

# SOLAR ENERGY & ENVIRONMENTAL CONSIDERATIONS

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# Solar Energy

## Solar Photovoltaics (PV) vs. Concentrated Solar Power (CSP) vs. Solar Thermal

### Types of Solar PV installations:

- Residential
  - Commercial
  - > Community Solar
  - Utility-Scale
- } **“Behind the Meter”  
Rooftop or Ground-Mounted**
- } **“Front of the Meter”  
Ground-Mounted**

### Ground-Mounted Solar

- 5-8 acres per MW
- 100-200 homes per MW



# Permitting Solar Energy Systems

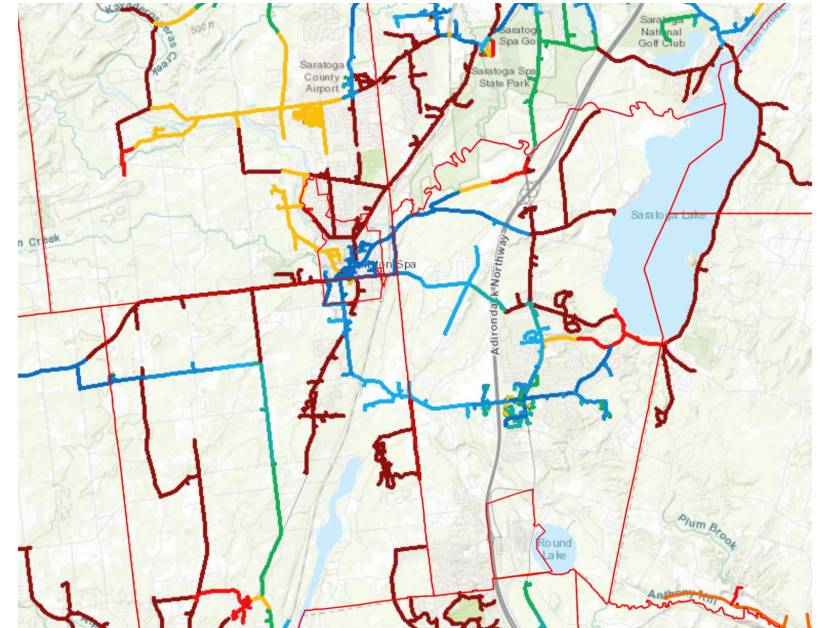
**Permitting process varies based on size of the installation:**

- **Projects < 25 MW: Permitted at Local level (SEQR, municipal requirements)**
- **Projects > 25 MW: Permitted at State level (Article 10, Office of Renewable Energy Siting and Electric Transmission [ORES])**



# Hosting Capacity

- Visualize local energy distribution infrastructure
- Identify general potential locations for solar development based on select criteria:
  - Grid proximity
  - Grid hosting capacity
  - Existing zoning
  - Proximal land use



# A BALANCING ACT



# Wetlands and Waterbodies



- MARSHES**
- frequently or continually inundated with water
  - characterized by emergent soft-stemmed vegetation adapted to saturated soil conditions.
  - tidal salt marshes or freshwater marshes



