



OTTER CREEK
ENGINEERING

July 20, 2023

Ms. Barbara Noyes-Pulling
Rutland Regional Planning Commission
PO Box 430
Rutland, VT 05702

And

Ms. Hilary Solomon
Poultney Mettawee Natural Resources Conservation District
PO Box 209
Poultney, VT 05764

Subject: Merck Forest & Farmland Center – Mettawee Community School Wetland Restoration
South Lake Clean Water Service Provider Request for Proposals Application

Via Email

Dear Barbara and Hilary:

On behalf of Merck Forest & Farmland Center, we are submitting this proposal for funding under the Clean Water Initiative Program. Merck Forest is applying for funding for preliminary design for a wetland restoration project in Pawlet, VT.

Cover Page Information

Project Name: Mettawee Community School Wetland Restoration
Project ID Number: TBD
Project Location: 5788 Vt Rte 153, West Pawlet, VT 05775
Project Type: Preliminary Design (30%)
Project Sector: Streams
Project Stage: Conceptual Plan
Funds Being Requested: \$6,000

Project Description

Merck Forest owns a 150 acre property consisting of fields, forests, and extensive wetlands that is adjacent to the Mettawee Community School (MCS) in Pawlet, VT. Merck Forest and MCS partner to provide an outdoor classroom setting and programs that are an important part of the school's science curriculum, along with providing outdoor recreational opportunities.

Otter Creek Engineering's Natural Resources Ecologist and Environmental Scientist conducted field evaluation during the summer of 2023 that assessed the value of a restoration project at this site. A wetland delineation was also completed for the project area and confirmed by District Wetland Ecologist Zapata Courage. The primary goals of this project are to provide water quality improvements by retaining water and associated sediment on the landscape, where phosphorus can be taken up by wetland plants rather than flowing

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downstream into the Mettawee River. The reshaping of a man-made pond surrounded by wetland, creation of depressions (macrotopography) and microtopography is proposed. This earthwork will maximize wetland hydrology and hold water on the landscape longer before flows reach a channelized ditch which flows through agricultural lands off the subject property before entering the Mettawee River. Native shrub, tree, and herbaceous plantings are proposed involving students in planting efforts. The property is home to a variety of wildlife that will benefit from the increased biodiversity of plant life and improved vertical structure resulting from the native plantings. A boardwalk-style viewing platform for students and the public will be applied for in a separate educational grant.

Scope of Preliminary Design

1. Field Services – Field mapping of existing soils, hydrology and plants has already been completed by Otter Creek Engineering, Inc. on Merck Forest’s behalf which will inform the preliminary design process. Additional field visits are necessary to map project limits, estimate phosphorus reduction, and review potential project elements with stakeholders including Mettawee Community School. Initial review with State and Federal regulators will be necessary to complete the natural resources review required for funding eligibility.
2. Conceptual Plan – A conceptual site plan will be developed to share with the landowner, regulators, and other stakeholders as needed to solicit project buy-in and ensure agreement on the major components prior to completing final design.

Project Budget

Otter Creek Engineering, Inc. recommends the following budgets for the Preliminary Design process:

Phase	Budget
1. Field Services	\$ 3,000
2. Conceptual Plan	\$ 2,000
3. Grand Administration	\$ 1,000
Total	\$6,000

Project Timeline

The field services will be completed in September and October 2023. The conceptual plan will be developed in November and December 2023 for discussion with stakeholders and regulators. Merck Forest intends to apply for final design and implementation of the project in future grant rounds.

Relevant Experience

Both Merck Forest & Farmland Center as the Grantee and Otter Creek Engineering, Inc. as the Subgrantee have experience with project management for natural resources projects. Rob Terry and Christine Ferris-Hubbard have managed projects and associated budgets related to natural resources education and land management. OCE’s Environmental Scientist, Andy Sample, WPIT, has experience with wetland restoration work and OCE’s Managing Engineer, Craig Jewett, P.E. has extensive project management experience. See attached for resumes for all four of these individuals, providing further detail on their relevant experience.

Attachments

We have attached the following documents to the Intake Form to facilitate your review:

1. Project Location Map,
2. 2023 VT Clean Water Initiative Program Funding Policy, Appendix A: Project Eligibility Screening Form,
3. Watershed Projects Database entry, and
4. Resumes for relevant individuals.

Please reach out if you have any questions.

Sincerely,



Mary Beth Poli, PWS
Natural Resources Ecologist

c: Chris Ferris-Hubbard – Merck Forest & Farmland Center

Enclosures/4/
P2023 Merck Forest



LEGEND

- Stressed Waters List (Streams)
- Stressed Waters List (Lakes at Wetland - VSWI)
- Class 1 Wetland
- Class 2 Wetland
- Wetland Buffer
- Wetlands Advisory Layer
- Parcels (standardized)
- Waterbody

Stream

- Stream
- Intermittent Stream

Roads

- Interstate
- US Highway; 1
- State Highway
- Town Highway (Class 1)
- Town Highway (Class 2,3)
- Town Highway (Class 4)
- State Forest Trail
- National Forest Trail
- Legal Trail
- Private Road/Driveway
- Proposed Roads

- Town Boundary

1: 4,559
July 20, 2023

232.0 0 116.00 232.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 380 Ft. 1cm = 46 Meters

© Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

NOTES

Map created using ANR's Natural Resources Atlas

APPENDIX A. CLEAN WATER INITIATIVE PROGRAM - PROJECT ELIGIBILITY SCREENING FORM

This fillable PDF form is designed to assist with project review by systematically walking through all eligibility criteria. It should be completed for all projects seeking funding for 30% + design or implementation work. It may be applied to projects seeking funding for assessment or development if helpful for determining their alignment with eligibility criteria 2, 3, 6, and 8.

