



CAC Recommendations for Scarsdale Solar Policy and Permitting

Village of Scarsdale
Conservation Advisory Council

October 2016



Introduction

...the Village Board hereby refers to the Conservation Advisory Council the following questions for their research and recommendation of municipal best practices for regulating solar energy systems in our local context:

What are the appropriate circumstances, conditions, and design choices under which residential solar energy system installations should be authorized in Scarsdale? Specific consideration shall be given to the following (without limitations):

- **Should solar panels be authorized for installation upon the front elevation of residential properties** and, if so, what are the appropriate rules, procedural requirements, or installation guidelines (including aesthetic guidelines), taking into consideration pending New York State 2016 building and fire prevention code amendments?
- **Should solar panels be authorized for installation on the ground** and, if so, what are the appropriate rules, procedural requirements, or guidelines?
- **Should property owners be authorized to modify their tree canopy** to accommodate necessary solar exposure and, if so, what are the appropriate rules, procedural requirements, or guidelines? and be it further

Summary of Recommendations

- **Should solar panels be authorized for installation upon the front elevation of residential properties:**
 - Surveyed opinion is decidedly **in favor**, potentially subject to aesthetic constraints.
- **Should solar panels be authorized for installation on the ground?**
 - **Yes**, subject to BAR review that is guided by CAC-developed approval criteria.
- **Should property owners be authorized to modify their tree canopy?**
 - Not any more so than currently allowed, which the CAC believes is more than adequate.

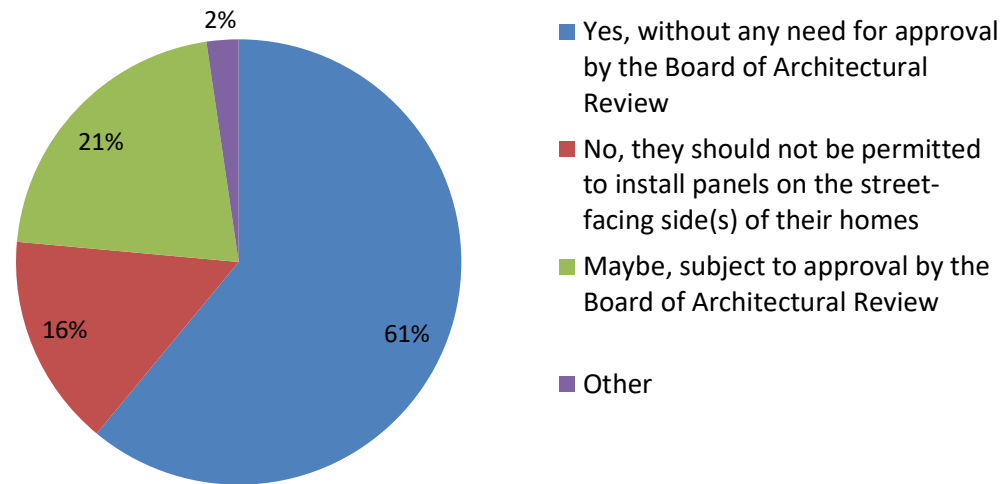
In addition:

- The Village should adopt the NYS Unified Solar Permit.
- The NYS Unified Solar Permit should be amended with quick approval criteria developed by the CAC; otherwise applications should be subject to BAR approval.

“Should solar panels be authorized for installation upon the front elevation* of residential properties”

To answer this question, the CAC surveyed resident attitudes. Notice of this survey was made in the Inquirer, Scarsdale10583, the “Scarsdale Moms” Facebook Group, Scarsdale Forum and League of Women Voters, and Neighborhood Associations . It has received 259 responses.

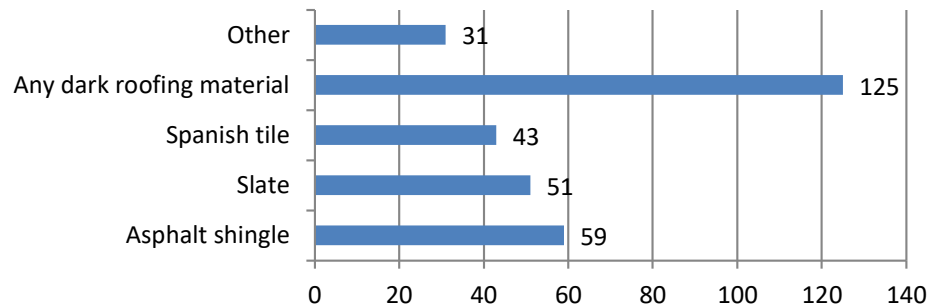
Should residents be permitted to install solar panels on the street-facing roof of their homes?



