



NY-Sun

NY-Sun PV Trainers Network

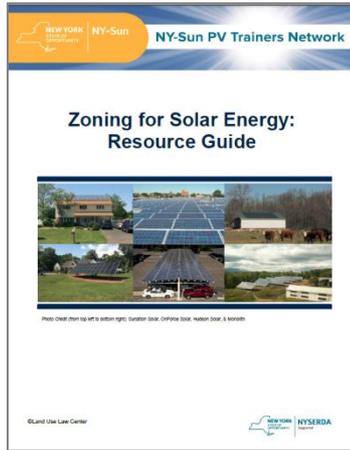
In-Depth Policy Workshop: Zoning for Solar Energy

Presented by the
NY-Sun PV Trainers Network



Resources: NY-Sun PV Trainers Network

Zoning for Solar Energy: Resource Guide



https://training.ny-sun.ny.gov/images/PDFs/Zoning_for_Solar_Energy_Resource_Guide.pdf

Agenda

Overview of NY Sun PV Trainers Network

Developing a Solar Policy and Planning for Solar Energy

Role of Local Governments

Defining Solar Energy Systems in the Zoning Code

Updating Zoning Codes

Amending Site Plan Requirements

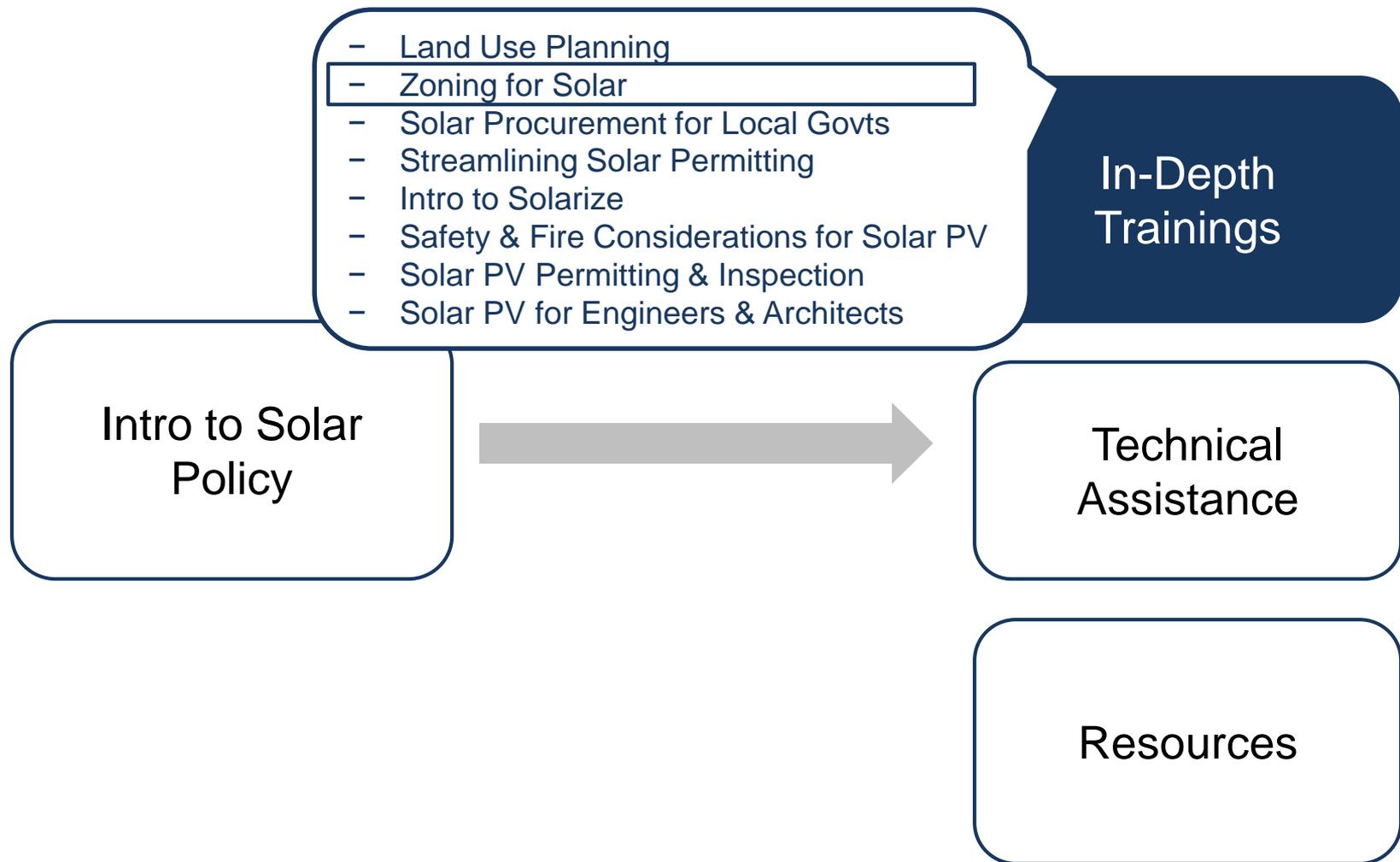
Navigating SEQRA

Review by Additional Local Boards

Requiring & Incentivizing Solar Energy Systems

Helpful Resources

PV Trainers Network Services Offered



Visit: <https://training.ny-sun.ny.gov/trainings>

Why We Are Here

Workshop Goal:

To enable local governments to **remove land use barriers** for solar energy systems and **encourage the use of solar energy** through effective regulation.

