



**Request for Proposals  
Hands Mill Dam Removal Study and Preliminary Engineering Design**

**Project Title:** Hands Mill Dam Removal in Washington - Phase 1 Preliminary Design

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\*Winooski NRC is acting as project manager on behalf of the dam owner, the Town of Washington, VT

**Project Schedule:**

May 29, 2020		RFP released
June 12, 2020		Deadline for Questions
June 19, 2020		Question Responses shared publicly on our website: <a href="http://winooskinrcd.org/handsmilldam">winooskinrcd.org/handsmilldam</a>
<b>June 30, 2020</b>	<b>11:59 pm</b>	<b>Receive proposals from Engineering Consultant -DUE DATE</b>
July 17, 2020		Consultant Notification
July 17-31, 2020 (approximate date)		Stakeholder Launch Meeting
July - October 2020		Design Work
November 2020 (approximate date)		Stakeholder Closing Meeting

**Project Background**

Hands Mill Dam, located in and owned by the Town of Washington, impounds a segment of the Jail Branch, a tributary to the Winooski River. Constructed to impound more than 500,000 cubic feet, it is subject to regulation under 10 V.S.A. §1082 and falls under the jurisdiction of the Vermont Dam Safety Program. State ID number is 225.01. Its initial build date is unknown, but there was a mill on site as early as 1866 that may have used an early timber dam for mechanical power. Shortly after the November 1927 flood, the dam was reconstructed with concrete and the mechanical power feature was lost.

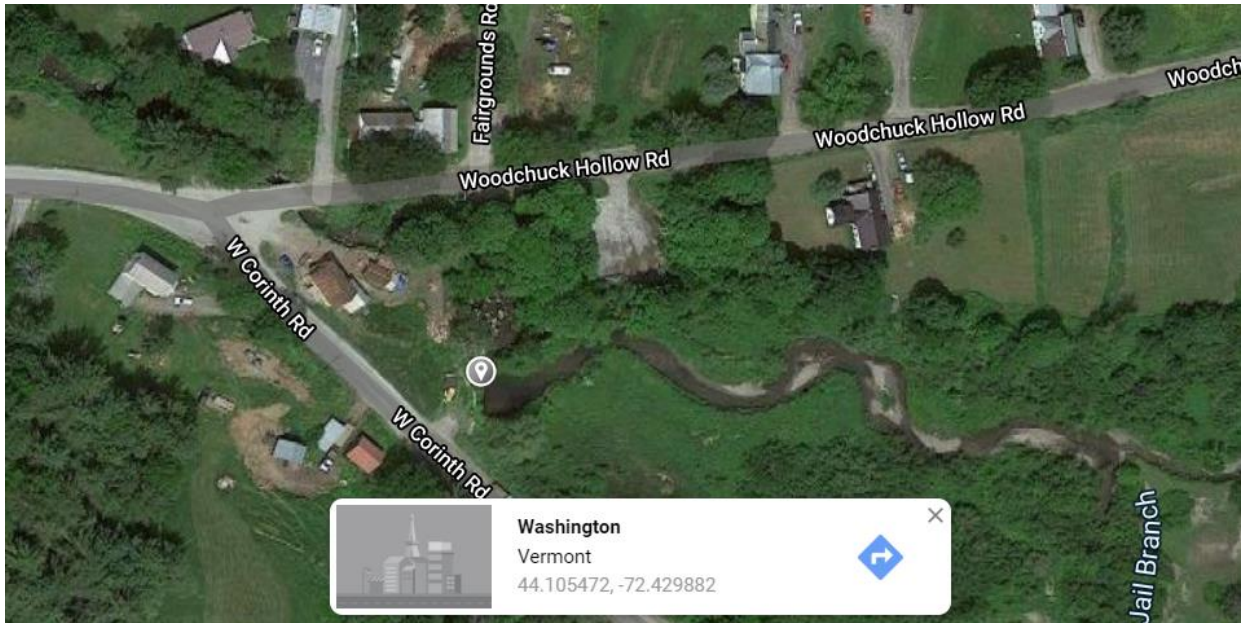
Hands Mill is classified as a Significant Hazard potential dam and recent Dam Safety reports indicate that a sudden failure could cause “probable loss of life and property damage.” This potential loss of life may trigger a reclassification to “High Hazard” under Vermont’s new Dam Safety regulations which are scheduled to launch in 2020 and 2022. Compounding the hazard classification risks is the dam’s current condition. The overall condition of the dam is poor, partially breached and continues to deteriorate and progressively breach. The earth embankment section of the dam is primarily left of the spillway tying into the left abutment at the gravel parking lot. The right end of the dam consists of a concrete wall with significant scour and cracking in the exposed section of the spillway and dam. The downstream wall consists of concrete with large round stones with deteriorating concrete and several areas of the wall with significant loss of dry-laid stones. Several large stones and pieces of concrete have fallen off the wall to the right of the spillway which appears to be impacted by overtopping events. The dam crest is in poor condition with overtopping in multiple locations and a partial breach near the mid-section. The principal concrete spillway is cracked and scoured, partially breached and water is flowing through (within) the dam. The low level sluiceway is about 12’ long through the dam and appears inoperable. Since at least 1984, respective dam owners have received consistent inspection reports emphasizing that the dam is in poor condition and continues to deteriorate. Reports recommend the owner take actions to either reconstruct or remove the dam and restore the upstream channel.

