BASIN WATER QUALITY COUNCIL
APRIL 30, 2026, 3:00 PM

MEETING DETAILS

Virtual: Microsoft Teams, ID: 28945081456069, Pass: pK7gE2cG
In-Person: RRPC, 16 Evelyn Street, Second Floor, Rutland, VT 05701

MEETING AGENDA

3:00 WELCOME & INTRODUCTIONS

3:05 APPROVAL OF APRIL 30, 2026, AGENDA

3:07 APPROVAL OF JANUARY 29, 2026, MINUTES

3:10 OPEN TO THE PUBLIC

3:15 REVIEW OF NEW PROJECTS
- Austin Pond River Planting
- Mettawee Community School Wetland Restoration Implementation
- Lochlea Lane Stormwater Final Design and Implementation

4:15 CWSP UPDATES

4:30 ADJOURN

BASIN WATER QUALITY COUNCIL
JANUARY 29, 2026, 3:00 PM

MEETING DETAILS

Virtual: Microsoft Teams, ID: 28945081456069, Pass: pK7gE2cG
In-Person: RRPC, 16 Evelyn Street, Second Floor, Rutland, VT 05701

MEETING ATTENDANCE

Members: Erin Rodgers, Mike Winslow, Paul Donaldson, Katie Crumley, Shayne Jaquith, Sarah Pelkey, Adam Piper, and Rob Terry.
Other: Devon Neary (RRPC), Mike Jones (Castleton), Vicki Pattison-Willits, Hilary Solomon (PMNRCD), Brian Bertsch (F&O), Zapata Courage, Chris Rottler, and Angie Allen (DEC).

MEETING MINUTES

WELCOME & INTRODUCTIONS

The meeting was called to order by Chair Rodgers at 3:04 PM. Neary thanked Barbara Pulling, recently retired from the RRPC, for all her incredible work with the CWSP. The BWQC members all congratulated and thanked Pulling for her service.

APPROVAL OF JANUARY 29, 2026, AGENDA

Motion to approve the January 29, 2026 agenda by Winslow. Seconded by Piper. Approved by voice vote.

APPROVAL OF SEPTEMBER 18, 2025, MINUTES

Motion to table the approval of September 18, 2025 minutes until next meeting by Winslow. Seconded by Crumley. Approved by voice vote.

OPEN TO THE PUBLIC

None present.

REVIEW OF NEW PROJECTS

Solomon introduced the project alongside Bertsch from Fuss & O'Neill, who has worked closely with the Town. The project originated from a scoping study completed by PMNRCD and the Town to address chronic drainage and water quality issues in the village, particularly recurring flooding near the library where untreated stormwater freezes in winter and discharges directly to the river. The former Village School property, now a town-owned recreation center, was identified as the highest-ranking site for phosphorus reduction and stormwater treatment due to its highly infiltrative soils and municipal ownership. Concept design was funded through the LCBP, with final design funded by the South Lake CWSP and nearing completion.

Bertsch presented aerial imagery and engineering drawings for a proposed subsurface infiltration system beneath the basketball court. The project would treat runoff from approximately 17 acres, including residential areas, roadways, and portions of the college campus, with 8–9 acres of impervious surface. Stormwater currently flows rapidly through catch basins to the Castleton River. The system is designed to capture the water quality volume, roughly the first inch of rainfall carrying the highest pollutant load, with larger storms bypassing to existing infrastructure. Test pits showed strong infiltration rates averaging 5.5 inches per hour. Operations and maintenance would be shared by the Town and the CWSP through routine inspections and periodic cleanout.

Solomon reviewed staff scoring, noting an estimated phosphorus reduction of approximately 10.15 kg per year, a projected project life of over 20 years using a 10-year default for calculations, and generally strong basin priority and longevity scores. Cost efficiency varied depending on final funding assumptions, and total staff scores ranged from 57 to 77. Discussion followed on co-benefits such as flood reduction, environmental justice, cultural value tied to the library and village center, and community visibility. While some concern was raised about potential overlap among criteria, members agreed the project remained strong regardless of minor scoring adjustments.

The Council also discussed how the 3-acre stormwater permit rule could affect phosphorus accounting, particularly for runoff from the Castleton University campus. If portions of the campus are subject to the rule, those acres may not be eligible for CWSP credit, potentially reducing the impervious area counted and lowering phosphorus reduction totals. Members agreed this is largely a regulatory interpretation issue requiring further coordination with DEC. Easement requirements were noted and are expected to be manageable. The Council requested the CWSP staff work with project partners to determine eligibility and adjust phosphorus credits and cost ratios as needed.

Motion to approve the proposed project at a cost of up to $55,000 per kilogram based on eligibility after potential changes to phosphorus credits and costs by Winslow. Seconded by Jaquith. Approved by voice vote.

MEETING SCHEDULE

Neary requested the Council establish a routine meeting time on a quarterly schedule. The Council granted the request and determined that BWQC meetings would be held on the last Thursday of the Quarter at 3PM. Neary to provide a recurring meeting invite and link.

CWSP STAFF UPDATES

Neary stated that the RRPC was interviewing candidates to take over the RRPC staff role for the CWSP.

Solomon reported that forest headwaters outreach is gaining momentum, with letters recently sent to priority landowners in the Castleton watershed and initial responses already received, including one follow-up meeting scheduled. Mailing lists are also being developed for additional headwater areas, and CWSP staff emphasized the importance of continuing to build this project pipeline.

ADJOURN
Meeting adjourned at 4:34 PM.

PROJECT APPLICATION FOR THE SOUTH LAKE CWSP
ROUND 12: APRIL 2026

Cover Page Information

Contact Information: PMNRCD Hilary Solomon and Sadie Brown

Hilary Solomon, PMNRCD
Po Box 209, Poultney, VT 05764
(802) 558-3515 / hilary@pmnrcd.org

Sadie Brown, CVNPRN
PO Box 209, Poultney, VT 05764
(802) 287-0710 / sadie@pmnrcd.org

Project Name: Austin Pond River Planting - Hubbardton

Project ID number: 14190

Project Location: South Lake Champlain Watershed, Austin Pond, Hortonia Rd. Hubbardton, VT 05732

Project Type: Riparian Buffer / River Planting

Project Sector: Streams

Project Stage: Implementation

Funds being requested: $226,834
Matching funds: $0

Project Summary

This project consists of planting 30.2 acres of forested buffer along the newly established stream channels following the removal of the dam at Austin Pond in Hubbardton, VT. Drainage to this project is primarily mixed forest with some developed impervious and pervious land use. Goals of the planting include stabilization of the new stream banks, reducing sediment transport post dam removal, establishing a canopy layer along the waterways, and improving wildlife habitat.

The phosphorus treatment estimates are roughly 17.71 kg per year at the potential cost of $226,834

($12,808 average per kg reduction). Installation costs $7,511/ acre at the current rates *This is a little expensive per acre because of the number fascines requested by the dam removal engineer. If we can't make and/or purchase this many fascines, we will reduce the planting space to every 50' (per Jordan Duffy, site engineer) and adjust the cost accordingly.

Project Description

The project includes implementing and establishing a riparian floodplain following the removal of the Austin Pond Dam. The overall dam removal project is being managed through The Nature Conservancy and Fitzgerald Environmental Associates is the engineering firm overseeing the dam removal work.

