conceptual
Westover 115/34.5kV Transformer B7 Replacement	Reliability		Conceptual
Oakdale - Noyes Island 34.5kV Line 410 Upgrade	Reliability		Conceptual

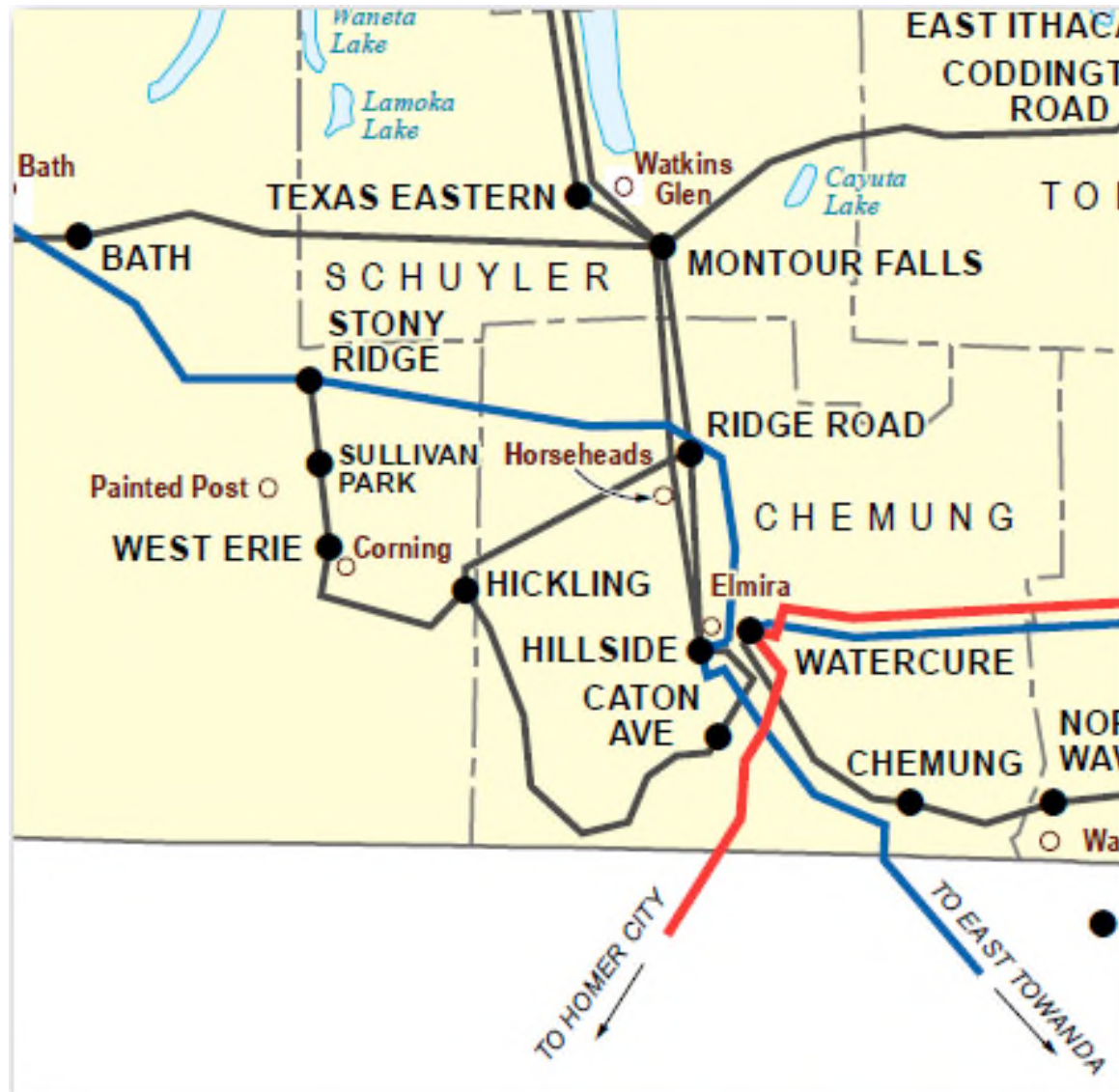
NYSEG – Brewster Division



Brewster – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Brewster Line 807 Conversion Project - Convert Katonah - Wood St - Carmel 46kV Line 807 to 115kV Operation	Reliability	6/2017	In Construction
Pawling New 115kV 95MVAR Capacitor Bank	System Capacity	12/2018	Planned
Wood Street New 3rd 345/115kV Transformer	Reliability	2018	In Progress
Carmel New 2nd 115/46kV Transformer	Reliability	2022	Planned
Katonah New 3rd 115/46kV Transformer	Reliability	2025	Planned
Pawling New 3rd 115/46kV Transformer	Reliability		Conceptual
Putnam Lake New 20 MVAR Capacitor Bank	Reliability		Conceptual
Pawling - Amenia New 2nd 46kV Line	Reliability		Conceptual
Adams Corners New 15 MVAR Switched Capacitor Bank	Reliability		Conceptual
Pound Ridge New 10 MVAR Switched Capacitor Bank	Reliability		Conceptual
Dover Plains New 10 MVAR Switched Capacitor Bank	System Capacity		Conceptual