Drainage area for the dam is approximately 6.6 square miles, 84% forested, 8% agricultural, 4% developed, 2% shrubs and grasses, and 2% wetlands. A large volume of sediment is impounded behind the dam and the brook now winds through well vegetated scrub/shrub wetland for roughly 2.2 acres upstream.

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Location Map:



Site Photos: October 2019



Winooski NRCDC is working in partnership with the Town of Washington, the United States Fish and Wildlife Service, the Vermont Department of Fish and Wildlife, and the Vermont Department of Environmental Conservation to launch Phase 1 - Preliminary design (30%) to remove Hands Mill Dam and restore the upstream channel for hazard mitigation, aquatic organism passage, stream equilibrium, and water quality. The full project scope will later include 100% design for dam removal, stream bed and bank remediation, floodplain and wetland restoration, and historical documentation.

In Phase 1, Winooski NRCDC is requesting that consulting engineers who are experienced in dam removal design and licensed to practice in Vermont submit proposals for a comprehensive geomorphological assessment, preliminary (30 percent) design and sediment management plan for removal of Hands Mill Dam in Washington, VT (see full scope of work below). Of concern is the large volume of impounded sediment and its possible release into receiving waters. Determining the character, quality and volume of this sediment and developing a design and removal plan that will minimize downstream impacts of this material is a critical aspect of this project.

## **2. Scope of Services Requested**

Tasks outlined below summarize expected scope of work for consultants. Proposals may expand on this based on prior firm experience where appropriate. Tasks are designed to deliver products that meet both the requirements of the project's existing funding (an Ecosystem Restoration Program grant from the Department of Environmental Conservation - ERP) as well as prepare products for a successful Phase 2 - Final design application. Winooski NRCDC expects to apply for a Vermont Clean Water Revolving Loan Fund (CWSRF) financing for Phase 2- Final Design. As such, the scope of engineering work proposed below captures ERP and CWSRF requirements as well as some assistance to Winooski NRCDC to prepare assessments required for FEMA Hazard Mitigation Assistance funding for the implementation phase.