The property where the project will occur is currently the location of Austin pond which is scheduled to be fully removed during the 2026 field season. Planting will utilize a combination of bareroot plants, live stakes, and live fascines to revegetate the newly exposed soil following dam removal. Goals of the planting include stabilizing the newly created area, preventing sediment transport post dam removal, establishing a canopy layer along the waterways, and improving wildlife habitat.

The planting itself will cover 30.2 acres and be composed of approximately 9,060 native trees and shrubs suitable for the mapped soils, associated natural communities, and environmental conditions anticipated to be at the site. The installation will follow a phased approach as soils and stream channels stabilize post dam removal.

The Poultney Mettowee Natural Resources Conservation District will finalize the planting plan, source materials including suitable native tree and shrubs, and supply the planting crew through the Champlain Valley Native Plant Restoration Nursery, to complete the planting installation. Planting installation will take place in four waves from Spring 2026 through Fall 2027.

The goals of this project include:

- Create a successful planting plan to maximize phosphorus mitigation and stream restoration
- Get a signed site access agreement from the landowner who owns the dam
- The CWSP will use accepted DEC tools, such as the DEC Stormwater Treatment Practice Calculator and FFI tool to establish phosphorus reduction numbers. Initial phosphorus calculations to be reviewed by DEC staff.
- Additionally, the CWSP will manage, track, and report the results of this project per DEC requirements and will interface with Vermont DEC technical staff as needed.

Applicable strategies from the 2022 South Lake Tactical Basin Plan:

- Strategy 39: Continue buffer plantings along rivers in priority locations, Basin-wide.

Applicable Milestones from the 2023 CWIP Funding Policy:

- Site and constraints identified, DEC River Scientist and Basin Planner approval secured
- Developed planting plan (including species type, number, and estimated cost)
- 10-year (minimum) DEC Operation and Maintenance (O&M) Plan drafted and signed
- Clean Water Project sign installed during construction
- Buffer Restoration planting complete
- Return of Clean Water Project sign to host site
- Press release or newsletter article

Project Budget

Table 1: Preliminary budget for the Austin Pond Planting

Category	Amount	Match	Total
Personnel	$15,000		$15,000
Fringe	Included in rate		$0
Travel	$452		$452
Supplies	$106,295		$106,295
Professional Services	$75,500		$75,500
Subtotal	$197,247		$197,247
Indirect	$29,587		$29,587
Total	$226,834		$226,834

Budget Narrative

Personnel: PMNRCD Staff time finalizing planting plan, sourcing plants, completing landowner outreach, and on-site crew communication at current billable rates. This will pay for approximately 292 hours of staff time (figured at a blended rate) or 73 hours per planting wave. PMNRCD will provide current rate sheets to RRPC each year.

Travel: $452

- $252 mileage ([30 mi round trip to and from office * 0.725 Federal reimbursement rate] x 12 trips).
- $200 mileage (trips to Intervale to pick up fascines (71 miles x 4 trips x 0.725 (or a delivery fee)).

Supplies: Approximately $99,245 plant material combination of bare root, live stakes, and fascines. And approximately $7,050 hardgoods (stakes, tree guards, flagging, etc)

Professional Services: $75,500 will be used to hire the CVNPRN planting crew for the planting of 30.2 acres ($2,500/acre) over two seasons.

Indirect: PMNRCD indirect rate is 15%.

Project Eligibility Screening from CWIP Funding Policy Appendix A

- Please find the CWIP project eligibility screening form attached.

Austin Pond Planting Plan

1. Project Information

A. Project Participants*:*

Project Manager(s): Sadie Brown, PMNRCD Nursery Manager
Hilary Solomon, PMNCRD Manager

B. Project Description:

Coordinates: 43.71569, -73.19668
WPD: 14190

Site Description: This project consists of planting 30.2 acres of newly established floodplain on the site of Austin Pond in Hubbardton, VT. Land use of the surrounding parcels draining to this project are primarily mixed forest, along with impervious and pervious residential and agricultural fields. Goals of the planting include a reduction of overland nutrient input, establishing a canopy layer along the waterways, and improving wildlife habitat.

Area: The area to be planted encompasses approximately 30 acres of the former 40-acre pond. Four small tributaries feed into this site from the surrounding watershed, including the outfall of Beebe Lake to the north.

