

FLOODPLAIN MANAGEMENT GUIDELINES FOR SOLAR ARRAY AND WIND FARM PROJECTS



SOLAR ARRAYS AND WIND FARMS are collections of multiple solar panels or wind turbines that generate electricity as a system. They are often constructed across rural areas of New York State, including in floodplain areas. You should avoid or minimize negative impacts to floodplain areas during installation of these projects.

Developers considering a project site must check the FEMA Flood Insurance Rate Maps (FIRM) at <https://msc.fema.gov> to determine if any part of the site, or access roads, encroaches into the floodplain.

You must obtain a Floodplain Development Permit from the Local Floodplain Administrator for any man-made change in the floodplain, including but not limited to: excavation, fill, mining, dredging, construction of buildings, installation of utilities, and storage of equipment.

The site construction plans should delineate all floodplain and floodway areas. Design criteria for areas of floodplain disturbance include:

- 1. AVOID FLOODWAY AREAS**, if possible. Conduct hydraulic and hydrologic analysis showing no-rise (0.00 feet) if any development will encroach into designated floodway (see item 3 below).
- 2. FOR SOLAR ARRAYS:** Elevate the lowest edge of all photovoltaic panels, when at full tilt, at least 2 feet above the Base Flood Elevation (BFE) in Zone AE or Zone A1–A30. If the site is in Zone A, with no BFEs, the panels must be elevated at least 3 feet above the Highest Adjacent Grade of the full tilt position. Column embedment must be enough to provide structural stability while assuming reasonably anticipated scour during the 1% event.

FOR WIND TURBINES: Any buildings and all utilities associated with the project must be elevated at least 2 feet above the BFE, or 3 feet above the Highest Adjacent Grade if located in Zone A.



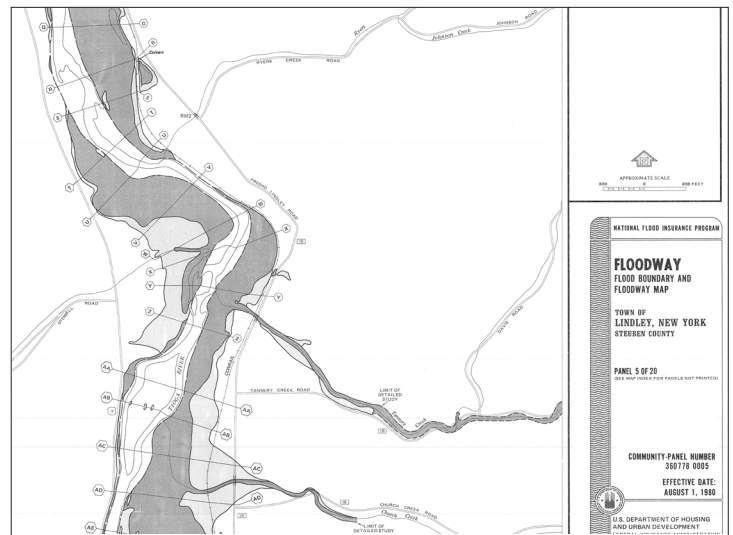
3. ROAD CONSTRUCTION: Roads should be constructed at grade. Bridges or culverts across floodplains must be permitted by the community. Any floodway encroachment must have an engineering encroachment review provided, which demonstrates no net rise (0.00') in the BFE prior to issuance of the permit. If the review demonstrates a rise, the project must be redesigned or a Conditional Letter of Map Revision (CLOMR) must be approved by FEMA prior to the start of construction. The final Letter of Map Revision (LOMR) is required after construction is completed. The following must be elevated at least 2 feet above the BFE (or 3 feet above the highest adjacent grade in Zone A):

- a. electrical service equipment,
- b. bottom of structural frame of temporary construction trailers,
- c. inverter skid platforms, and
- d. permanent structures.

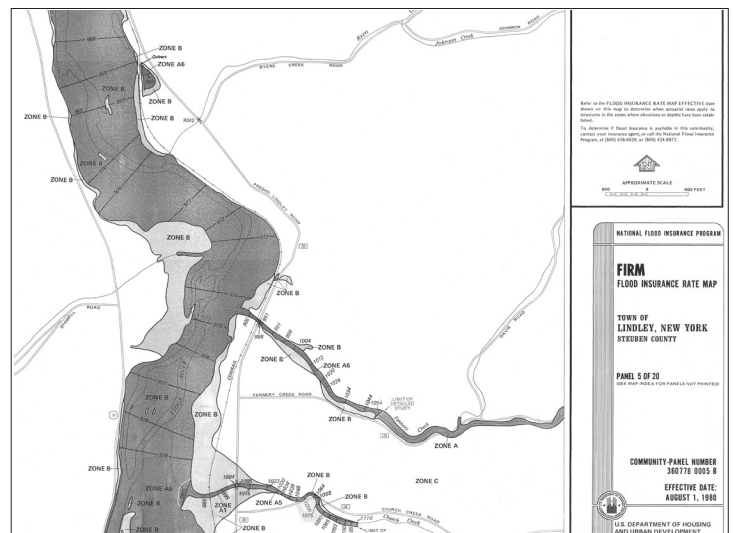
- 4. All new construction must be designed and adequately anchored to prevent floatation, collapse, or lateral movement of the structure resulting from flood forces.
- 5. All construction below the base flood elevation must be constructed with materials resistant to flood damage and capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage.
- 6. Fencing must provide flow-through for the base flood. Fencing in floodways should be avoided.
- 7. Other local, state, or federal permits must be obtained, if necessary.

FLOODWAY DELINEATION

Careful investigation to determine if the site is in the floodway must be undertaken. Communities with mapping in NYS dated 1978 to 1986 may have the floodways delineated on a separate map panel. This critical information is not shown when searching by address on FEMA's Map Service Center. To find the additional panel search "all products" on the MSC.



Example of a floodway panel map.



Example of a Flood Insurance Rate Map (FIRM) panel.

NOTE: If the project site is more than 5 acres and located in a Zone A floodplain where no BFE is provided, the developer must calculate the BFE for the entire project site.

CONTACT & LINKS

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www.dec.ny.gov/lands/24267.html