Step 1: Conduct Eligibility Criteria #1 Screening: Project Purpose

Table 1A: Project Purpose	
From the drop-down list to the right, please select which of the four objectives of Vermont's Surface Water Management Strategy this project addresses. If multiple, please list below:	

a final design will have a different WPD-ID from a preliminary design even if for the same project). If the project, or the specific phase, is not yet in the Watershed Project Database, follow directions provided in the CWIP Funding Policy to secure a WPD-ID. Please see [CWIP Funding Policy](#) for more information on the WPD-ID.

Table 3A. WPD-ID	
Watershed Project Database ID number assigned	
Watershed Project Database Project Name	

Step 4: Conduct Eligibility Criteria #4 Screening: Natural Resource Impacts³

Agency of Natural Resources (ANR) permit screening for natural resource impacts includes 1) an initial desktop review to identify which ANR permitting programs should be contacted, 2) a review by the relevant ANR permitting staff, and 3) a response summary from the project proponent addressing any permitting staff concerns. ⁴

- 1) **Table 4. Natural Resource Impacts** facilitates a high-level desktop review of the most likely ANR permits to apply to clean water projects. Project proponents should answer all the questions to identify likely permit needs. ⁵ Please note that “project site” may include both the active restoration location as well as any additional impact footprint related to staging, site access, or storage of waste or disposed materials.
- 2) If responses to the **Table 4. Natural Resource Impacts** desktop review trigger a permitting staff consultation, **Table 4** provides appropriate contact information.
 - a. Proponents should send the identified permitting staff the following:
 - i. The watersheds project database identification number (WPD-ID) (if available),
 - ii. Project location (GPS coordinates)
 - iii. Summary of proposed scope of work, and
 - iv. Any other relevant information they request that will be utilized in their review.
 - b. **Proponents should clarify they are seeking permitting staff input on potential permitting needs, permit-ability of proposed scope of work, and other design considerations but they are NOT seeking a formal permit determination.**
 - c. Project proponents must attempt to communicate with the permitting staff and provide them with at least thirty days to review the project and provide a

³ Easements and Riparian Buffer Plantings are excluded from this eligibility requirement/step.

⁴ In cases where this screening may have already occurred in a prior project phase, project proponents may supply attachments or links to relevant permit needs assessment documents in place of completing Table 4.

⁵ Entities selected for funding are expected to perform due diligence to ensure all applicable permits (including non-ANR state, local, and federal permits) are discovered and secured prior to implementation. The [ANR Permit Navigator](#) and an Environmental Compliance Division Community Assistance Specialist can help confirm ANR permitting needs for any projects once selected for funding.

response. Project proponents are encouraged to perform this screening during a project development phase as opposed to during a project solicitation round to allow for more time for feedback. Permitting feedback may be up to one year old.

- 3) Proponents should summarize permitting staff feedback and how the proposed scope of work will address this at the bottom of **Table 4**. Specifically, please include:
 - a. Which permits or permit amendment are needed or might be needed?⁶
 - b. What type might be needed? (e.g., a general or individual permit⁷)?
 - c. What concerns were voiced by permitting staff?
 - d. How will the proposed scope of work address these concerns?⁸

Table 4A: Natural Resource Impacts		
I. Act 250 Permits		
1. Have any Act 250 (Vermont’s Land Use and Development Control Law) Permits been issued in the project site’s parcel location?⁹	Yes	No
If yes , please provide the permit number and list any water resource issues or natural resource issues found ¹⁰ :		
PermitNumber: _____		
ResourceIssues: _____		
If yes , use the Water Quality Project Screening Tool to identify the appropriate regulatory contact for an Act 250 consultation.		
Regulatory Point of Contact Name/Position: _____		
II. Lake and Shoreland		
1. Is the project site located within 250 feet of the mean water	Yes	No

⁶ Occasionally permit staff may indicate they need a field visit or to see more completed designs prior to making a permit need determination.

⁷ Design phase projects that require an individual wetlands permit must have the permit in hand at the close of the final design phase. Implementation phase projects must have the individual permit in hand to be eligible for funding.

⁸ Examples could include planned design changes or inviting permitting staff to stakeholder meetings.

⁹ An Act 250 Permit is required for certain categories of development, such as subdivisions of 10 lots or more, commercial projects on more than one acre or ten acres (depending on whether the town has permanent zoning and subdivision regulations), and any development above the elevation of 2,500 feet. The [ANR Atlas Clean Water Initiative Program Grant Screening tool](#) can help answer this yes/no question. Follow the instructions on the link above to identify whether your project is located on an Act 250 parcel. Note that the layer to activate in ANR Atlas is now named “Clean Water Initiative Program Grant Screening.”

