

WATER QUALITY IMPROVEMENT PROJECTS



Department of
Environmental
Conservation

Berm Removal Engineering Design Report Outline

Engineering design reports for projects to address the removal of berms located along streams, which prevent flood flows (i.e., bankfull and greater flood flow events) from accessing the floodplain. Berm removal projects include the following: (1) removal of side-cast streambed material that was placed at the top of the streambank; (2) removal of soil, stone, or other fill material placed at the top of the streambank, adjacent to the streambank or within the stream's floodplain, which limits or precludes flood waters from accessing it floodplain, or (3) removal of other types of physical structure(s) that impede floodwater flows into floodplain. The engineering design report must include a detailed description of the existing site conditions and the proposed work that will be completed under this project. Engineering designs must meet the minimum [Protection of Waters permit requirements](#).

Required Elements

- I. **Cover Page** (project title, owner, prepared by, professional's stamp, and date)
- II. **Executive Summary:** Provide an overview of the project's purpose (i.e., what will be accomplished by implementing this proposed project?).
- III. **Projective Objectives:** Describe goal(s) and objective(s) for the proposed berm removal project. Include a project background description, including flood history of the site and surrounding area, how this berm removal project will mitigate flooding and what area(s) will be benefitted by the proposed project. Indicate if this is a stand-alone flood mitigation project or if it is part of a larger flood mitigation initiative.
- IV. **Existing Conditions:** Include a detailed description of the current site conditions where the proposed project is located, including, but not limited to: (1) the location(s) of the existing berm(s) and its proximity and distance to the stream and to nearby residential, commercial structures critical facilities and/or infrastructure; and (2) the dimensions of the existing berm, including length, height and width.
- V. **Existing Conditions Graphic:** A site plan or diagram of the existing project site is required. It must include:
 - a. Engineer / Landscape Architect name; date and project title
 - b. North arrow / legend
 - c. Graphical scale (1 " = 10', 20', 30', 40', 50', 60' or 100')
 - d. Natural features on the site including wetlands, streams, steep slopes, and floodplains
 - e. Site features including streets, buildings, other infrastructure and location of existing berm(s)
 - f. Site topography
 - g. Project location map / address (including nearest cross street)
 - h. Stormwater flowpath (also consider adjacent sites)

- i. Nearest receiving waterbody
- j. Location relative to the 100-year floodplain and regulatory floodway
- k. Other site considerations (hotspots, brownfield remediation or other potential design issues at the site)
- l. Location of any available boring logs, infiltration tests, or other subsurface investigations.

VI. Project Description: Provide a narrative that explains the proposed project and provides justification for the recommended berm removal project and why this project is being proposed. Please describe how this proposed project will mitigate flooding and what specific area(s) will be benefitted as a result of implementing the proposed project. If this proposed project has been specifically identified and evaluated within a flood study (e.g., Resilient NY Streams Study or other type of flood study), please include all relevant project information.

VII. Alternatives Analysis with cost estimates: include any alternative project(s) that were evaluated.

VIII. Anticipated Regulatory Approval and Permits (*list all that will apply, e.g. NYSDEC, NYSDOT, etc.*)

IX. Conceptual Site Plan: A site plan or diagram of the project's conceptual design is required. It must include:

- a. Engineer / Landscape Architect name; date and project title
- b. North arrow / legend
- c. Graphical scale (1 " = 10', 20', 30', 40', 50', 60' or 100')
- d. Location map
- e. Natural and site features (wetlands, nearest waterbody, floodplains, streets, steep slopes, buildings, other infrastructure etc.)
- f. Proposed berm removal project location
- h. Site grading (proposed conditions)
- i. Other design considerations

X. Floodway Encroachment Analysis: Projects within a regulatory floodway require a hydrological & hydraulic (H&H) analysis conducted by a professional engineer to demonstrate no-rise (0.00 feet) in the base flood elevation, as required under the National Flood Insurance Program. Guidance can be found at <https://www.dec.ny.gov/lands/24281.html>

XI. Site Photographs: Photographs that are representative of existing site conditions.