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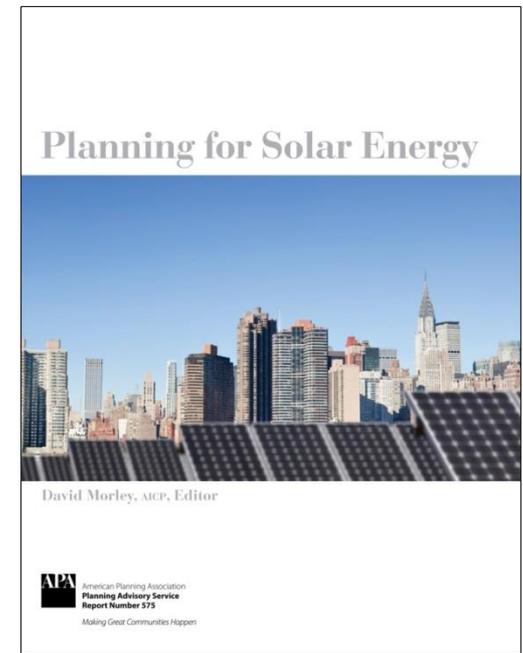
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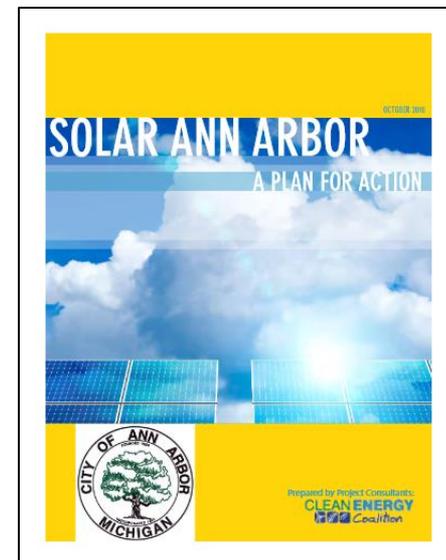
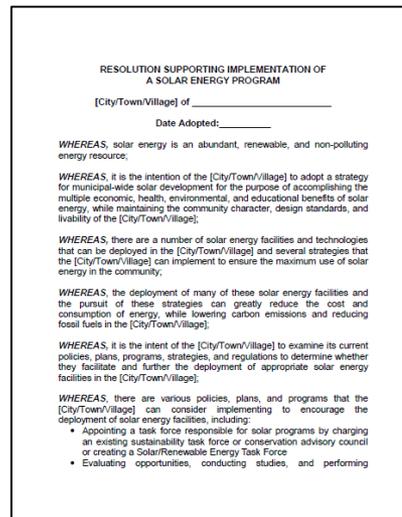
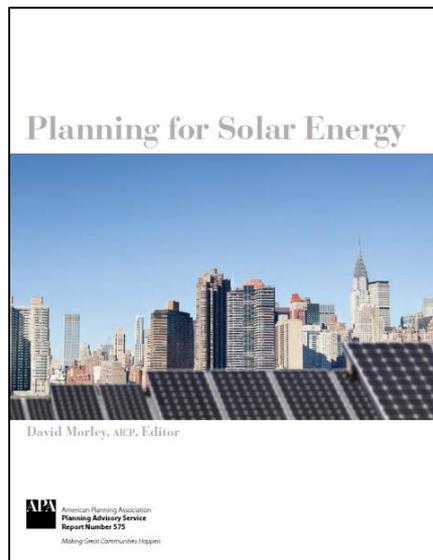
Part I: Land Use Planning for Solar Energy

- Plan Making
- Policy Development
- Community Engagement



Planning to Accommodate Solar

- Add Solar Energy Component to Comp Plan
- Adopt Solar Energy Policy or Plan



Part II: Zoning for Solar Energy

Zoning Must Be in Accordance with Comprehensive Plan



Photo Credit (from top left to bottom right): Sunation Solar, OnForce Solar, Hudson Solar, & Monolith Solar

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Types of Solar Energy Systems



Building Integrated



Small-Scale Roof



Large-Scale Roof



Small-Scale Ground



Large-Scale Ground

Example Zoning Chapter

- Purpose
- Definitions
- Establishment of Districts & Zoning Map
- District Use, Lot and Bulk Regulations
- Special Permit Regulations
- Supplemental Regulations
- Off-street Parking, Driveways and Loading Areas
- Nonconforming Uses, Buildings and Structures
- Site Plan and Special Permit Review & Approval

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Defining Solar Energy Systems

Zoning Definitions Section



§ 300-4 Definitions and word usage.

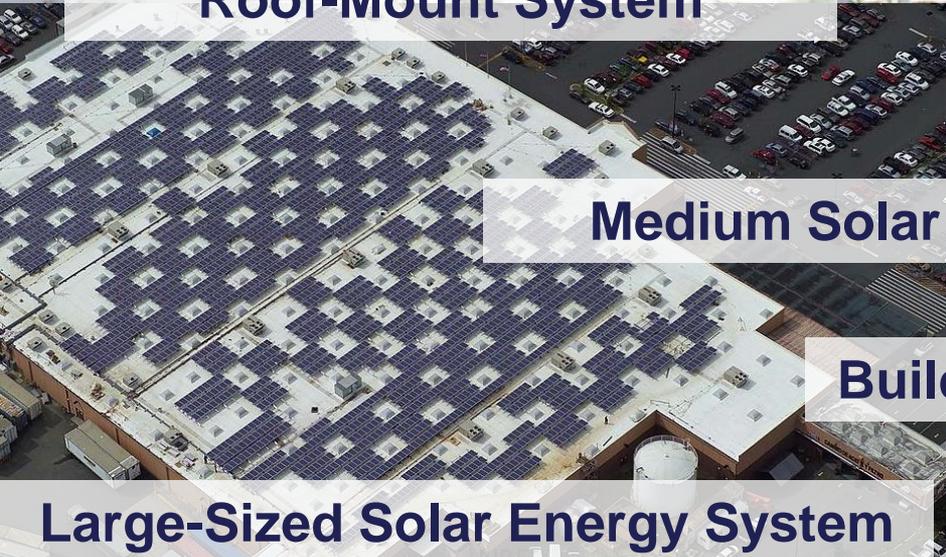
- A. Word usage. Except where specifically defined herein, all words used in this chapter shall carry their customary meanings. Words used in the present tense include the future, and the plural the singular. The word "lot" includes the word "plot"; the word "building" includes the word "structure"; the word "shall" is intended to be mandatory; and "occupied" or "used" shall be considered as though followed by the words "or intended, arranged or designed to be used or occupied."
- B. Definitions. As used in this chapter, the following terms shall have the meanings indicated:

Defining Solar Energy Systems



Solar Electric Systems

Small-Scale Solar



Roof-Mount System

Medium Solar Energy System

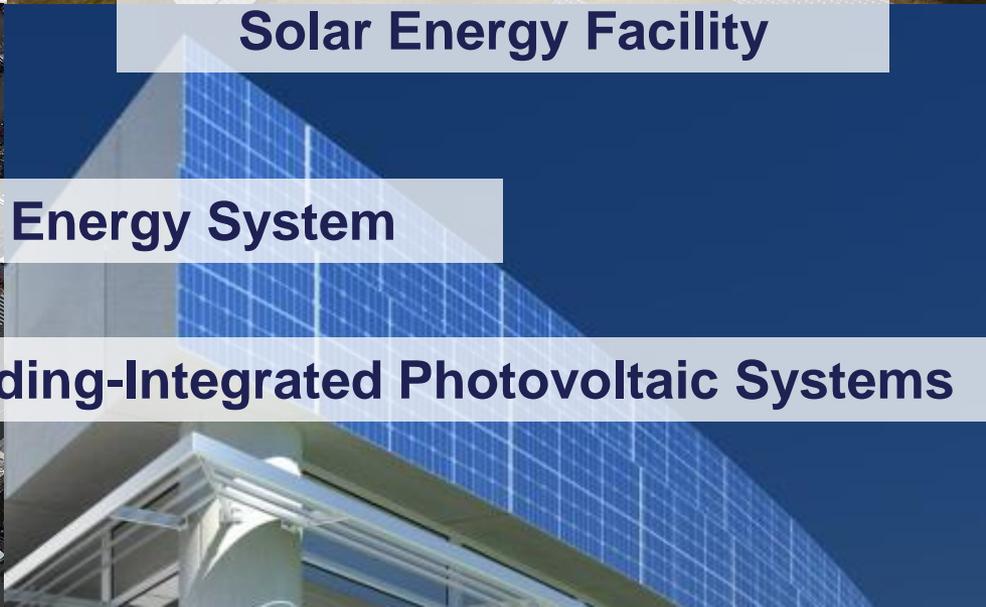
Large-Sized Solar Energy System



Ground-Mounted Solar Facility

Principal Solar Energy System

Solar Energy Facility



Building-Integrated Photovoltaic Systems

Defining Solar: Four Factors To Consider

- Energy System Type
- Location Where System-Produced Energy is Used
- Bulk & Area of System Dimensions
- System Energy Capacity

