SCHEDULE "A"

Solar Energy Guidelines

Town of Cazenovia, New York

2022

Introduction

In 2019, the State of New York developed an accelerated strategy to reduce greenhouse gas emissions by transitioning to renewable energy sources, such as solar, wind, and hydropower. By reducing such emissions, the plan aims to mitigate the impacts of climate change. Included among its goals, the Climate Leadership and Community Protection Act now calls for:

- 70% of electricity generation from renewable energy sources by 2030 (the "70 x 30" goal)
- 100% of electricity generation to be carbon-free by 2040.

The Town of Cazenovia supports these goals as essential in transitioning away from fossil fuel power and toward a system comprised of a mix of smaller scale solutions and large solar projects. In addition to slowing climate change, solar energy systems ---- along with other renewable energy sources – can improve air quality and community health; reduce impacts to finite resources; increase reliability and resiliency of the state's electrical supply; and create local economic benefits through new jobs and revenue creation.

The Town of Cazenovia seeks to maximize the development of renewable energy projects while protecting the Town's natural, cultural, economic, and historic resources; its farmland; scenic views; and the health and welfare of its residents. It recognizes that while climate change poses threats to these very resources, the solution itself cannot pose an equivalent threat to much of what defines our community character and quality of life. The Town's Solar Energy Law, amended and adopted in 2022, aims to balance these objectives.

This guide neither replaces nor supersedes that which is stated in the Town Code. It is intended for residents, business owners, and large-scale solar developers to understand what solutions are available; key requirements for the applicant; the practices the Town encourages; and the processes for approval. Any applicant whose application requires an exception to the stated requirements may appeal to the Zoning Board of Appeals for consideration.

1.0.0 SOLAR SOLUTIONS ENCOURAGED IN THE TOWN OF CAZENOVIA

Solar energy solutions are all photovoltaic systems. A photovoltaic system is one which generates voltage by absorbing and converting radiant energy (sunlight) into an electrical current. Based on the technology available in 2022, the Town recognizes the following as acceptable forms of deployment:

- Roof-top solar panel installations which consist of individual panels mounted on top of an existing roof. They can consist of multiple components, including the photovoltaic modules, mechanical and electrical connections and mounting, and a means of regulating and/or modifying the electrical output.
- Ground-Mounted Systems (also called "free-standing" or "pole-mounted") allow the benefits of renewable solar power without disrupting a roofline or altering a structure. Typically, they are placed away from the structure and connected through underground wiring. Where a roof may be blocked by trees and not receiving sunlight, or when roof placement in not acceptable, a free-standing panel(s) allows mobility to place in optimal sunlight areas or to avoid those areas that change seasonally.
- Building-Integrated Solar (Photovoltaic) Systems: These systems or products are seamlessly integrated into the building envelope, forming an integral and essential part of a permanent building structure, such as facades, windows, or roofs. Included in this category are solar shingles, also called photovoltaic shingles, which are solar cells deigned to look like conventional asphalt shingles. Varieties range from shingle-sized solid panels that take the place of a number of conventional shingles in a strip to semi-rigid designs to various thin film solar cell technologies that match conventional shingles in size and flexibility.
- Commercial Solar Projects are solar energy systems or collection of solar energy systems with the primary purpose of supplying electricity to a utility grid for wholesale or retail sales of electricity to the general public or utility provider. This includes *Community Solar Projects* which feature the ability to participate in subscriptions for lower electrical costs to Town residents.

There are general requirements that apply to all such installations. Additionally, there are best practices, requirements, permitted locations, and approval processes specific to each type, as described below. The Town Code should be referenced for additional detail, clarifying language, and/or explanatory statements.

2.0.0 GENERAL REQUIREMENTS APPLICABLE TO ALL TYPES OF SOLAR INSTALLATIONS

- Installation by a qualified solar installer
- Unless a commercial solar project, solar installations are to provide power for use by owners, lessees, tenants, residents or other occupants of the premises on which they are erected.
- Residential solar energy system applications shall be limited to 25 kW or 110% of energy consumed on the site in the prior 12 months.

- Solar energy systems serving a commercial or industrial use shall be limited to no more than 110% of the energy consumed on the site in the prior 12 months unless applicant can demonstrate a need to exceed the threshold.
- Electrical connections and those connecting to the grid are to be inspected by the Town Code Officer, designated electrical inspection person or agency, and/or public utility, prior to operation, and providing proof of such inspection.
- All systems shall be maintained in good working order or removed if not functioning after a period of 12 consecutive months; shall be consistent in size and use with the character of surrounding neighborhoods; and shall present no safety hazards.
- Compliance to New York State Uniform Fire Prevention and Building Code Standards and to all existing New York State and Federal rules and regulations.
- All utility services and electrical wiring/lines shall be placed underground and otherwise be placed within the walls or unobtrusive conduit.
- Shall have neutral, non-reflective paint colors, materials and textures to achieve visual harmony with the surrounding area.
- Shall prevent the direction, misdirection and/or reflection of solar rays onto neighboring properties, public roads, public parks, and public buildings
- Equipment shall be marked to readily identify the energy system to emergency responders. The applicant/owner shall demonstrate to the Town Code Enforcement Officer a reliable and safe master method for the de-energizing of the system in the event of an emergency.