- SWAMPS**
- any wetland dominated by woody plants



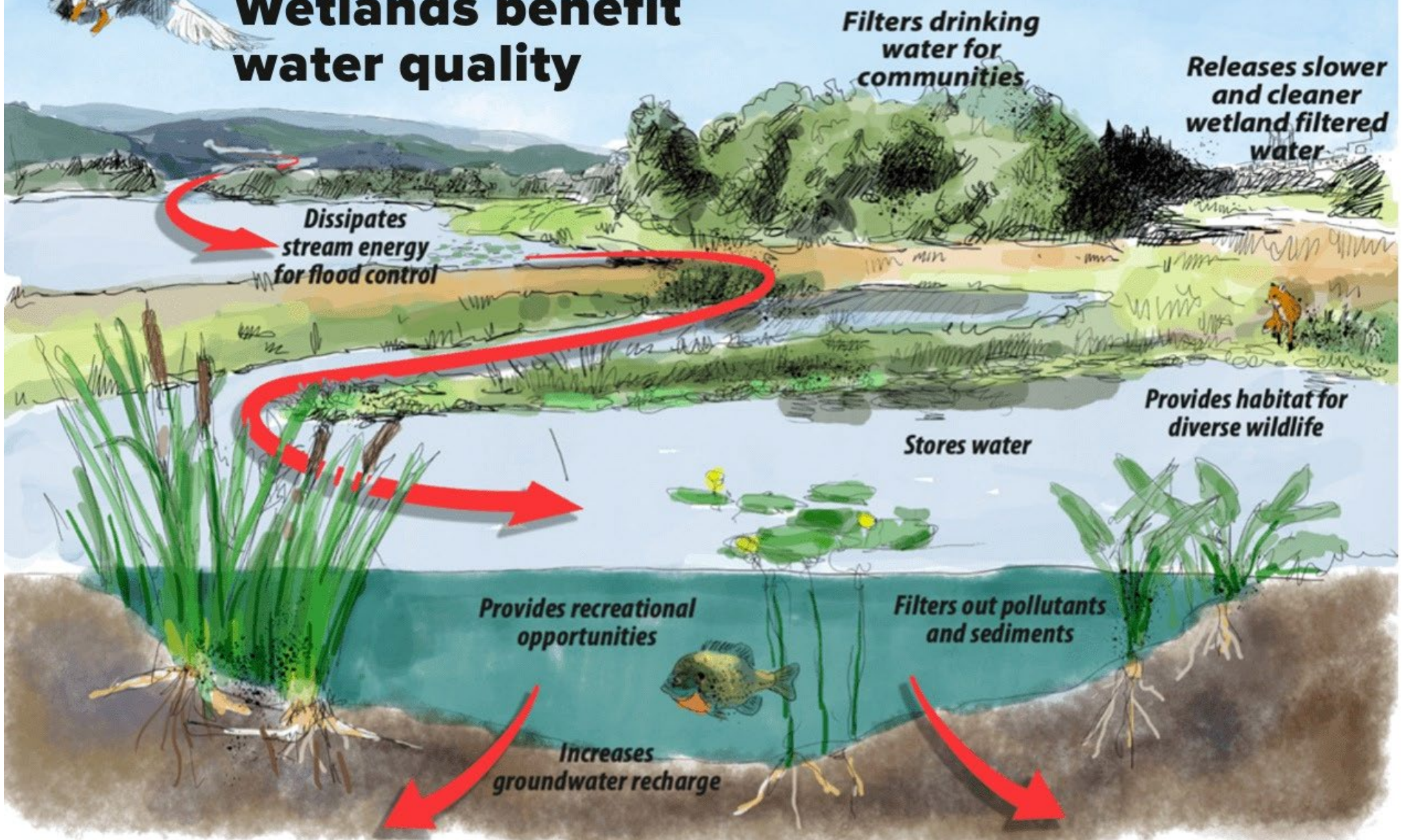
- FENS**
- peat-forming wetlands that receive nutrients from sources other than precipitation
  - Less acidic than bogs and have higher nutrient levels



- BOGS**
- spongy peat deposits
  - acidic waters
  - floor covered by a thick carpet of sphagnum moss