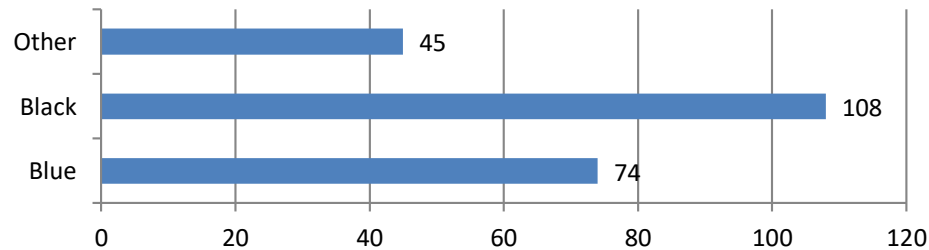
* The CAC recommends the terminology “street facing” be used in place of “front elevation”. We believe that this term more accurately addresses the context being referred to.

Additional Survey Questions

2. On which roofing materials should street-facing solar panels be permitted? You may wish to examine the photo montage above for guidance.

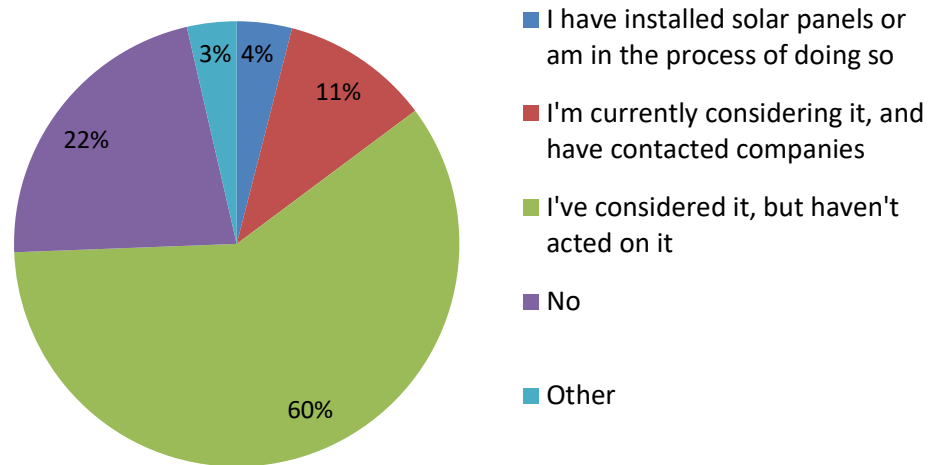


3. What colors should be permitted for street-facing solar panels?



Survey (continued)

4. Have you considered installing solar panels? (250 responses)



How many respondents answered “No BAR approval needed” versus the responses above:

12%	“No”
66%	“I’ve considered it but haven’t acted on it”
16%	“I’m currently considering it...”
6%	“I have installed solar panels...”

Community Input From Survey Open Responses

These responses capture the general theme in responses:

- “I am not sure that the Board should have the right to determine who gets to use the sun and who doesn't.”
- “the B.A.R. allows so many unattractive features, at least this wd be beneficial.”
- “As much as I want to encourage use of alternate sources of energy, solar panels take away from the character of a neighborhood. If people want to add them, that is fine, but they should be obligated to keep them out of sight.”

Survey Reliability

The survey was conducted in two phases:

- The first phase was publicized via Inquirer, Scarsdale10583 and Scarsdale Moms (on Facebook).
 - About two weeks later, the second phase was publicized via SNAP.
- ✓ Similar results from both surveys.
 - ✓ Trend over time has been consistent.
 - ✓ Number of respondents: 259

Given a population of 17,885 with 11,858 adults, assuming systemically unbiased responses, survey accuracy is better than +/- 6.1% with 95% confidence.