3.0.0 ROOF-TOP INSTALLATIONS

Roof-top installations have become fairly common for residential, farming, and business properties, providing energy savings, as well as reducing carbon-based emissions. They may be placed on roofs of residences, businesses, as well as secondary structures. They also offer an alternative when ground-mounted systems are not possible. Flat-roof installations are particularly welcome due to minimal impact on neighboring properties.

Where Permitted: All Districts

Additional Requirements Specific to Roof-Top Installations:

- On structures having significant architectural features as defined by the U.S. Department of Interior, all installations will conform to the Secretary of the Interior's Standards for Rehabilitation of historical structures (https://www.nps.gov/tps/standards/rehabilitation.htm)
- Locational placement of such panels shall be made such that there is no direct adverse effect or visual impact on any significant architectural features. Destruction or alteration of historic or architecturally significant features or materials that characterize the structure shall be prohibited.

(Roof-Top Installations, continued)

- A site plan showing location of major components of the solar energy system and other equipment on the roof or legal accessory structure. Indicate relative locations of components (location of arrays, existing electrical service locations, utility meters, inverter locations, system orientation, tilt angles, etc.). If applicable, plan should show access and pathways compliant with NYS Fire Prevention and Building Code.
- One-line or three-line electrical diagram
- Specification sheets for all manufactured components
- All diagrams and plans must be prepared by a professional engineer or registered architect.

Best Practices:

- Utilize low-profile solar panels.
- Where possible, install on rear slopes or other locations not easily visible from the public right of way.
- Avoid locating panels on the primary façade or public facing side.
- Panels should not alter the slope of the roof. Flat roof structures should have panels set back from the roof edge to reduce visibility.
- Where possible, position panels behind defining architectural features such as dormers or chimneys.

Examples:

Residential installation, multi-level roof; Photo courtesy of National Park Service, https://www.nps.gov/

(Roof-Top Installations, continued)

Residential installation, one story; photo courtesy of CNET, www.cnet.com

Business installation, flat roof; photo courtesy of Adco. Roofing, www.adco.com

Process:

- Unified Solar Permit Application* (for rooftop systems generating 25 KW or less)
- Site Plan
- Building Permit
- Payment of Fee
- Approval by Code Enforcement Officer

(Roof-Top Installations, continued)

*The Unified Solar Permit provides the following link to a comprehensive list of technical standards and requirements of installers and equipment: https://www.nyserda.ny.gov

Timeline: 14 days upon receipt of complete and accurate Permit applications. If an inspection is required, a single inspection should be sufficient and will be provided within seven days of inspection request.

4.0.0 GROUND-MOUNTED SOLAR SYSTEMS ("Free-Standing" "Pole-Mounted")

Ground-mounted solutions offer the flexibility to be positioned on a property to receive the maximum sunlight and are an option when the property is not ideal for a roof-top system. If the roof isn't at the right angle, doesn't face south, or has obstructions, the solar array may be less productive, Ground-mounted systems can be located wherever conditions are best. In addition, if the property uses a lot of electricity, the roof might not be big enough for a solar energy system that meets the electricity needs. In contrast, ground-mounted solar systems can be sized to match electricity consumption without the space restrictions of a rooftop system.

Where Permitted: Rural A (RA) District, the Rural B (RB) District, the Industrial Overlay (IO) District and the Agriculture Overlay (AO) District of the Town. Ground mounted systems may be installed within the Lake Watershed and Riparian Corridor (LW&RC) District on lots which physically front on or abut Cazenovia Lake only when such structures are not visible from the Lake.

Where Prohibited: Ground-mounted solar energy systems shall not be permitted in the New Woodstock Hamlet Overlay (NWHO) District and the New Woodstock Central Business Overlay (NWCBO) District. If visible from the lake, such structures are not allowed within the Lake Watershed and Riparian Corridor on lots fronting or abutting the Lake.

Restrictions:

- Prohibited in all front yards and all lake abutting yards (front or rear yards with physically adjacent lake frontage but not including side yards). Side yard placement will demonstrate mitigation of any visual impacts of such placement to address the Lake and surrounding vantage points.
- Height of the solar collector/panel and any mounts shall not exceed 10 feet when oriented at maximum tilt measured from the ground (average grade) and including any base
- Shall be screened to harmonize with the character of the property and the surrounding area.
- Surface area of all ground-mounted solar energy system components shall not exceed the area of the ground covered by the building structure of the largest building on the lot.