# Wetlands benefit water quality





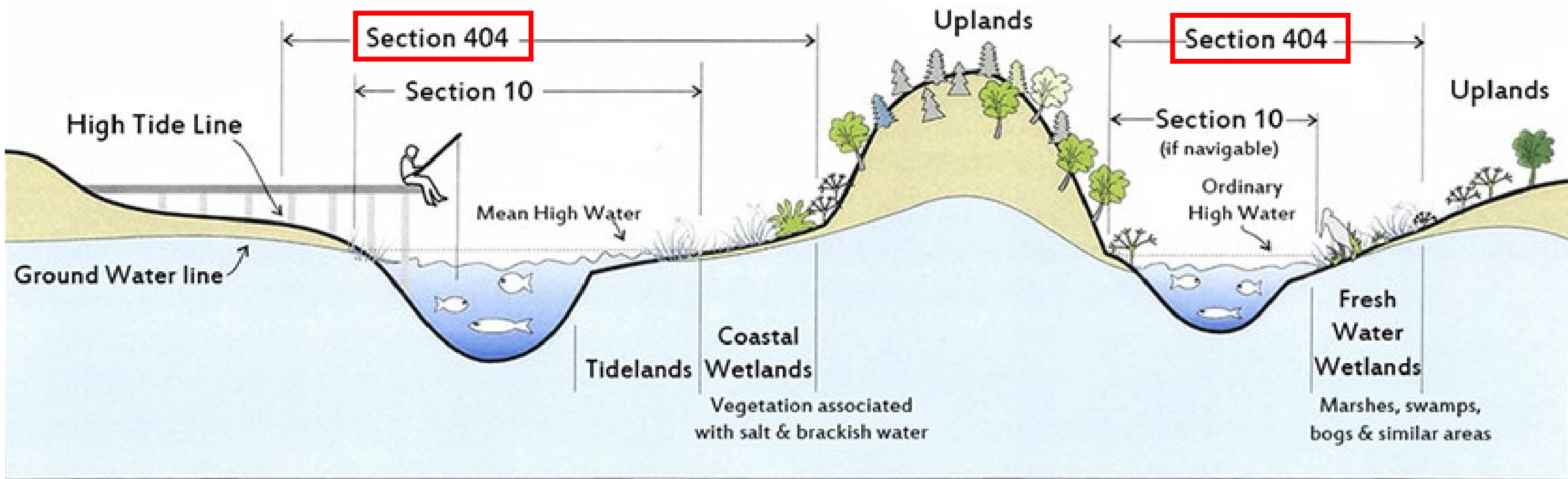
# Federal Wetland and Waterbodies Regulations



# Corps of Engineers Regulatory Jurisdiction

## Tidal Waters

## Fresh Waters



### Typical examples of regulated activities

**Section 103**  
Ocean Discharge of Dredged Material  
Ocean discharges of dredged material.

**Section 404**  
Disposal of Dredged or Fill Material  
All filling activities, utility lines, outfall structures, beach nourishment, riprap, jetties, some excavation activities, etc.

**Section 10**  
All Structures and Work (navigable waters)  
Dredging, marinas, piers, wharves, floats, intake/outtake pipes, pilings, bulkheads, ramps, fills, overhead transmission lines, etc.

# Federal Permitting Options

**Nationwide Permits: Pre-issued permits with pre-defined permit conditions for pre-defined actions. Usually covers most jurisdictional work solar developers do.**

- > NWP 14. [Linear Transportation Projects](#)
- > NWP 51. [Land-Based Renewable Energy Generation Facilities](#)
- > NWP 57. [Electric Utility Line and Telecommunications Activities](#)

**Individual Permits: Anything not covered by a Nationwide Permit (e.g., when developer exceeds amount of impact allowed by NWP)**

**Regional Permits: There are 3 covering NY. None relate to solar**



# Mitigation Whether for Individual Permit or NWP

- **Must describe avoidance, minimization, and compensation for impacts to WOTUS.**
- **Typically, compensatory mitigation is required for permanent jurisdictional wetland losses greater than 0.1 acre.**
- **Temporary losses (e.g., wetland conversion from forest to wet meadow) may also require mitigation, usually at lesser ratios.**
- **Mitigation ratio required is variable and discretionary**
  - Law says at least 1:1, unless waived
  - Average is ~2.5:1 (acres of mitigation for acres of impact)
  - Forested wetland usually has highest ratio

