

PERMIT APPLICATION

NY State Unified Solar Permit

Unified solar permitting is available statewide for eligible solar photovoltaic (PV) installations. Municipal authorities that adopt the unified permit streamline their process while providing consistent and thorough review of solar PV permitting applications and installations. Upon approval of this application and supporting documentation, the authority having jurisdiction (AHJ) will issue a building and/or electrical permit for the solar PV installation described herein.

PROJECT ELIGIBILITY FOR UNIFIED PERMITTING PROCESS

By submitting this application, the applicant attests that the proposed project meets the established eligibility criteria for the unified permitting process (subject to verification by the AHJ). The proposed solar PV system installation:

- Yes No 1. Has a rated DC capacity of 25 kW or less.
- Yes No 2. Is not subject to review by an Architectural or Historical Review Board. (If review has already been issued answer YES and attach a copy)
- Yes No 3. Does not need a zoning variance or special use permit.
(If variance or permit has already been issued answer YES and attach a copy)
- Yes No 4. Is mounted on a permitted roof structure, on a legal accessory structure, or ground mounted on the applicant's property. If on a legal accessory structure, a diagram showing existing electrical connection to structure is attached.
- Yes No 5. The Solar Installation Contractor complies with all licensing and other requirements of the jurisdiction and the State.
- Yes No 6. If the structure is a sloped roof, solar panels are mounted parallel to the roof surface.

For solar PV systems not meeting these eligibility criteria, the applicant is not eligible for the Unified Solar Permit and must submit conventional permit applications. Permit applications may be downloaded here: www.townofmurray.org or obtained in person at 3840 Fancher Road Holley, NY 14470 during business 9-4 Monday, Tuesday, Thursday, Friday and 9-12 Saturday.

SUBMITTAL INSTRUCTIONS

For projects meeting the eligibility criteria, this application and the following attachments will constitute the Unified Solar Permitting package.

- This application form, with all fields completed and bearing relevant signatures.
- Permitting fee of \$50.00 payable by Cash or check MADE PAYABLE TO Town of Murray.
- Required Construction Documents for the solar PV system type being installed, including required attachments.

Completed permit applications can be submitted electronically to codes@townofmurray.org or in person at 3840 Fancher Road, Holley, NY 14470 during business hours 9-4 Monday, Tuesday, Thursday, Friday and 9-12 Saturday

APPLICATION REVIEW TIMELINE

Permit determinations will be issued within 14 calendar days upon receipt of complete and accurate applications, including payment. The municipality will provide feedback within 7 calendar days of receiving incomplete or inaccurate applications.

FOR FURTHER INFORMATION

Questions about this permitting process may be directed to Ron Vendetti 585 638-6570 x109 or codes@townofmurray.org.

PROPERTY OWNER

Property Owner's First Name Last Name Title

Property Address

City State Zip

Section Block Lot Number

EXISTING USE

Single Family 2-4 Family Commercial Other

PROVIDE THE TOTAL SYSTEM CAPACITY RATING (SUM OF ALL PANELS)

Solar PV System: _____ kW DC

SELECT SYSTEM CONFIGURATION

Make sure your selection matches the Construction Documents included with this application.

Supply side connection with microinverters Load side connection with DC optimizers
 Supply side connection with DC optimizers Load side connection with microinverters
 Supply side connection with string inverter Load side connection with string inverter

SOLAR INSTALLATION CONTRACTOR

Contractor Business Name

Contractor Business Address City State Zip

Contractor Contact Name Phone Number

Contractor License Number(s) Contractor Email

Electrician Business Name

Electrician Business Address City State Zip

Electrician Contact Name Phone Number

Electrician License Number(s) Electrician Email

Please sign below to affirm that all answers are correct and that you have met all the conditions and requirements to submit a unified solar permit.