¹⁰Note that Act 250 permit amendments may require more extensive review of project impacts to natural resources including wildlife habitat, significant natural communities, and riparian zones. Please consult with the Act 250 District Coordinator regarding the nature and scope of that review and what bearing it may have on your project design.

level (shoreline) of a lake or pond? ¹¹			
<p>If yes, you might need either a Shoreland Protection Act Permit or a Lake Encroachment Permit. Use the Water Quality Project Screening Tool to find the Lakes and Ponds Program contact for your project's region.</p> <p>Regulatory Point of Contact Name/Position:</p>			
III. Rivers, River Corridors, and Flood Hazard Areas			
<p>1. Is there any portion of the project site located within 100' of a river corridor and/or mapped Federal Emergency Management Agency (FEMA) flood hazard area¹²? (e.g. a stormwater pond's pipe draining into a river corridor area)? Any permanent excavation/filling or construction within a flood hazard area or river corridor may trigger regulatory requirements through municipal bylaws or through state authorities.</p>		Yes	No
<p>If yes, you will need to speak with a Floodplain Manager. Use the Water Quality Project Screening Tool to find the Floodplain Manager for your project's region.</p> <p>Regulatory Point of Contact Name/Position:</p>			
<p>2. Is any portion of the project site within a perennial river or stream channel?</p> <p>¹³</p>		Yes	No
<p>If yes, you will need to speak with a Stream Alteration Engineer. Use the Water Quality Project Screening Tool to find the Stream Alteration Engineer for your project's region.</p> <p>Regulatory Point of Contact Name/Position:</p>			
IV. Wetland			

¹¹ The [ANR Atlas Clean Water Initiative Program Grant Screening tool](#) can help answer this yes/no question. Follow the instructions on the link above to identify whether your project is located in the jurisdictional zone to trigger a Lakeshore permit. Note that the layer to activate in ANR Atlas is now named "Clean Water Initiative Program Grant Screening."

¹² FEMA mapped Flood Hazard Areas are not available statewide on the ANR Natural Resources Atlas. For projects located in Grand Isle, Franklin, Lamoille, Addison, Essex, Orleans, Caledonia, and Orange Counties, maps are available via the FEMA Flood Map Service Center: <https://msc.fema.gov/portal/home>. ANR Floodplain Managers are available to provide technical assistance if needed.

¹³ Stream Alteration Permits regulate all activities that take place within perennial river and stream channels. Examples of regulated activities include streambank stabilization, dam removal, road improvements that encroach on streams, and bridge/culvert construction or repair. The [ANR Atlas Clean Water Initiative Program Grant Screening tool](#) can help answer this yes/no question. Follow the instructions on the link above to identify whether your project is located in the jurisdictional zone to trigger a Stream Alteration permit. Note that the layer to activate in ANR Atlas is now named "Clean Water Initiative Program Grant Screening."

<p>1. Does the Wetland Screening Tool¹⁴ provide a result of wetlands likely, very likely, or present at the project site?</p>	<p style="text-align: center;">Yes No</p>
<p>2. Does your project site involve land that is in or near an area that has <u>any</u> of the following characteristics:</p> <ul style="list-style-type: none"> o Water is present – ponds, streams, springs, seeps, water filled depressions, soggy ground under foot, trees with shallow roots or water marks? o Wetland plants, such as cattails, ferns, sphagnum moss, willows, red maple, trees with roots growing along the ground surface, swollen trunk bases, or flat root bases when tipped over? o Wetland Soils – soil is dark over gray, gray/blue/green? Is there presence of rusty/red/dark streaks? Soil smells like rotten eggs, feels greasy, mushy or wet? Water fills holes within a few minutes of digging? (See Landowners Guide to Wetlands for additional information on identifying wetlands onsite.) 	<p style="text-align: center;">Yes</p> <p style="text-align: center;">No</p> <p style="text-align: center;">Not Sure</p>
<p>If you answered yes or not sure to <u>either</u> of the above questions, you will need to contact your District Wetlands Ecologist using the Wetland Inquiry Form. The District Wetlands Ecologist can help determine the approximate locations of wetlands and whether you need to hire a Wetland Consultant to conduct a wetland delineation. Alternatively, if you answered yes or not sure to <u>either</u> of the above questions, you can simply budget for a Wetland Consultant in the proposed scope of work. Any activity within a Class I or II wetland or wetland buffer zone (minimum of 100 feet and 50 feet respectively) which is not exempt or considered an “allowed use” under the Vermont Wetland Rules requires a permit. All permits must go through review and public notice process, which takes at minimum 6 weeks for a General Permit and 5 months for an Individual Permit.</p> <p>Regulatory Point of Contact Name/Position:</p>	
<p>1. Is your project a Wetland Restoration project type?</p>	<p style="text-align: center;">Yes No</p>
<p>If you answered yes, under the Vermont Wetland Rules you will need an “allowed use” determination from the DEC Wetlands Program. Contact your District Wetlands Ecologist using the Wetland Inquiry Form.</p> <p>Regulatory Point of Contact Name/Position:</p>	
<p>V. Fish and Wildlife</p>	
<p>State law protects endangered and threatened species. No person may take or possess such species without a Threatened & Endangered Species Takings permit.</p> <p>1. Does your project involve cutting down trees larger than 5 inches in diameter in any of the following towns? Addison, Arlington, Benson, Brandon, Bridport, Bristol, Charlotte, Cornwall, Danby, Dorset, Fair Haven, Ferrisburgh, Hinesburg, Manchester, Middlebury, Monkton, New Haven, Orwell, Panton, Pawlet, Pittsford, Rupert, Salisbury, Sandgate, Shoreham, Starksboro, St. George, Sudbury, Sunderland, Vergennes, Waltham, West Haven, Weybridge, Whiting</p>	<p style="text-align: center;">Yes No</p>