**Options: Permittee responsible mitigation, in lieu fee, wetland banking**



# State Freshwater Wetland and Waterbody Regulations



# 2025 Freshwater Wetland Regulation Changes

- **NYS Freshwater Wetlands Maps will no longer limit DEC regulatory jurisdiction to wetlands depicted on the maps.**
- **Small wetlands will be newly-established.**

## New York Court Annuls DEC's Part 664 Freshwater Wetlands Regulations

ALERT | 4.8.2026 | *Hodgson Russ Environmental & Energy Alert*

*Albany County Supreme Court finds DEC failed to comply with SEQRA in adopting new wetlands rules*

In a decision with significant consequences for landowners, developers, and municipalities throughout New York State, the Albany County Supreme Court has annulled in their entirety the New York State Department of Environmental Conservation ("DEC's") recently promulgated Part 664 freshwater wetlands regulations, holding that the DEC failed to satisfy its obligations under the State Environmental Quality Review Act ("SEQRA").

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1. **Watershed**
2. **Located within**
3. **Contains a**
4. **Contains high**
5. **Classified by**
6. **Lands previously**
7. **A vernal pool**
8. **Located in**
9. **Previously**
10. **Has wetland functions and values that are of local or regional significance; or**
11. **Determined by the commissioner to be of significant importance to protect NYS water quality**

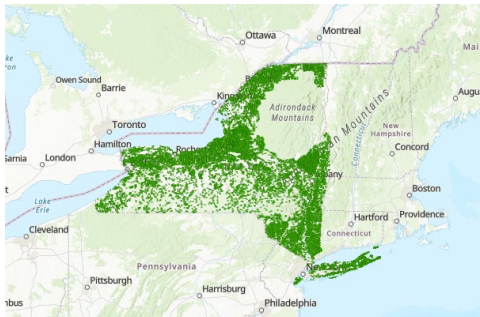
000 individuals state-  
species of special  
an (SWAP);  
importance;  
Insurance Rate Map

# New General Permits

1. Basic Freshwater Wetlands
2. Solar PV Projects



<https://dec.ny.gov/regulatory/permits-licenses/general-permits>



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
General Permit Number GP-0-25-003

**PERMIT**  
Under the Environmental Conservation Law (ECL)

**GENERAL PERMIT GP-0-25-003**  
Basic Freshwater Wetlands General Permit

**Permittee and Facility Information**

**Permit Issued To:**  
All Affected Persons

**Facility:**  
Locations identified in project-specific plans and authorizations covered under this General Permit

**Applicable DEC Region(s):** ALL  
**General Permit Authorized Activity:** This permit authorizes the following activities that occur within State-regulated freshwater wetlands and freshwater wetland adjacent areas (Article 24) and may also have impacts to protected streams and navigable waters of the State (Article 15, Title 5), in accordance with the conditions identified in this permit and the DEC approved project-specific plans.

**Authorized Activities:**

1. **Repair, reconstruction, and/or in-kind replacement of existing functional structures and facilities** in a freshwater wetland or freshwater wetland adjacent area, excluding septic systems in freshwater wetlands. The maintenance of existing drainage ditches adjacent to public roads and highways may be covered under this authorized activity, but all other activities involving drainage ditches are excluded from coverage.
2. **Repair, reconstruction, and/or replacement of septic systems in wetland adjacent areas.** Repair, reconstruction, or replacement may not change design capacity but does allow for upgrades to an existing system to meet design standards.
3. **Construction and/or modification of the following residential, commercial, industrial, or public structures** that results in permanent and/or temporary disturbance totaling no more than 1/10-acre to freshwater wetlands and totaling no more than 1/10-acre to freshwater wetland adjacent areas:
  - a. Utility lines from an existing distribution line to a structure including the following types of utilities:
    - i. Electric and gas utility lines less than one mile in length;
    - ii. Sewer and water lines; and
    - iii. Telecommunication lines (e.g., internet, telephone, etc.);
  - b. Dry hydrants for fire protection; and
  - c. Elevated walkways or unenclosed platforms built on open-work supports (no-fill supports).

