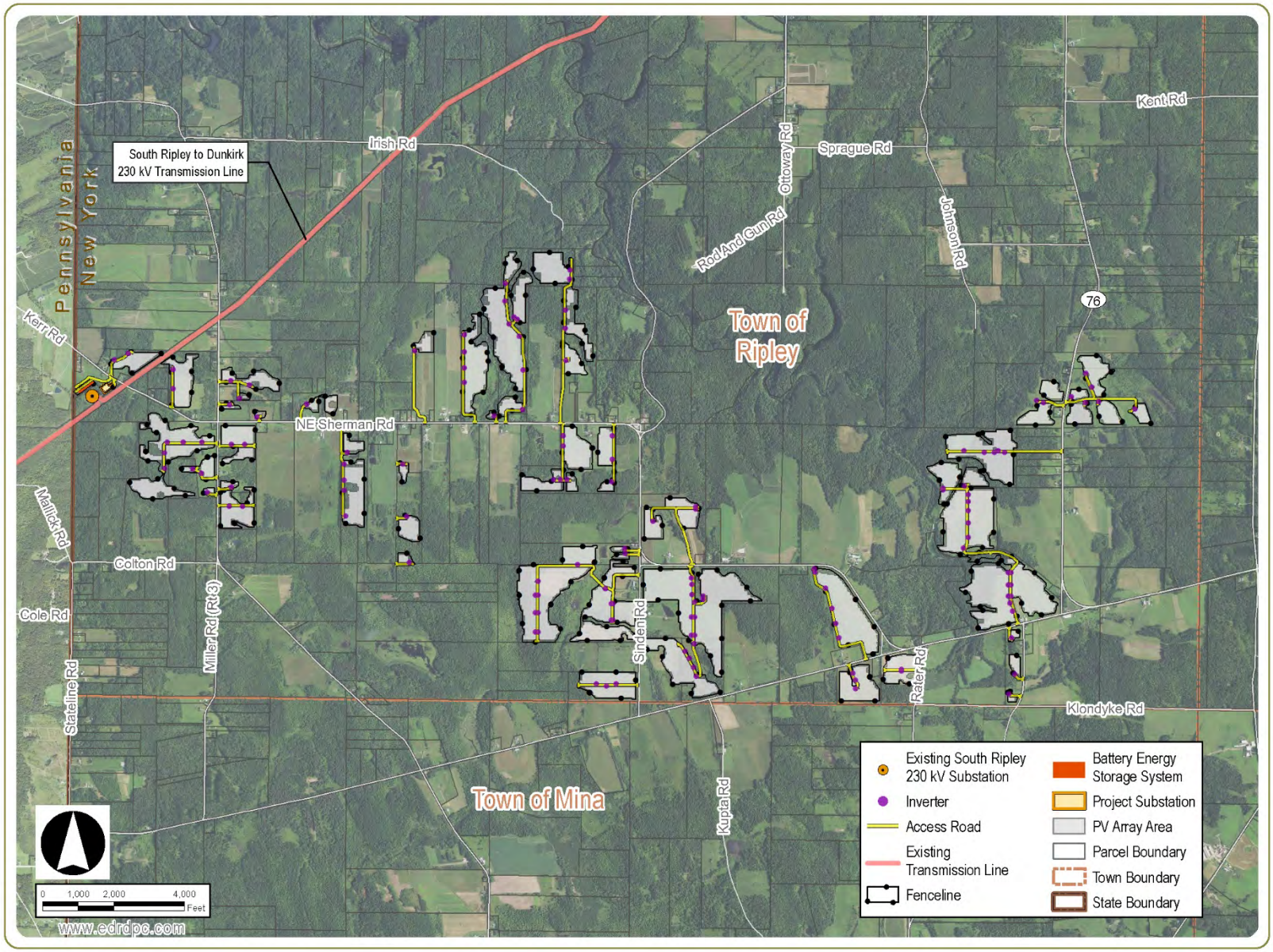
# South Ripley Preliminary Solar Layout



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# Stormwater and Groundwater

Section 94-c ensures that renewable energy projects study potential stormwater and groundwater impacts from project development and design management plans to ensure that projects do not change the water runoff characteristics of a site through construction and operation. PV panels are designed to ensure no release or leakage of panel material into the surrounding environment.

**A final 94-c Application will include:**

- A Stormwater Pollution Prevention Plan (SWPPP) for the collection and management of stormwater discharges from the facility site during construction.
- A preliminary plan for post-construction stormwater management practices that will be used to manage stormwater runoff from the developed facility site. This plan will be finalized before construction as part of Compliance.
- Plans must be prepared in accordance with the applicable NYS Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, the NYS Standards and Specifications for Erosion and Sediment Control, and NYS Stormwater Design Manual.
- ConnectGen will complete a local water well survey for properties within 1,000 feet of project boundaries to effectively site project equipment to avoid potential impacts during construction.
- The 94-c Application will also identify other groundwater resources, such as aquifers.

# Wetland and Stream Resources

**Resource Identification and Field Survey:**

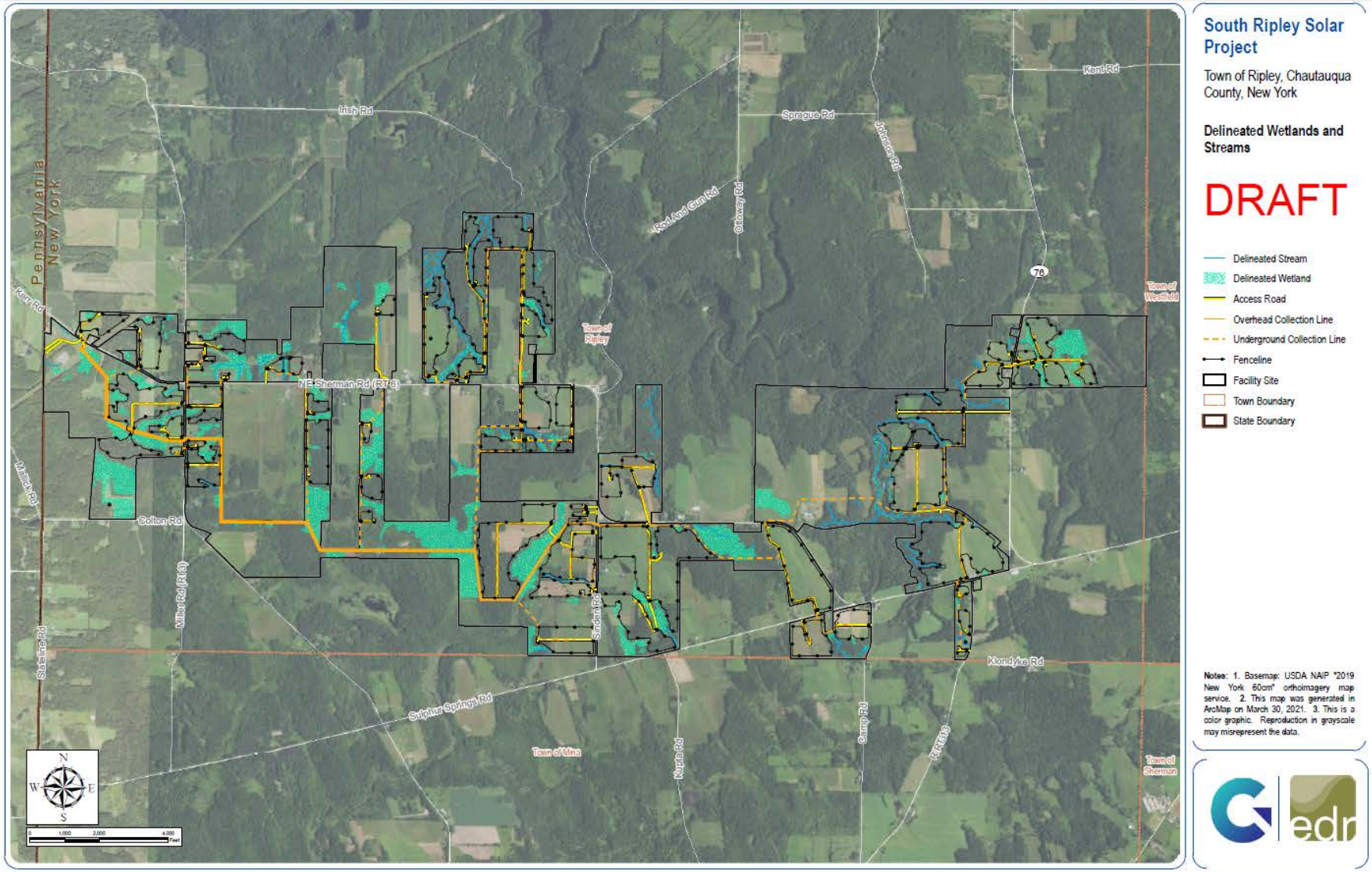
- Wetland and stream desktop approximations were completed in March 2020.
- On-site wetland and stream delineations were completed from June – Sept 2020.
- Boundaries of wetland and stream resources were identified within the study area.
- Results are being used to inform Project design through impact avoidance and minimization.
- A final wetland stream and delineation report will be included in the Section 94-c Application.