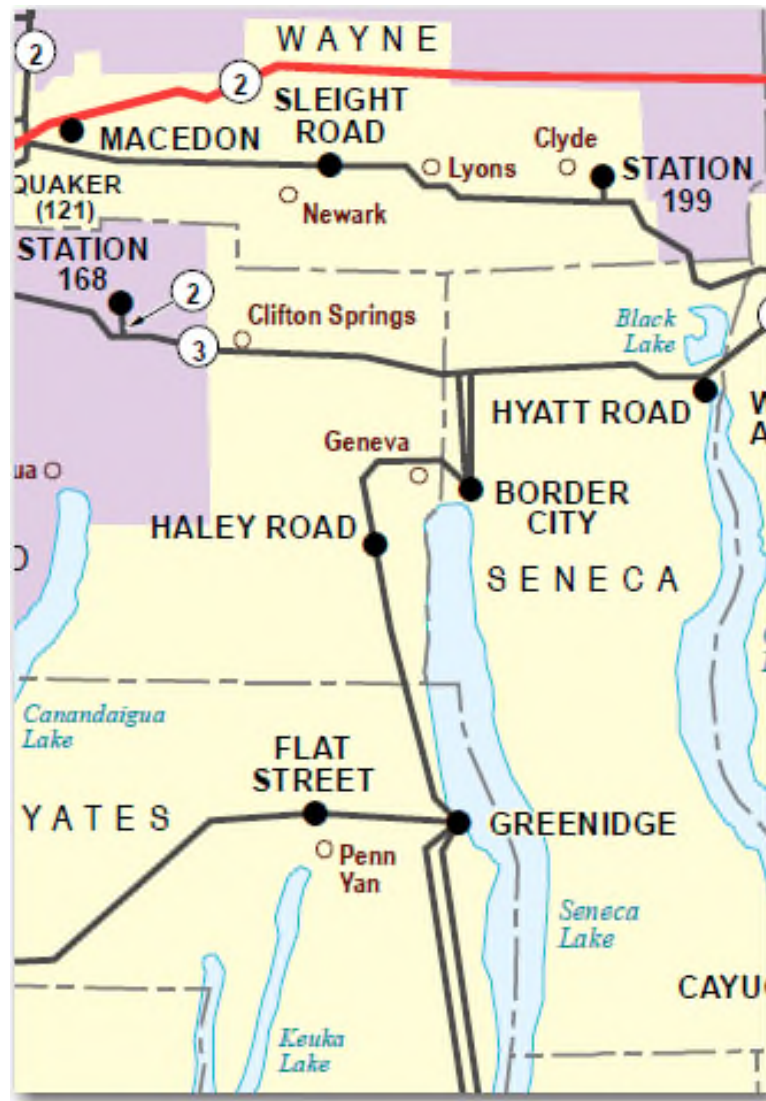
NYSEG – Elmira Division



Elmira – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Watercure Road New 2nd 345/115kV Transformer	Reliability	4/2018	In Progress
Bulkhead - Caton Ave 34.5kV Line 574 Upgrade	Reliability	2025	Planned
Bulkhead New 34.5kV, 5.4 MVAR Capacitor Bank	Reliability	2025	Planned
West Elmira - Hillcrest 34.5kV Line 576 Upgrade	Reliability	2025	Planned