¹⁴ To view the Wetland Screening Tool introduction video, see <https://youtu.be/6lv5en0AB1o>

2. Is the project site within 1 mile of a mapped¹⁵ Significant Natural Community or Rare, Threatened, or Endangered Species?	Yes	No
<p>If yes to either of the above questions, connect with the VT Fish and Wildlife department (everett.marshall@vermont.gov 802-371-7333) to discuss your project and any necessary permitting.</p> <p>Regulatory Point of Contact Name/Position:</p>		
VI. Stormwater		
1. Will the project disturb more than an acre of land during construction, add or redevelop impervious surface, create new development or otherwise require a Stormwater permit?	Yes	No
<p>If yes, forward to the appropriate Stormwater specialist to ensure necessary permitting. Use the Water Quality Project Screening Tool to find the Stormwater specialist for your project's region.</p> <p>Regulatory Point of Contact Name/Position:</p>		
VII. Solid Waste		
2. Will you be creating any debris (including construction and demolition waste, stumps, brush, untreated wood, concrete, masonry, and mortar) with your project that you intend to bury on site? ¹⁶	Yes	No
<p>If yes, connect with the Waste Management & Prevention Division (dennis.fekert@vermont.gov 802-522-0195) to discuss your project and any necessary permitting.</p> <p>Regulatory Point of Contact Name/Position:</p>		
<p>Provide below or attach a narrative summary of Table 4 findings. Please include:</p> <ol style="list-style-type: none"> Which permits or permit amendment are needed or might be needed? What type might be needed? (e.g. a general or individual permit)? What concerns were voiced by permitting staff? How will the proposed scope of work address these concerns? 		
Is the project, as proposed, reasonably considered permit-able by all applicable	Yes	No

¹⁵ Find both of these layers on the ANR Atlas under Atlas Layers/Fish and Wildlife. Use the Measurement tool to 1) Plot Coordinates for your project 2) select the coordinates from the left panel 3) select the Radius Tool 4) click on your project location 5) Indicate 1 mile distance 6) look for overlap with either of these mapped layers.

¹⁶ If your project will result in the transfer and disposal of debris (including construction and demolition waste, stumps, brush, untreated wood, concrete, masonry and mortar), you do not need a permit from this office as long as you hire a [licensed solid waste hauler](#) and bring the material to a certified facility.

ANR permitting programs? (Answer must be Yes to continue)	
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Step 5: Conduct Eligibility Criteria #5-8 Screenings

Table 5A. Eligibility Criteria 5-8		
Landowner and Operation and Maintenance Responsible Party Support. Project identifies and demonstrates commitment from a qualified and willing operation and maintenance responsible party. Project demonstrates landowner support for the proposed project phase. (Answer must be YES to proceed)	Yes	No
Budget. Project budget includes ineligible expenses. (Answer must be NO to proceed)	Yes	No
Leveraging. Proposed leveraging meets required leveraging levels (if applicable), meets the definition of leveraging, and comes from eligible sources (Answer must be YES or N/A to proceed)	Yes	No N/A
Funding Program Specific Eligibility. Project meets additional funding program eligibility requirements*. Please list applicable funding program below: (Answer must be YES to proceed) *If Water Quality Restoration Formula Grant, complete Step 6 below	Yes	No

Step 6: Screening Projects on Agricultural Lands (Water Quality Restoration Formula Grants Only)

For Water Quality Restoration Formula Grant projects, please complete the following information as part of your Funding Program Specific Eligibility Screening (Criteria 8). Please note this must be completed for all projects located on agricultural lands regardless of project type. See [CWIP Project Types Table](#) for eligible project types.

Table 6A. Screening Projects on Agricultural Lands	
1. Is the proposed project located on a jurisdictional farm operation ¹⁷ ? Complete a preliminary review to	Yes - Proceed to next question below.

¹⁷ Jurisdictional farm operations are required to meet Vermont’s Required Agricultural Practices (RAPs).

<p>determine if it is a jurisdictional farm operation, and any case that requires consultation with AAFM will occur via the farm determination process. Please note this form must be submitted by the farm operation/landowner seeking the determination.</p>	<p>No¹⁸ - There is no additional requirements related to agricultural review for these projects.</p>
<p>2. Is the proposed project an agricultural project?</p> <p>Examples of agricultural projects include but are not limited to Production Area Practices – (e.g. Waste Storage Facilities, Heavy Use Area, Diversion) Fence, Livestock Exclusion, Filter Strip, Cover Crop, Reduced Tillage, Manure Injection, Rotational Grazing. Please note this is not an exhaustive list of all agricultural practices.</p>	<p>Yes - Agricultural Projects on jurisdictional farms are not an eligible project type. You can provide a referral to an applicable state or federal agricultural assistance program, or a local organization.</p> <p>No- The natural resource, innovative, or other project type will require an agricultural project review and approval from the Vermont Agency of Agriculture, Food and Markets (VAAFAM) to ensure a consistent approach on farms statewide that follows rules, regulations, and laws in place. Please follow Steps 1 & 2 below.</p> <p>Step 1- Please submit a detailed description of the project, project site, project details, landowner, farm operation, and any other relevant information to VAAFAM at AGR.WaterQuality@Vermont.gov .</p> <p>Step 2- Once you complete this Agricultural Project Review, please allow 30 days for a response. Once that response has been received, please include a summary of the response in the next section.</p>
<p>Agricultural Project Review Status & Summary:</p>	
<p>Check as Applicable</p>	<p>Status</p>
	<p>Submitted/ Pending</p>
	<p>Approved</p>
	<p>Denied</p>

¹⁸ Note CWIP’s Agricultural Pollution Prevention project type eligibility is limited to land where owner or operator is not a jurisdictional farm (i.e., not required to meet the Required Agricultural Practices (RAPs)). As such, projects that meet the definition of the Agricultural Pollution Prevention project type in the [Appendix B. Project Types Table](#) are not subject to review by VAAFAM.