Mapped Wetland: South Ripley, 2020

**ORES Consultation and Jurisdictional Determination:**

- ORES was provided data from delineations and representatives conducted site review visits with EDR in November and December 2020.
- Based on delineation efforts and subsequent site visits, a draft wetland and stream delineation report was provided to ORES and NYSDEC in January 2021.
- ORES must issue final jurisdictional determination regarding state-regulated wetlands and streams within 60 days of receipt of the draft wetland delineation report.

# Wetland and Stream Resources: Project Map



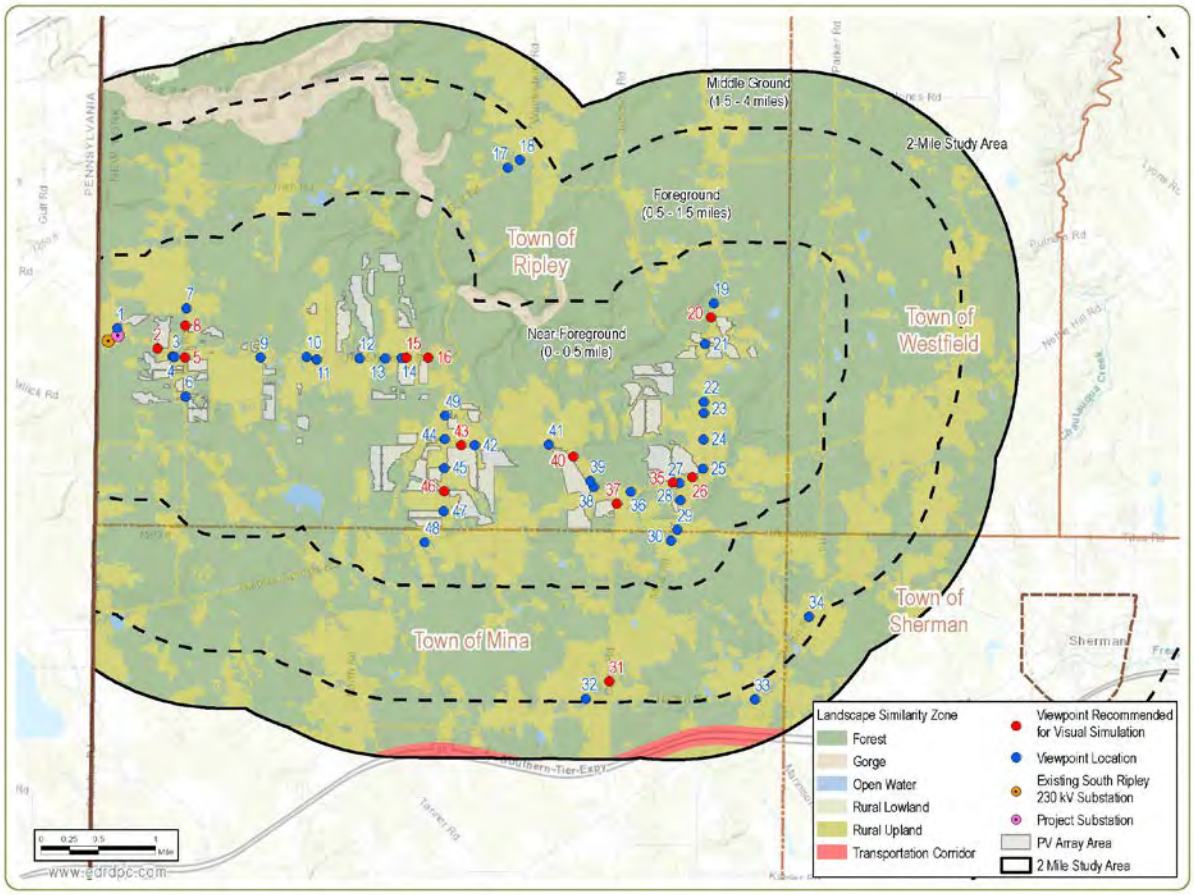
# Avian Resources: Consultations and Surveys

- Consultation with state and federal resource agencies initiated in the summer of 2019, through initial review of databases maintained by the NYSDEC and the USFWS.
- Further consultation and records review with NYSDEC Central Office and Region 9 occurred in the fall of 2019.
- Based on the potential presence of rare grassland species, a winter raptor survey workplan was prepared and provided to NYSDEC in November 2019.
- A Winter Raptor Survey (WRS) took place from November 2019 – March 2020.
- A virtual meeting was held with NYSDEC in April 2020 to review survey results, and a complete WRS report was provided to NYSDEC in May 2020.
- Additionally, a spring Breeding Bird Survey (BBS) workplan was prepared for NYSDEC review in May 2020 and surveys conducted from May – July 2020.
- A complete BBS report was provided to NYSDEC in September 2020.
- The results of all avian surveys were discussed with ORES, and all reports were provided to ORES in October 2020.

# Avian Resources: Results and Conclusions

- The WRS resulted in more than 5,600 survey minutes (over 93 survey hours).
- A total of 62 raptors were observed, most of which were common species such as red-tailed hawk and turkey vulture.
- The only state-listed threatened species observed were bald eagle (5) and northern harrier (7); however, no suspected roost locations or areas of concentrated activity were identified. No state-listed endangered species were observed.
- Of the more than 5,600 survey minutes, only 16 survey minutes included northern harrier and 16 survey minutes included bald eagle, totaling less than 1% of the entire survey effort.
- The BBS resulted in more than 4,680 survey minutes (over 78 survey hours).
- A total of 81 species were observed, most of which were common species such as song sparrow and red-winged blackbird.
- No state-listed threatened or endangered species were observed during the BBS.
- Based on the results of the WRS and the BBS, it was concluded that the Facility Site does not contain occupied habitat for wintering or breeding state-listed threatened or endangered avian species.

# Visual Impacts




## Define Affected Environment:

- Definition of a Visual Study Area (2 miles)
- Identification of Visually Sensitive Resources
  - Review of publicly available data
  - Consultation with state & local stakeholders
- Identification of Viewer Groups
- Landscape Similarity Zone mapping

## Evaluate Potential Visibility:

- Viewshed Analysis Mapping
- Field Review and Assessment



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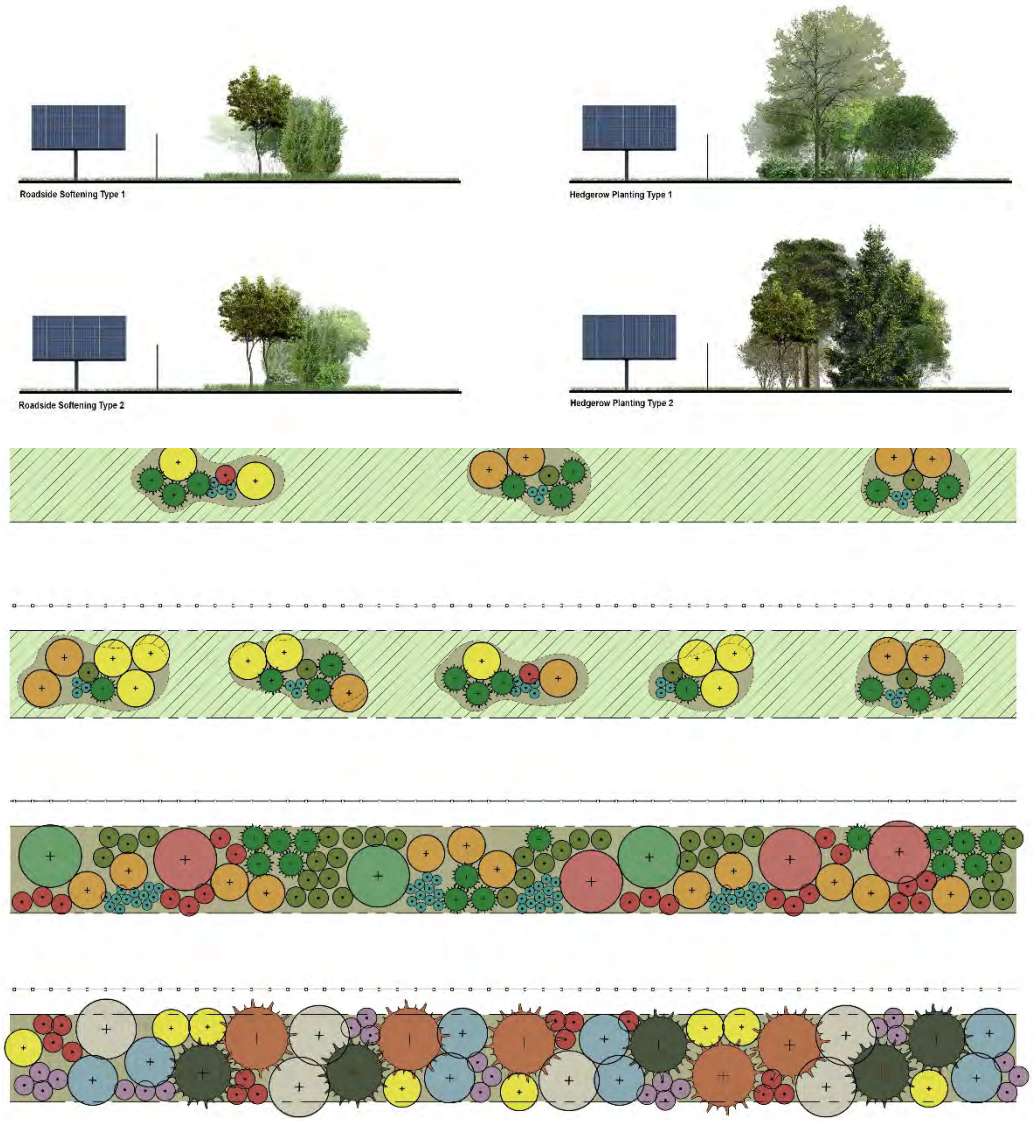
# Visual Impacts