Establishing Minimum Aesthetic Requirements

Minimum Requirements For All Residential Rooftop Systems

- **Setbacks from sides of roof:** Fire code requirements per NYS code
- **Panel placement:** As reasonably possible:
 - Should be as inconspicuous as possible and match to best degree possible with existing materials
- **Glare:**
 - Require panel to have anti-glare (aka non-reflective) coating. Panels should all have this already.
 - Accessory equipment (brackets, spacers, etc.) must use non-reflective paints or finishes
 - Onus is on homeowner to ensure glare is minimized
- **Height:**
 - Panels should be mounted no higher than twelve inches above the roof surface
 - Panels that exceed the roof peak are subject to BAR review

Minimum Design Requirements For Simplified Review (Not Involving BAR)

- **Tilt (angle) of panels:**
 - Panels must match slope of the roof
- **Panel Placement:**
 - Parallel to roof line (while suspended no more than 12 inches above roof surface)
 - All panel edges must be aligned and continuous
 - All accessory equipment/wires not visible on roof or front of house
- **Color of panels and equipment:**
 - Panels and observable (from street) equipment within reason match color of roof
- **Additional**
 - Include this language:
Notwithstanding the requirements set forth in this code, if the building inspector in his or her judgment feels the application does not meet the intent of this code, the application may be referred to the BAR for approval.

Ground Mounted

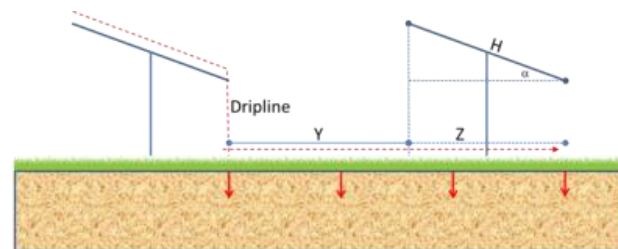
“Should solar panels be authorized for installation on the ground ?”

The CAC recommends that ground-mounted installations should be allowed subject to the following:

BAR review – The CAC has prepared guidance for expedited review by the BAR (next slide).

Applicable Lot coverage and Set back restrictions

Impervious surface limits – The Minnesota Stormwater Manual provides guidance and calculations which may be of use.



- > Water flow path
- Y = Pervious length between panels in adjacent rows
- Z = Average horizontal distance below panel
- H = Length of panel
- α = angle of solar panel from horizontal

From http://stormwater.pca.state.mn.us/index.php/Information_for_determining_stormwater_management_impacts_for_solar_projects

Ground-Mounted Solar Installations

- Guidance For the BAR

Location

- Backyard only
- Backyard on a corner lot is allowed only with sufficient screening from the street

Height

- The maximum height of the entire structure (measured at highest point of structure) no more than 6' from original ground level (e.g. can't build a mound and measure from top of mound)

Glare

- Panel must have anti-glare (aka anti-reflective) coating
- Accessory equipment (Brackets, spacer, etc.) must use non-reflective paints or finishes
- The onus is on the homeowner to ensure glare onto neighboring properties is minimized

Screening

- Screening is required between the system and the property line, either using a fence or evergreens, so that the installation is concealed from neighbors' view to an extent that is reasonably possible.
- The homeowner must maintain screening as long as the installation exists.

Tree Canopy and Solar

“Should property owners be authorized to modify their tree canopy to accommodate necessary solar exposure?”

The CAC recommends that:

- Homeowners should have no added right to tree removal. Current law permit two trees to be removed per year as of right, and there are no restrictions on pruning.
- Neighbors should not be compelled to accommodate, nor to maintain solar access. ‘Solar access’ laws do exist but are uncommon.

Making the Permit Process More Efficient

CAC Recommendations for Improving Permitting Efficiency

- Scarsdale should adopt a variant of the NYS Unified Solar Permit
- Systems meeting design requirements will allow for a “Simplified Review” and approval process without BAR review
- Systems that don’t meet design requirements are still allowed but subject to BAR review

Use A Modified Version of NYS Unified Permit

NY-Sun
Solar Powering New York

New York State Unified Solar Permit
Expedited Solar Permit Process for Small-Scale Roof-Mounted Residential and Commercial Solar Electric

Requirements for Application Submittal – Part A

For use in all New York State counties with the exception of Nassau County and Suffolk County.

The expedited solar permitting process uses a unified permit across participating municipalities in New York State.