Please include a summary of the response here:

Please note that it is expected that all projects with the status “submitted/pending” will be “approved” prior to a project approval for funding.

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Clean Water Project - New Project Form

version 1.10

(Submission #: HPW-97S9-MNFVS, version 1)

Details

Submitted 7/20/2023 (0 days ago) by Mary Beth Poli

Submission ID HPW-97S9-MNFVS

Status Submitted

Form Input

New Project (1 of 1)

Mettawee Community School Wetland Restoration

Is this project already in the Watershed Projects Database?

No

To check if this project is already in the database, visit the Clean Water Project Explorer (see link below).

Select all project status: Potential Projects, Projects in Progress, Completed Projects.

Select the applicable county, basin, or town the project is located in.

Click 'Search.'

Review the project results on the map and in the 'search results' list at the top of the window. Use Ctrl+F to search keywords in the project list if needed. If the project is listed, including the appropriate project phase, do not enter a new project on this form.

If unsure, please contact the Watershed Planner assigned to the basin that the project is located in. You can find the contact information for the appropriate DEC technical staff by region through the Water Quality Screening Tool. (see link below)

[Clean Water Project Explorer](#)

Guidelines

All projects entered in the database through this form must satisfy the screening requirements below. Screening refers to the initial evaluation of a project at every phase (e.g. planning, design, implementation) in the funding process. If you are unsure if a project meets the screening criteria, use the Water Quality Project Screening Tool link provided below. By entering the location of your project into the tool, you will identify the State of Vermont technical staff contacts to reach out to for that area. The Water Quality Project Screening tool also provides basin information and location coordinates for a project location.

[Water Quality Project Screening Tool](#)

Does this project treat or assess a water quality problem as identified in a State-supported assessment or plan?

Yes

Is this project free of any evident critical natural resource conflicts or other critical constraints?

Yes

Instructions

Please enter new project(s) to upload to the Watershed Projects Database. Additional projects can be added at the bottom of this page.

The project name should be searchable and have 100 characters or fewer. Include a descriptor, project type and phase, and town or region in the name. Example: **Blue River Dam Removal** **Final Design** **Greenville** and **Blue River Dam Removal** **Implementation** **Greenville**.

Project Name

Mettawee Community School Wetland Restoration

The project description is a summary of the project that can be understood by a public audience. It should be written in the present tense in complete sentences and describe the following four elements: what the project is, the specific location, what the project entails and accomplishes, and what specific problems it addresses. 4-6 sentences long.

Project Description

Merck Forest & Farmland Center owns a 150 acre property consisting of fields, forests, and extensive wetlands that is adjacent to the Mettawee Community School (MCS). Merck Forest and MCS partner to provide an outdoor classroom setting and programs that are an important part of the school's science curriculum, along with providing outdoor recreational opportunities. The primary goals of the project are to provide water quality improvements by retaining water and associated sediment on the landscape, where phosphorus can be taken up by wetland plants rather than flowing downstream into the Mettawee River. The reshaping of a man-made pond surrounded by wetland, creation of depressions (macrotopography) and microtopography is proposed. This earth work will maximize wetland hydrology and hold water on the landscape longer before flows reach a channelized ditch which flows through agricultural lands before entering the Mettawee River. Native shrub, tree, and herbaceous plantings are proposed involving students in planting efforts. The property is home to a variety of wildlife that will benefit from the increased biodiversity of plant life and improved vertical structure resulting from the native plantings. A boardwalk-style viewing platform for students and the public will be applied for in a separate educational grant.

Please visit the link below to view a list of project types and definitions. If you are unsure of the correct project type to choose for this submission, please contact the Watershed Planner assigned to the region the project is located in for assistance.

[List of Project Types](#)

Project Type

Wetland Restoration - Preliminary Design

Can this location be represented by a single latitude/longitude?

Yes

Location

43.38463,-73.22271

Town(s) where the project is based

Pawlet

To determine the correct sub-basin for the project location, visit the [Water Quality Project Screening Tool](#) and enter the project coordinates (lat/long) and select 'submit.' The sub-basin will be listed in the results page under 'Basin Information.'

[Water Quality Screening Tool](#)

Sub-Basin

VT02-05:Mettawee River Watershed

Potential Funding Sources

Water Quality Grant

Woody Buffer Block Grant

Design and Implementation Block Grant

Click here if there is a potential funding source for this project which is not listed.

NONE PROVIDED

Potential Partners

NONE PROVIDED

Click here if there is a potential partner for this project which is not listed.

NONE PROVIDED

Is this project a child of an existing project?

