

NONPOINT SOURCE PLANNING GRANT



Department of
Environmental
Conservation

Streambank/Shoreline Stabilization Engineering Design Report Outline

Engineering design reports for projects to address sedimentation of waterbodies caused by erosion of streambanks or shorelines must include the required elements listed below. Streambank/shoreline stabilization practices include but are not limited to staking, erosion control matting, root wads, and rip-rap. Rip-rap may only be used in conjunction with natural restoration principles that incorporate vegetative materials. The engineering design report must include an accurate description of the existing conditions and the proposed work, which may include a combination of streambank/shoreline stabilization practices identified. Engineering designs must meet the minimum [Protection of Waters permit requirements](#).

The following design criteria must be followed:

- New vertical bank stabilization measures are not eligible.
- All existing vegetation shall be preserved to the extent practicable.
- The channel width must not be constricted and must match the existing, upstream and downstream channel widths outside the project.
- The slope of new bank stabilization measures shall not be steeper than a ratio of 1-1/2 horizontal units to 1 vertical unit.
- Protection measures must be properly keyed into the stream bank(s) to prevent scouring.
- Measures using live vegetation shall consist only of native plant species.
- Measures must not include geotextile fabric as part of the final structure.
- Erosion control fabrics that will be left in place must be made from 100% biodegradable materials and contain no plastic fibers or netting.
- Fabrics containing “photodegradable” materials are prohibited.

Required Elements

- I. **Cover Page** (project title, owner, prepared by, professional’s stamp, and date)
- II. **Executive Summary:** Overview of the project’s purpose
- III. **Projective Objectives:** Describe goals for streambank stabilization elements. Indicate whether the elements are a portion of a larger project. Include a project background description and history/problem statement.
- IV. **Existing Conditions:** Include an analysis of the proposed project site which may include but are not limited to: historic/current erosion rates, nearby land use, soil classification, current streambank condition, and description of critical infrastructure.
- V. **Existing Conditions Graphic:** A 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
 - d. Site features (wetlands, streets, buildings, etc.)
 - e. Location map
 - f. Site topography
 - g. Project location / address (including nearest cross street)
 - h. Stormwater flowpath (also consider adjacent sites)
 - i. Nearest receiving waterbody
 - j. Location relative to the 100-year floodplain
 - k. Other site considerations (hotspots, brownfield remediation or other potential design issues at the site)

I. 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 streambank stabilization practices and why they were selected.

VII. Alternatives Analysis with cost estimates

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

IX. Conceptual Site Plan: A 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. Site features (wetlands, nearest waterbody, streets, buildings, etc.)
- f. Proposed streambank stabilization 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 show 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.