Defining Solar: System Type

- Roof- or Building-Mounted
- Ground-Mounted or Freestanding
- Building-Integrated



Example

WESTERN PENNSYLVANIA ROOFTOP SOLAR CHALLENGE

Final Solar Zoning Ordinance

Prepared for
PennFuture

Defines:

- Building-Mounted System
- Ground-Mounted System
- Building-Integrated System

Defining Solar: Energy Usage

Energy is Used:

- Entirely Onsite with Some Net Metering
- Entirely Offsite
- Onsite & Offsite



Example

- Small SES → primarily onsite
- Medium SES → onsite uses & offsite customers
- Large SES → offsite customers



Defining Solar: Bulk & Area

Define according to physical size of system:

- Min. or Max. Footprint or Disturbance Zone

- Measured in:

acres, square feet, % lot coverage, or
% of primary structure's foot print



Example



NC SUSTAINABLE
ENERGY ASSOCIATION



NORTH CAROLINA
Solar Center

Template Solar Energy Development Ordinance for North Carolina

- Level 1 SES → $\leq 50\%$ of footprint of primary structure but no more than 1 acre
- Level 2 SES → $\leq \frac{1}{2}$ acre in residential, ≤ 10 acres in commercial/office/institutional, any size in industrial
- Level 3 SES → those that do not satisfy Level 1 or 2 parameters

Defining Solar: Energy Capacity

Minimum or Maximum kW:

- Generating Capacity
- Rated Capacity
- Rated Storage Volume

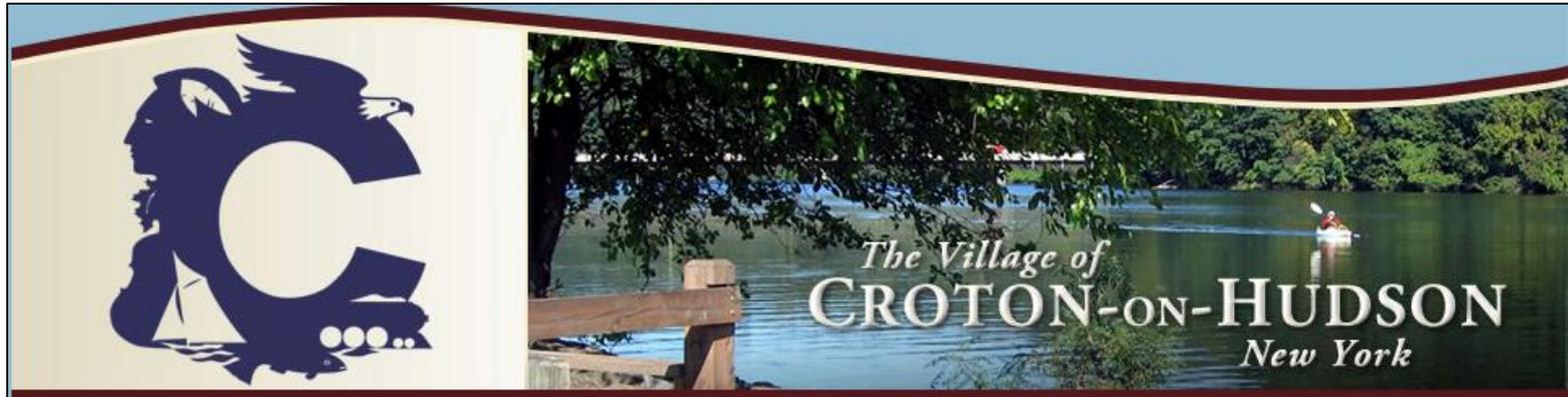


Example



- Large SES → ≥ 200 kW & Ground-mounted
- Medium SES →
 - Ground-mounted: > 5 kW and < 200 kW
 - Roof-mounted: > 5 kW
- Small SES → ≤ 5 kW

Example: System Type and Energy Capacity



New York State Unified Solar Permit

Expedited Solar Permit Process for Small-Scale Photovoltaic Systems

For Small-Scale Solar Electric Systems:

→ Rated capacity of 12 kW or less

→ Roof-Mounted

Example: System Type & Energy Usage



New York State Model Solar Zoning Ordinance

- Building-Integrated Photovoltaic
- Ground-Mounted
- Roof-Mounted
- Large-Scale System → offsite energy consumption

Example: System Type, Energy Usage, Energy Capacity



Large SES

- Ground-mounted
- Rated capacity of ≥ 200 kW
- Offsite use (sell to power grid)

Medium SES

- Ground-mounted & rated capacity of < 200 kW but > 5 kW
- Roof-mounted & rated capacity of > 5 kW & serving single or multiple lots or parcels

Small SES

- ≤ 5 kW & serving single parcel or lot

Example: System Type, Energy Usage, Energy Capacity



The Official Website of

Worcester County, Maryland

worcestercountymd.gov // www.co.worcester.md.us

SOLAR ENERGY SYSTEM, LARGE

A ground-mounted solar energy system with a rated capacity of two hundred kilowatts up to and including two and one-half megawatts, the principal purpose of which is to provide electrical power for sale to the general power grid or to be sold to other power consumers through a power purchase agreement as part of a net metering project which may include both physical or virtual aggregation, or be consumed on-site.

[Added 3-15-2011 by Bill No. 11-2; amended 11-18-2014 by Bill No. 14-6]

SOLAR ENERGY SYSTEM, MEDIUM

A ground-mounted solar energy system with a rated capacity greater than five kilowatts but less than two hundred kilowatts or a roof mounted solar energy system of any capacity in excess of five kilowatts and serving, or designed to serve, any agricultural, residential, commercial, institutional or industrial use on a single lot or parcel or group of adjacent lots or parcels.

[Added 3-15-2011 by Bill No. 11-2]

SOLAR ENERGY SYSTEM, SMALL

A solar energy system with a rated capacity of five kilowatts or less and serving, or designed to serve, any agricultural, residential, commercial, institutional or industrial use on a single parcel or lot. Individual photovoltaic cells or small groups of such cells attached to and used to either directly power, or charge a battery which does so, an individual device such as a light fixture, fence charger, radio or water pump shall not be considered as a small energy power generation facility as defined herein and may be used in any zoning district without regard to lot or setback requirements.