No

Project Priority as Identified in an Assessment or Report

NONE PROVIDED

Prioritization Source

NONE PROVIDED

Other Notes

NONE PROVIDED

Status History

	User	Processing Status
7/20/2023 12:28:18 PM	Mary Beth Poli	Draft
7/20/2023 3:58:06 PM	Mary Beth Poli	Submitted

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted	Mary Beth Poli	7/20/2023 3:58:06 PM

Christine Ferris-Hubbard

Education Specialist

Address: Blind Buck Road, Salem, NY
Phone: 802-394-7836 (w), 518-810-6100 (c)
Email: christine@merckforest.org

Experience:

Merck Forest and Farmland Center, Rupert, Vermont

Education Specialist, July 2023

- Developing and implementing interpretive signage for increased visitor engagement and education.
- Overseeing projects for on a 144 – acre parcel adjacent to Mettawee Community School to provide access to students and teachers and to increase student engagement in the natural world, and managing to a \$110,000 budget.
- Collaborating with incoming Education Director for team transition.

Education Director, May 2015 – July 2023

- Developed education programming from limited offerings to a robust public offering of programs, focusing on our forest and farm.
- Oversaw education department and programming, including managing an education team
- Created and implemented educational programming based on environmental science and natural resources, including a multi-day field experience for grades 5 and 6 based on the Next Generation Science Standards, with a focus on life and environmental science, as well as nature-based summer day camps.
- Created and managed to a yearly budget of \$40,000
- Managed and maintained records documenting education reach of the organization.
- Collaborated with leadership team to develop policies and procedures for organization.
- Organized and led staff and camp counselor training.

Birken Hill Farm and Fiber; 1989 to present, Salem, NY

Owner/operator of Birken Hill Farm and Fiber and folk artist, Self-taught chair seat weaver

- Demonstrate chair caning techniques and information to a public audience.
- Instruct individual and small group classes in chair caning, including multi-generational classes, at local folk schools and museums.
- Designed and implemented professional development class for NYSATA (New York Teachers Art Association) focusing on traditional arts.
- Manages budget for sole proprietorship.

The Dorset School, Dorset, Vermont

2005 – 2014

Elementary School Teacher, Grade 3

- Prepared and implemented lesson plans for all subject areas.
- Assessed students for understanding through formal and informal observations.
- Maintained student records.

- Collaborated with faculty and staff members.
- Member of Local / Regional Standards Licensing Board
- Co-president of The Dorset Teachers Association

Education/Skills/Certifications:

- Spring, 2005, M.Ed., College of Saint Joseph, Rutland, VT: Reading and Writing Literacy
- Spring, 2003, B.A., Green Mountain College, Poultney, VT: Elementary Education
- Project Learning Tree Facilitator and Instructor
- Project Wild Certified Instructor
- Wilderness First Aid certification
- STAR (Science, Technology, and Assessment Resource) teacher
- Microsoft Office Suite, Google Suite, Jotform

Robert M. Terry

robterry802@gmail.com
802.356.9861

Professional Experience:

March 2017-Present: Merck Forest & Farmland Center

Executive Director

Oversee all institutional functions involved in meeting mission across multiple campuses, including:

- Collaborating with the Board of Trustees to set strategic objectives and ensure the long-term financial viability of the institution
- Building community-based and sector specific partnerships to further institutional objectives
- Providing educational programming relating to regenerative agriculture, sustainable silviculture, and ecology for pre-k through professional certification
- Managing a 60-acre farm featuring pasture raised livestock, perennial horticulture and maple sugaring, a 3,500-acre working forest, a 35-mile trail network including 12 backcountry cabins/lean-tos and all requisite facilities, tools, vehicles, and equipment
- Leading a diverse fundraising effort featuring a legacy gift initiative, major donor program, annual campaign, membership program, and federal, state and foundation grants program
- Assessing and subsequently implementing best practice strategies across all HR and Finance related administrative functions

Highlights:

- Collaborated with Board of Trustees to realign governance structure, refresh mission, craft institutional values, and draft renewed strategic & master plans.
- Led staff through an institutional reorganization to ensure that staffing structure is aligned with the organization's needs and aspirations.
- Led the acquisition of a 144-acre satellite campus adjoining the regional public elementary school in order to reduce barriers between regional youth & families and meaningful outdoor recreation and stewardship experiences.
- Expanded annual revenue from \$600,000 to \$1,100,000, diversified across earned income programming, grants, annual fund, and major contributions
- Enhanced staff morale through increased role clarity, interdepartmental collaboration, group dynamics work, team building, and expanded benefits
- Launched off-property collaborative initiatives including "Connected Taconics" the effort to protect an ecologically high-value 42,000-acre intact forest block in the Southern Taconic mountains as well as "Neighbors in Need" a food and fuel wood assistance programs connecting regional producers with community members in need

2012-2017: Student Conservation Association

Vice President of National Program: Feb 2012-Feb 2017

Led strategic development, oversaw operations/implementation, developed new partnerships and served as program officer/crisis responder for all SCA programs. Led a national team

consisting of 15 managers and coordinators responsible for developing and maintaining SOPs, recruiting candidates, developing advertising campaigns, interviewing and selecting members, writing and managing national AmeriCorps grants, implementing nationally funded programs, procuring, maintaining and distributing equipment/uniforms, and managing fleet vehicles, leased housing, and staff travel.