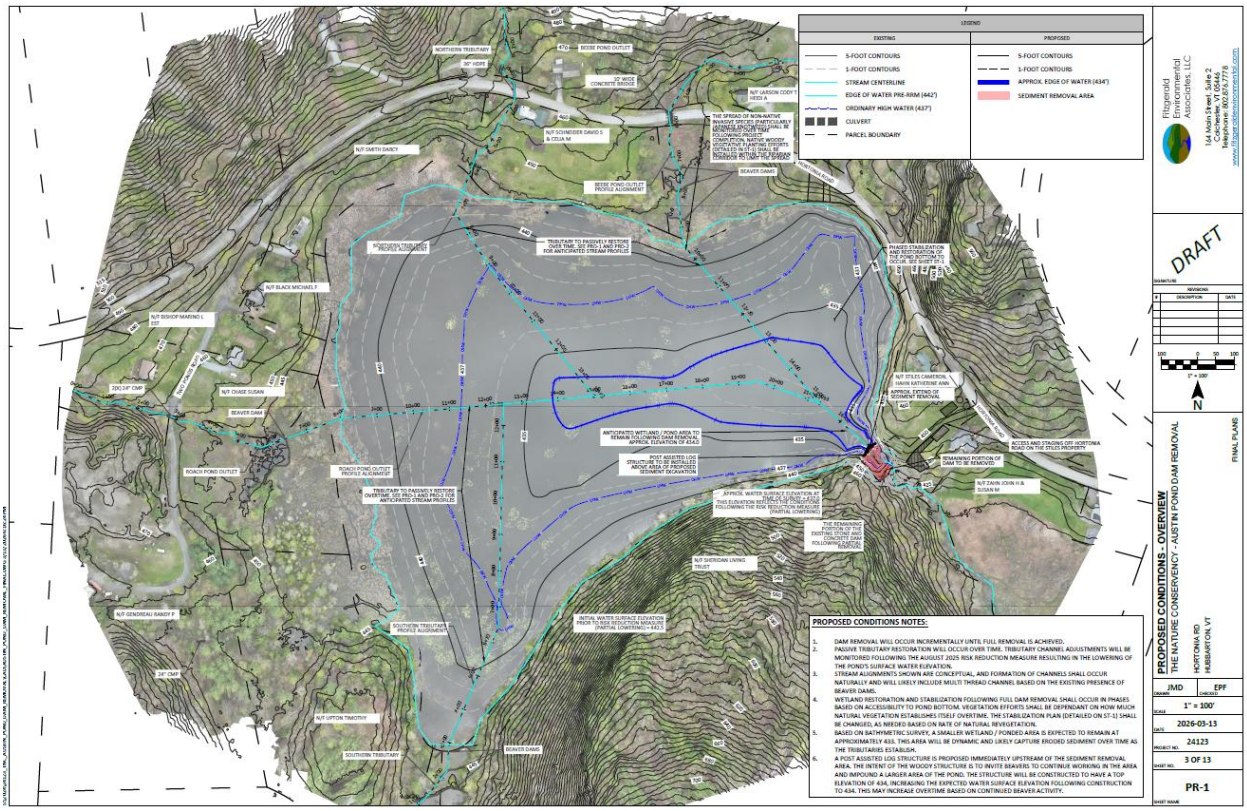
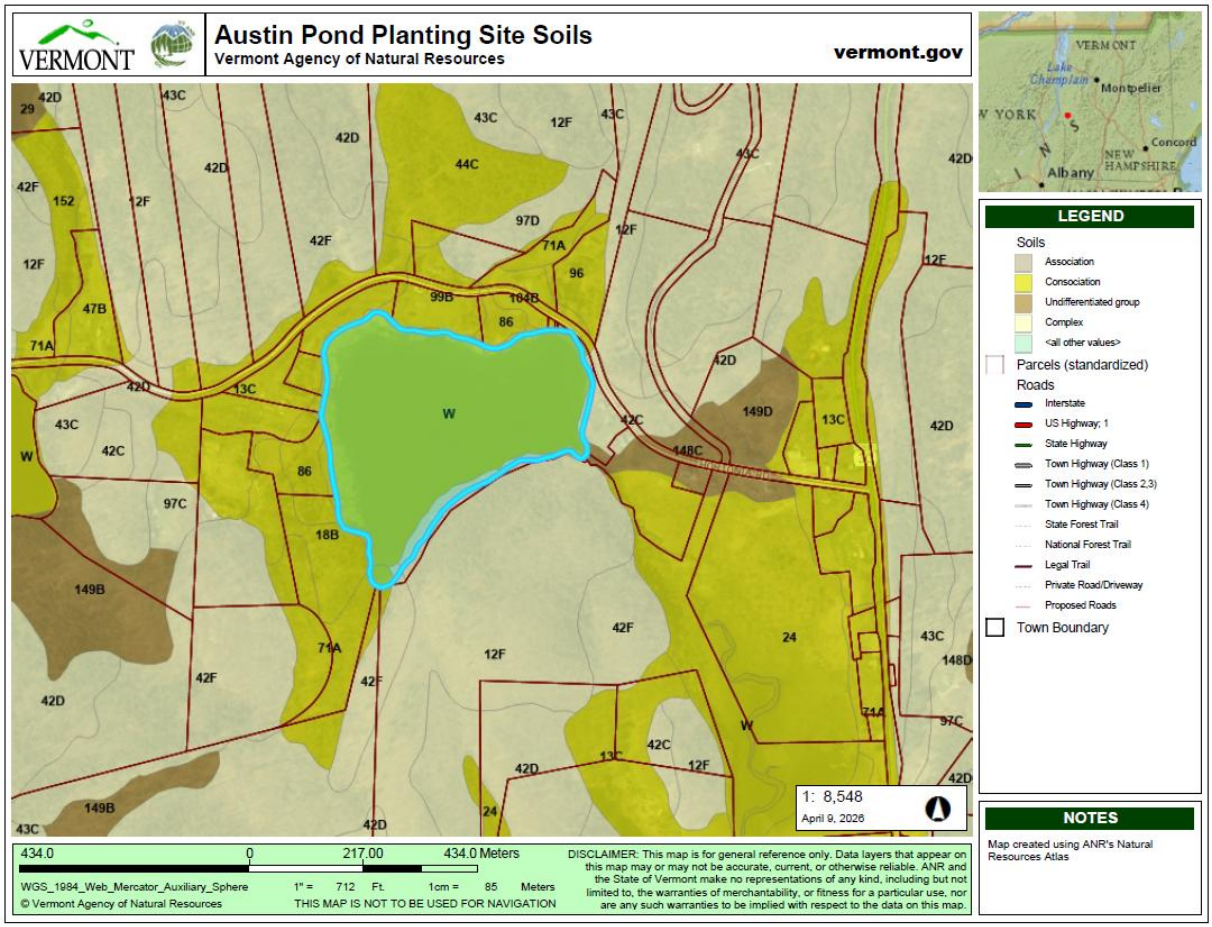


Figure 1: Anticipated channels and planting area post drawdown.

Stem Density: The area planted is approximately 30 acres and planted with 9,000 – 11,000 (depending on the number of trees equal a fascine) trees and shrubs; resulting in a stem density of 300 – 367 stems per acre. A combination of bareroot plants, live stakes and willows will be used throughout the installation. To account for stem density bare root plants and live stakes will be counted as one stem and fascine bundles will be counted as 3 - 5 plants (every two feet or 5 per fascine – similar to cluster planting) to account for the full coverage of plant material being used.

Soil Type and Natural Communities:
Areas surrounding the current pond site have mapped soil types of Hinckley gravelly loamy fine sand, 8 to 15 percent slopes, Taconic-Hubbardton-Macomber complex, 25 to 80 percent slopes, very rocky; Udipsamments, sandy, deep and nearly level, and Copake gravelly fine sandy loam, 2 to 8 percent slopes. Species were chosen based on the surrounding natural community types as well as the anticipated site conditions following the draw down of the water level behind the dam impoundment.



Map 1: Project location and surrounding areas soil types.

Installation

Installation will take place over the course of two growing seasons as the exposed soils and stream channels become increasingly stable following dam removal. Phase 1 will occur in the Spring of 2026 following initial drawdown focusing on live stakes and seeding in accessible areas. As site soils begin to stabilize Phase 2 will take place in Fall of 2026 with bareroot plants along the perimeter of the site and fascine installation by the current mouths of the tributaries to further define the new river corridors. Phase 3 will take place in the Spring of 2027 and include additional willow fascines along the inner stream portions of the river corridor closer to the remaining water level and the wet areas. The final phase, Phase 4, will take place in the Fall of 2027 and focus on areas not previously vegetated and include a combination of drier species bareroot plants and live stakes. Additional details below.

Phase 1 Spring 2026
1. Live stakes will be installed along the perimeter of the exposed soil and along the water line as accessible following the risk reduction measure and partial drawdown. The exact location of planting extents may vary and be adjusted based on monitoring of observed erosion and channelization patterns following dam removal, or based on conditions present in the spring of 2026.
2. Wetland seed mix (to be approved by the engineer) shall be spread on all exposed soil within the riparian corridor, as accessible.

3. Extent of seeding and planting may also be adjusted based on the rate of natural revegetation within the pond bottom based on the native seed bank within the soils.
4. except where noted, planting and seeding efforts shall be conducted by others (not the chosen earth work contractor).

Phase 1 Spring 2026					
Item	**Scientific Name**	**Type**	**Size**	**Amount**	**Density**
Wetland Seed Mix			lb	219	
Red Osier Dogwood	Swida sericea	Live Stake	12-18"	300	300
Shrub Willow	Salix spp.	Live Stake	12-18"	400	400
Silky Dogwood	Swida amomum	Live Stake	12-18"	200	200

Phase 2 Fall 2026

1. Areas within the "riparian corridor" of each tributary, defined by the approximate meander belt width (6x the bank full width of each channel) shall be heavily planted with willow fascines.

2. Willow fascines shall be installed on the back side of the beaver dams present on the outlet of Beebe pond outlet tributary and along the riparian corridor area where stable.

3. Bareroot species to be installed during Phase 2 favor drier soil and will be installed in the stable areas where sediment is stable closer to the perimeter of the site.

6. Where bedrock is not encountered, wetland seed mix and specific plantings shall be installed in the area immediately surrounding the existing dam and the sediment removal area (conducted by the earth work contractor). side slopes of excavated sediment greater than 3:1 shall be stabilized with recp and seed mix.