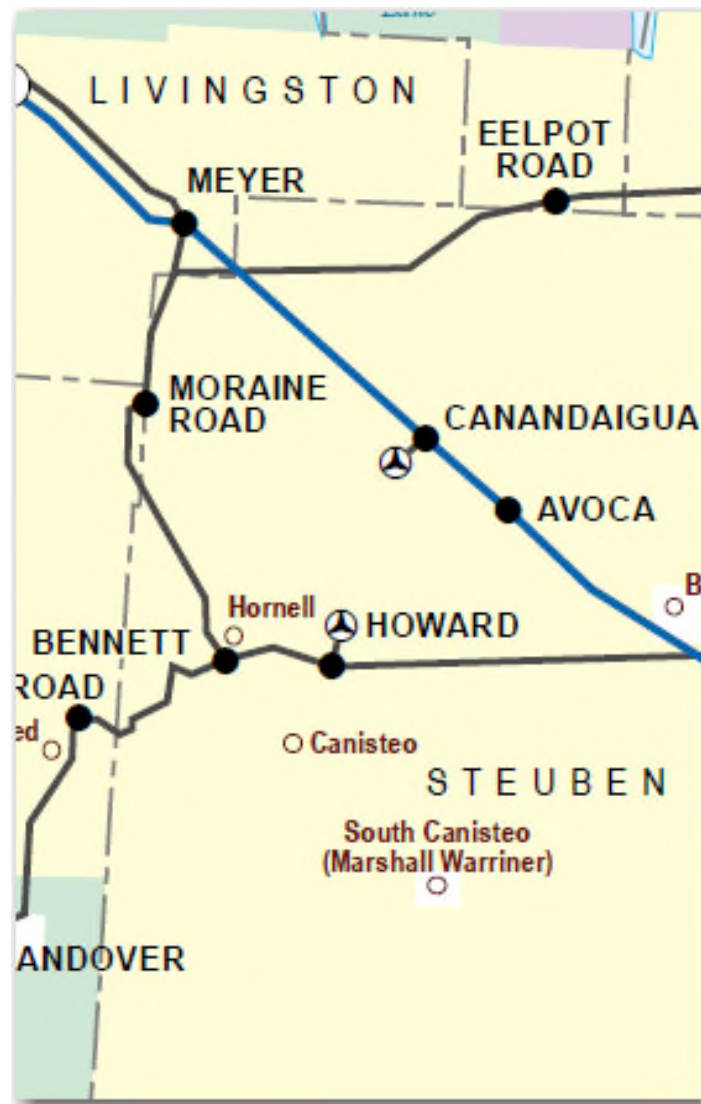
NYSEG – Geneva Division



Geneva – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Flat Street Substation New 2nd 115/34.5kV Transformer	Reliability	11/2018	In Progress
Sleight Road-Van Buren Tap 34.5kV Line 542 Upgrade	Reliability	2025	Planned
Route 14 – Transalco 34.5kV Line 596 Upgrade and New Voltage Regulator	Reliability	2025	Planned
Goulds Pump New 2.4MVAR Switched Capacitor Bank	Reliability		Conceptual

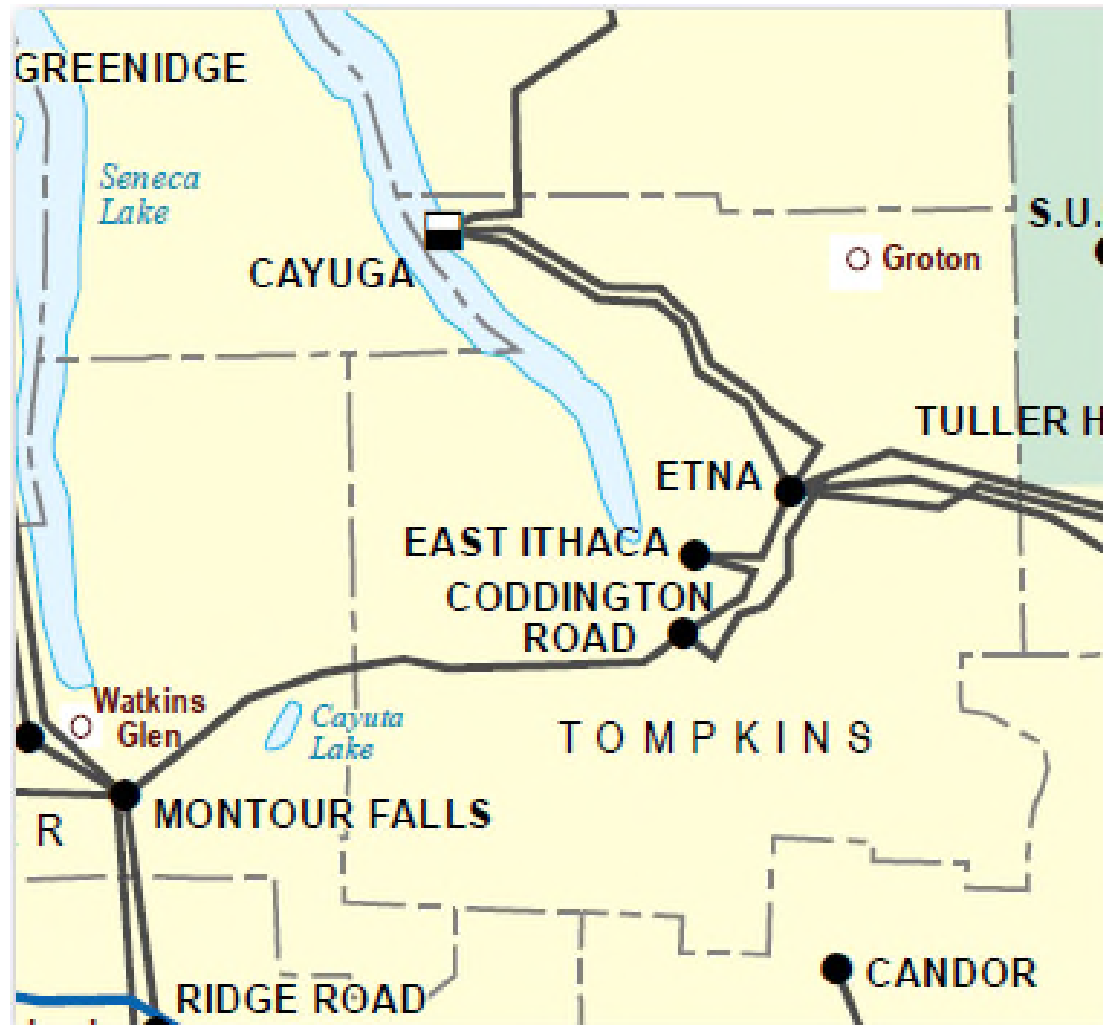
NYSEG – Hornell Division



Hornell – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Perry Center Area New 34.5kV Substation	Reliability	11/2015	In Construction
Eelpot New 2nd 115/34.5kV Transformer	Reliability	10/2016	In Construction
South Perry New 230/115kV Transformer	Reliability	6/2017	In Construction
Meyer New 2nd 115/34.5kV Transformer	Reliability	10/2018	In Progress
South Perry - Meyer 115kV Line 934 Upgrade	Reliability	2020	Planned
South Perry New 2nd 115/34.5kV Transformer	Reliability	2025	In Progress
Naples New 34.5kV Switched Capacitor Bank	Reliability		Conceptual

