



Rutland Natural Resources Conservation District

Request for Proposals

Culvert Replacement Preliminary Design Services on an unnamed tributary to Otter Creek at Crown Point Road in Shrewsbury, VT Schedule:

Friday, August 14, 2026	<i>RFP released</i>
Wednesday, August 26, 2026	<i>Questions due</i>
Friday, August 28, 2026	<i>Questions answered</i>
Wednesday, September 9, 2026	<i>Proposals due</i>
Friday, September 11, 2026	<i>Consultant selected</i>

Katie Stiles, District Manager

Rutland Natural Resources Conservation District (RNRCD)

katie@rnrcd.org

Purpose: Rutland Natural Resources Conservation District is seeking engineering consultant design services for a culvert replacement project in the Town of Shrewsbury to restore fish passage and stream stability.

Project Description: The purpose of this project is to replace an undersized and perched culvert to improve aquatic organism passage (AOP) and improve stream stability on an unnamed tributary to Otter Creek. This culvert is geomorphically incompatible and perched. RNRCD seeks proposals to complete preliminary designs for the structure.

Project Timeline: The Preliminary Design and associate deliverables will be due **no later than August 15, 2027**.

Culvert Description:

Name: Crown Point Road Culvert

Location: Crown Point Road, near Northam Road junction, Shrewsbury (43.50792, -72.86203)

VT ANR Atlas Structure ID: 10896

Approximate Bankfull Width: 11'6" **Culvert Width:** 3.5" **Length:** 35" **Height:** 2.5"



Rutland Natural Resources Conservation District



Downstream Crown Point Road Culvert



Upstream Crown Point Road Culvert

Scope of Work: The work will be conducted as a single phase for Preliminary 30% Design. The Consultant will meet with the Project Team as needed to discuss topics such as scope of work, methods, deliverables, and project timelines. A site visit with the Project Team and correspondence with Vermont DEC Rivers Program will be necessary early in the design process. In addition to RNRCD, the Project Team may include representatives from US Fish and Wildlife Service, VT Fish and Wildlife Department, and the Town of Shrewsbury (landowner). Concepts and considerations found in AOP design guidelines developed in SWG2-T-1-2 (<https://vtfishandwildlife.com/conservation/aquatic-habitat-conservation/aquatic-organism-passage-at-road-stream-crossings>) shall be used as the basis for project design, with additional elements included from the USFWS Northeast Region Fish Passage Engineering Design Criteria (large document, please request from katie@rnrkd.org as needed). The designs will also meet VT Stream Alteration and Army Corps General Permit criteria.

Preliminary Design

The goal of the Preliminary Design is to collect the field data, analyze the data through appropriate models and produce a 30% design for the selected option. The Consultant will collaborate throughout this step with the Project Team as needed to ensure an acceptable final product. Tasks for the Preliminary Design are:

Data Collection: The Consultant will review existing relevant culvert information, including channel morphology, characterization of bed substrate, channel type, and condition. If necessary, the Consultant will delineate wetlands adjacent to the channel throughout the project area. Topographic survey will be performed to record existing site conditions, including channel cross sections upstream and downstream of the structure, channel profile (20-30x times bank full width upstream and downstream of project site, pool depths, and head of riffle), road elevations, infrastructure that may be

170 South Main St, Suite 4, Rutland, VT 05701

Office: (802) 779-8034 Mobile: (802) 779-6212

<https://www.vacd.org/conservation-districts/rutland/>



Rutland Natural Resources Conservation District

affected by the change, and other site features relevant to the design. Topographical survey limits shall extend a sufficient distance to define existing features related to the project site and provide sufficient information to complete a hydraulic analysis. Geotechnical investigations shall be performed as needed. RNRCD will facilitate landowner communication as needed.

Hydrology and Hydraulics: The Consultant will develop a hydrology and hydraulics model for the site. Hydrology estimates will be made from field measurements and from peak flow estimates using USGS StreamStats. The Consultant will analyze peak flow rates using VTrans Hydraulics Manual, Chapter 4, as a guide. The peak flow rates will be analyzed to ensure the culvert has the appropriate waterway openings and geometries to pass the Q-100 storm even with $H_w/D < 0.8$ (where H_w = headwater surface elevation and D = culvert vertical span). Once the culvert is sized, a scour analysis will be performed using the controlling channel velocities using the Q-2.33 through Q-500 storm events.

Design: Based on the data collected during the field investigations, the consultant will develop a design for simulating the natural channel geometry through the project area. The design will provide the existing and anticipated longitudinal profile and cross sections, streambed composition, grade control locations, anticipated access points for implementation and an anticipated Limit of Disturbance (LOD) polygon. The information will be detailed on the preliminary plans and included in the technical specifications. If there is more than one option, the options will be reviewed with the Project Team to select a preferred option. There will be a strong preference is for 1.2 bankfull, open-bottomed structure designs. The Consultant should provide construction and maintenance estimates as well as anticipated structure lifespan into the design recommendation.

Design Review: A meeting will be held with the Consultant and Project Team to review the Preliminary Design prior to August 15, 2027. If relevant DEC programmatic staff are unable to join design review meeting, design and relevant site data (wetland delineation, H&H analysis) should be sent for comments.

Deliverables: Final deliverables include: preliminary 30% design, report, DEC programmatic staff comments on design, and minutes from the Design Review. The preliminary 30% design plans shall include, but are not limited to, a title sheet, site plan sheet, details sheet (including longitudinal profile), Limits of Disturbance (LOD), required permit list, recommended additional survey or geotechnical work (including cost estimates), and opinion of probable cost for final design, construction, and construction oversight. The final report shall include, but is not limited to, a description of the project area, characteristics of subwatershed and land uses, an estimate of phosphorus reduction benefits of implementing the project as determined by the Functioning

170 South Main St, Suite 4, Rutland, VT 05701

Office: (802) 779-8034 Mobile: (802) 779-6212

<https://www.vacd.org/conservation-districts/rutland/>



Rutland Natural Resources Conservation District

Floodplains Initiative Tool or otherwise approved method by DEC, and a description of potential co-benefits of implementing the project. The estimated construction cost of a temporary crossing must be a separate line item if deemed necessary.

Questions: Questions may be submitted to katie@nrncd.org before 5:00 pm on August 26, 2026. A comprehensive answer sheet will be distributed to all interested parties by August 28, 2026.

Proposal Format: The narrative response, cost proposal and proposed timeline should be laid out to correspond to each of the major tasks under the Preliminary Design phase. A staffing summary plus one-page biographies should be included for each member of the Consultant's team, as well as a summary of the Consultant's experience with aquatic organism passage projects and references.

Proposals shall be submitted via email as a single PDF to katie@nrncd.org by 5:00 pm on Wednesday, September 9, 2026.