Permitted with Special Use Permit: Lake Watershed and Riparian Corridor (LW&RC) District, Commercial Overlay (COMO) District, Wellhead Protection Overlay (WPO) District and Village Edge Overlay (VEO) District.

(Ground-Mounted Installations, continued)

Additional Requirements Specific to Special Use Ground-Mounted Installations:

- For all lots, such location shall be in the side yard or rear yard of such lot.
- If desired by the ZBA, visual/photo simulations of the proposed energy system facility for projects visible from Cazenovia Lake
- Appropriate screening with vegetation, trees, or fencing suitable for the scale and character of the property and neighboring properties.

Best Practices:

- Install in locations that can maximize energy collection regardless of season.

Example:

Ground-mounted solar system; photo courtesy of DIY Solar Racking, https://www.diysolarracking.com/

Process:

- Site Plan Application and Short Environmental Assessment Form (EAF)
- Building Permit
- Payment of Fee
- Site Plan, including planting plan
- Approval by Planning Board

If within designated restricted Districts:

- Special Use Permit Application
- Approval by Zoning Board of Appeals

Timeline: 2-3 months dependent on completeness of application

5.0.0 BUILDING-INTEGRATED SYSTEMS

Building-integrated systems, including solar shingles, are systems or products seamlessly integrated into the building envelope.

Where Permitted: All Districts

Requirements Specific to Building-Integrated Systems: Such systems will be guided by the "General Requirements Applicable to All Types of Solar Installations," as described above in Section 2.0.0 and conformance to NYS Building Code.

Example:

A roof with solar shingles; photo courtesy of GAF Energy

Process:

- Application
- Building Permit
- Payment of Fees and Deposit
- If for new construction, process will be part of Site Plan Review by Planning Board.

Timeline: Dependent on project

6.0.0 COMMERCIAL SOLAR PROJECTS

The transition to 70% clean energy will require large-scale renewable energy projects as part of the solution. Such projects are undertaken by developers either to sell power wholesale to the state-wide electric grid or on community scale where power is sold directly to the consumer. Smaller scale roof-top or ground mounted systems alone cannot achieve this goal nor meet the electricity needs of New York State.

Due to their scale and the acreage footprint required, commercial solar projects involve examination of a wide range of numerous and scientific factors, along with consideration of property owner interests, community character, and quality-of-life impacts. Despite these factors, commercial solar projects offer benefits over other energy facilities or business uses: they do not require parking and traffic for on-site personnel; can be less visible than taller industrial structures; and do not have impacts associated with other industrial uses such as noise and pollution. New York State law requires decommissioning plans for any project generating over 25 megawatts to ensure that a facility is properly restored after an energy project reaches end of life.

(Commercial Solar Projects, continued)

The Town of Cazenovia utilizes a GIS mapping application, developed in conjunction with the Cazenovia Preservation Foundation. This tool, through a layering of data and weighting of siting considerations, identifies optimal potential locations where commercial solar projects could be considered. The resultant map is accessible on the Town's website, www.townofcazenovia.org and may be updated from time-to-time by resolution of the Town Board.

Where possible, commercial solar projects should be located using a site design that limits the potential for negative impacts to the long-term use of productive farmland. The NYS Department of Agriculture and Markets (NYSDAM) recommends that project sponsors avoid installing solar arrays on the most valuable or productive farmland. The order of importance for solar array avoidance, per NYSDAM is:

1. Active rotational farmland
2. Permanent hay land
3. Improved pasture
4. Unimproved pasture
5. Other support lands
6. Fallow/inactive farmland

Woodland sites that may be proposed for a commercial solar project generally do not have prime agricultural soils. It may, however, be dominated by the growth of non-invasive, native tree species such as sugar maple, red maple, lack birch, beech, hickory, red oak, white oak, shadblow, and white pine. Use of such sites is discouraged.

Where Permitted: Rural A (RA) District, Rural B (RB) District and Industrial Overlay (IO) District within the Town. Use in an Agriculture Overlay (AO) District is allowable with a special use permit, only if it can be demonstrated that it poses no negative impacts on the soils deemed to be USDA prime soils, prime farmland, prime soils, prime soil lands, and lands deemed to be farmlands of Statewide importance.

Where Prohibited: Lake Watershed and Riparian Corridor (LW&RC) District, New Woodstock Central Business Overlay (NWCBO) District, Commercial Overlay (COMO) District, Wellhead Protection Overlay (WPO) District, Village Edge Overlay (VEO) District and the Agriculture Overlay (AO) District.

