

NONPOINT SOURCE PLANNING GRANT



Department of
Environmental
Conservation

Culvert Repair and Replacement Engineering Feasibility Study/Design Report Outline

Engineering feasibility studies or design reports for culvert repair and replacement projects must include the following required elements. Feasibility studies and engineering designs must include an accurate description of the existing conditions and the proposed work. The feasibility study or engineering design report must also identify necessary permits to complete the project. Engineering designs must follow DEC's Guidelines and [Best Management Practices for Stream Crossings](#) and meet the minimum [Protection of Waters permit requirements](#). Engineering designs may also be designed to meet [New York State Department of Transportation's Highway Design Manual Chapter 8](#) for culverts and [DEC's Technical Guidance #2 \(DFW GS 24-01\)](#),

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 culvert repair and replacement elements. Indicate whether the elements are a portion of a larger project.
- IV. **Existing Conditions:** Include an analysis of the proposed project site which may include but are not limited to: historic/current streambank or streambed erosion rates, aquatic connectivity barriers or obstructions, current culvert condition and size, 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 (stream, streets, bridges, etc.)
 - e. Location map
 - f. Site topography
 - g. Project location / address (including nearest cross street)
 - i. Stream crossing location
 - j. Location relative to the 100-year floodplain
 - k. Other site considerations (hotspots, brownfield remediation or other potential design issues at the site)
- VI. **Project Description:** Provide a narrative that explains the proposed project and provides justification for the recommended culvert repair and replacement elements and why they were selected.
- VII. **Anticipated Regulatory Approval and Permits** (*list all that will apply, e.g. NYSDEC, NYSDOT, etc.*)
- VIII. **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 (stream, streets, bridges, etc.)
 - f. Proposed culvert repair or replacement location and size
 - h. Site grading (proposed conditions)
 - i. Other design considerations

- IX. 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://dec.ny.gov/environmental-protection/water/water-quantity/dam-safety-coastal-flood-protection/floodplain-management>
- X. Site Photographs:** Photographs that are representative of existing site conditions.