**Appearance of the Facility:**

- Proposed Equipment
  - PV Panels and Racking
  - Inverters
  - Fencing
  - Substation
  - Above ground collection
  - Energy Storage System
- 3-Dimensional Model

**Results and Conclusions:**

- Visual Impact Analysis
  - Visual Simulations
  - Rating Panel Analysis
  - Visual Mitigation



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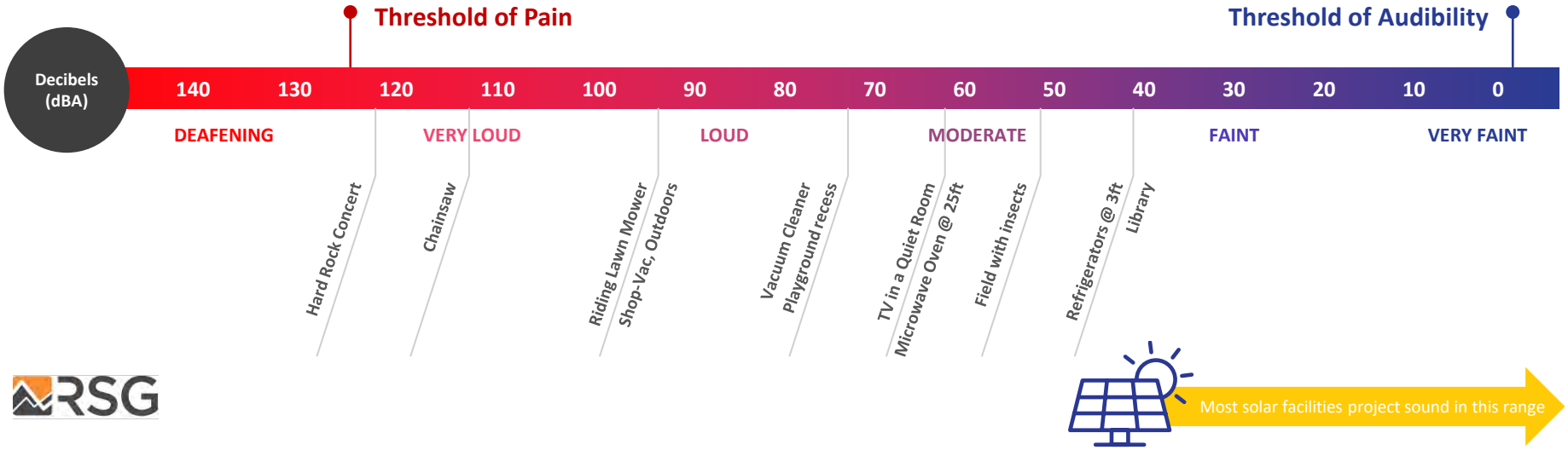
# Sound and Noise Impact




## The equipment anticipated to be used in the South Ripley Solar Project Include:

| | | |
|---|---|---|
| **Solar Panels** | Collect solar energy and transform into electricity | *Not expected to generate any sound* |
| **Inverters** | Convert DC to AC current | *Generate limited sound during the day* |
| **Transformers** | Increase the voltage for collection and distribution | *Generate limited sounds day and night* |
| **Energy Storage** | Stores and releases power as needed | *Generate sound mostly via the cooling systems* |

# Sound Level Monitoring and Analysis

Sound Monitoring Device in South Ripley (2020)

## Sound Level Monitoring:

- ConnectGen completed on-site sound level monitoring in the project area during the 2020 winter and summer seasons.
- Average measured winter background sound in South Ripley is 37 dBA at night and 41 dBA during the day.

## Sound Level Modelling:

- International Standards Organization procedures (ISO 9613-2) are used.
- Equipment locations and their maximum sound power are entered in the model.
- Meteorological conditions for downwind or, equivalently, nighttime inversion are assumed.
- Output modeled for all homes and properties in the study area.



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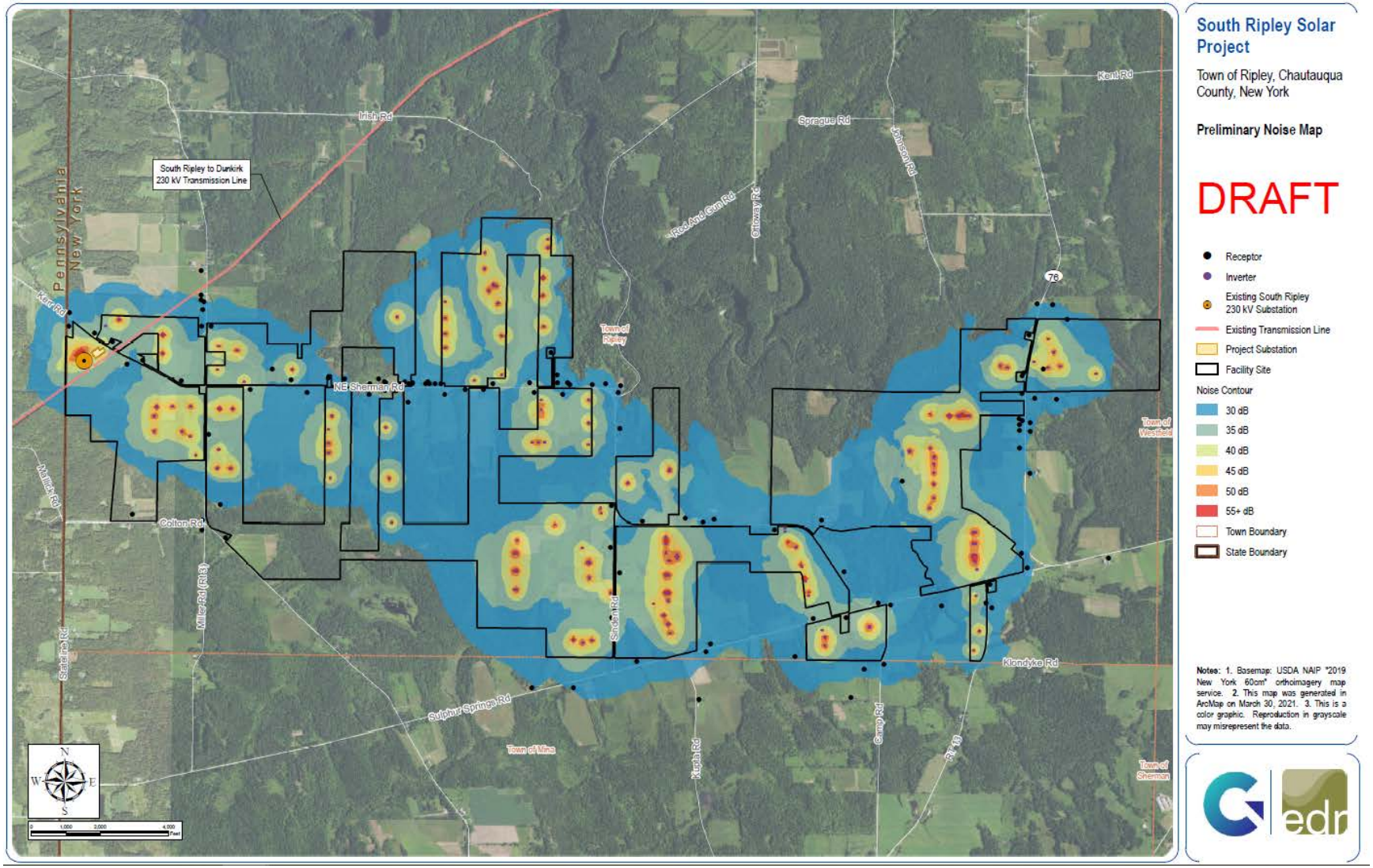
# Preliminary Representative Noise Map