Property Owner's Signature Date

Solar Installation Company Representative Signature Date

SUBMITTAL REQUIREMENTS SOLAR PV 25KW OR LESS (ATTACHMENTS)

NY State Unified Solar Permit

This information bulletin is published to guide applicants through the unified solar PV permitting process for solar photovoltaic (PV) projects 25 kW in size or smaller. This bulletin provides information about submittal requirements for plan review, required fees, and inspections.

PERMITS AND APPROVALS REQUIRED

The following permits are required to install a solar PV system with a nameplate DC power output of 25 kW or less:

- a) Unified Solar Permit
- b) A BUILDING PERMIT will be issued. Planning review is NOT required for solar PV installations of this size.

Fire Department approval is NOT required for solar PV installations of this size.

SUBMITTAL REQUIREMENTS

In order to submit a complete permit application for a new solar PV system, the applicant must include:

- a) Completed Standard Permit Application form which includes confirmed eligibility for the Unified Solar Permitting process. This permit application form can be downloaded at www.townofmurray.org.
- b) Construction Documents, with listed attachments. Construction Documents must be stamped and signed by a New York State Registered Architect or New York State Licensed Professional Engineer. See Attachment.

The Town of Murray, through adopting the Unified Solar Permitting process, requires contractors to provide construction documents, such as the examples included in the Understanding Solar PV Permitting and Inspecting in New York State document. Should the applicant wish to submit Construction Documents in another format, ensure that the submittal includes the following information:

- Manufacturer/model number/quantity of solar PV modules and inverter(s).
- String configuration for solar PV array, clearly indicating the number of modules in series and strings in parallel (if applicable).
- Combiner boxes: Manufacturer, model number, NEMA rating.
- From array to the point of interconnection with existing (or new) electrical distribution equipment: identification of all raceways (conduit, boxes, fittings, etc.), conductors and cable assemblies, including size and type of raceways, conductors, and cable assemblies.
- Sizing and location of the EGC (equipment grounding conductor).
- Sizing and location of GEC (grounding electrode conductor, if applicable).
- Disconnecting means of both AC and DC including indication of voltage, ampere, and NEMA rating.
- Interconnection type/location (supply side or load side connection)
- For supply side connections only, indication that breaker or disconnect meets or exceeds available utility fault current rating kAIC (amps interrupting capacity in thousands).
- Ratings of service entrance conductors (size insulation type AL or CU), proposed service disconnect, and overcurrent protection device for new supply side connected solar PV system (reference NEC 230.82, 230.70).
- Rapid shutdown device location/method and relevant labeling.

c) (For Roof Mounted Systems) A roof plan showing roof layout, solar PV panels and the following fire safety items: approximate location of roof access point, location of code-compliant access pathways, code exemptions, solar PV system fire classification, and the locations of all required labels and markings.

d) Provide construction drawings with the following information:

- The type of roof covering and the number of roof coverings installed.
- Type of roof framing, size of members, and spacing.
- Weight of panels, support locations, and method of attachment.
- Framing plan and details for any work necessary to strengthen the existing roof structure.
- Site-specific structural calculations.

e) Where an approved racking system is used, provide documentation showing manufacturer of the racking system, maximum allowable weight the system can support, attachment method to roof or ground, and product evaluation information or structural design for the rack.

PLAN REVIEW

Permit applications can be submitted to Code Enforcement in person at 3840 Fancher Road Holley, NY 14470 electronically through: codes@townofmurray.org (the application is not complete until payment of \$50.00 is received)

FEES

\$50.00

INSPECTIONS

Once all permits to construct the solar PV installation have been issued and the system has been installed, it must be inspected before final approval is granted for the solar PV system. On-site inspections can be scheduled by contacting Code Enforcement by telephone at 585-638-6570 X109 or electronically at codes@townofmurray.org. Inspection requests received within business hours are typically scheduled for the next business day. If next business day is not available, inspection should happen within a five-day window.