[Added 3-15-2011 by Bill No. 11-2]

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Update Zoning Code

Siting: Determine which zoning districts to permit each defined system

Amending District Use Regulations to Allow Solar

Land Uses Allowed in Districts As:

1. Principal Use
2. Accessory Use
3. Secondary Use
4. Special Use

1. Solar as Principal Use



2. Solar as Accessory Use



3. Solar as Secondary Use



4. Solar as Special Use



Review and Approval Process

Zoning code provisions that express project review and approval requirements generally intensify as impacts associated with permitted solar energy systems increase.

Land Use Review Options

For Building-Integrated:

- Building parts exempt from land use review
- Subject to building code compliance



Land Use Review Options

For Small-Scale, Accessory Systems:

- Review by Zoning Enforcement Officer
- Building Permit Review
- Some may Require Site Plan Review



Land Use Review Options



For Small-Scale, Accessory Systems:

- Must be 12 kW or less & roof-mounted
- Exempt from zoning review
- Expedited review for combined building and electrical permit

Land Use Review Options

For Larger Systems with Greater Impacts:

- Major & Minor Site Plan Review
- Special Use Permit Review



Example



Town of New Hartford NEW YORK

Roof- & Building-Mounted

- Building Permit
- Subject to setbacks, engineering/installation reqs

Ground- or Pole-Mounted

- Building Permit (if lot size < 10,000 sq. feet)
- Planning Board Rev. (if lot size > 10,000 sq. feet)

Example

Small SES, onsite

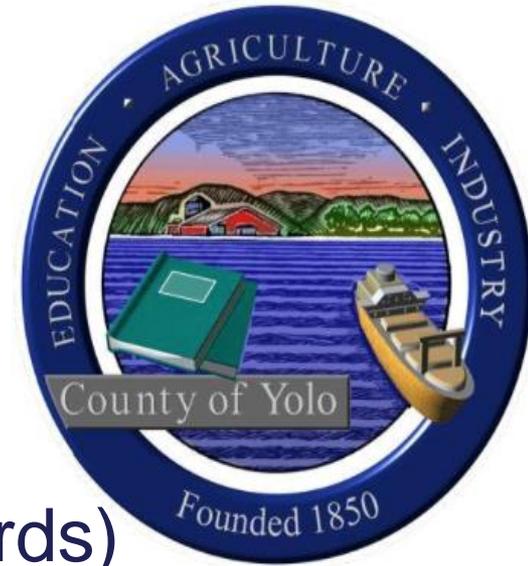
- Building Permit
- Administrative Zoning Clearance

Medium-Sized SES, onsite/offsite

- Site plan approval (if meets standards)
- Minor use permit

Large & Very Large, Utility-Scale SES

- Major Use Permit



Reviewing Bulk & Area Requirements

SEC.	DISTRICT	MAXIMUM HEIGHT		MINIMUM REQUIREMENTS				MINIMUM YARDS (7)			
		FT.	STY.	LOT AREA Sq. Ft.	LOT WIDTH	LOT DEPTH	FRONT DEPTH	EACH SIDE YARD	TOTAL BOTH SIDES	REAR DEPTH	
1	R-1 Single Family Residential	35	2.5	20,000	100'	100'	30'	10'	30'	30'	
2	R-2 Two-Family Residential	35	2.5	7,000	50'	100'	20'	6'	16'	20'	
3	R-3 Multi-Family Residential	40	4	1 FAMILY: 7,000	50'	100'	20'	1,2,2.5 STORY:	6'	16'	20'
	2 FAMILY: 3,000@DU(1)			40'	3 OR 4 STORY:			15'	30'	20'	
	3+ FAMILY: 1,500@DU			40'							
7	C-3 Commercial			TOWN HOUSE: 2,000(2)	18'						
4	B-1 Neighborhood Business	35(3)	2.5(3)	For Dwis: same as R-3 Other Bldgs: -- -- --			50'	NOTE (4)			
5	C-1 General Commercial	40(3)	3(3)				50'	NOTE (4)			
6	C-2 Central Commercial	45(3)	3				NOTE (4)				
8	M-1 Light Industrial	45(3)	3	(11) 1500 @DU	NONE	NONE	50'	20'	50'	NONE(5)	
9	M-2 Heavy Industrial	125(6)	--	(11) 1500 @DU	NONE	NONE	50'	20'	50'	NONE(5)	
10	FW Flodway	NO BUILDING PERMITTED		NONE	NONE	NONE	NO BUILDING EXECPT UTILITY				
10	FF Flod-Fringe	DEVELOPMENT SHALL BE UNDERTAKEN IN STRICT COMPLIANCE WITH FLOOD-PROOFING AND RELATED PROVISIONS CONTAINED IN ALL OTHER APPLICABLE CODES AND ORDINANCES.									

Example



- SES allowed as as-of-right accessory structures in all zones subject to bulk & area reqs.
- SES exempt from max building height reqs.

Development Standards

Some municipalities impose specific development standards to mitigate land use impacts associated with solar energy system

Development Standards for Accessory-Use SESs

Roof-Mounted:

- Max height
- Min tilt, angle
- Color & location restrictions



Ground-Mounted:

- Setback, yard requirements
- Max height
- Blending or screening



Development Standards for Principal-Use SESs

Requirements To Mitigate Impacts:

- Siting
- Height Limits
- Setbacks
- Screening
- Safety (fencing, signage)
- Utility Interconnection
- Required Studies (environmental, economic)
- Decommissioning/Site Restoration



Example

Accessory-Use SESs:



Roof- & Building-Mounted

→ Building Permit

→ Subject to setbacks, engineering/installation reqs

Ground- or Pole-Mounted

→ Building Permit (if < 10 feet high)

→ Area Use Permit (if > 10 feet high)

→ Subject to setbacks, yard reqs

Example



Principal-Use SES

- Min Lot Size: 20 acres
- 50- to 20-foot front, side, rear yard setbacks
- Year-round screening & 6-foot fencing where nec.
- Location away from sensitive areas

Accessory-Use SES

- Max height for roof-mounted
- Setbacks for for ground-mounted
- \geq 5-foot screening (fence, vegetation) for ground-mounted

Example

Principal-Use SES



- 50-foot property line setbacks
- 20-foot max height limit
- 25-foot-wide landscape perimeter with 6-foot fence
- 80% max lot coverage
- system design to blend with surroundings
- advertising display prohibition
- Limitations on vegetation and tree removal
- Abandonment & decommissioning provisions