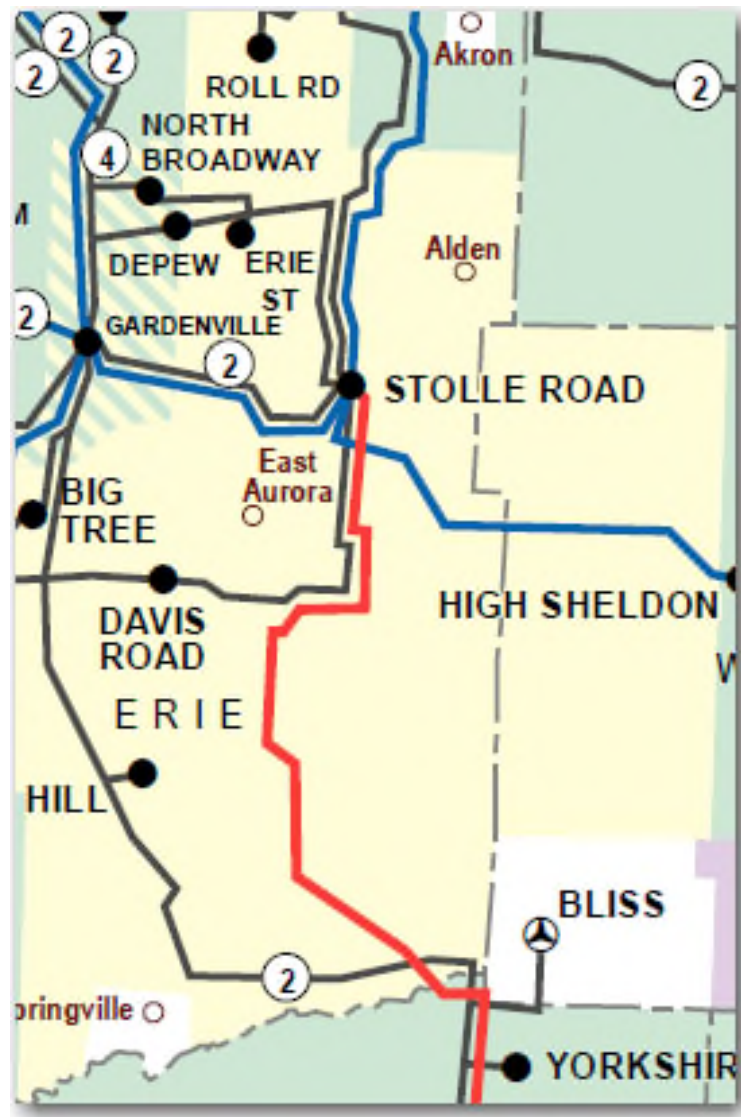
NYSEG – Ithaca Division



Ithaca – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Bolton Point 34.5kV Line 522 Voltage Regulator Upgrade	Reliability		Conceptual
Borg Warner New 34.5kV 10 MVAR Switched Capacitor Bank	Reliability		Conceptual