# Noise Design Goals – Section 94-c

## 94-c Uniform Conditions and Standards for Sound:

- Non-participating residence = 45 dBA (8-Hour $L_{eq}$)
- Participating residence = 55 dBA (8-Hour $L_{eq}$)
- Non-participating residence = 40 dBA due to substation
- Non-participating property line = 55 dBA (8-Hour $L_{eq}$)
- Separate limits on low frequency sound
- Penalty for audible prominent tones

## Other 94-c Requirements:

- Sound propagation model parameter specifications
- Reporting requirements
- Complaint resolution plan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# Public Health, Safety, and Security

### Solar Panels and Electrical Equipment

- Solar panels must meet strict electrical safety standards.
- Solar panels are designed to ensure no release or leakage of panel material into the surrounding environment.
- Solar projects result in no water discharges.

### Battery Energy Storage

- Battery storage systems meet strict local, state, and federal electrical and fire safety standards.
- Battery systems are designed to contain numerous redundant safety measures including 24/7 remote monitoring, internal heat sensors and electrical monitoring, built in exhaust and ventilation, and internal fire suppression systems.

### A 94-c Application will include:

- A Safety Response Plan that outlines emergency response measures, descriptions of on-site protection equipment and compliance with New York Fire Code, a requirement to conduct training drills with local EMS once a year.
- A Site Security Plan that includes site plans and descriptions of fencing, gates, electronic security, lighting, and cyber security for the facility.

# Decommissioning

## 94-c Requirements for Decommissioning:

An Application will include a Decommissioning and Site Restoration Plan which addresses:

- Commitments for equipment removal
- Safety
- Environmental impacts
- Aesthetics
- Recycling
- Potential future uses for the Site
- Financial aid commitments
- Schedule
- Estimated cost for decommission and allocation of funding to local municipalities

# Current Local Zoning Regulations

The Town of Ripley's existing zoning regulations provide substantive regulations for solar energy development, construction and operation.

**Applicable Exisiting Zoning Laws**

**Section 505**: Visibility at Intersections

- Height limitations for vegetation hedges within 50 ft. from intersections.

**Section 507**: Topsoil Excavation

- Management of runoff to neighboring property and topsoil replenishment if necessary.

**Section 610**: Signs

- Requirements for new signage.

**Section 618**: Off-Street Parking

- Off-street access and size requirements.

**Section 620**: Solar and Wind Systems

- Property line setbacks for adjoining properties, zoning district allowances, operations and maintenance plan, decommissioning plan, height and setback requirements, lot size requirements, lot coverage requirements, and fencing requirements.

**Compliance with Local Laws**

ConnectGen is designing the project to comply with all existing zoning regulations and will continue to evaluate applicable laws if and when the Town updates specific standards for solar and energy storage.

# Local Zoning Regulations Under Review

The Town Board recently introduced a new solar law amendment which would add to the existing regulations (it is unclear whether it intends to supersede/repeal the existing regulations).

As required by Section 94-c, ConnectGen previously reviewed the existing zoning law's substantive requirements and noted a number of potentially applicable provisions to the Town Board in a letter dated February 10, 2021. We have conducted a preliminary analysis of the Town's proposed amendment and have provided the Town a comment letter dated March 30, 2021. ConnectGen has four primary concerns with the proposed local law:

1. 450 foot setback in rural/agricultural district with no allowance for participating landowners
2. 6 dBA over ambient limitation of noise at property boundary
3. Prohibition of tree clear of tress over 6 in diameter and of more than 5% of any parcel
4. 10% limit of use of prime agriculture in the town

A more comprehensive response was presented in the comment letter on March 30th. Additionally, ConnectGen understands that the Town Planning Board also made reccomendations for a energy storage zoning law, but the town has not released an official version for public comment at this time.

**4. Town of Ripley Pre-Application Consultation Meeting Project Maps (4-1-2021)**

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Proposed Facility Site - Substation and Battery Energy Storage System

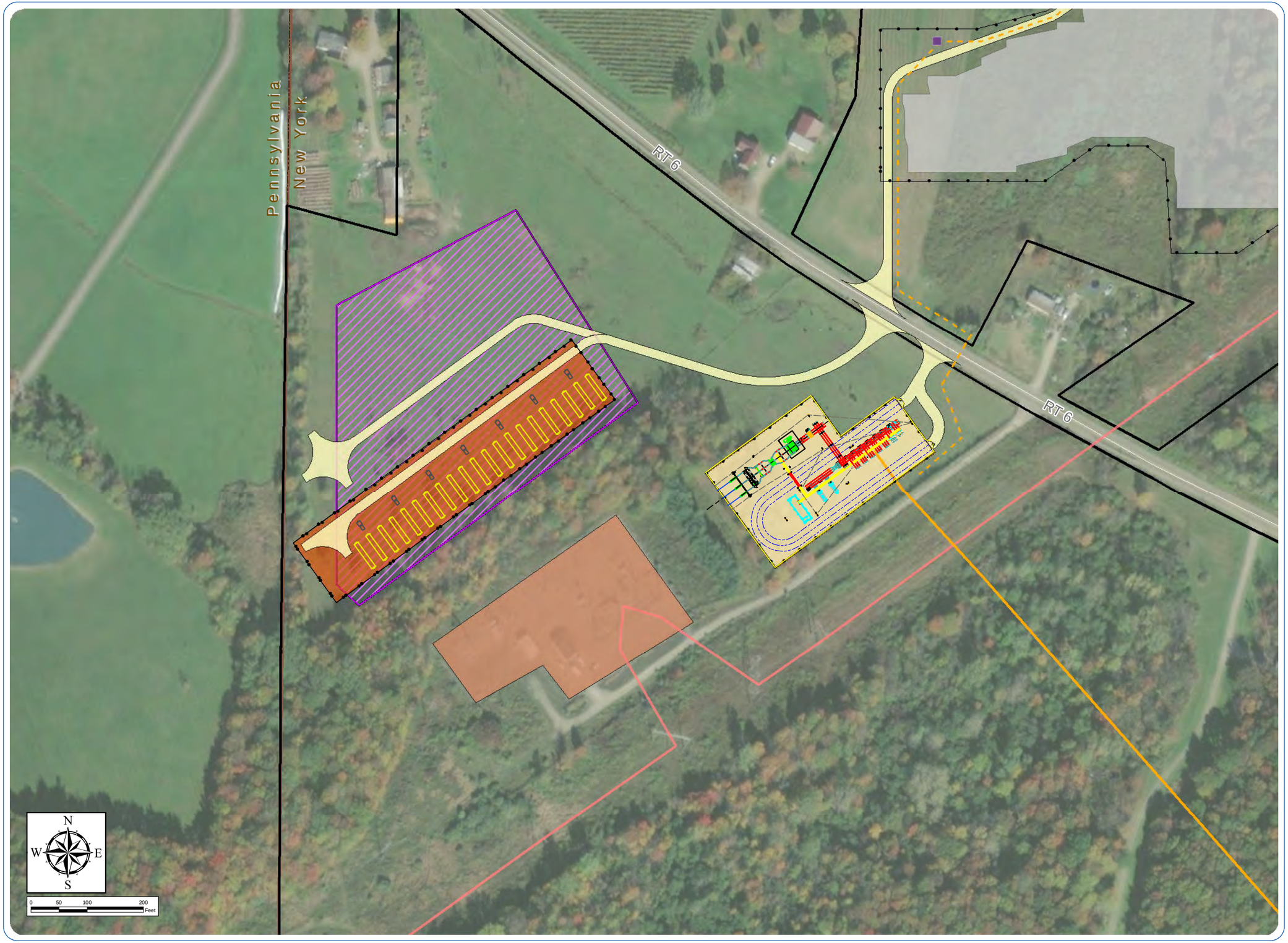
DRAFT

- Receptor
- Underground Collection Line
- Overhead Collection Line
- Access Road
- Existing Transmission Line
- Fenceline
- PV Panel Area
- Inverter
- Substation
- Battery Energy Storage System
- Existing South Ripley 230 kV Substation
- Laydown Yard
- Facility Site
- Town Boundary
- State Boundary