Phase 2 Fall 2026					
Item	**Scientific Name**	**Type**	**Size**	**Amount**	**Density**
Willow	Salix spp.	Fascine	6-10'	500	1500-2500
Red Maple	Acer Rubrum	Bare Root	3-4'	200	200
Eastern Cottonwood	Populus deltoides	Bare Root	10-18"	200	200
Gray Birch	Betula populifolia	Bare Root	2-3'	400	400
White Pine	Pinus strobus	Bare Root	2-3'	200	200

Phase 3 Spring 2027

1.Areas within the "riparian corridor" of each tributary, defined by the approximate meander belt width (6x the bank full width of each channel) shall be heavily planted with willow fascines and native shrubs.

2. Willow fascines will be installed along the now stable soil of the riparian corridor area not previously planted during Phase 2.

3. Bareroot plants will be installed fanning out from the fascine planted river corridors. Focus will be on the wetter areas

4. Additional wetland seed shall be installed on exposed soil, as needed and accessible.

Phase 3 Spring 2027					
Item	**Scientific Name**	**Type**	**Size**	**Amount**	**Density**
Wetland Seed Mix		seed	lb	144	
Red Osier Dogwood	Swida sericea	Live Stake	10-18"	100	100
Silky Dogwood	Swida amomum	Live Stake	10-18"	100	100
Willow	Salix spp.	Fascine	6-10'	500	1500-2500
Black Willow	Salix nigra	Bare Root	2-3'	200	200
Buttonbush	Cephalanthus occidentalis	Bare Root	2-3'	500	500
Red Osier Dogwood	Swida sericea	Bare Root	2-3'	300	300
Red Maple	Acer Rubrum	Bare Root	3-4'	100	100
Speckled Alder	Alnus incana rugosa	Bare Root	2-3'	700	700

Silky Dogwood	Swida amomum	Bare Root	2-3'	500	500
Swamp White Oak	Quercus bicolor	Bare Root	3-4'	300	300

Phase 4 Fall 2027

1. Following channel formation remaining bareroot plants will be installed focusing on the remaining drier areas between channels and closer to the perimeter of the site.
2. Live stakes will be installed in any eroded areas or areas still in transition.

Phase 4 Fall 2027					
Item	**Scientific Name**	**Type**	**Size**	**Amount**	**Density**
Red Osier Dogwood	Swida sericea	Live Stake	12-18"	200	200
silky dogwood	Swida amomum	Live Stake	12-18"	200	200
Eastern Cottonwood	Populus deltoides	Bare Root	10-18"	200	200
Gray Birch	Betula populifolia	Bare Root	2-3'	200	200
Red Maple	Acer Rubrum	Bare Root	3-4'	200	200
White Pine	Pinus strobus	Bare Root	2-3'	300	300

Willow Fascine installation:

Within the riparian corridor, willow fascines shall be installed perpendicular to the flow of the new tributaries in a herringbone pattern. Fascine spacing shall be approximately 30' apart in these areas.

Stream alignments shown are conceptual, and formation of channels shall occur naturally and will likely include multi thread channel based on the existing presence of beaver dams. Fascine installation will begin at the top of ‘bank’ of each channel as they exist during the time of installation, and shall not be installed in any active channels.

Note: plantings will not occur in areas that are reserved for ponding – approximately 10 acres within the site are anticipated to have standing water into the future.

Invasive Species

Japanese Knotweed is found in one of the northern tributaries (the stream draining from Beebe Lake) and neighboring landowners are concerned about it spreading. One objective of this project is to shade out the knotweed

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:	Protect and restore aquatic and riparian habitats

Step 2: Conduct Eligibility Criteria #2 Screening: Project Types and Standards

Table 2A: Project Types and Standards		
Please select the most representative project type from the drop-down list to the right.[1,2] If multiple BMPs are included in the project, please list below: Restore the wetlands behind th Mettawee Community School.	Wetland Restoration - Implementation	
Is the project type an eligible project type for the funding program you are applying to as listed in column B of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◉	No ○
Does the project meet the project type definitions and minimum standards as provided in column C of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◉	No ○
Will the project result in the standard performance measures, milestones, and deliverables as defined by project type in columns D-F of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◉	No ○
Is the project listed as an ineligible project or activity in the CWIP Funding Policy? If Yes, please explain below how project meets the allowable exceptions within the CWIP Funding Policy. (Answer must be NO to proceed, unless reasonable justification is provided above)	Yes ○	No ◉

Step 3: Conduct Eligibility Criteria #3 Screening: Watershed Projects Database

Verify project has been recorded in the Watershed Project Database (WPD). Each project must have a Watershed Project Database number specific to the proposed project phase (for example,

[1] Note that Road/Stormwater Gully project-types must not otherwise be considered intermittent or perennial streams by the DEC Rivers Program and therefore project proponent must show documentation of this determination in order to select this project type.

[2] One project may include multiple best management practices (BMPs) that cross "project types." For example, a single project may include both stormwater and lake shoreland BMPs. Proponents should use their best judgement in selecting the most representative project type for the purposes of eligibility screening and reporting.

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	14190
Watershed Project Database Project Name	Austin Pond Dam Removal - Implementation

Step 4: Conduct Eligibility Criteria #4 Screening: Natural Resource Impacts[3]

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 permit[7])?
   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."

[10] Note 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]	
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. **Regulatory Point of Contact Name/Position:** Olin Reed	
III. Rivers, River Corridors, and Flood Hazard Areas	
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 area[12]**?** (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.	Yes ◉ No ○
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. **Regulatory Point of Contact Name/Position:** Shannon Pytlik	
2. Is any portion of the project site within a perennial river or stream channel? [13]	Yes ◉ No ○
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. **Regulatory Point of Contact Name/Position:** Josh Carvajal	
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."

1. Does the Wetland Screening Tool[14] provide a result of wetlands likely, very likely, or present at the project site?	Yes ◉ No ○
2. Does your project site involve land that is in or near an area that has any of the following characteristics: 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.)	Yes ◉ No ○ Not Sure ○
If you answered ***yes*** or ***not sure*** to either 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 either 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. **Regulatory Point of Contact Name/Position:**	
1. Is your project a Wetland Restoration project type?	Yes ◉ No ○
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. **Regulatory Point of Contact Name/Position:** Zapata Courage	
V. Fish and Wildlife	
State law protects endangered and threatened species. No person may take or possess such species without a Threatened & Endangered Species Takings permit. 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	Yes ○ No ◉

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

2. Is the project site within 1 mile of a mapped[15] Significant Natural Community or Rare, Threatened, or Endangered Species?	Yes ○ No ◉
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. **Regulatory Point of Contact Name/Position:**	
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 ◉
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. **Regulatory Point of Contact Name/Position:**	
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 ◉
If yes, connect with the Waste Management & Prevention Division (dennis.fekert@vermont.gov 802-522-0195) to discuss your project and any necessary permitting. **Regulatory Point of Contact Name/Position:**	
Provide below or attach a narrative summary of Table 4 findings. Please include: a. Which permits or permit amendment are needed or might be needed? b. What type might be needed? (e.g. a general or individual permit)? c. What concerns were voiced by permitting staff? d. 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)	

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: CWSP South Lake (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).

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.	◉ **No**[18] - There is no additional requirements related to agricultural review for these projects.
2. Is the proposed project an agricultural project? 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.	○ **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. ○ **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 (VAAFM) to ensure a consistent approach on farms statewide that follows rules, regulations, and laws in place. Please follow Steps 1 & 2 below. **Step 1** - Please submit a detailed description of the project, project site, project details, landowner, farm operation, and any other relevant information to VAAFM at AGR.WaterQuality@Vermont.gov . **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.