- 1) Participate in a project initiation stakeholder meeting to guide scope and design considerations.
- 2) Field Investigations:
  - a) Review any existing records including inspection reports, engineering designs and drawings for the dam, property plans and monumentation.
  - b) Identify and take note of upstream, downstream, and adjacent infrastructure that could potentially be impacted by the loss of the impoundment (e.g., roads, building, private wells etc.), and any utility infrastructure (e.g., water lines) that could potentially run through the impoundment and therefore would need to be taken care of during construction.
  - c) Identify and take note of trees upstream, downstream and adjacent that may need to be removed and their species type and count.
  - d) Perform the surveying and probing necessary to determine if removing the dam structure will likely improve aquatic organism passage (i.e. presence of natural bedrock barrier).
  - e) Develop a hydraulic model to predict changes in floodplain inundation, channel patterns and stream velocities that could take place following dam removal. Confirm Aquatic Organism Passage flow objectives will be met with removal.
  - f) Perform the necessary survey to develop a longitudinal channel profile and cross sections for the affected upstream and downstream reaches. Ideally the longitudinal profile would extend upstream past the end of the impoundment and downstream 20-30x the bankfull width. Determine the channel's natural bankfull width at the site of the dam. Assess the upstream and downstream reaches and develop a description of the channel and adjacent floodplain/wetland areas and a prediction of the future channel profile and pattern following dam removal.
  - g) Document the extent and approximate dimensions of the wedge of deposited sediment upstream of the dam. Include an estimate of sediment volume and the amount of sediment that may mobilize during dam removal and during an uncontrolled failure. Identify a sediment management alternative for the dam removal.
  - h) Collect 4-6 sediment grab samples and analyze for grain size and phosphorus concentration. Based on the results, provide an opinion on the need for additional sediment testing in the next Phase II Final Design. Review the past and present land use upstream of the dam to evaluate the need for other sediment sampling for laboratory analysis for potential contaminants in the impounded sediments such as metals, PAHs and organic contaminants as

per the VT DEC 2016 Recommended Guidelines for Evaluating Contaminant Concentrations in Freshwater Sediments and the Potential for those Contaminants to Adversely Affect Aquatic Biota (Attachment F).

- 3) Prepare a memorandum summarizing results and conclusions from field investigations and modeling. Memorandum should also include:
  - a) A concept design for discussion and clear area of impact to inform historical assessment.
  - b) A feasibility and alternatives to removal analysis that includes life cycle costs for all alternatives (for more guidance see: Attachment B and <https://dec.vermont.gov/water-investment/water-financing/srf/srfstep1/PER>)
- 4) Participate in a stakeholder check-in meeting to review the memorandum content, get approval for topographic and boundary/geotechnical report and wetlands delineation and prepare for 30% design.
  - a) Perform topographic and boundary survey, geomorphic/fluvial investigation, and draft geotechnical report defining “area of impact”, existing conditions, and restoration considerations if determined to be applicable.
  - b) Complete a wetlands delineation to satisfy requirements for the CWSRF EID (See template in Attachment E for reference).
- 5) Prepare a 30% design for the dam removal, stream bed and bank remediation, and floodplain and wetland restoration. The design should include items such as project footprint, extent of dam removal, channel restoration and cross-sections, estimate of sediment removal volume, location of likely stabilization measures, sediment management plan, and a recommendation on construction access.
- 6) Draft a final report to include all relevant components as outlined for “30% Design” starting on page 3 of the ERP Design Terminology and Guidance Document (<https://dec.vermont.gov/sites/dec/files/documents/ERPDesignTerminologyandGuidance.pdf>) as well as the following:
  - a) 30% Design plans must satisfy any engineering standards set out in the CWSRF Preliminary Engineering Report Template (Attachment B).
  - b) A completed Preliminary Engineering Report (Attachment B).
    - i) Please have engineer’s opinion of probable project cost based on the 30% concept plans and itemized into Phase 2 100% final design, and Phase 3 dam removal implementation.
    - ii) Please make sure permitting section includes a brief narrative on federal, state and local permits and approvals that will be necessary to complete the dam removal. Winooski NRCD staff will help with this discovery.
  - c) A Benefit Cost Analysis of the selected alternative performed with FEMA tools (see <https://www.fema.gov/media-library/assets/documents/179903>). Note that Vermont Dam Safety Division may be available to help run a dam breach model to determine possibly impacted properties in the event of a full pool dam failure and thereby determine a portion of costs associated with the “do nothing” alternative.
  - d) A summary of any environmental impacts of the project and mitigation measures included in the design to address these (see Attachment E).
  - e) A photographic simulation depicting the stream before and after the dam removed at a typical streamflow.
  - f) Draft Operations and Maintenance considerations for the restored site. See FEMA maintenance agreement (<https://vem.vermont.gov/funding/mitigation/infrastructure>) and VTDEC O&M Considerations for Dam Removals (Attachment A) as a reference.
  - g) A summary of stakeholder meeting feedback on designs and assessment reports and how feedback was integrated into the design.
  - h) A summary of prior project deliverables.
  - i) A narrative summary and numeric estimate of the potential environmental and water quality benefits should the proposed design plan be implemented (for example, lbs of sediment or nutrients removed, linear feet of streambank restored, miles of stream habitat reconnected etc.)
- 7) Present final report and participate in close-out stakeholder meeting.