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

N W E S

0 1,000 2,000 4,000 Feet




# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Substation and Battery Energy Storage System

DRAFT

- Overhead Collection Line
- Underground Collection Line
- Existing Transmission Line
- Access Road
- Fenceline
- PV Panel Area
- Inverter
- Project Substation
- Battery Energy Storage System
- Battery Container
- Existing South Ripley 230 kV Substation
- Laydown Yard
- Facility Site

Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Delineated Wetlands and Streams

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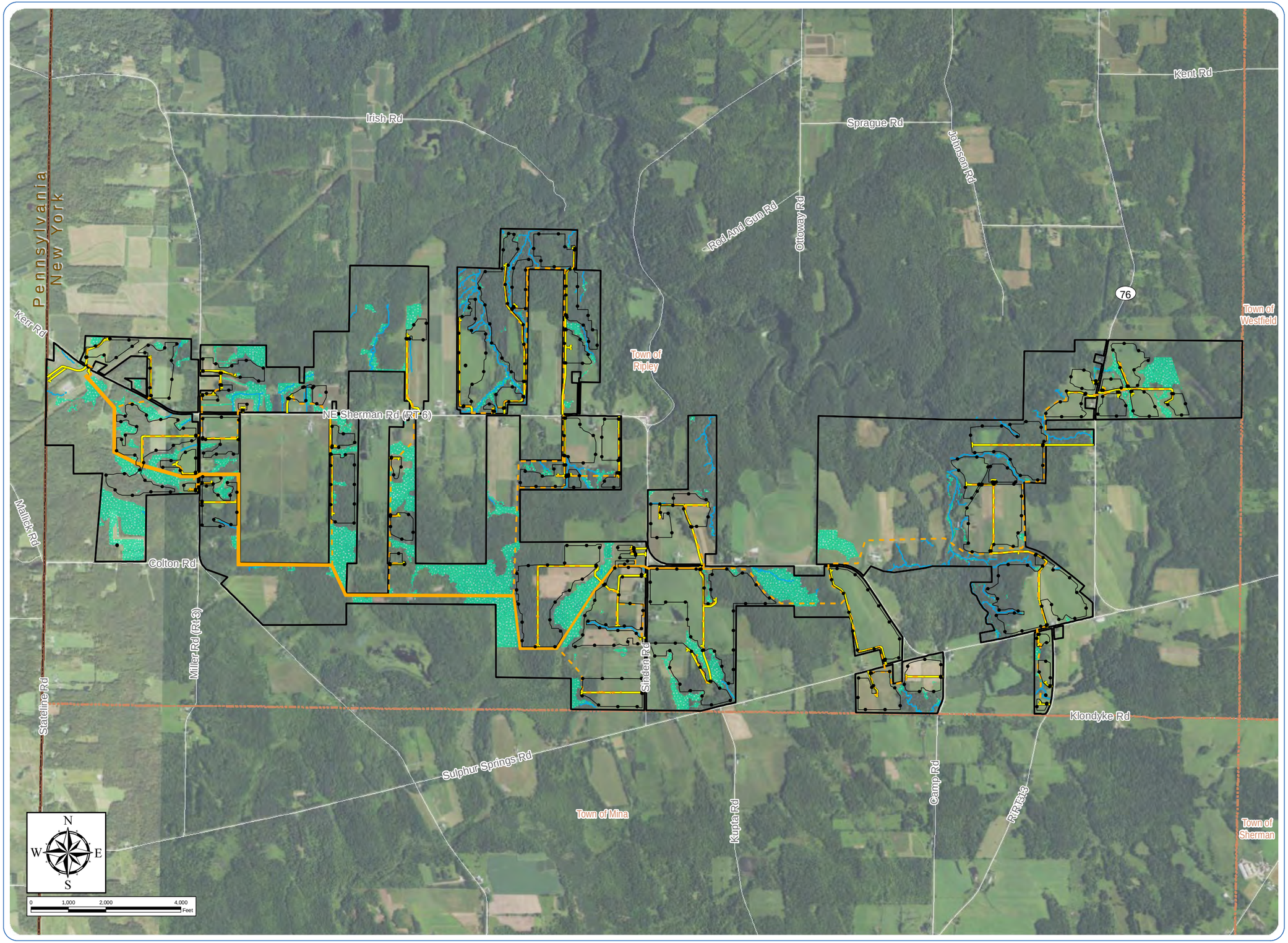


- Delineated Stream
- Delineated Wetland
- Access Road
- Overhead Collection Line
- Underground Collection Line
- Fenceline
- Facility Site
- Town Boundary
- State Boundary

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Historic Resources

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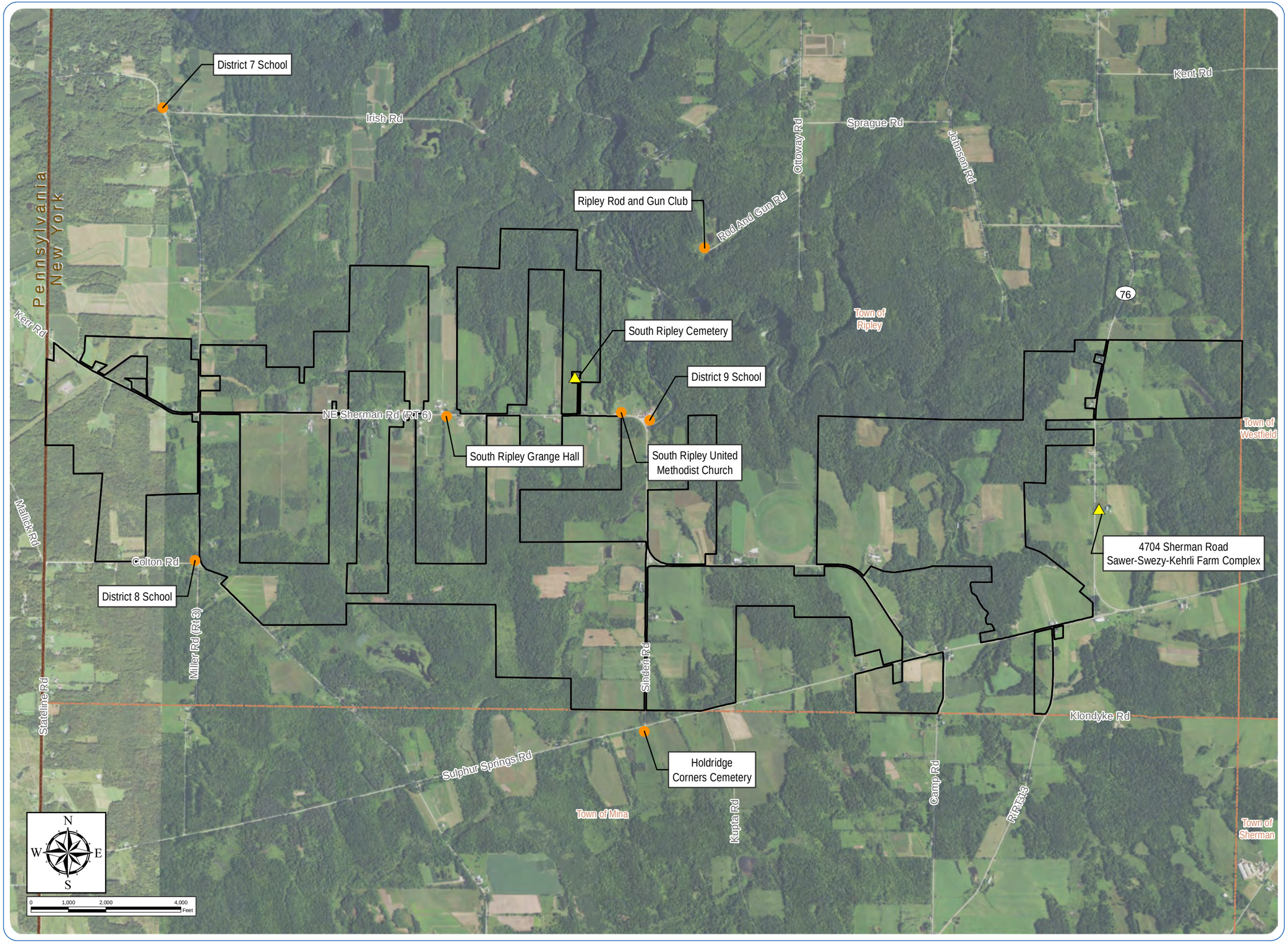