Agricultural Project Review Status & Summary:	
Check as Applicable	**Status**
☐	Submitted/ Pending
☐	Approved
☐	Denied

[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 VAAFM.

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.

PROJECT APPLICATION FOR THE SOUTH LAKE CWSP
ROUND 12: APRIL 30, 2026

Cover Page Information

Contact Information: PMNRCD Hilary Solomon and Devon Neary

Hilary Solomon, PMNRCD
Po Box 209, Poultney, VT 05764
(802) 558-3515 / hilary@pmnrcd.org

Devon Neary, RRPC
PO Box 430, Rutland, VT 05702
(802) 775-0871 ext 203/ Devon@rutlandrpc.org

Project Name: Mettawee Community School Wetland Restoration Implementation – W Pawlet

Project ID number: 14724

Project Location: Mettowee Watershed, Pawlet

Project Type: Project Implementation

Project Sector: Low-level residential, agricultural, and stream/wetlands

Project Stage: Implementation

Funds being requested: $83,632.20
Matching funds: $0

Project Summary

This is the implementation of a wetland and floodplain restoration plan, based on a final (100%) design that was recently completed by Arrowwood Environmental. The project site spans two parcels: one belonging to the Mettawee Community School (MCS), and the other owned by the Merck Forest & Farmland Center (Merck Forest). 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 reduce phosphorus inputs into the Mettawee River by planting a forested riparian buffer along a tributary stream, and to improve habitat for native species. The site has many non-native invasive plant species (NNIS) plants, therefore prior to planting, site preparation will include the management of invasive plants (including removal and treatment), to prepare the site for the planting of native species. The site also has a large, dense stand of reed canary grass, which will be

treated with an excavator before planting. The treatment will consist of turning the sod to prepare a seedbed for a native wetland seed mix, and to reduce rodent pressure on native tree and shrub plantings. The planting plan for this site proposes adding 1595 native plants to 3.35 acres of degraded riparian buffer, the majority of which is also wetland or wetland buffer. In addition to reducing downstream phosphorus loading, these plantings will also increase the biodiversity of the site by providing ecologically appropriate native trees and shrubs, which will in turn improve the habitat for many species of native insects, birds, and amphibians.

A boardwalk and viewing platform for students and the public was successfully funded and constructed in 2025. This new infrastructure passes right through the heart of the proposed restoration project and will provide a unique and valuable opportunity for students and the public to access and observe the restoration area develop over time. The 100% design was produced in collaboration with MCS, and the implementation will continue to include the teachers and students in the implementation and management of the site.

Estimated phosphorus (P) load reductions were calculated for each practice using Vermont DEC-approved methodologies:

Forested riparian buffer planting (3.35 acres):

Estimated P Load Reduction of 3.227 kg per year, equivalent to 0.96 kg/acre/yr.

Native Revegetation / no mow (1.67 acres):

Calculated estimated P Load Reduction of 0.3877 kg per year, equivalent to 0.23 kg/acre/yr.

Total Project Area: (7.84 acres):

The total project area includes areas that do not fall within the above project types but are part of the entire treatment.

The combined estimated P Load Reduction is 3.687 kg per year (equating to an estimated annual P load reduction of 0.47 kg/acre/yr).

Native Pollinator Garden

This garden area consists of 170 native plants at the entrance to the wetland educational area. There is no P-load reduction, though the garden will provide habitat for birds, bees, and other pollinators, and an educational area for the students.

Cost Effectiveness: The total estimated project cost equates to approximately **$22,683 per kg/year of phosphorus reduced**.

Project Description

This project will implement a stream and wetland system restoration across two adjacent properties in West Pawlet, Vermont: The Mettawee Community School (MCS) and a parcel owned by the Merck Forest and Farmland Center (Merck) where Vermont Land Trust holds a conservation easement. The site is actively used for education and recreation, with a new boardwalk installed in 2025 to improve student access to the wetland.

The project is based on a complete (100%) final design developed by Arrowwood Environmental (AE) who were contracted to the South Lake Champlain Clean Water Service Provider. The design is informed by a field site assessment conducted in July 2025, and engagement with key stakeholders including MCS staff, and identifies key restoration priorities for improving wetland habitat and enhancing water quality. Importantly, the proposed wetland restoration project is designed to integrate with the recently created boardwalk and accommodates the needs of students, teachers and staff. All permits have been acquired or are in the final stages of approval.

Implementation will focus on restoring approximately 3.35 acres of a wetland and riparian buffer area through native tree and shrub plantings, with targeted site preparation practices designed to support and improve planting success. The plan includes planting with a mix of bareroot stock and live stakes (total 1595 stems), together with other native vegetation practices including no-mow or reduced-mowing of designated areas (approximately 1.67 acres). Pre-planting site preparation and maintenance work includes the targeted control of NNIS woody shrubs (including honeysuckle, common buckthorn, glossy buckthorn, and multi-flora rose) and herbicide treatment of herbaceous species including goutweed in pre-existing forest and meadow areas, and selective “plowing” (turning the soil with an excavator) in the new planting area to smother areas of dense reed canary grass and prepare the area for planting.

The project is designed to be self-sustaining over the long term, with approximately three years of establishment-phase maintenance to ensure successful plant survival and site stabilization. Additional complementary practices—such as meadow management, wellhead protection, and educational garden installation—will be supported through separate funding sources or school-led efforts.

An RFP will be put out to retain a project manager who will work with partners on the project to finalize the planting plan, source materials including suitable native tree and shrubs, put out RFPs to retain (1) contractors for the planting supply and crew and installation of native trees and shrubs, and to complete the planting installation and (2) to an RFP to hire a contractor for other preparatory work including excavation of the site and herbicide application for the control and remediation of woody and herbaceous NNIS.

Implementation will be coordinated through a competitively procured project manager, who will oversee final planting specifications, materials sourcing, contractor procurement, and installation. Separate contractors may be engaged for site preparation and planting.

Project goals include:

- Implement a final, permitted restoration design to maximize phosphorus reduction and improve wetland and floodplain function

- Restore native vegetation and improve habitat quality across the project area
- Control priority non-native invasive species to support long-term ecological resilience
- Maintain and enhance site use for outdoor education and community access
- Complete all required agreements (landowner permissions, access, and operations and maintenance plans)
- Track, report, and verify phosphorus reductions using Vermont DEC-approved methodologies

Applicable strategies from the 2022 South Lake Tactical Basin Plan:

> 52. Restore previously drained and degraded wetlands identified in RCPs, Wetland Restoration Assessments, high scores on the Wetland Restoration Potential layer on the ANR Atlas and assessments, and field surveys.