Highlights:

- Aided in growth of national initiatives portfolio from \$2 million to \$6 million in revenue, while simultaneously reducing per member expense by load balancing with seasonal workforce.
- Led recruiting team through reduction from \$1 million to \$500,000 in annual operating expense, simultaneously expanding key responsibilities to include candidate review and selection while improving morale and diversifying the candidate pool.
- Enhanced safety through risk management practice, protocol and training for SCA Internships, shifting to a proactive strategy that improved member experience and reduced incident rates
- Stabilized operations and retention sales for internship program amidst staff reductions that led to over \$350,000 in annual savings.
- Developed curriculum-based tools (member handbook, instructional videos, etc.) that improved member and partner experience while significantly reducing customer service call volume.

2010-2012: The Efficacy Institute

Trainer/Consultant:

Worked to close the achievement gap by leading turnaround initiatives in struggling urban school districts throughout the US by supporting district leaders, school administrators, teachers and students in mobilizing academic and character development.

Project Management Highlights:

- Provided training, leadership and oversight to dozens of administrators and hundreds of teachers through on-site and remote support of their efforts to implement Efficacy programming and serve as agents of change in their school or district.
- Co-led the creation of a k-6 Detroit charter school by managing internal and external stakeholders and coordinating all aspects of development and implementation.
- Collaborated with colleagues to plan and administer a variety of events including Envoy Leadership Camps (a week long experience for up to 750 students)--included logistical, programmatic, and budgetary responsibilities.
- Packaged Efficacy's Envoy Project (a student-centered reform initiative) for expansion beyond Memphis City Schools into 40 schools nationwide.

2007-2010: The Lyme School: Lyme, NH

Teacher: Planned and taught 7th and 8th grade Social Studies and Language Arts.

Highlights:

- Led school-wide team in the development of an experiential k-8 Humanities curriculum
- Developed and implemented innovative leadership curriculum for middle school students

2001-2005: St Albans School: Washington, DC

Voyageur Program Instructor: Led daily whitewater and climbing based leadership programs and extended wilderness trips

Highlights:

- Administered all aspects of programming including writing risk management protocol, developing budget, coordinating schedule, securing permits, managing equipment and motor pool, etc.
- Expanded reach from elective middle and high school programming to include all St Albans and Cathedral School students from grade three up.

Volunteer Experience: _____

- 2020-Present: Velomont Trail Collaborative, Board Member
- 2019-Present: Shires Outdoor & Adventure Recreation, Committee Chair
- 2018-Present: Bennington County Conservation District, Board Member
- 2015-2017: Woodstock Area Mountain Bike Association, Board Member
- 2014-2016: Windsor Early Childhood Education Center, Board President
- 2012-2014: Ledyard Charter School, Board Member

Recent Presentations: _____

- Agriculture, Farming, and Food Security - Peaceful Communities: Breakout at the 73rd Session of the UN General Assembly
- Land Management as a Tool for Restorative Justice: PeaceCon 2018 – The Alliance for Peacebuilding’s annual conference
- Diversifying Federal Land Management Workforce: Panel presentation for select hiring managers hosted by the Department of the Interior
- Responding to Racism in Field Programming: 2016 National Wilderness Risk Management Conference

Education/Skills/Certifications: _____

- Spring 2010: M.Ed New England College: Curriculum and Instruction
- Spring 2000: B.A. St Mary’s College of Maryland: Sociology and Anthropology
- Innovation Engineering: Black Belt
- American Canoe Association: Whitewater Kayak Instructor Trainer
- Professional Association of Dive Instructors: Rescue Diver
- Wilderness First Responder, up for recert in 2022
- Salesforce CRM, Microsoft Office, Google Suite

Awards: _____

- University of Vermont: Outstanding Community Partner Award 2023
- Vermont Council on Rural Development: Climate Leadership Award 2021
- State of Vermont: Emerging Leader Award, 2018
- Lyme Education Association: Distinguished Service Award, 2009
- Eagle Scout, 1995

Andrew Sample, WPIT *Environmental Scientist*



Andy joined Otter Creek Engineering, Inc. in 2023 and is based out of our West Lebanon office. His professional experience as an environmental scientist has focused on environmental permitting, environmental assessment, wetland and stream impact mitigation and restoration, and water quality improvement. Andy's interest in wetlands led him to return to school to research wetland plants and water quality after 5 years of professional experience as an environmental scientist. He aims to use this experience and the knowledge gained from his recent graduate studies to successfully carry out environmental and natural resource projects and provide environmental regulatory support for other OCE projects.

EDUCATION

- Master of Science in Biological Sciences from Mississippi State University in Starkville, MS in 2023.
- Bachelor of Science in Crop, Soil, & Environmental Sciences from University of Arkansas in Fayetteville, AR in 2015

CERTIFICATIONS

- Wetland Professional in Training (WPIT), Society of Wetland Scientists

AFFILIATIONS

- Society of Wetland Scientists, 2015 to present

Recent Experience

Town of West Rutland, Recreation Area Wetland Restoration- Conducted wetland delineation and mapped wetlands with GPS in field. Assisted with final restoration design. Participated in regulatory site visit and conversations regarding project.

Various Private Developers and Landowners - Conducted wetland assessments and delineations on various properties for proposed development. Mapped wetlands with GPS in field and reviewed wetland maps.