- S/NRHP-Eligible
- Locally Identified Resource
- Facility Site
- Town Boundary
- State Boundary

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

# South Ripley Solar Project

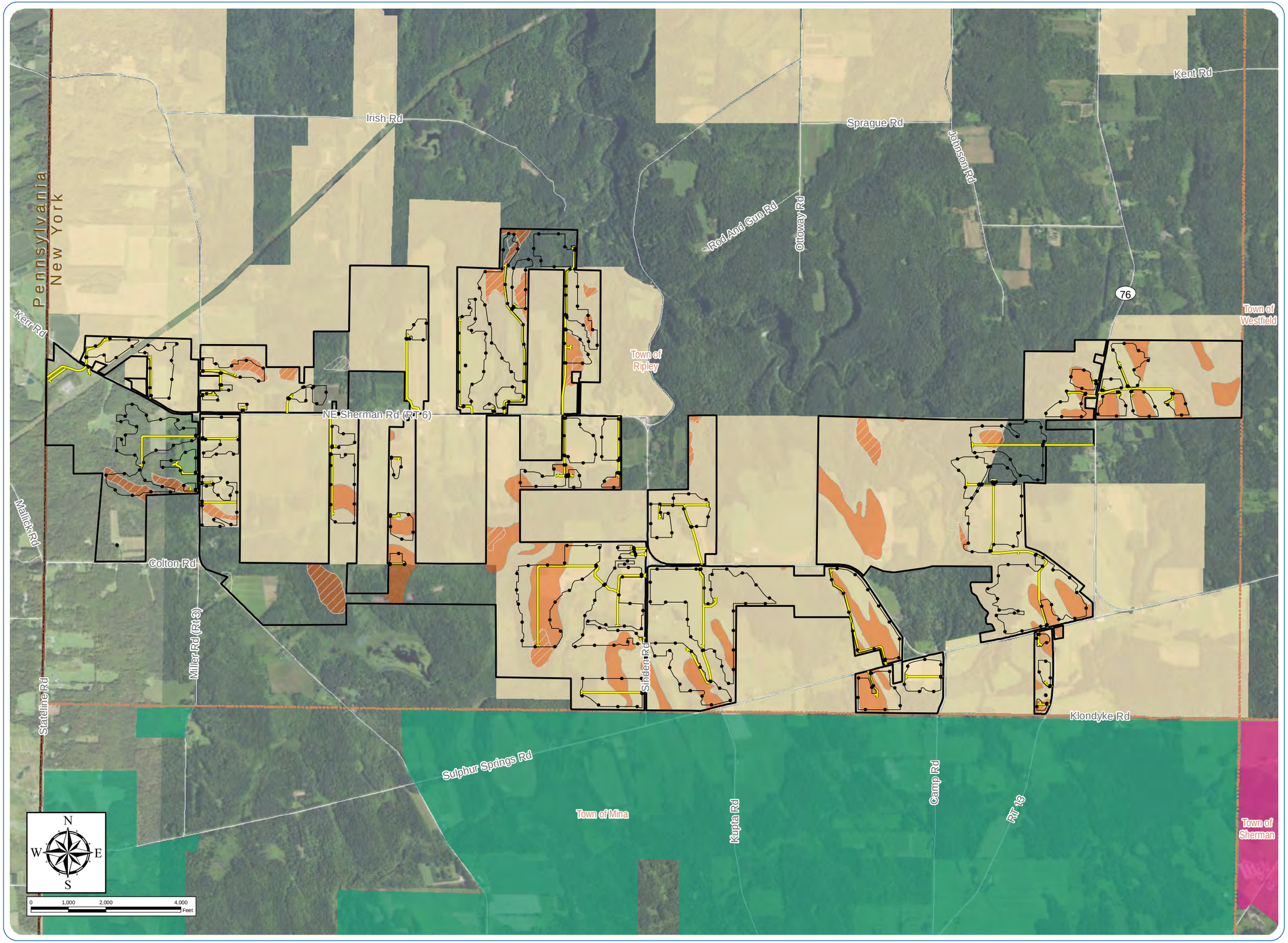
Town of Ripley, Chautauqua County, New York

Mineral Soil Groups

DRAFT

- Mineral Soil Groups 1-4
- Prime Farmland
- Chautauqua County Agricultural District 1
- Chautauqua County Agricultural District 6
- Chautauqua County Agricultural District 7
- Access Road
- Fenceline
- Facility Site
- Town Boundary
- State Boundary

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Visual Impact Assesment - Viewpoint Locations

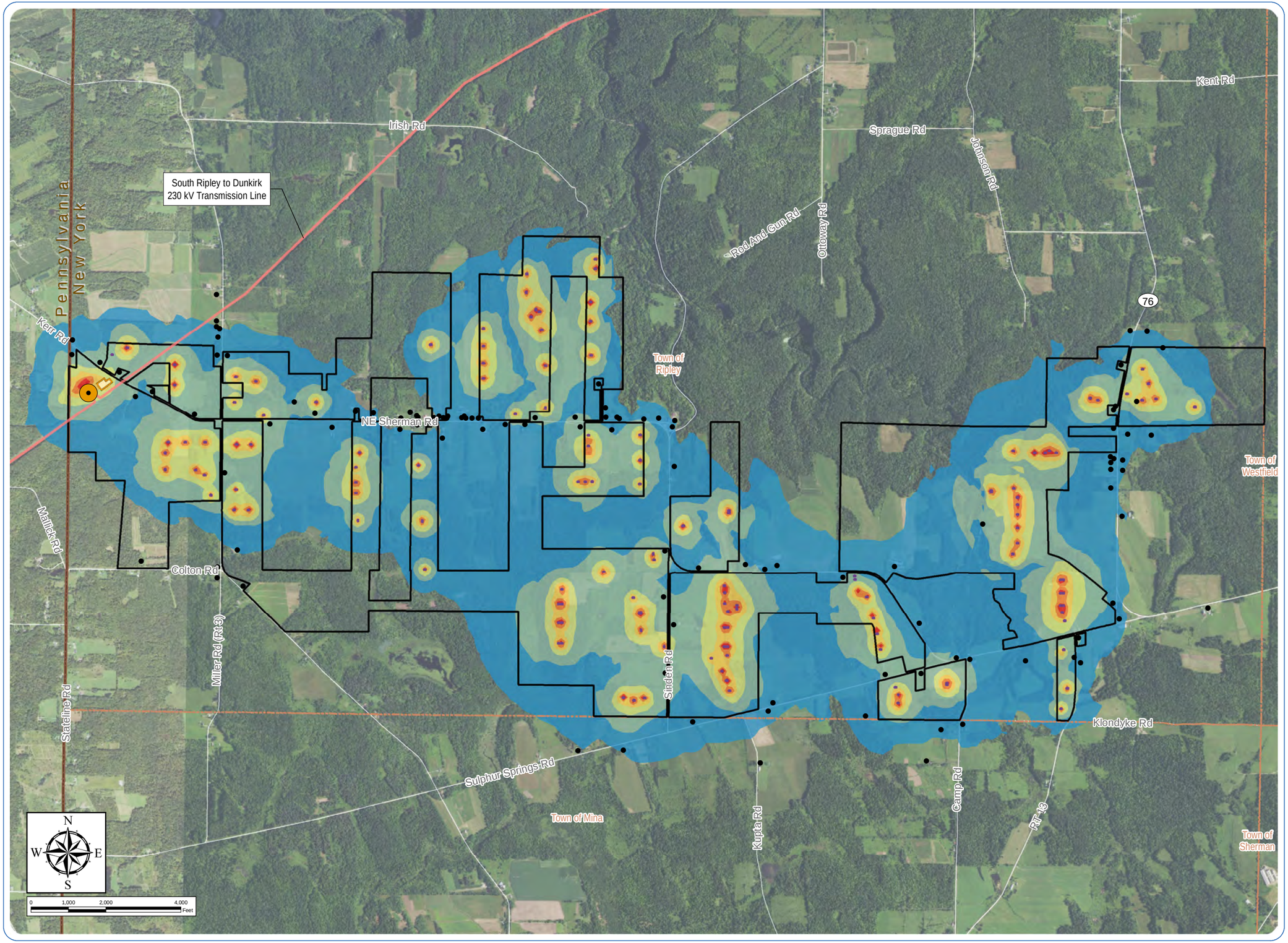
DRAFT

- Viewpoint Location
- Fenceline
- PV Panel Area
- Project Substation
- Facility Site
- Town Boundary

Notes: 1. Basemap: "USGS Topo" map service. 2. This map was generated in ArcMap on March 31, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