A combined building and electrical permit for a grid-tied solar electric system will be issued pending proper completion of forms, submission of approved plans and approval by municipality. All applicants must submit:

- Unified Solar Permit for Small-Scale Solar Electric Systems Eligibility Checklist – PART B
- _____ set of plans that include:
 - Site Plan showing location of major components of solar system and other equipment on roof or legal accessory structure. This plan should represent relative location of components at site, including, but not limited to, location of array, existing electrical service location, utility meter, inverter location, system orientation and tilt angle. This plan should show access and pathways that are compliant with New York State Fire Code, if applicable.
 - One-Line or 3-Line Electrical Diagram as required by:
 - Specification Sheets for all manufactured components. If these sheets are available electronically, a web address will be accepted in place of an attachment, at the discretion of the municipality.
 - All diagrams and plans must be prepared by a PE or RA as required by New York State law and include:
 - Project address, section, block, and lot number of the property;
 - Owner's name, address and phone;
 - Name, address and phone number of the person preparing the plans; and
 - System capacity in _____.
- Unified Solar Permit for Small-Scale Solar Electric Systems Application – PART C
- Permit Fee Amount

Permit Review and Inspection Timeline

Permit determinations will be issued within 14 calendar days upon receipt of complete and accurate application. Municipality will provide feedback within 7 calendar days of receiving incomplete or inaccurate application. If required, a single inspection should be sufficient and will be provided within 7 calendar days of inspection.

The NY-Sun Initiative, a dynamic public-private partnership, will drive growth of the solar industry and make solar technology more affordable for all New Yorkers. Visit ny-sun.ny.gov for more information on the NY-Sun initiative.

Cover page

NY-Sun
Solar Powering New York

Eligibility Checklist – Part B

To determine if you are eligible for the expedited permitting process, answer the questions below.

Yes No 1. Solar installation has a rated capacity of 12 kW or less.
 Yes No 2. Solar installation is not subject to review by an Architectural or Historical Review Board.
 Yes No 3. Solar installation does not need a zoning variance or special use permit/conditional use permit.
 Yes No 4. Solar installation is to be mounted on a permitted roof structure of a building, or on a structure. If on a legal accessory structure, a diagram showing existing electrical connection is attached.
 Yes No 5. Solar installation is compliant with all applicable electrical and building codes.
 Yes No 6. Solar installation is compliant with New York State Fire Code.
 Yes No 7. The Solar Installation Contractor complies with all licensing and other requirements of the State.
 Yes No 8. The proposed equipment is permitted by code and equipment meets all relevant code requirements.
 Yes No 9. The solar electric system and all components will be installed per the manufacturer's instructions.
 Yes No 10. The project will comply with adopted National Electrical Code® requirements.
 Yes No 11. The roof has no more than a single layer of roof covering (in addition to the solar equipment).
 Yes No 12. The system is to be mounted parallel to the roof surface, or tilted with no more than an 18 inch gap between the module frame and the roof surface.
 Yes No 13. The system will have a distributed weight of less than 5 pounds per square foot and less than 40 pounds per attachment point to roof.

If you answered "No" to any of Questions 1-10, you are not eligible to participate in the expedited permit process. You must go through the standard permitting process dictated by the municipality. If you answered "No" to 11-13, in order to use this form, in addition to other New York State PE or RA requirements, you must be certified by a Professional Engineer or Registered Architect certifying that the existing structure can support weight and wind loads of the solar electric system. If you answered "Yes" to all of the above questions below to affirm that all answers are correct, and you have met all the conditions and requirements to participate in the expedited process.

Property Owner's Signature _____ Date _____
 Solar Installation Contractor Signature _____ Date _____

The NY-Sun Initiative, a dynamic public-private partnership, will drive growth of the solar industry and make solar technology more affordable for all New Yorkers. Visit ny-sun.ny.gov for more information on the NY-Sun initiative.

Checklist

NY-Sun
Solar Powering New York

Application – Part C

1. Property Owner:
 Property Owner's Name _____ Phone _____ Email _____
 Property Address _____
 Section _____ Block _____ Lot Number _____

2. Existing Use:
 Single Family 2-4 Family Commercial Other _____

3. Provide the total system capacity rating (sum of all panels):
 Solar Electric System: _____ kW/DC

4. Solar Installation Contractor and Electrician:
 Installer Business Name _____
 Installer Business Address _____
 Installer Contact Name _____ Installer Phone Number _____
 Installer License Number(s) _____ Installer Email _____
 Electrician Business Name _____ Electrician License Number _____

5. What is the existing roofing material? _____

6. Provide method and type of weatherproofing for roof penetrations (e.g., flashing, caulking). _____

7. Is the mounting structure an engineered product designed to mount solar electric modules? If no, provide details of structural attachment in a letter certified by a design professional. _____

The NY-Sun Initiative, a dynamic public-private partnership, will drive growth of the solar industry and make solar technology more affordable for all New Yorkers. Visit ny-sun.ny.gov for more information on the NY-Sun initiative.