Applicable Milestones from the 2023 CWIP Funding Policy pertaining to wetland restoration-implementation:

- Project initiated.
- Proposal/bid solicitations issued, pre-bid site visits, and contractors selected/ contracted (if applicable)
- Stakeholder meetings/ pre-construction kick-off meeting, walk through of site with plans, evaluate any needs, issues/considerations for plan adjustments
- Finalize planting plan in accordance with planning recommendations
- Required permits secured
- DEC Programmatic Staff Engagement (as required)
- 10-year (minimum) DEC **Operation and Maintenance (O&M) Plan** signed by O & M responsible party
- 10-year (minimum) **access license or easement** (if applicable) signed by landowner (or other relevant party)
- Required permit applications drafted (Projects requiring a **Wetlands Individual Permit** must have this secured prior to the close of final design) (DEC review just completed (4/21/26).
- **Other permit-required activities completed or elements installed** (if applicable)
- **Final VDHP Project Review / Treatment Plan Implementation** (if applicable)
- **Clean Water Project Sign** installed during construction if the project is considered publicly visible.
- Site preparation activities (if applicable)
- Restoration planting completed / wetland restoration complete, final construction walkthrough
- Return of **Clean Water Project Sign** to host site (if applicable)
- Project complete

Project Budget

Table 1: Preliminary budget for the Mettawee Community School Wetland Restoration Implementation

Category	Amount	Match	Total
CWSP Project Management	$ 6,000		$6,000
Fringe	Included in rate		
CWSP PM Travel*	$200		$200
Supplies	$ n/a		
Professional Services**	$77,432.20		$77,432.20
Subtotal	$		$
Indirect	$N/A		
Total	**$83,632.20**		**$83,632.20**

*Travel associated with CWSP project management.

** Costs include all professional services provided by contractors, including site preparation and maintenance (NNIS treatment and microtopography), planting (materials, labor, and installation), and post-planting maintenance. All estimates include materials and labor.

Budget Narrative

The project budget is based on cost estimates developed by Arrowwood Environmental as part of the final design. Personnel and supplies costs are incorporated within the professional services and project management line items, as implementation will be led and coordinated by a contracted project manager. The project manager will work with the CWSP to procure and retain contractors for planting, excavating and NNIS management.

<u>CWSP Project Management</u>

Funds to support CWSP staff bidding out the project and broadly overseeing and documenting installation of the project.

Estimated roughly 60 hours by Rutland RPC staff with $200 for mileage.

<u>Professional Services</u>

- **Project Management & Oversight:**

A Requests for Proposal will be issued to retain a qualified contractor to serve as the Project Manager for the duration of the project. Project management costs are based on estimates developed by Arrowwood Environmental and are outlined as follows:

Year 1:

Project Management: Total of 16 hours at a rate of $95.00 /hour = $1,520.00

Onsite Management: Total of 20 hours at a rate of $95.00 /hour = $1,900

Years 2-4:

Ongoing Project Management: Total of 24 hours at a rate of $115.00 /hour = $2,760

Total Project/Onsite Management Costs = $6,180.00

Mileage: (associated with year 1 site visits is estimated at 372 miles at a rate of $0.73/mile = $269.70.

Total Project Management Costs (Management Hours + Mileage) = $6,180 + $269.70 = $6,449.70

- **Site Preparation / Maintenance:**

Site preparation and early-stage maintenance activities are based on cost estimates developed by Arrowwood Environmental, using contractor quotes and recommended best management practices.

1) Treatment Non-Native Invasive Species (NNIS) species Treatment for NNIS (including honey suckle, glossy buckthorn, common buckthorn and multi-flora rose) are provided for using targeted cut – stump (cut/dab) herbicide methods. Cost estimates are based on quotes provided by Redstart Natural Resource Management and include:

- One initial treatment prior to restoration planting
- Two years of annual follow-up treatments

Estimated total cost for three years = $5,600.

2) Treatment of Herbaceous NNIS (Goutweed Treatment Zone): Two identified patches of goutweed will be treated using targeted herbicide application. Estimates are based on Redstart Natural Resource Management's recommended approach of:

- Two treatments per year (spring and fall)
- Over three consecutive years

Estimated total cost for three years = $4000.

3) Microtopography and Reed Canary Grass Management (Planting Zone Preparation): Site preparation within the primary planting area includes excavator-based soil disturbance to reduce NNIS, improve planting conditions, and restore natural microtopography. Cost estimates are based on a contractor quote from Davenport Excavation and include:

- Equipment mobilization: $2,500
- Excavation (approx. 10 hours): $2,000
- Wetland seed mix: $1,575
- Weed-free straw mulch and labor: $1,944

Total estimated cost: $8,019

Total = $8019

4) Native Pollinator Garden: Students will help plant ~170 native flowering plants at the entrance to the boardwalk. Cost estimates are based off plant prices from the Champlain Valley Native Plant Restoration Nursery in Poultney, VT.

Total estimated cost: $2700

- **Planting Components and Costs:**

Planting activities are based on the final design developed by Arrowwood Environmental.

The planting plan includes restoration of approximately 3.35 acres using a mix of bareroot trees and shrubs and live stakes. A planting density of 500 stems per acre is specified to exceed minimum requirements and account for expected mortality.

Cost estimates are based on materials and services provided by Champlain Valley Native Plant Restoration Nursery and Redstart Natural Resource Management:

- Bareroot trees and shrubs (1,595 stems across 3.17 acres): $14,604
- Live stake materials (0.18 acres): $426
- Planting labor (bareroot and live stakes): $6,700
- Tree protection (tree tubes, spiral guards, stakes, installation): $6,586
- Establishment maintenance (string trimming over two growing seasons): $16,747.50

Total Planting and Establishment Cost: $45,063.50

Protective measures include tree tubes for browse-susceptible species (e.g., maples, oaks, basswoods) and spiral guards for select species (e.g., birches and willows). Follow-up maintenance includes string trimming twice in the first growing season and once in the second to reduce competition and improve survival rates.

- **NNIS Treatment – Natural Succession and Managed Areas**

Management will consist of targeted foliar herbicide applications beginning the year after planting, followed by two additional treatments (years 2 and 4 post-planting) to support native vegetation establishment and long-term site resilience.

Cost estimates, provided by Redstart Natural Resource Management, for three years:

Total Post Planting NNIS Cost: $5,600

Match will be available from the Mettawee Community School and Merck, if needed by DEC.

Attachments

- Project eligibility screening CWIP Funding Policy Appendix A form
- Project memo and 100% design from Arrowwood.

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:	Protect and restore aquatic and riparian habitats

Step 2: Conduct Eligibility Criteria #2 Screening: Project Types and Standards

Table 2A: Project Types and Standards	
Please select the most representative project type from the drop-down list to the right.[1,2] If multiple BMPs are included in the project, please list below: Restore the wetlands behind th Mettawee Community School.	Wetland Restoration - Implementation
Is the project type an eligible project type for the funding program you are applying to as listed in column B of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◯ No ◯
Does the project meet the project type definitions and minimum standards as provided in column C of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◯ No ◯
Will the project result in the standard performance measures, milestones, and deliverables as defined by project type in columns D-F of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◯ No ◯
Is the project listed as an ineligible project or activity in the CWIP Funding Policy? If Yes, please explain below how project meets the allowable exceptions within the CWIP Funding Policy. (Answer must be NO to proceed, unless reasonable justification is provided above)	Yes ◯ No ◯

Step 3: Conduct Eligibility Criteria #3 Screening: Watershed Projects Database

Verify project has been recorded in the Watershed Project Database (WPD). Each project must have a Watershed Project Database number specific to the proposed project phase (for example,

[1] Note that Road/Stormwater Gully project-types must not otherwise be considered intermittent or perennial streams by the DEC Rivers Program and therefore project proponent must show documentation of this determination in order to select this project type.

[2] One project may include multiple best management practices (BMPs) that cross "project types." For example, a single project may include both stormwater and lake shoreland BMPs. Proponents should use their best judgement in selecting the most representative project type for the purposes of eligibility screening and reporting.

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	14190
Watershed Project Database Project Name	Austin Pond Dam Removal - Implementation

Step 4: Conduct Eligibility Criteria #4 Screening: Natural Resource Impacts[3]

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 permit[7])?
   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."