N W E S

0 1,000 2,000 4,000 Feet




# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Preliminary Noise Map

DRAFT

- Receptor
- Inverter
- Existing South Ripley 230 kV Substation
- Existing Transmission Line
- Project Substation
- Facility Site

Noise Contour

- 30 dB
- 35 dB
- 40 dB
- 45 dB
- 50 dB
- 55+ dB
- Town Boundary
- State Boundary

Notes: 1. Basemap: USDA NAIP "2019 New York 60cm" orthoimagery map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Haul Route

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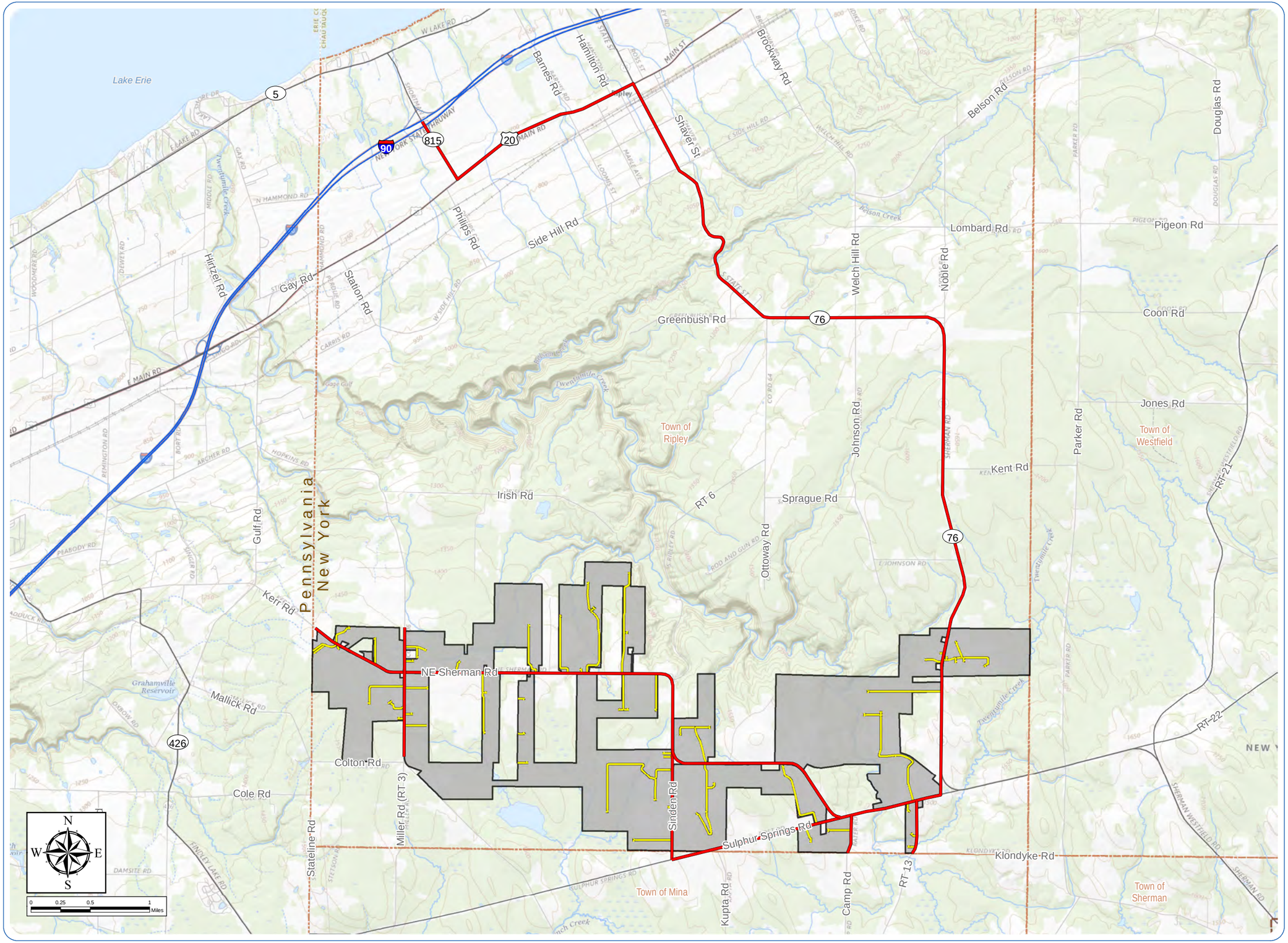


Haul Route
Access Road
Facility Site
Town Boundary

Notes: 1. Basemap: "USGS Topo" map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Emergency Routes

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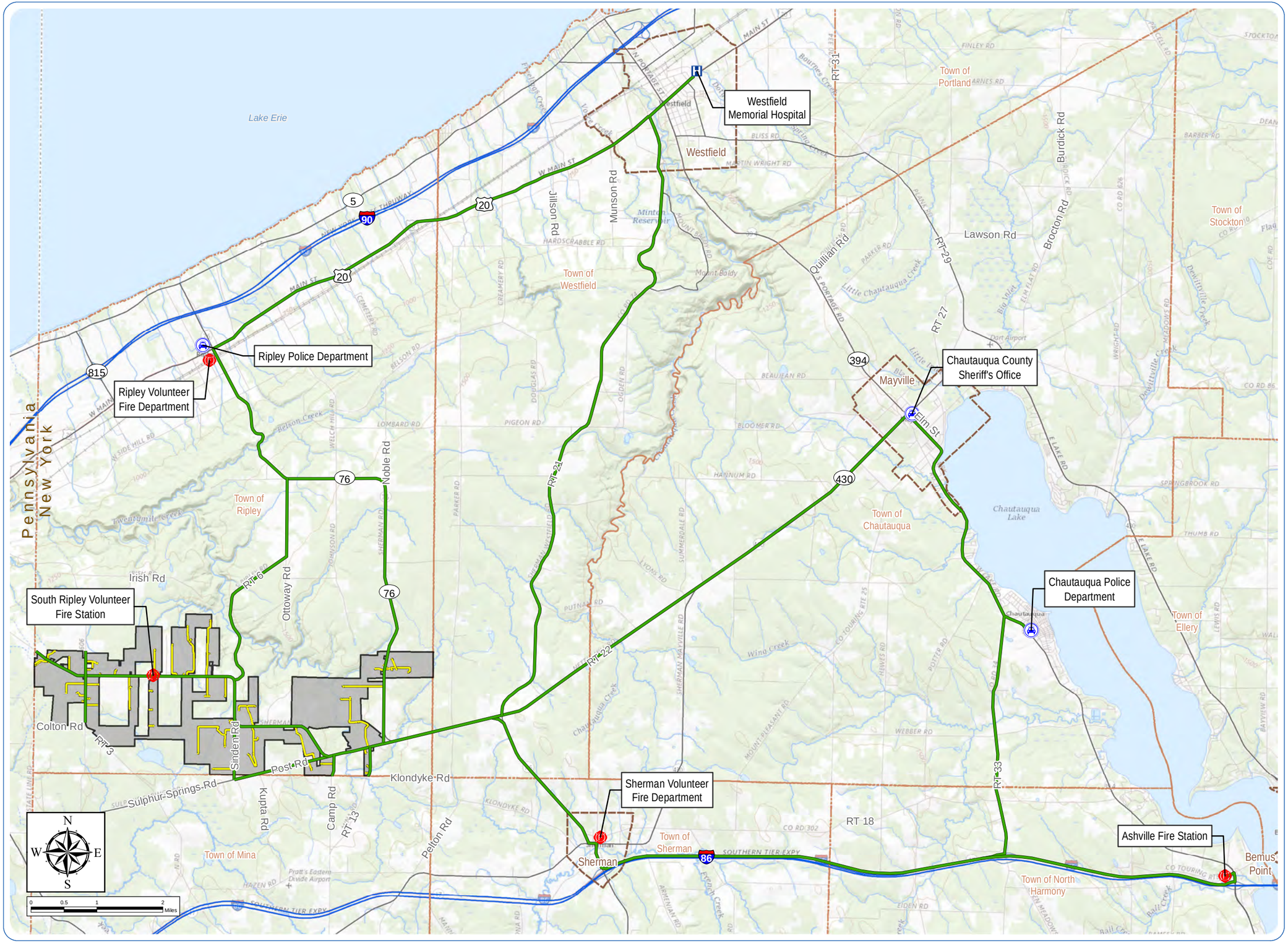


## Legend

- Fire Station
- Hospital
- Police Station
- Potential Emergency Responder Route
- Access Road
- Facility Site
- City/Village Boundary
- Town Boundary

Notes: 1. Basemap: ESRI ArcGIS Online "USGS Topo" map service. 2. This map was generated in ArcMap on March 30, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