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
General Permit Number GP-0-25-004

**PERMIT**  
Under the Environmental Conservation Law (ECL)

**GENERAL PERMIT GP-0-25-004**  
Solar Photovoltaic Projects (Less than 25 MW)

**Permittee and Facility Information**

**Permit Issued To:**

**Facility:**

**Applicable DEC Region(s):** ALL  
**General Permit Authorized Activity:** This permit authorizes the following activities associated with solar photovoltaic projects with a nameplate generating capacity of no more than 25 MW that occur within state-regulated freshwater wetlands and freshwater wetland adjacent areas (Article 24) and/or protected streams (Article 15, Title 5).

**Authorized Activity 1: Construction of temporary and permanent access roads and associated vegetation clearing** in freshwater wetlands and freshwater wetland adjacent areas subject to the following limitations and requirements:

- a. In **freshwater wetlands**, construction of permanent access roads (including shoulders, grading, side slopes, stormwater features, or other related disturbances) shall result in no more than 0.25-acres of fill.
- b. In **freshwater wetland adjacent areas**, construction of temporary and permanent access roads shall be minimized to the maximum extent practicable.
- c. In both **freshwater wetlands and freshwater wetland adjacent areas**, the surface of permanent and temporary access roads shall be no more than 20 feet in width. Disturbance to accommodate shoulders, grading, side slopes, stormwater features, or other related disturbances shall be minimized to the maximum extent practicable but permanent access roads in freshwater wetlands shall not exceed 0.25-acres of fill.

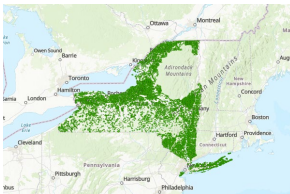
# Issuance Standards

**The proposed activity must be compatible with the public health and have no practicable alternative on a site that is not a freshwater wetland or adjacent area.**



**Mitigation: Preference for in-kind, on-site mitigation: 1. Restoration, 2. Creation 3. Enhancement**

**ILF/ banking is not an option and mitigation must be in immediate vicinity of impact**



# Wetlands and Solar



## Misconceptions:

1. Contamination/ Pollution
2. Unregulated

## Reasons Avoided:

1. Permitting
2. Mitigation requirements
3. Construction costs
4. Maintenance



## Rare, Threatened, & Endangered Species

### State

- Department of Environmental Conservation
- Natural Heritage Program (NYNHP)

### Federal

- US Fish and Wildlife Service (USFWS)

### Considerations for Siting Renewable Energy

- Habitat loss / fragmentation
- Seasonal studies
- Construction timelines based on observed species
- Mitigation

# Forest Resources

## Considerations for Solar

- Carbon sequestration vs solar energy
- Vernal pools (*documented*) and swamps
- Rare, threatened, or endangered species
- Migration corridors and habitat fragmentation



# Strategies for Responsible Solar Siting

1. Site solar on marginal lands (e.g. old landfills, brownfields, fallowed farmland)
2. Avoid sensitive areas
  - Wetlands and streams
  - Keep forests intact
3. Incorporate wildlife movement & connectivity
  - Wildlife friendly fencing (NEC)
  - Hedgerows
4. Encourage dual-use designs (agrivoltaics)
5. Flexible zoning laws





# NYS Model Solar Law: Environmental Resources

## Tier 2, 3 & 4 Systems

- **Minimize tree removal for existing trees larger than [6] inches in diameter**
- **Utilize and maintain native vegetation for game birds, songbirds, and pollinators.**
  - **Farm-related activities may be excluded by Reviewing Board**
- **Limit or refrain from pesticide and herbicide use for long term operation and maintenance**