Application

NY-Sun
Solar Powering New York
ny-sun.ny.gov

Application – Part C (continued)

8. For manufactured mounting systems, provide the following information about the mounting system:

a. Mounting System Manufacturer _____
 b. Product Name and Model Number _____
 c. Total Weight of Solar Electric Modules and Rails _____ lbs.
 d. Total Number of Attachment Points _____
 e. Weight per Attachment Point (c ÷ d) _____ lbs.
 f. Maximum Spacing Between Attachment Points on a Rail _____ inches
 (See product manual for maximum spacing allowed based on maximum design wind speed)
 g. Total Surface Area of Solar Electric Modules (square feet) _____ ft²
 h. Distributed Weight of Solar Electric Module on Roof (c ÷ g) _____ lbs./ft²

9. Indicate quantity, brand, make and model of the Inverter(s):


Quantity	Make	Model
_____	_____	_____
Quantity	Make	Model
_____	_____	_____

Please sign below to affirm that all answers are correct and that you have met all the conditions and requirements to participate in this expedited process.

Property Owner's Signature _____ Date _____
 Solar Installation Contractor Signature _____ Date _____

The NY-Sun Initiative, a dynamic public-private partnership, will drive growth of the solar industry and make solar technology more affordable for all New Yorkers. Visit ny-sun.ny.gov for more information on the NY-Sun initiative.

NYS Unified Permit - Eligibility Checklist



Eligibility Checklist – Part B

To determine if you are eligible for the expedited permitting process, answer the questions below.

- Yes No 1. Solar installation has a rated capacity of 12 kW or less.
- Yes No 2. Solar installation is not subject to review by an Architectural or Historical Review Board.
- Yes No 3. Solar installation does not need a zoning variance or special use permit/conditional use permit.
- Yes No 4. Solar installation is to be mounted on a permitted roof structure of a building, or on a legal accessory structure. If on a legal accessory structure, a diagram showing existing electrical connection to structure is attached.
- Yes No 5. Solar installation is compliant with all applicable electrical and building codes.
- Yes No 6. Solar installation is compliant with New York State Fire Code.
- Yes No 7. The Solar Installation Contractor complies with all licensing and other requirements of the jurisdiction and the State.
- Yes No 8. The proposed equipment is permitted by code and equipment meets all relevant certification standards.
- Yes No 9. The solar electric system and all components will be installed per the manufacturer's specifications.
- Yes No 10. The project will comply with adopted National Electrical Code® requirements.
- Yes No 11. The roof has no more than a single layer of roof covering (in addition to the solar equipment).
- Yes No 12. The system is to be mounted parallel to the roof surface, or tilted with no more than an 18 inch gap between the module frame and the roof surface.
- Yes No 13. The system will have a distributed weight of less than 5 pounds per square foot and less than 45 pounds per attachment point to roof.

See “Minimum Design Requirements for Simplified Review”

See “Minimum Design Requirements for all residential rooftop systems”

All Other Installations

- Any system not identified in this code would go through a BAR review
- At discretion of building inspector, a full site plan could be required