In order to receive final approval, the following inspections are required:

ROUGH INSPECTION a rough inspection, the applicant must demonstrate that the work in progress complies with relevant codes and standards. The purpose of the rough inspection is to allow the inspector to view aspects of the system that may be concealed once the system is complete, such as:

- Wiring concealed by new construction.
- Portions of the system that are contained in trenches or foundations that will be buried upon completion of the system.

It is the responsibility of the applicant to notify Code Enforcement before the components are buried or concealed and to provide safe access (including necessary climbing and fall arrest equipment) to the inspector.

The inspector will attempt, if possible, to accommodate requests for rough inspections in a timely manner.

ELECTRICAL INSPECTION a third party inspector will provide an electrical inspection certificate at Final.

FINAL INSPECTION The applicant must contact Code Enforcement when ready for a final inspection. During this inspection, the inspector will review the complete installation to ensure compliance with codes and standards, as well as confirming that the installation matches the records included with the permit application. The applicant must have ready, at the time of inspection, the following materials and make them available to the inspector:

- Copies of as-built drawings and equipment specifications, if different than the materials provided with the application.
- Photographs of key hard to access equipment, including:
 - Example of array attachment point and flashing/sealing methods used.
 - Opened rooftop enclosures, combiners, and junction boxes.
 - Bonding point with premises grounding electrode system.
 - Supply side connection tap method/device.
 - Module and microinverter/DC optimizer nameplates.
 - Microinverter/DC optimizer attachment.

The Town of Murray has adopted a standardized inspection checklist, which can be found in the Understanding Solar PV Permitting and Inspecting in New York State document, found here: www.townofmurray.org.

The inspection checklist provides an overview of common points of inspection that the applicant should be prepared to show compliance. If not available, common checks include the following:

- Number of solar PV modules and model number match plans and specification sheets number match plans and specification sheets.
- Array conductors and components are installed in a neat and workman-like manner.
- Solar PV array is properly grounded.
- Electrical boxes and connections are suitable for environment.
- Array is fastened and sealed according to attachment detail.
- Conductor's ratings and sizes match plans.
- Appropriate signs are property constructed, installed and displayed, including the following:
 - Sign identifying PV power source system attributes at DC disconnect.
 - Sign identifying AC point of connection.
 - Rapid shutdown device meets applicable requirements of NEC 690.12.
- Equipment ratings are consistent with application and installed signs on the installation, including the following:
 - Inverter has a rating as high as max voltage on PV power source sign.
 - DC-side overcurrent circuit protection devices (OCPDs) are DC rated at least as high as max voltage on sign.
 - Inverter is rated for the site AC voltage supplied and shown on the AC point of connection sign.
 - OCPD connected to the AC output of the inverter is rated at least 125% of maximum current on sign and is no larger than the maximum OCPD on the inverter listing label.
 - Sum of the main OCPD and the inverter OCPD is rated for not more than 120% of the buss bar rating.

UNIFIED SOLAR PERMITTING RESOURCES

The jurisdiction has adopted the following documents from the New York Unified Solar Permit process: Delete any documents not adopted by the jurisdiction.

- Standard Application www.townofmurray.org
- Understanding Solar PV Permitting and Inspecting in New York State document, which includes sample construction documents, inspection checklist, design review checklist, and labelling guide www.townofmurray.org

DEPARTMENTAL CONTACT INFORMATION

For additional information regarding this permit process, please consult our departmental website at www.townofmurray.org or contact Code Enforcement at 585 638-6570 x 109

3 Design Review of Construction Documents

As part of their permit application, applicants must submit a site plan, an electrical wiring diagram, a structural analysis, and specification sheets for the modules, inverter, and racking system. This chapter includes checklists of items for code officials to check as part of their design review.

The construction documents must be stamped by a New York State licensed professional engineer (PE) or registered architect (RA).³ The local code official will determine the depth of review necessary. The following three-part checklist may be expanded should the code official require examination at greater depth, such as checking wire sizing and other calculations.

3.1 Site Plan

Yes/No

Site Plan

Construction document prepared and stamped by a New York State licensed professional engineer or registered architect, who incorporated the following into system design.