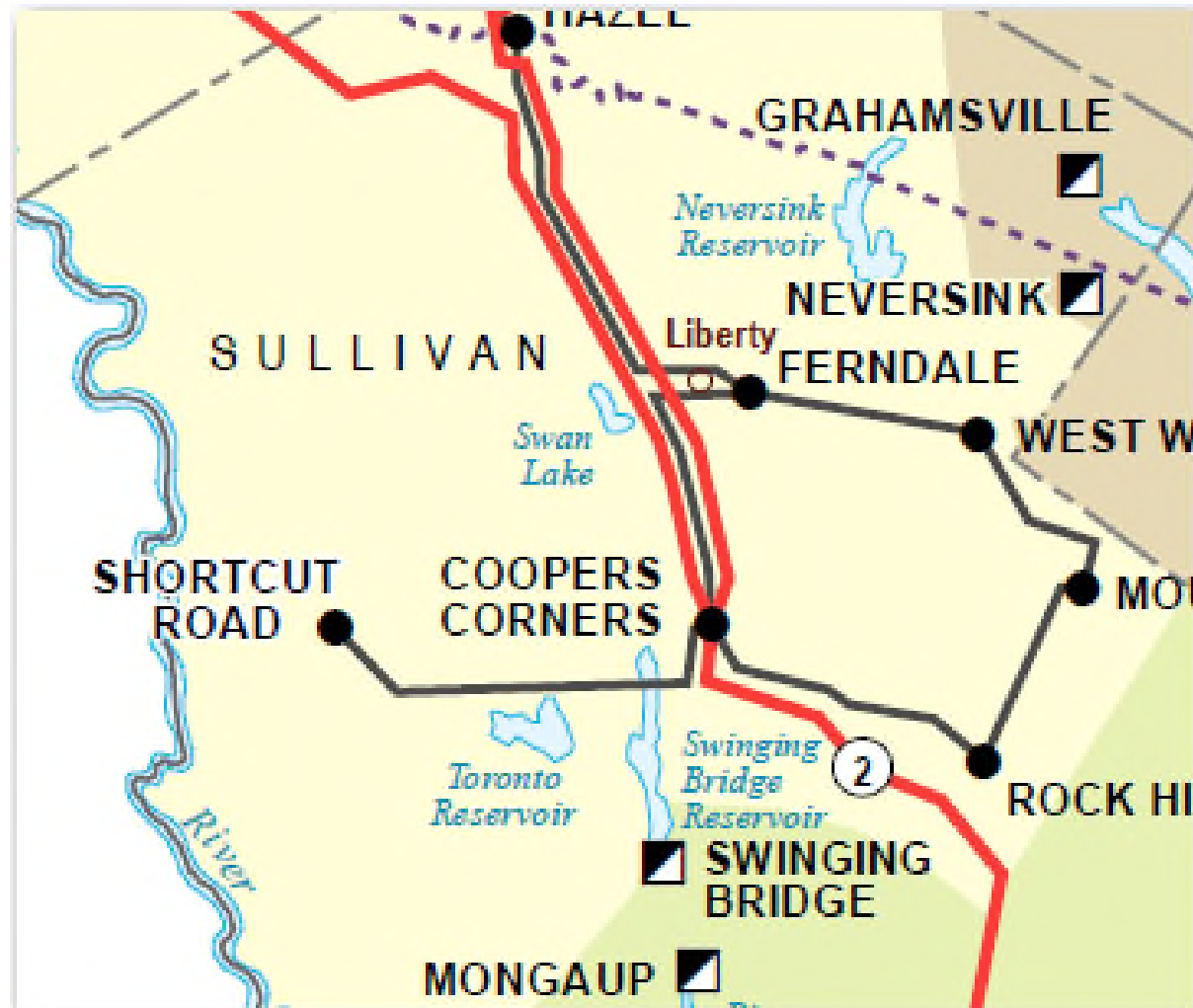
NYSEG – Lancaster Division



Lancaster – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Erie Street New 3rd 115/34.5kV Transformer	Reliability	2020	Planned
Cobble Hill New 2nd 115/34.5kV Transformer	Reliability	2022	Planned
North Broadway New 2nd 115/34.5kV Transformer	Reliability	2023	Planned
Roll Road New 2nd 115/34.5kV Transformer	Reliability		Conceptual

NYSEG – Liberty Division



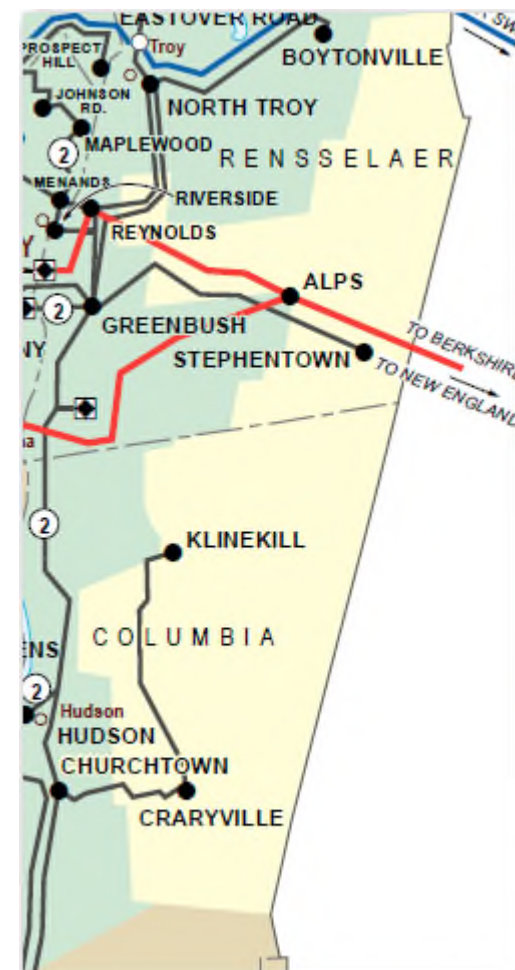
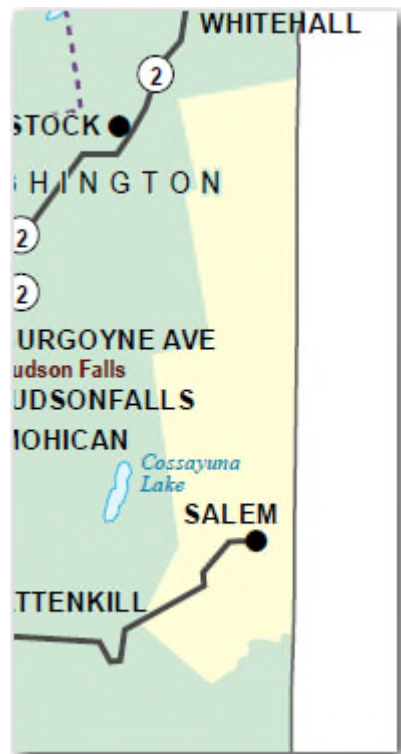
Liberty – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Hazel New 2nd 115/34.5kV Transformer	System Capacity	2018	Planned
Coopers Corners New 3rd 345/115kV Transformer	System Capacity	2022	In Progress
Coopers Corners New 2nd 115/34.5 kV Transformer	System Capacity	2022	Planned
West Woodbourne New 2nd 115/34.5kV Transformer	Reliability		Conceptual
Ferndale - Liberty 34.5kV Line 348 Upgrade	Reliability		Conceptual
Ferndale - Kiamesha 34.5kV Line 343 Upgrade	Reliability		Conceptual
Ferndale New 2nd 115/34.5kV Transformer	Reliability		Conceptual
Old Falls New 34.5kv, 10MVAR Switched Capacitors	Reliability		Conceptual