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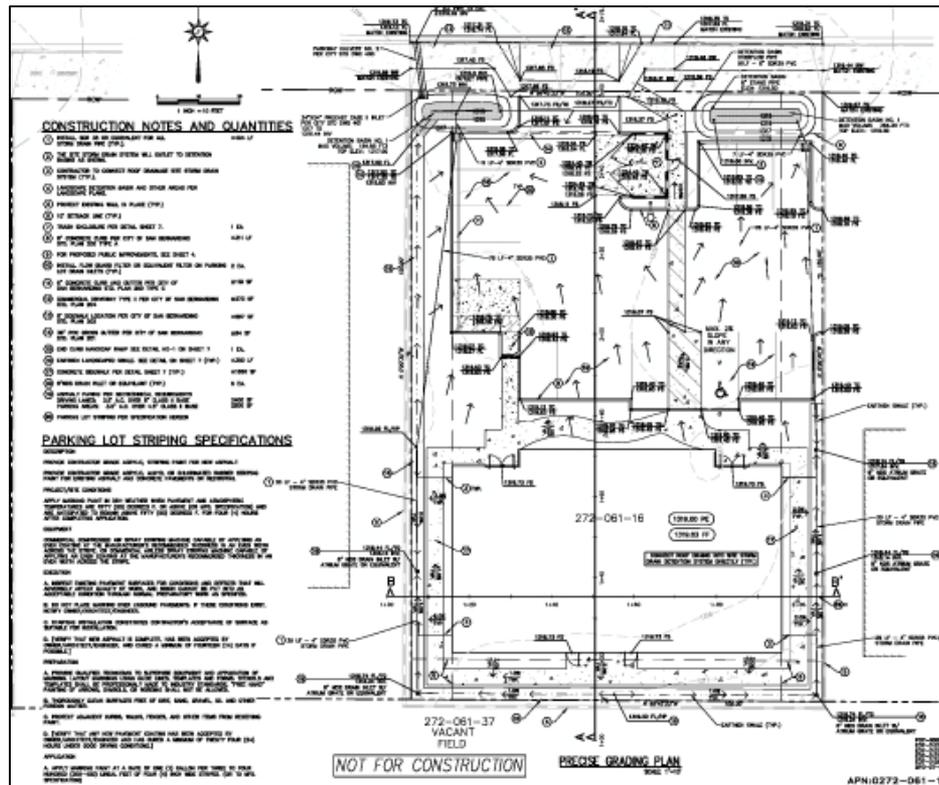
Review by Additional Local Boards

Requiring & Incentivizing Solar Energy Systems

Helpful Resources

Amending Site Plan Requirements

Major Site Plan Review Minor Site Plan Review



Example



Minor Site Plan Review for:

- Ground-mounted
- Between 2,000 sq.ft. & 10 acres in size

Preliminary & Final Site Plan Review for:

- > 10 acres in size
- Site plan must include: transmission line/equipment location, changes to existing substations, how facility will connect to grid, landscape maintenance plan, decommissioning plan, etc.

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New York's State Environmental Quality Review Act



Services

News

Government

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Introduction to SEQR

New York's **State Environmental Quality Review Act** (SEQR) requires all state and local government agencies to consider environmental impacts equally with social and economic factors during discretionary decision-making. This means these agencies must assess the environmental significance of all actions they have discretion to approve, fund or directly undertake. SEQR requires the agencies to balance the environmental impacts with social and economic factors when deciding to approve or undertake an **"Action"**.

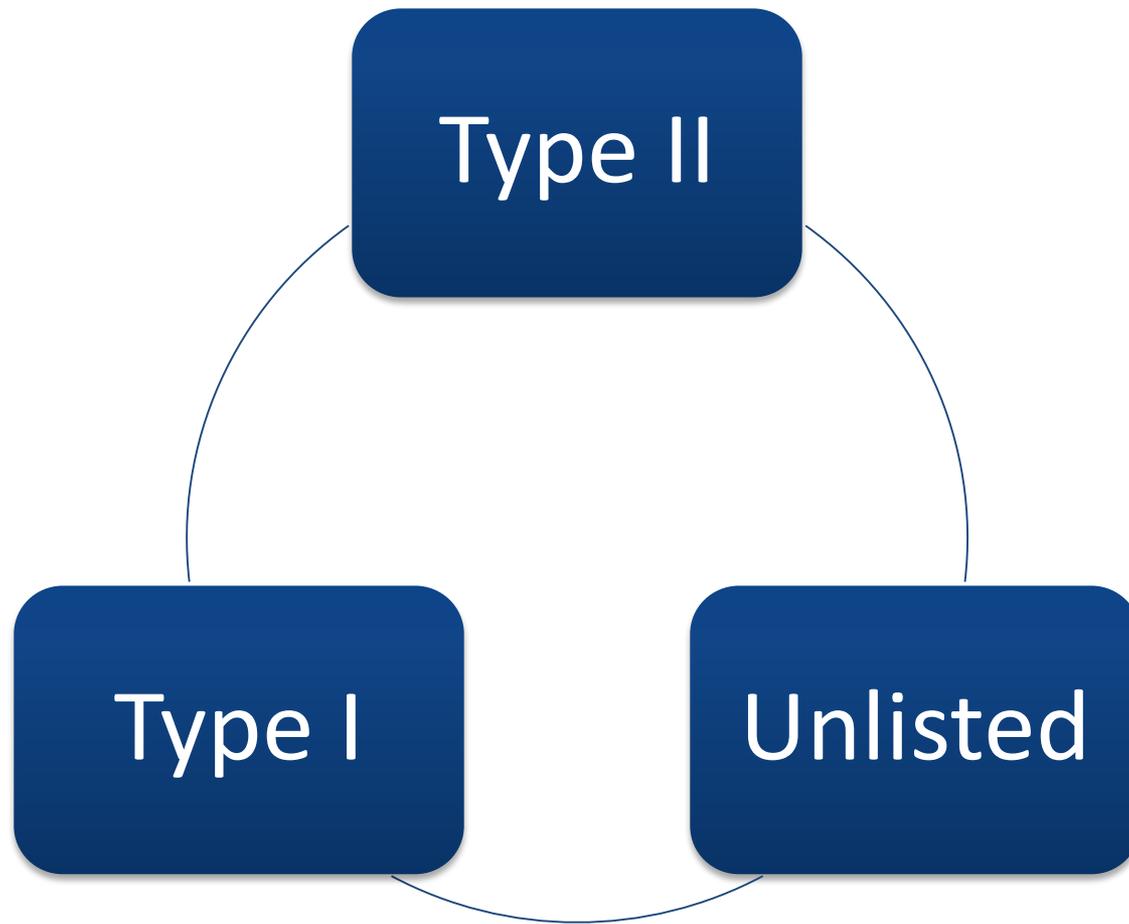
How does SEQR work?

If an action is determined not to have significant adverse environmental impacts, a determination of nonsignificance (Negative Declaration) is prepared. If an action is determined to have potentially significant adverse environmental impacts, an **"Environmental Impact Statement"** is required.