Opportunity should be taken, where possible, to align deliverables to meet a multitude of objectives and avoid redundant product development. For example, if both ERP and the CWSRF require an assessment of alternatives, do one assessment and include all necessary analysis components to satisfy both funding requirements.

### 3. Proposal Submission Guidelines

Proposals must include

- The name and contact information of the design consultant who will perform the work, and their firm (if applicable). A list of staff who will be part of the project team, brief description of their qualifications, and their hourly rates. Resumes may be attached as a supplement.
- The fee requested by the consultant with a cost breakdown by task and split across labor, supplies, and other categories as appropriate. Clearly identify subcontracted roles and costs. All costs associated with developing or submitting documents in response to this solicitation and/or in providing oral or written clarification of its content shall be borne by the Bidder.
- A description of the consultant's relevant experience demonstrating familiarity and experience with similar dam removal design projects. Photos or diagrams of the consultant's work may be added as a supplement to this section.
- A list of at least two references familiar with the consultant's work, including the name, email, and telephone number of each reference.
- A proposed timeline with identified milestones for completing the scope of services requested - please use the project schedule and task list for guidance.
- A description of the approach to be taken in addressing the scope of services detailed above. Specific tasks need to be thoroughly described and any proposed additions or changes from this request clearly highlighted.
- A description of any tasks that will be subcontracted, including the names and qualifications of possible subcontractors.

Please submit all questions to contact listed above with the subject line "Hands Mill – RFP QUESTION" by the deadline indicated.

Please email proposal submissions in PDF or Word format to contact listed above. Paper copies will not be considered. Proposals will be accepted up until the due date as listed above. Proposals should note all confidential or proprietary items in their responses and why. Please use the subject line: "Hands Mill – RFP Submission – Firm Name". Brevity is appreciated.

#### 4. Selection Process

Proposals will be evaluated by a selection committee made up of staff and/or elected officials from the Winooski NRCD, USFW, VTFW, and the VTDEC using a standardized scoring matrix. Each proposal will be evaluated on the ability of the consultant to complete the scope of work within a reasonable budget and tight timeframe. Other factors listed below may increase the likelihood of a successful proposal:

- Proven record of successful completion of similar projects.
- Experience with projects funded by the Vermont Clean Water Revolving Loan Fund and/or FEMA Hazard Mitigation and their application requirements.
- Quality and succinctness of materials submitted.
- Qualifications of the consultant.
- Other factors the selection committee deems relevant in advance of reviewing the proposals.

The preferred consultant must have prior river restoration experience and have successfully designed and implemented dam removal projects. Experience with Vermont regulatory and design requirements is preferred, although not required. Winooski NRCD reserves the right to amend, modify or withdraw this RFP, require supplemental information from candidates, reject any or all proposals received, and negotiate separately with competing candidates.