Liberty – continued

Project	Driver	Proposed In-Service Date	Status
Liberty New 34.5kv, 5MVAR Switched Capacitors	Reliability		Conceptual
Shortcut Road New 34.5kv, 5MVAR Switched Capacitors	Reliability		Conceptual
West Woodbourne - Old Falls 34.5kV Line 342 Upgrade	Reliability		Conceptual
West Woodbourne - Hilldale Tap 34.5kV Line 341 Upgrade	Reliability		Conceptual
Kiamesha - Maplewood 34.5kV Line 347 Upgrade	Reliability		Conceptual
Coopers Corners - Maplewood - Kiamesha 34.5kV Line 347 Upgrade	Reliability		Conceptual
Old Falls - Concord - Kiamesha 34.5kV Line 342 Upgrade	Reliability		Conceptual
Liberty - Grossinger 34.5kV Line 341 Upgrade	Reliability		Conceptual

NYSEG – Mechanicville Division



Mechanicville – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Mechanicville Reinforcement Project - Construct the Luther Forest 115/34.5kV Substation with two 34.5.kV distribution lines.	Reliability	1/2016	In Construction
Stephentown New 2nd 115/34.5kV Transformer	Reliability	10/2016	In Construction
Columbia County Transmission Project (Original Project New Ghent to Klinekill 115kV Line; Current Project New Ghent 115/34.5kV Distribution Substation)	Reliability	3/2018	In progress
Comstock - Franchise Line 34.5kV Line 625 and Line 626 Upgrade	System Capacity	2018	Planned
Brainard Tap - West Lebanon 34.5kV Line 620 Upgrade (Install Static and Ground Wires)	Reliability	2021	Planned

NYSEG – Oneonta Division



Oneonta – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Fraser New 2nd 345/115kV Transformer and 115kV Bus Reconfiguration	Reliability	2021	In Progress
Colliers 115/46kV Transformer B1 and B2 Replacement or New 3rd 115/46kV Transformer	System Capacity	2023	Planned
Colliers - Emmons - Sand Street 46kV Line 811 Upgrade	System Capacity		Conceptual
Richfield Springs New 2nd 115/46kV Transformer	System Capacity		Conceptual
Stilesville New 46kV, 20MVAR Switched Capacitor Bank	System Capacity		Conceptual
Delhi Additional 46kV, 10MVAR Switched Capacitor Bank	System Capacity		Conceptual
Stilesville - Deposit 46kV Line 831 Upgrade	System Capacity		Conceptual
Edmeston New 46kV, 5MVAR Switched Capacitor Bank	System Capacity		Conceptual

Oneonta - continued

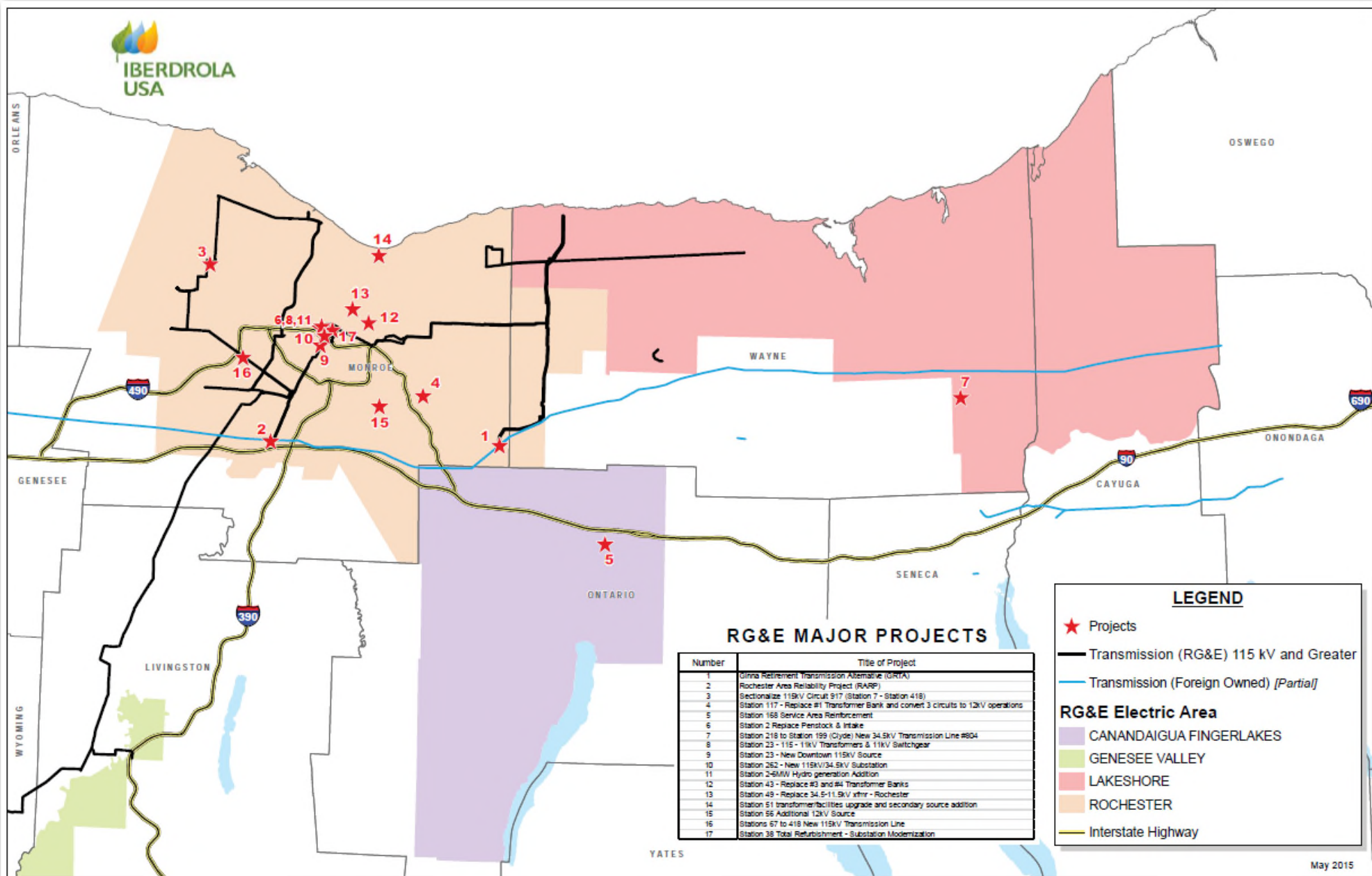
Project	Driver	Proposed In-Service Date	Status
Mount Upton New 46kV, 10MVAR Switched Capacitor Bank	System Capacity		Conceptual
Pierce Avenue New 46kV, 10MVAR Switched Capacitor Bank	Reliability		Conceptual
Brothertown Road New 2nd 115/46kV Transformer	Reliability		Conceptual
South Cooperstown New 46kV, 10MVAR Switched Capacitor Bank	Reliability		Conceptual
Richfield Springs New 46kV, 5MVAR Switched Capacitor Bank	Reliability		Conceptual
Munnsville Tap - Morrisville Tap 46kV Line 806 Upgrade	Reliability		Conceptual