[10] Note 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]	
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. **Regulatory Point of Contact Name/Position:** Olin Reed	
III. Rivers, River Corridors, and Flood Hazard Areas	
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 area[12]**?** (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.	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:** Shannon Pytlik	
2. Is any portion of the project site within a perennial river or stream channel? [13]	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:** Josh Carvajal	
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."

1. Does the Wetland Screening Tool[14] provide a result of wetlands likely, very likely, or present at the project site?	Yes ○ No ○
2. Does your project site involve land that is in or near an area that has any of the following characteristics: 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.)	Yes ○ No ○ Not Sure ○
If you answered ***yes*** or ***not sure*** to either 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 either 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. **Regulatory Point of Contact Name/Position:**	
1. Is your project a Wetland Restoration project type?	Yes ○ No ○
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. **Regulatory Point of Contact Name/Position:** Zapata Courage	
V. Fish and Wildlife	
State law protects endangered and threatened species. No person may take or possess such species without a Threatened & Endangered Species Takings permit. 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	Yes ○ No ○

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

2. Is the project site within 1 mile of a mapped[15] Significant Natural Community or Rare, Threatened, or Endangered Species?	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:**	
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 ◯
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. **Regulatory Point of Contact Name/Position:**	
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 ◯
If yes, connect with the Waste Management & Prevention Division (dennis.fekert@vermont.gov 802-522-0195) to discuss your project and any necessary permitting. **Regulatory Point of Contact Name/Position:**	
Provide below or attach a narrative summary of Table 4 findings. Please include: a. Which permits or permit amendment are needed or might be needed? b. What type might be needed? (e.g. a general or individual permit)? c. What concerns were voiced by permitting staff? d. 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)	

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: CWSP South Lake (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).

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.	◯ **No**[18] - There is no additional requirements related to agricultural review for these projects.
2. Is the proposed project an agricultural project? 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.	◯ **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. ◯ **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 (VAAFM) to ensure a consistent approach on farms statewide that follows rules, regulations, and laws in place. Please follow Steps 1 & 2 below. **Step 1** - Please submit a detailed description of the project, project site, project details, landowner, farm operation, and any other relevant information to VAAFM at AGR.WaterQuality@Vermont.gov . **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.

Agricultural Project Review Status & Summary:	
Check as Applicable	**Status**
☐	Submitted/ Pending
☐	Approved
☐	Denied

[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 VAAFM.

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.

Introduction

The South Lake Champlain (SLC) Clean Water Service Provider (CWSP) has retained Arrowwood Environmental (AE) to deliver a Final Design for a wetland and floodplain restoration project located in Pawlet, VT.

This memo addresses the 100% Design project milestone. Components of the 100% design and this accompanying memo include:

- Accompanying documents:
    - Annotated plan view of existing site conditions and existing vegetative conditions.
    - Annotated plan view of proposed restoration conditions. This includes restoration details and planting plan for all components of the proposed restoration.
    - Draft 10-year (minimum) access license & DEC Operation and Maintenance (O&M) Plan.
        - Documentation of support/commitment from O&M responsible party and landowner.
- Memo components:
    - Field Survey Results
    - General description of proposed restoration practices
    - Anticipated cost estimates for project implementation
    - Phosphorus reduction numbers

Background

The designed restoration project addresses a stream and wetland system that spans two properties in Pawlet, VT: The Mettawee Community School (MCS), and a parcel owned by the Merck Forest & Farmland Center (Merck). Vermont Land Trust owns an easement on the Merck property.

The Merck property is used by students and teachers at MCS, and a new boardwalk was constructed in the summer of 2025 to facilitate access by students to the wetland and the Merck property beyond. The proposed wetland restoration project is designed to integrate with the boardwalk and accommodate the needs of MCS students, teachers, and staff.

Field Survey Results

A field study was conducted on July 9th, 2025. During this site visit AE ecologists spoke with MCS staff and assessed the site for restoration needs. Key findings that influenced chosen restoration practices include:

- The stream is not incised and already has a high level of connectivity to its floodplain. Additionally, there is already dead and dying wood in and near the stream. Therefore,

the stream would not benefit from significant berm removal or other practices to increase floodplain connectivity.

- Hydrology is not significantly impaired within the project area, and the site already contains multiple anthropogenic ponds. Therefore, the site would not benefit from additional shallow scrapes or other similar practices.
- Native plant diversity and establishment is strong in many places. Some places show strong tree and shrub recruitment, while much of the site would benefit from the cessation of brush-hogging and supplemental plantings.
- The pond is lacking habitat diversity and could benefit from woody material additions.
- Non-native invasive species (NNIS) have a heterogeneous distribution across the project area. A few large swaths are dominated by reed canary grass, which is inhibiting the regeneration of native-woody species. Other NNIS (such as purple loosestrife, goutweed, and multiflora rose) are scattered throughout.

Key site conditions affecting restoration practices are shown on the associated Existing Site Conditions and Existing Vegetative Conditions maps.

Restoration Practices – General Description

Site restoration will center on native tree and shrub plantings, with targeted supplemental practices designed to support planting success, control NNIS, improve habitat quality and provide additional educational opportunities. Direct hydrologic manipulation will not occur in the wetland. Included in the 100% plan are two designs for an optional native plant welcome garden located at the new boardwalk entrance. The project has been designed to be self-sustaining in the long term, with limited follow-up maintenance required in the first few years to ensure success.

Each restoration practice is presented on the attached Restoration Plan map and described below in the order in which they should be initiated.

Well & 100’ Well Offset Zone

Summary:

- MCS requested that no restoration activities occur within 100’ of their water supply well.
- All contractors should be made aware of this before beginning work on the property.
- Wooden stakes or some other marker should be installed prior to any restoration activities to make this boundary clear.
- Maintenance within this area is at the discretion MCS.

Cost:

$0.00

This is a continuation of current management practices and zero cost is assumed.

Brush Hog Every Other Year Zone

Summary:

- Area of high-quality native plant meadow adjacent to the athletic field.
- Discretional management by MCS.
- Suggested to maintain as meadow by brush hogging every other year, or as conditions allow.

Description:

South of the MCS athletic field is an area of meadow that supports a particularly diverse suite of native herbaceous species including common milkweed. This area is currently managed with brush hogging on a semi-regular basis. Brush hogging should continue here for a 2-year interval to maintain the current habitat diversity. Mowing could cease in the future if desired. If so, the area should be monitored and treated for any NNIS species that may establish.

Cost:

$0.00

This is a continuation of current management practices and zero cost is assumed.

Site Prep/Maintenance NNIS Treatment: Existing Tree/Shrub Zone

Summary:

- 1-5% cover of NNIS shrubs is present in areas of existing trees and shrubs in the project area.
- Treatments that include herbicides are most cost effective and successful.
- Coordinate timing and methods with MCS principal and Merck.
- Work with a qualified contractor for herbicide treatments (options provided in cost estimate section).
- Mechanical removal or repeated cuttings without herbicide application are options but are less likely to be successful without dedicated and ongoing follow-up management.
- Initiate treatment as soon as possible, ideally before restoration planting begins.
- Follow-up treatments should be conducted annually for 2 years, with periodic additional follow-up treatments as needed.

Description:

The areas of existing trees and shrubs have 1%-5% cover of NNIS woody shrubs including honeysuckle (*Lonicera spp.*), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Frangula alnus*), and multi-flora rose (*Rosa multiflora*). Additional NNIS species may be present.