The SEQR process uses the EIS to examine ways to avoid or reduce adverse environmental impacts related to a proposed action. This includes an analysis of all reasonable alternatives to the action. The SEQR **"decision making process"** encourages communication among government agencies, project sponsors and the general public.

The law was implemented by regulations which were fully effective on November 1, 1978 and revised effective June 1, 1987 and January 1, 1996.

Navigating SEQRA



Navigating SEQRA

Streamline the SEQRA Process:

Add to Local Type II List



Mitigate impacts through Conditioned Neg Dec



Negotiate in pre-app meeting



Provide clear application forms



Offer technical assistance



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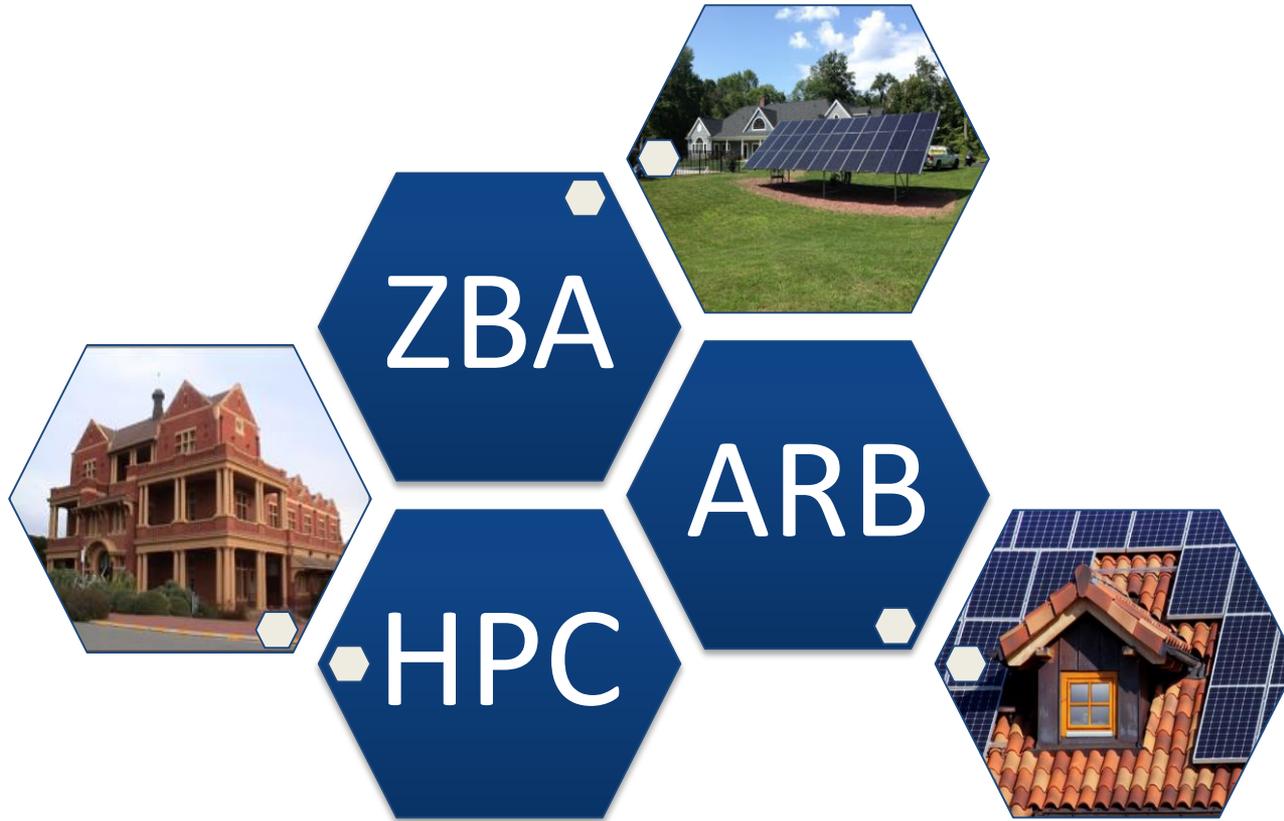
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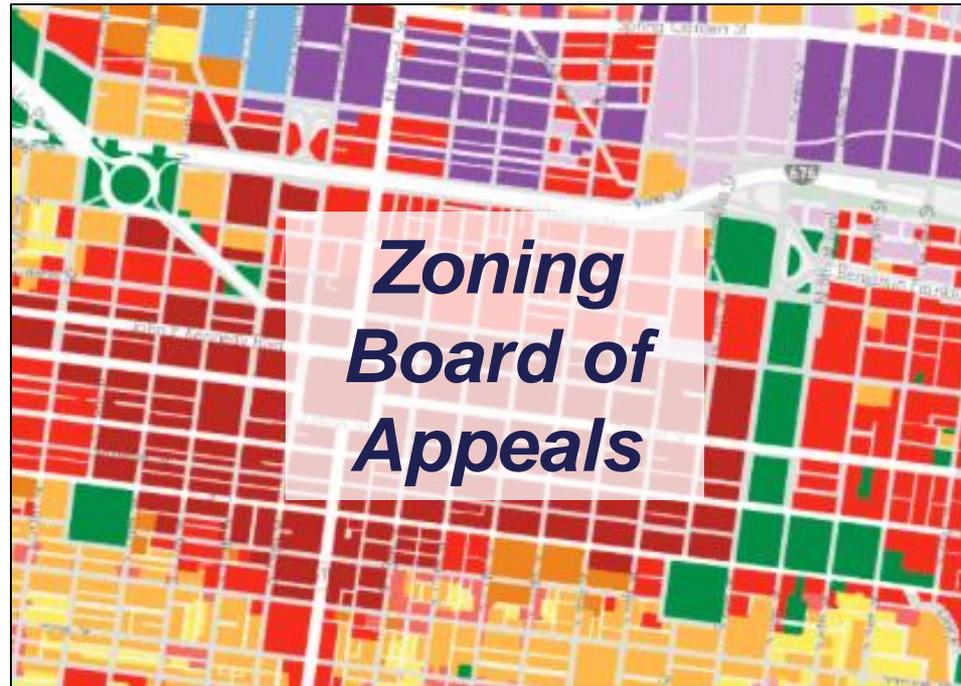
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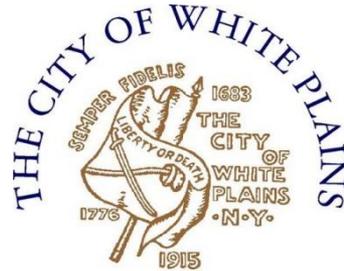
Review by Additional Local Boards



Review by Additional Local Boards



Example



SES exempt from design review if:

- On 1- or 2-family structures w/o variance
- Rated capacity \leq 12 kW
- Mounted parallel to roof or with minimal tilt

Example



SES exempt from ARB approval if:

- Roof-mounted does not extend beyond exterior perimeter
- Ground-mounted does not extend into setbacks & has minimum tilt
- Design blends into architecture or SES is screened
- Color consistent with roof
- Building-integrated meets all setbacks