NYSEG – Plattsburgh Division

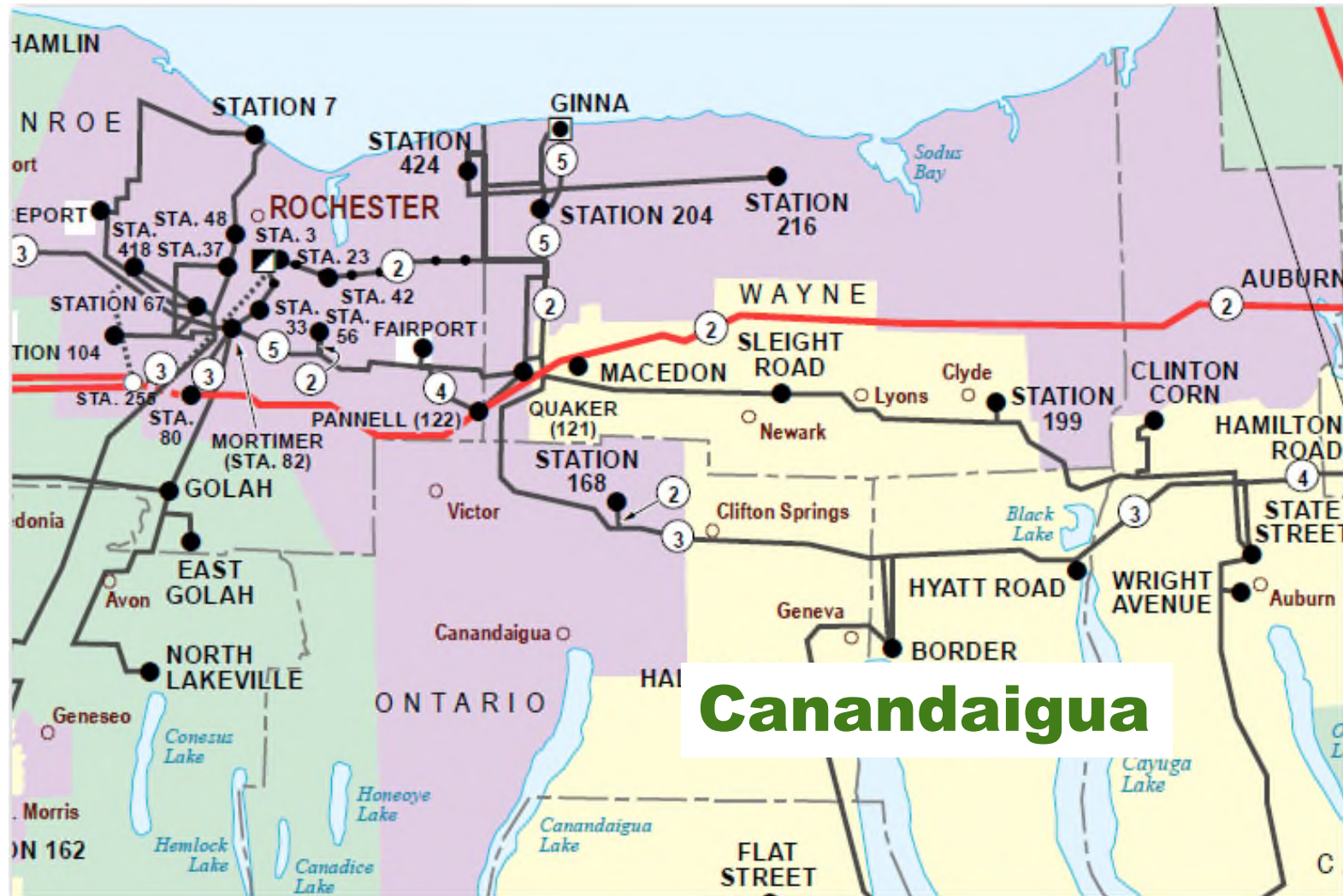


Plattsburgh – Proposed Projects

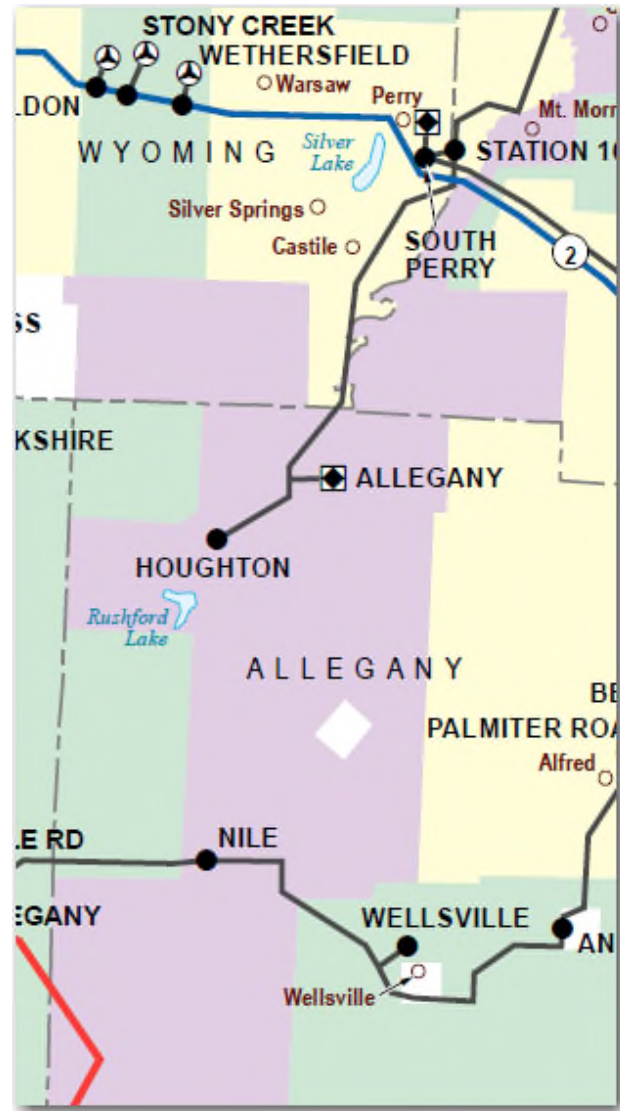
Project	Driver	Proposed In-Service Date	Status
Lyon Mountain New 2nd 115/34.5kV Transformer	Reliability		Conceptual
Clintonville New 34.5kV, 5.4MVAR Capacitor Bank	Reliability		Conceptual
Chateaugay New 34.5kV, 5.4MVAR Capacitor Bank	Reliability		Conceptual
Northend New 2nd 115/34.5kV Transformer	Reliability		Conceptual



Lakeshore



Genessee Valley



RGE – Proposed Projects

Project	Driver	Proposed In-Service Date	Status
Ginna Retirement Transmission Alternative	Reliability	1/2017	In Progress
Rochester Area Reliability Project (RARP)	Reliability	3/2020	In Construction
Station 23 - New Downtown 115kV Source	System Capacity	5/2018	In Construction
Station 23 - Add Transformer and 11 kV Switchgear	System Capacity	4/2018	In Construction
Station 218 - Station 199 (Clyde) New 34.5kV Transmission Line 804	System Capacity	5/2016	In Progress
Station 70 - Add Auto Sectionalization 115kV Circuit 917	Reliability	11/2017	In Progress