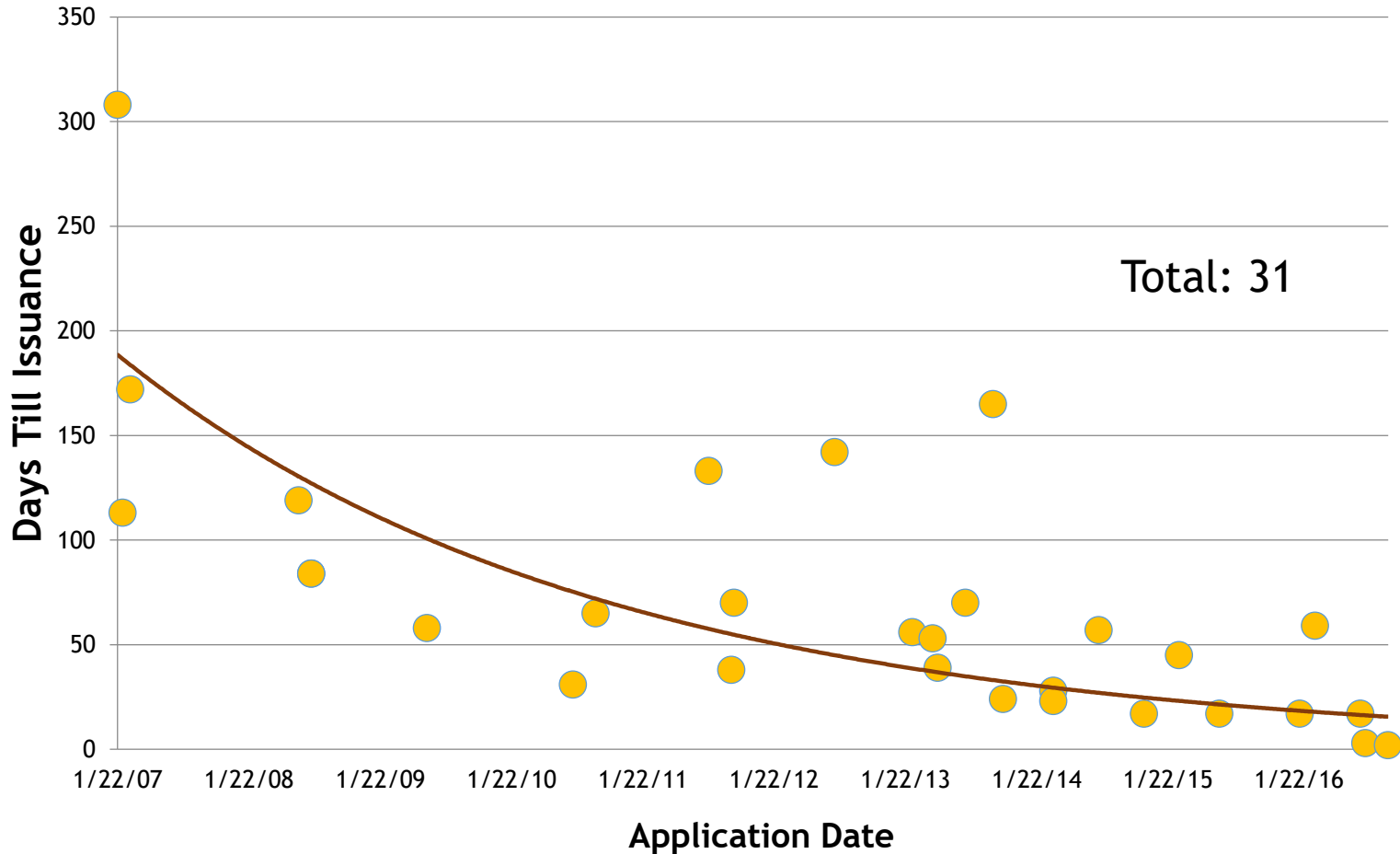
Research

CAC engaged in the following:

- Review of published guidance
 - Connecticut Solar Survey, 2014
 - NYS Model Solar Energy Law Toolkit, Sustainable CUNY, 2016
 - NYS NYSolar Smart Survey, 2014
 - Survey of Solar Permitting Practices in Pennsylvania Municipalities
 - Planning and Zoning for Solar Energy FAQ, American Planning Assoc.
 - Solar Code Sections with NYS Supplemental, International Code Council
 - Barrier Removal for Solar Permitting Resource Guide, Solarize Westchester
 - Minnesota Stormwater Manual
 - Siting Solar Panels under the Zoning Laws of New York State, Albany Law School, 2012
- Discussion with stakeholders: Pace University Land Use Law Center, Solarize Westchester, Bedford 2020
- Comparative review: codes as implemented in Greenburgh, Mamaroneck, Bronxville and Larchmont
- Survey: published in *Inquirer*, *Scarsdale10583*, *Facebook*, and promoted through major local institutions.

Solar Installations In Scarsdale

Solar PV Permits 2007-2016



Total: 31