#### Project Budget

Bids exceeding \$39,000 will not be considered. All payments will be made after satisfactory completion of each deliverable as outlined in an agreement between the Winooski NRCD and the selected entity. Note that contract payments are contingent upon review, approval and acceptance of contract deliverables by Winooski NRCD staff.

**Type of Contract:** Winooski NRCD anticipates that, if a contract is entered into as a result of this RFP, it will be a fixed price contract for the tasks identified in the Scope of Services. Selected entities for Phase 1 might be awarded an agreement to provide services during Phase 2 final design and Phase 3 construction but this is not a guarantee. Future phases may be subject to blind bid requirements.

**Site Visits:** Please alert Winooski NRCD at least one day in advance if you plan to perform a site visit. Respect private property. The dam can be viewed from a public road.

**Background Information:** The DEC dam safety reports are available as Attachment G at our project site page: [winooskinrcd.org/handsmilldam](http://winooskinrcd.org/handsmilldam) . For more information on the programs with which we hope to align these deliverables with please see: <https://vem.vermont.gov/funding/mitigation/infrastructure> and <https://dec.vermont.gov/water-investment/water-financing/srf/srfstep1> . Familiarity with these funding programs will increase the likelihood of a successful proposal.

### **Contractor Provisions**

All contractors must comply with any and all applicable laws, statutes, ordinances, rules, regulations, and/or requirements of federal, state, and local governments and agencies thereof which relate to, or in any manner affect the performance of this agreement. Those requirements imposed upon the Winooski NRCD, as recipients of funds are thereby passed along to the contractor. All contractors must comply with all pertinent federal, state, and local laws and must carry adequate insurance coverage. Selected firm will be expected to meet state minimum standards for worker's comp insurance and liability coverage and to comply with all Standard State Contracting Provisions (Attachments C and D). Firms will need to provide Winooski NRCD with a Certificate of Insurance and a W-9 prior to contract execution.

### **Project Partners and WNRCD**

Project partners include representatives from the Town of Washington Select Board, the VTDEC Dam Safety and Watershed Management Programs, VTFW, USFW, The Nature Conservancy, VNRC, and Trout Unlimited. To learn more about Winooski NRCD please visit our website ([winooskinrcd.org](http://winooskinrcd.org)). Winooski NRCD will provide Engineering Consultant with a full contact list of all stakeholders after contracting.

### **Solicitation**

This RFP was posted in the following places:

- The Winooski NRCD Project Site Page: [winooskinrcd.org/handsmilldam](http://winooskinrcd.org/handsmilldam)
- Vermont Business Registry ([Vermontbusinessregistry.com](http://Vermontbusinessregistry.com))
- Direct emailed to firms offering Engineering Services and listed in the 2020 M/WBE Directory held by the State of Vermont and available here: <https://bgs.vermont.gov/facilities/forms/minority-women>

Winooski NRCD is an equal opportunity employer. Review of proposals shall not discriminate on the basis of race, religion, national origin, color or sex. Thank you for your interest!

### **Attachments**

This RFP and the following Attachments are made available at our Project Site Page: [winooskinrcd.org/handsmilldam](http://winooskinrcd.org/handsmilldam)

- A. VT DEC O&M Considerations for Dam Removal Projects
- B. Clean Water Revolving Loan Fund Preliminary Engineering Report Template
- C. State Standard Provisions Attachment C
- D. State Standard Provisions Attachment D
- E. Drinking Water Revolving Loan Fund Environmental Review Template (Clean Water version pending)
- F. VT DEC 2016 Recommended Guidelines for Evaluating Contaminant Concentrations in Freshwater Sediments and the Potential for those Contaminants to Adversely Affect Aquatic Biota
- G. Hands Mill Dam Safety Reports and Historical Documents