Stations 67 to 418 - New 115kV Transmission Line 939	Reliability	10/2018	In Progress
Station 262- New 115kV/34.5kV Substation	Reliability	11/2018	In Progress
Station 168 Service Area Reinforcement	Reliability	1/2019	Planned

RGE - continued

Project	Driver	Proposed In-Service Date	Status
Station 49 - Replace Two 34.5/11.5kV Transformers	Reliability	5/2018	Planned
Station 121 - Add 115-34.5 kV Transformer	Reliability		Conceptual
Station 80 - Station 82 New 115kV Transmission Line	Reliability		Conceptual
Line 926 - Upgrade 115kV Line	Reliability		Conceptual
Station 48 - Replace Two 115/34.5 kV Transformers	Reliability		Conceptual
Station 67 - Add Second 115-34.5kV Transformer	Reliability		Conceptual
Station 204 - Add 115-35kV Transformer	Reliability		Conceptual

LTP Posted On-line

- NYSEG and RGE Local Transmission Owner Planning Process and Results posted to the NYISO website.
- Also available on the respective websites of NYSEG and RGE at:
 - <http://www.nyseg.com/SuppliersAndPartners/transmissioninfo/localtransmissionplans.html>
 - <http://www.rge.com/SuppliersAndPartners/transmissioninfo/localtransmissionplans.html>