- Street address and tax map parcel number
- All required setbacks, including rooftop access and ventilation requirements as applicable⁴
- Location of array, inverter, disconnects, and point of interconnection
- Array azimuth and tilt
- For ground mounted systems, length and location of trenches
- Location and type of rapid shutdown device, if applicable (2014 NEC 690.12)

3.2 Electrical Diagram

Yes/No

Electrical Wiring Diagram

Electrical wiring diagram prepared and stamped by a New York State-licensed Professional Engineer or Registered Architect, who incorporated the following into system design.

- Solar electric module array information – number of modules in series, number of strings.
- Quantity, make, and model of UL-listed solar PV modules.
- All conductor types, ratings, and conduit type (if applicable). Solar electric source circuit conductors are USE-2 or solar PV wire (NEC 690.31(B)).
- Max voltage of 600 VDC (NEC 690.7(C)) (1,000 VDC wire may be used on 600 VDC systems).
- Rating (voltage and current) for all disconnects.
- Voltage drop is minimized (NEC 210.19(A) Informational Note No. 4).
- Provision for Rapid Shutdown per 690.12 in the 2014 NEC. Using microinverters or string inverters with DC Power optimizers is one way of meeting this requirement.
- DC disconnect is present (may be integral to inverter) (NEC 690.13).
- Quantity, make, and model of UL-listed inverter provided.
- AC disconnect appropriately sized for inverter output (690.8(A)(3), 690.8(B)(1)).
- Conductor type, rating, and conduit type (if applicable) provided for all conductors.
- If supply-side connection, meets all requirements of NEC 705.12, including:
 - Service-rated AC disconnect specified, at least 60 amps, with appropriate overcurrent protection device. If breaker used, must meet or exceed utility fault current kAIC rating.
 - Conductors between disconnect and point of interconnection are sized at least 60 amps (#6 or larger).
 - Supply side connection made between main service panel's main disconnect and utility meter.
- If load side connection, meets all requirements of NEC 705.12, including:
 - Inverter output connection is made at a dedicated circuit breaker or fusible disconnect.
 - The sum of 125% of the inverter(s) output current plus the main circuit breaker rating must be less than or equal to 120% of the bus or cable rating. 2014 NEC 705.12
 - Backfed breaker located at opposite end of buss bar from main breaker.
- Equipment grounding conductor (EGC) present at all components likely to become energized, and sized according to NEC 250.122.
- If not using an isolated/ungrounded/transformer-less inverter, grounding electrode conductor (GEC) present and continuous from inverter to service disconnect, sized according to NEC 250.66.

3.3 Structural Analysis

Yes/No**Structural Analysis**

Structural analysis prepared and stamped by a New York State licensed professional engineer or registered architect, who incorporated the following into their review.

- Weight of the existing roofing (composition shingle, metal, masonry, etc.).
- Number of layers of roof covering.
- Method of waterproofing penetrations (flashing is required by the 2015 International Residential Code and International Building Code).
- Type of racking system (engineered product) and height of solar PV modules from surface of roof.
- Location-specific wind load and snow load.
- Type, dimensions, and spacing of roof structural framing.
- Calculations must be provided if any of the following apply:
 - Roofing is not lightweight, or roof has multiple layers of covering.
 - Racking system is not engineered for mounting of solar PV modules.
 - Modules will be mounted more than 18 inches above roof surface.
 - Modifications must be made to framing to strengthen roof structure.
 - Solar electric system and racking will add more than 5 pounds per square foot to dead load, or more than 45 pounds per attachment point, calculated as follows:
 - Total weight of solar PV modules, racking, and mounting hardware _____pounds.
 - Total number of attachment points to roof _____.
 - Weight per attachment point ($A \div B$) _____pounds.
 - Total area of solar PV array _____square feet.
 - Distributed weight of solar PV array on roof ($A \div D$) _____pounds/square foot.