5. **Town of Ripley Pre-Application Consultation Visual Simulations (4-1-2021)**

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 24 | State Route 76
Viewpoint Location Map

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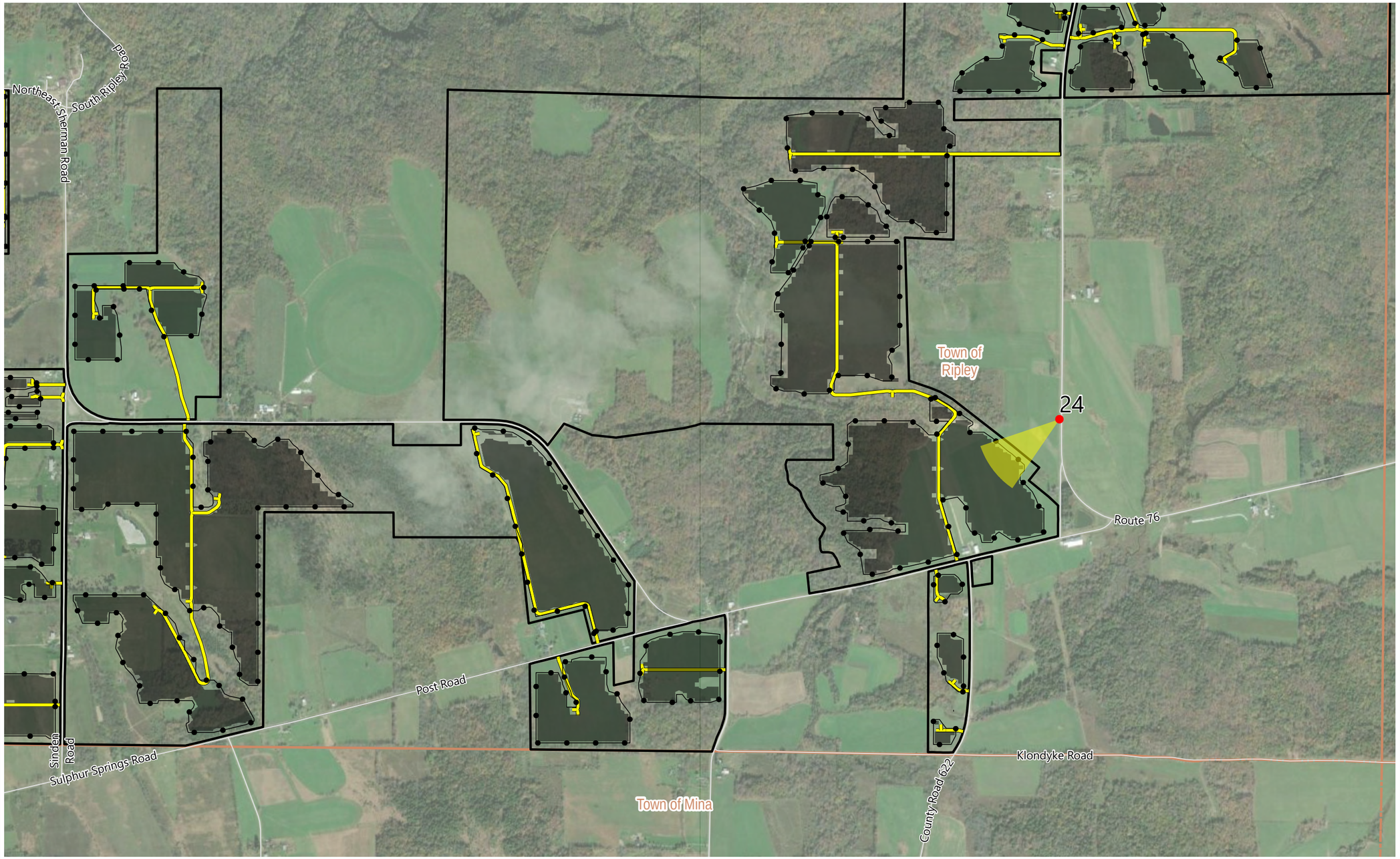


0 0.25 0.5 1
Mile

Selected Viewpoint Location
Access Road
Fenceline
Cone of View
PV Panel Area
Substation
Facility Site

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 24 | State Route 76
Existing Conditions

DRAFT

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 24 | State Route 76
Visual Simulation

DRAFT

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 24 | State Route 76
Visual Simulation - with Mitigation (5-7 year post install)

DRAFT

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 56 | NE Sherman Rd.
Viewpoint Location Map

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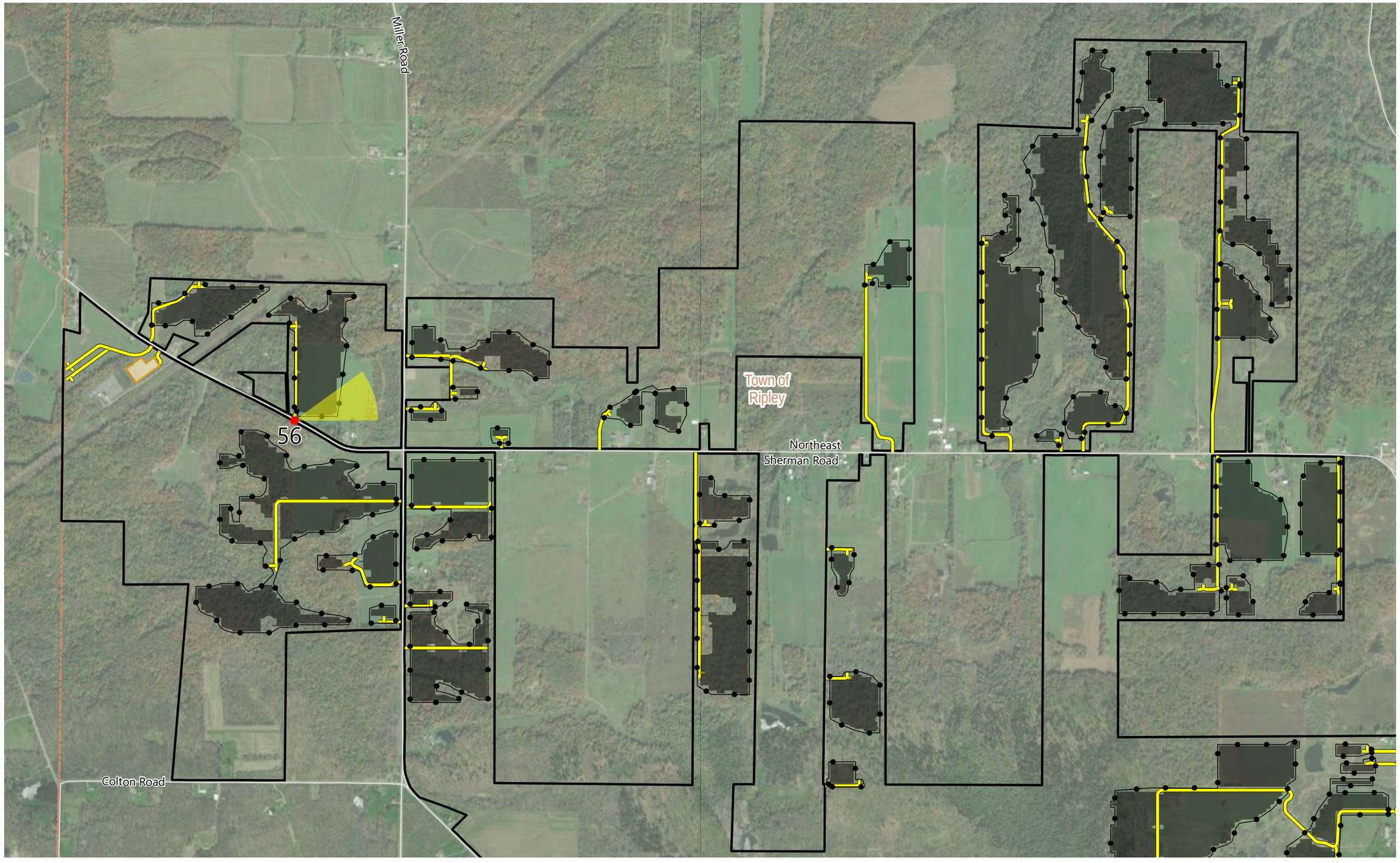


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Mile

Selected Viewpoint Location
Access Road
Fenceline
Cone of View
PV Panel Area
Substation
Facility Site

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 56 | NE Sherman Rd.
Existing Conditions

DRAFT

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 56 | NE Sherman Rd.
Visual Simulation

DRAFT

# South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Viewpoint 56 | NE Sherman Rd.
Visual Simulation - with Mitigation
(5-7 year post install)

DRAFT