Review by Additional Local Boards



Example



Solar apparatus criteria for HPC review of alterations in historic districts:

- No detraction from architectural integrity
- Must be as unobtrusive as possible
- Cannot hide features from street view
- Cannot become major feature of design

Example

HPC will approve SES if:

- Installation does not substantially impair historic character
- Complies with required design and location modifications that do not significantly impair system effectiveness



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Requiring & Incentivizing Solar

-  Site Plan & Subdivision Requirements
-  Building Ready Standards
-  Solar Mandates
-  Solar Access Protections
-  Zoning Incentives
-  Other Incentives

Subdivision & Site Plan Requirements

- Solar-Ready Lot & Building Orientation
- Panel-Ready Rooftops
- Community Solar Energy System



Example



- Solar Siting Requirements for Subdivisions:
 - Lot and building orientation
 - Building shape
 - Open space area location
 - Roof-Surface orientation

Building Ready Standards in Codes

- Solar-Ready Construction Standards
 - Electrical accommodations
 - Plumbing accommodations



Example



- Electrical Code
 - Pre-wiring Requirements
- Plumbing Code
 - Pre-plumbing Requirements

Solar Mandates

- For Solar Energy Systems in New Developments
- For Contributions to Solar Energy Elsewhere



Example



- New, Single-Family Homes
 - Install SES to receive building permit
- New Subdivisions
 - Install aggregate energy generation requirement

Solar Access Protections

- Solar Easements
- Solar Access Permits
- Solar Fences
- Building Orientation, Design, Setbacks



Example



- Solar Setbacks
 - minimize shadows at the north property line
- Solar Access Permit

Bonus Zoning & Density Incentives

Chapter 23.50 DENSITY BONUS AND OTHER DEVELOPER INCENTIVES

Sections:

- 23.50.010 Purpose.**
- 23.50.020 Eligibility for density bonus and incentives and concessions.**
- 23.50.030 General provisions for density bonus and incentives and concessions.**
- 23.50.040 Number and types of density bonuses and incentives and concessions allowed.**
- 23.50.050 Location of density bonus units.**
- 23.50.060 Continued availability.**
- 23.50.070 Process for approval or denial.**

Example



- Density Bonus Provisions for PUDs
 - 5% bonus above base density
 - Solar access for 40 percent of DU
 - Deed restrictions to ensure SESs utilized for water & space heating

Other Incentives

- Property Tax Abatements
- Reduced Fees
- Fee Waivers
- Information Clearinghouse
- Leveraged State & Federal Grants
- Streamlined Project Review



Example

Solar in Chicago



Welcome to the City of Chicago's rooftop solar portal!

The City of Chicago is accelerating solar energy, making installation of rooftop solar easier, cheaper, and faster than ever. By cutting fees, and reducing time-in-line, streamlining and standardizing permitting and zoning processes, the City of Chicago has made putting solar on your rooftop as efficient and affordable as possible. Get started:



For Small Installations
(<13.44 kW, a typical house)



For Large Installations
(>13.44 kW, commercial, industrial or other building)



Solar Contractor Checklist

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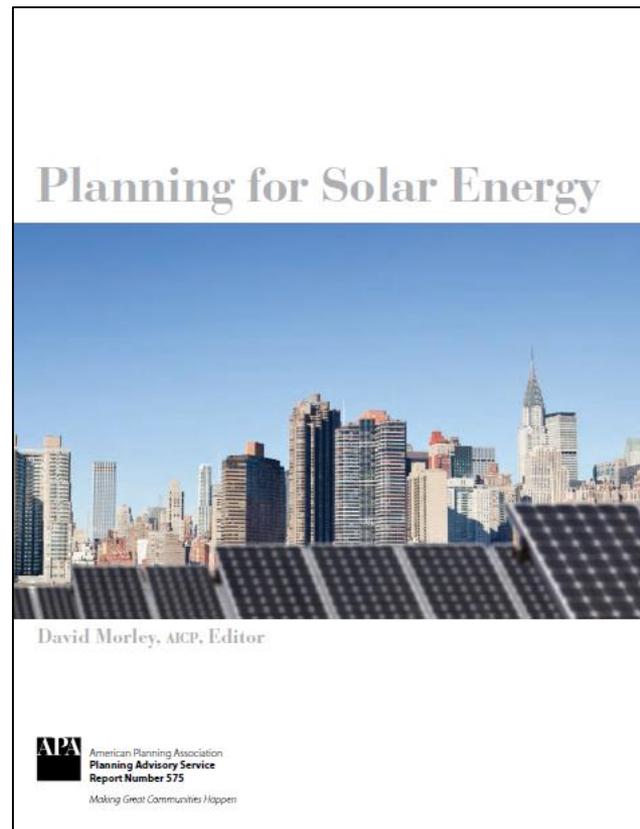
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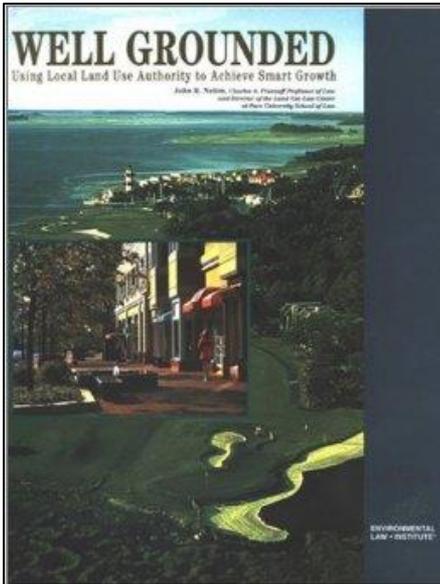
Resource: Planning for Solar Energy