Department of Biological Sciences, Mississippi State University (2020-2023) - M.S. in Biological Sciences completed May, 2023. Thesis research focused on wetland plant and water quality interactions. Thesis work involved project design, planning, and management. Project involved water quality and plant growth data collection, processing, and statistical analysis. Analyzed nitrogen and phosphorus pollution and other water quality parameters.

Geosystems Research Institute (GRI), Mississippi State University (2020) - Worked on ongoing projects at the GRI Aquatic Plant Research Facility. Projects focused on experimental evaluation of invasive and nuisance aquatic vegetation control methods. Conducted aquatic, wetland, and riparian vegetation and water quality surveys in water bodies around the state of Mississippi and on the Mississippi barrier islands.

Plummer Associates, Inc. (2015-2020) - Conducted environmental assessments, permitting, and guidance on water resource projects. Projects consisted of GIS analysis, field work and technical/report writing. Typical projects included wetland delineation, threatened and endangered species surveys, phase I environmental site assessments, NEPA compliance, or applications for federal or state project funding. Other projects included: Vegetative cover analysis, soil sampling, and water quality monitoring and reporting for a 2,000-ac treatment wetland; stream, riparian habitat, and wetland assessment for ecosystem restoration design support.

SPECIALIZED TRAINING

Planning Hydrology, Vegetation, and Soils for Constructed Wetlands, July 2019—Wetland Training Institute

Basic Wetland Delineation, June 2015—Wetland Training Institute

Craig Jewett, P.E. *Senior Project Engineer / Principal*



Craig joined Otter Creek Engineering, Inc. in 2010, is now a firm partner, and is based out of our Rutland office. His professional career began in 2003 and has focused on design, permitting, and construction of residential and commercial site development projects. Craig has worked at design firms in Nantucket, Massachusetts and Woodstock, Vermont, where his primary focus was in civil site design, including site design, municipal sewer, water and drainage, stormwater treatment and environmental permitting, including the lead on dozens of Act 250 permit projects.

EDUCATION

- Bachelor of Science Degree in Civil Engineering from the University of Massachusetts at Amherst, Amherst, Massachusetts, 2002.

PROFESSIONAL REGISTRATIONS

- Licensed Professional Engineer in the State of Vermont
- Licensed Professional Engineer in State of New Hampshire
- Licensed Professional Engineer in State of Massachusetts
- Member of the VT DEC Technical Advisory Committee (TAC) providing Oversight and Implementation of Wastewater System and Potable Water Supply Rules
- Member of VT DEC Indirect Discharge Advisory Committee
- Member of VT ACEC Environmental Protection Committee

Planning, Design, Permitting, Cost Estimating, Construction Review and/or Management for the following:

Site Design & Stormwater

Northern Stage – Northern Stage’s new theater was proposed on a former garage site in Downtown White River Junction, which was completely impervious and directly drained to the Town’s sewer system. Craig, working with the project architect and owner, reduced overall impervious surfaces for the parcel and designed multiple stormwater treatment systems, including bioretention systems and infiltration trenches. The treatment systems were designed to incorporate landscaping features, sitting walls and other functional site uses in addition to treating stormwater runoff.

Weston Playhouse – Weston Playhouse’s new Theater at the Walker Farm on Route 100 in Weston required stormwater treatment with little site area available due to other infrastructure and site needs. Craig designed a dry swale to promote infiltration when site conditions allowed, while providing stormwater filtering when infiltration was not present. The system was outfitted with field stone wall check dams to match with the existing site and surrounding features.

Upper Valley Waldorf – For the School’s new addition, Craig planned and designed for two bioretention systems to address stormwater runoff from the addition and portions of the existing stormwater runoff. The design allowed for the system to add a new landscaping features to the campus while promoting infiltration during all but extreme precipitation events.

Bennington College - As part of the Colleges rehabilitation of their historic Commons Building, Craig planned and designed two new bioretention systems sized to treat runoff from the project and additional areas on Campus. Designs were developed to allow the systems to be integrated into an existing grass field on campus and limit encroachment of the Commons site and infrastructure improvements.

Rutland Natural Resources Conservation District - Craig was tasked with designing of two separate stormwater treatment systems that were identified in previous master planning. The middle school system included conveyance improvements and two separate areas to where runoff was collected and stored in areas to promote infiltration and limit direct conveyance to East Creek. The second system was a dry swale which would allow infiltration under most conditions, but also filtering of stormwater during more extreme precipitation events.

Rutland Recreation and Parks Department - As part of the site design and athletic field improvements, Craig designed stormwater infiltration systems to promote infiltration of the athletic fields and the adject parking lot, thus limiting the amount of direct runoff conveyed to Tenney Brook, which is sensitive to sedimentation from stormwater runoff.

Bomoseen State Park - Working in conjunction with the project architect and landscape architect, Craig provided planning and design of a Green Stormwater Infrastructure system to fit within the park’s existing site. The system was designed to infiltrate stormwater while providing an opportunity to improve the landscaping features around the improved bathroom facility.

Village of Woodstock - Utilizing stormwater treatment principles, Craig helped the Village design a new snow dump site. The previous site was located within the floodway of the Ottauquechee, with a direct conveyance of runoff to the River. The new site is outside of all flood hazard areas, more than 500 feet from the river and infiltrates all runoff associated with the Village’s snow storage. Craig also conducted water quality monitoring of the project to ensure that the groundwater water quality was not being adversely affected by snow melt.