Use in an Agriculture Overlay (AO) District is allowable with a special use permit, only if it can be demonstrated that it poses no negative impacts on the soils deemed to be USDA prime soils, prime farmland, prime soils, prime soil lands and lands deemed to be farmlands of Statewide importance.

Restrictions:

- Minimum of 50 contiguous acres and compliance to required set-backs; smaller parcels may be considered by applying for an Area Variance.
- Not within one mile of an existing or approved project, unless Planning Board determines there is no detrimental impact to any siting considerations or best practices.

Requirements Specific to Commercial Solar Projects:

In regard to the following, the reviewing boards may waive or add specific requirements based on the site.

(Commercial Solar Projects, continued)

- Proof of ownership and demonstration that owner owns sufficient land area to operate and maintain the facility
- Demonstrate avoidance of areas impacting scenic quality, versus alternate sites
- A process for emergency shutdown and display of supporting signage
- Adequate security to restrict unauthorized access
- No material impact on scenic views or on fish, wildlife, animal or plant species or their critical habitats, or other significant habitats
- Use of non-invasive, pollinator-friendly, native ground covers between rows of solar panels
- Should any shrubs, trees, and other vegetation planted by developer die or deteriorate noticeably within the first ten years of operation, they are to are to be replaced by developer
- Weekly Status/Inspection Reports during the life of the construction and Annual Post-Installation Reviews
- Required Documents[3]:

1. Site Plans (indicating property lines, adjacent lots, existing structures, current and proposed utility and transmission lines) of the following, stamped by a professional engineer registered in New York State:
   a. Aerial Site Plan
   b. Site Survey with Existing Topographical Conditions
   c. Site Survey with New Topographical Conditions
   d. Landscaping Plan showing proposed removals and additions
   e. Grading Plan
   f. Erosion and Sediment Control Plan[4]
   g. Erosion and Sediment Control Details[2]
2. A Geo-Technical Report, which includes a Soil Analysis as performed by an independent third party, and which provides measurements of soil samples for permeability, organic content, and nutrient content at the proposed installation site
3. Photo Simulations of current and proposed views based on a Digital Elevation Model and a map designating vantage points
4. Panel/Racking Specifications
5. Plant Selections (trees, vegetation, cover crop selections)
6. e and Gate Specifications (material, style, height, color)
7. Signage Details (size, verbiage, quantity, color)
8. Storm Water Pollution Prevention Plan (SWPPP)
9. Sun chart

(Commercial Solar Projects, continued)

10. Glare Analysis
11. Utility Notification and Service Order Number
12. Construction Timetable
13. Report to NY Department of Agriculture and Markets (Ag & Markets) and its determination of any impact
14. A Wetlands Determination of no impact by Army Corps of Engineers, if applicable
15. A Business Operations Plan, outlining hours of operation, maintenance & frequency, lighting, etc.
16. A Determination of No Impact from Federal Aviation Agency (FAA)
17. Notification to and confirmations from Emergency Services within affected area
18. Road Maintenance Agreement with the Town[3]
19. Payment in Lieu of Taxes Agreement and Community Host Benefit Agreement with the Town[3]
20. Decommissioning Plan[3]

[3] Finalization of these documents may occur after approvals by reviewing board but must be completed prior to initiating any work on the site

Best Practices:

- Focus on previously disturbed areas for potential sites. In Cazenovia, this includes large expanse building rooftops, contaminated brownfields, under-utilized parking lots, abandoned mining locations, and non-productive farm areas. Protect and/or avoid impacts on highest value, productive agricultural lands
- Avoid impacts to historic, cultural, ecological, and scenic resources
- Avoid migratory pathways of wildlife
- Maintain the purpose and value of conserved lands
- Avoid and minimize new transmission and distribution lines
- Use construction and operation best practices, such as minimizing grading, avoiding use of concrete footings, mitigating run-off and potential for erosion, etc.
- Where feasible and desired, promote co-location with agricultural uses
- When mitigation of visual or other impacts proves unfeasible, provide a beneficial compensatory offset to the community
- Use pollinator-friendly plantings in and among solar arrays to support bees and other insects that pollinate crops

(Commercial Solar Projects, continued)

Examples:

Commercial solar project; photo courtesy of *The Statesman Journal*, Salem OR, www.statesmanjournal.com

Commercial solar project; photo courtesy of *Springfield News Leader*, Springfield MO, www.news-leader.com

(Commercial Solar Projects, continued)

Process:

- Site Plan Application and Long Form EAF
- Building Permit
- Payment of Fee
- Submission and Review of Required Documents (see above). *Plans a – g in Item 1 and Item 2 should be submitted prior to remaining documents*
- Site Plan Review and Approval by Planning Board
- Special Use Permit
- Special Use Permit Review and Approval by ZBA

Timeline: 6 - 12 months"