Resource: APA's Solar Planning & Zoning Data Search

www.planning.org/solar/data/

Resources: The Local Land Use System



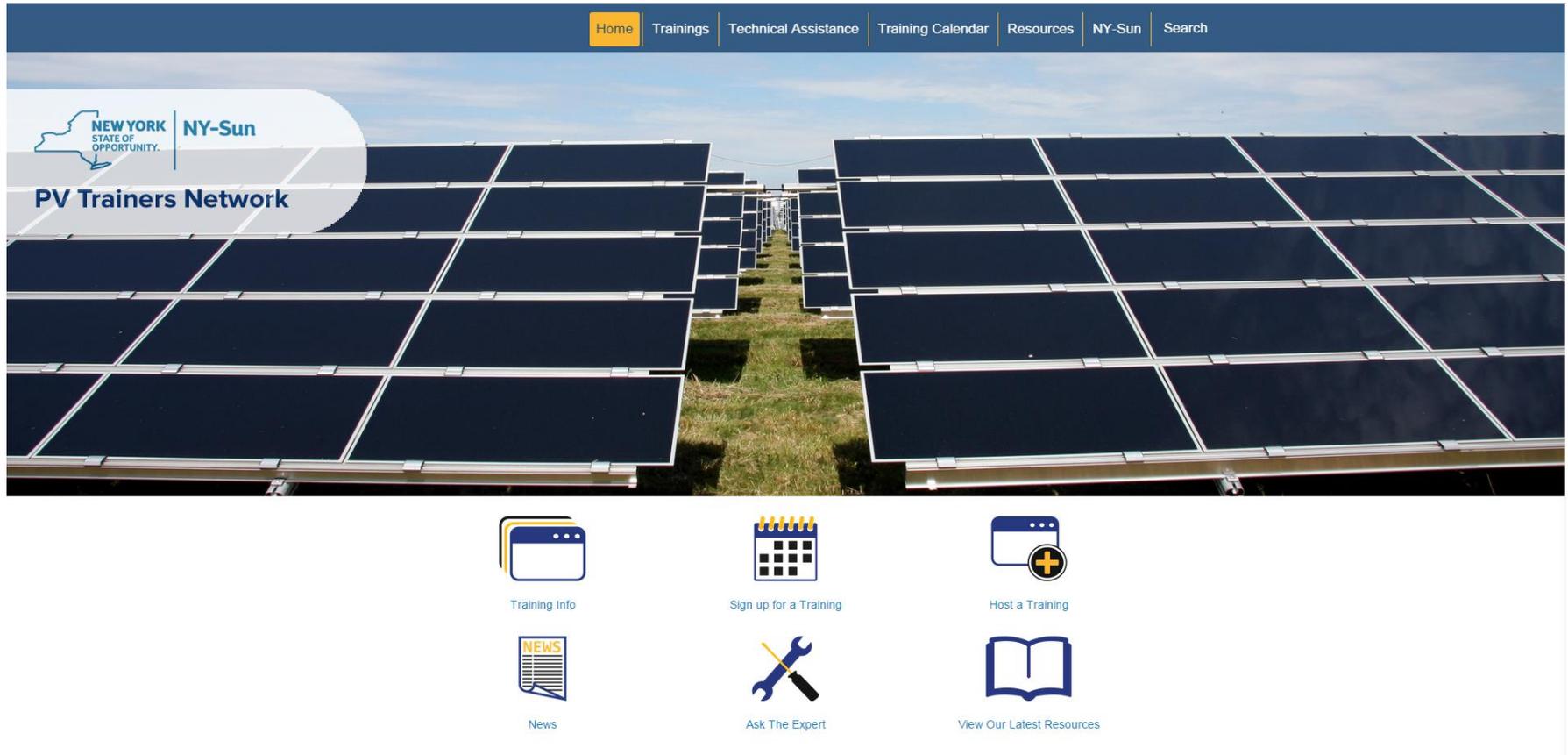
James A. Coon Local Government Technical Series



The Zoning School



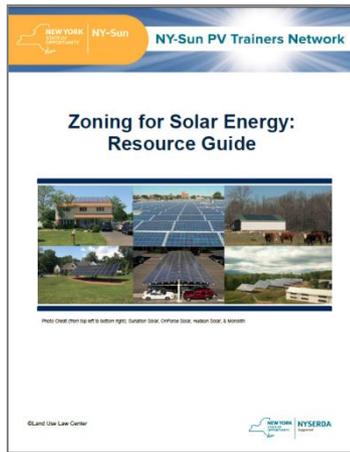
Resources: NY-Sun PV Trainers Network



Visit: <https://training.ny-sun.ny.gov/>

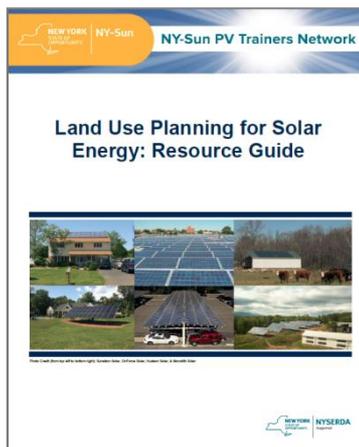
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https://training.ny-sun.ny.gov/images/PDFs/Zoning_for_Solar_Energy_Resource_Guide.pdf

Land Use Planning for Solar Energy



https://training.ny-sun.ny.gov/images/PDFs/Land_Use_Planning_for_Solar_Energy.pdf

Next Steps: What else can communities do?

- Attend a training
- Host an event
- Request one-on-one assistance
- Let us know what the Program is missing

Visit: <https://training.ny-sun.ny.gov>

Contact us: info@training.ny-sun.ny.gov

Upcoming Trainings

September 25, 2015	Solar PV Permitting and Inspection Methods , 8:30 am-3:30 pm Utica, Oneida County Climate Smart Communities Conference , 9:00 am - 5:00 pm Newburgh, Orange County
September 28, 2015	Solar PV Permitting and Inspection Methods , 8:30 am – 3:30 pm Watertown, Jefferson County Solar PV Permitting and Inspection Methods , 8:30 am – 3:30 pm Copiague, Suffolk County
September 29, 2015	Safety and Fire Considerations for Solar PV , 9:00 am – 12:00 pm Gardiner, Ulster County
October 01, 2015	Zoning for Solar Energy , 8:00 am – 12:30 pm Lake George, Warren County
October 02, 2015	Planning and Zoning for Solar Energy , 9:30 am – 12:30 pm Plattsburgh, Clinton County
October 05, 2015	Creating and Implementing Your Solarize Campaign – Capital District, 9:00-1:00 pm Albany, Albany County
October 06, 2015	Solar Procurement for Local Governments – NYS Government Finance Officer’s Association Northeast Region Fall Seminar , 9:10 – 10:25 am Lake George, Warren County
October 07, 2015	Creating and Implementing Your Solarize Campaign – North Country, 12:00 – 1:00 pm Plattsburgh, Clinton County Solar Procurement for Local Governments – NYS Government Finance Officer’s Association Long Island Fall Seminar , 9:10 – 10:25 am East Islip, Suffolk County
October 08, 2015	Solar PV for Engineers & Architects , 8:30 am – 3:30 pm New York, New York County Creating and Implementing Your Solarize Campaign , 9:00 am– 1:00 pm Westbury, Nassau County
October 10, 2015	Solar PV Permitting and Inspection Methods , 9:00 am – 4:00 pm Orchard Park, Erie County
October 17, 2015	Safety and Fire Considerations for Solar PV , 10:00 am – 1:00 pm Online Safety and Fire Considerations for Solar PV , 1:00pm - 04:00pm Albion, Orleans County
October 19, 2015	Solar PV Permitting and Inspection Methods , 8:30am - 03:30pm Copiague, Suffolk County
October 21, 2015	Safety and Fire Considerations for Solar PV , 6:00-9:00 pm Poughkeepsie, Dutchess County



NY-Sun

NY-Sun PV Trainers Network

Thank You!

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