If possible, management of these woody NNIS should be initiated prior to restoration planting. Herbicide is the most cost-effective and successful method of treating woody NNIS species, but

care should be taken to follow methods that pose minimal harm to nearby native species and that align with any safety considerations of MCS. The timing and methods of treatment must be coordinated with the MCS principal and Merck.

Common methods include targeted foliar spray or cutting and applying herbicide to the stump. The cut/dab stump method is more expensive but poses less of a risk of collateral damage to nearby native plants, especially in the first application when NNIS plants are larger. An initial treatment should occur before restoration planting if possible, and follow-up treatments should occur every year thereafter for at least 2 additional years, with periodic additional follow-up treatments as needed. Hire a certified contractor who will know the concentrations and combinations of chemicals for successful management and control of NNIS.

Mechanical removal or repeated cutting without herbicide application are options where herbicide is not an appropriate or desired method, though these techniques often fail without dedicated and ongoing follow-up.

Cost:
The below estimate is from Redstart Natural Resource Management (Redstart) using cut/dab stump method. Foliar spray is half as expensive but is more likely to harm non-target plants. Other estimates from other contractors are similar or more expensive.

Cost summary for Existing Tree/Shrub: NNIS Treatment (Redstart, cut/dab stump method)

Component	Unit Price	Total Price
Herbicide treatment Year 1	$1600-$2400	$2400
Herbicide treatment Year 2	$1200-$1600	$1600
Herbicide treatment Year 3	$1200-$1600	$1600
	Total	**$ 5600***

* Note that treatment cost estimates are a range, and the total cost has been calculated from the high end of the estimate range.

Site Prep/Maintenance NNIS Treatment: Goutweed Treatment Zone

Summary:

- Two patches of goutweed are present in the project area.
- Goutweed is persistent and will remain in both meadow and forest conditions.
- Initiate treatment as soon as possible, ideally before restoration planting begins.
- Coordinate timing and methods with MCS principal and Merck.

- Two treatment options:
    - 1) Herbicide application twice (spring and fall) a year for 3 consecutive years. Restoration planting can occur right away because non-target mortality can be minimal with careful foliar application.
    - 2) Smothering with thick black plastic for 5 years. Does not require herbicide but must be regularly monitored and maintained. Restoration planting must be delayed for 5 years. No local contractors were identified who have experience with this method.

Description:
Two patches of goutweed (i.e., bishop's weed, *Aegopodium podagraria*), were observed near the athletic field. Goutweed is an herbaceous NNIS that persists and spreads in both sunny and shady areas. Because of this it will not be shaded out by the restoration plantings.

There are two options for treating goutweed: 1) applying herbicide, and 2) using black plastic to smother the plants. The timing and methods of treatment must be coordinated with the MCS principal.

The first method involves herbicide treatments conducted twice a year (spring and fall) for 3 consecutive years. This is the method of choice for Redstart Natural Resource Management. The second option involves smothering the area of goutweed with thick black plastic for 5 years. This choice does not use herbicide, but requires care to not puncture the plastic, regular monitoring to look for holes and gaps, and rapid response to fix any holes in the plastic. No local contractors were identified who have experience with this method.

If herbicides are used, then restoration plantings could occur immediately if the contractor is able to use application methods (for example low-volume backpack sprayers) with low non-target mortality. Tree tubes could also be used to protect the trees from herbicide drift. If black plastic is used, the area will need to be seeded and planted when the plastic is removed in 5 years.

Cost:
The estimate below is from Redstart using herbicide spray. Other estimates from other contractors are similar or more expensive. Experience using black plastic on such a large area is limited and no quotes were available.

Cost summary for Goutweed: NNIS Treatment (Redstart)

Component	Unit Price	Total Price
Herbicide treatment Year 1 (spring)	$600-$800	$800
Herbicide treatment Year 1 (fall)	$600-$800	$800
Herbicide treatment Year 2 (spring)	$400-$600	$600
Herbicide treatment Year 2 (fall)	$400-$600	$600
Herbicide treatment Year 3 (spring)	$400-$600	$600
Herbicide treatment Year 3 (fall)	$400-$600	$600
	Total	**$4000***

* Note that treatment cost estimates are a range, and the total cost has been calculated from the high end of the estimate range.

Natural Succession and Woody Material Addition Zone

Summary:

- Optional practice to add habitat diversity to central pond.
- Opportunity for student involvement and outdoor classroom enhancement.
- Use available material (dead trees, logs, limbs, etc.) from Merck property.
- Larger material is preferred, but smaller material can be fastened together to create larger structures.

Description:

The baseline restoration practice prescribed for the central pond is passive natural succession. The pond is expected to slowly fill in overtime with sediment and woody plants without the help of active plantings, though this process could take decades.

Woody material additions to the central pond (such as dead logs, root balls, bundled smaller stems, etc.) are recommended as an optional restoration practice to complement the natural succession that will occur there. This practice could occur at any time.

Woody material additions help habitat diversity by providing a place for small creatures to rest and find shelter, as well as a location for some plants to take root. Woody material additions could also be an opportunity for student creativity and scientific observation due to the location of the boardwalk at the edge of the pond.

The pond currently does not have a lot of habitat diversity and would benefit from the addition of woody material. If desired, MCS or Merck can bring logs or other woody material in from the

Merck property. Care should be taken to only use local material to prevent the spread of forest pests and pathogens such as emerald ash borer. Care should also be taken to avoid spreading non-native invasive species.

Appropriate material could be already dead logs brought in from the forest, or sections of trees that have been felled during maintenance or forestry operations. Larger material is better than smaller material, but smaller material can be fastened together to create large bundles, piles, or log-cabin style “fish cribs.”

Cost:
$0.00
This is a voluntary practice using free materials and staff/student time.

Native Plant Garden (Optional)

Summary:

- Optional native plant garden at entrance of new boardwalk.
- Two alternate designs for budgetary flexibility.
- Designed for accessibility, edibility, pollinator habitat, and minimal maintenance.

Description:
MCS and Merck recently built a new boardwalk that gives students access to the wetland, as well as to the fields and forest beyond. An optional native plant garden is proposed that could be planted at the entrance of the boardwalk, along both sides of the new trail. A native plant garden at this location would welcome people to the newly constructed boardwalk, would be regularly visited, and would provide easy access to native plants for classroom use.

Two alternate designs were created for the garden to provide budgetary flexibility. Both designs use the same native flowers and shrubs, but one design also includes native ferns. All the plants were chosen for their pollinator support, and some are also edible. The designs are meant to be simple and low maintenance so that the garden will be self-sustaining over time. Staking out the limits of the garden is recommended to clearly demarcate its boundaries relative to other restoration practices.

A portion of the native plant garden overlaps with proposed natural succession and restoration plantings zones on the attached Restoration Plan. If the garden is not installed, the underlying restoration practices should be implemented.

The native plant garden is considered optional because wildflowers and ferns do not directly count towards phosphorus crediting. Alternative funding sources may need to be identified.

Native Plant Garden Species Lists and Quantities

Species	Common Name	Plant Spacing (ft)	Design 1 QTY	Design 2 QTY
Amelanchier arborea	Downy serviceberry	-	2	2
Asclepias incarnata	Swamp milkweed	2	51	26
Asclepias syriaca	Common milkweed	3	58	17
Chelone glabra	Turtlehead	1.5	77	43
Eupatorium perfoliatum	Boneset	3	15	10
Eutrochium maculatum	Spotted Joe-Pye weed	3	28	24
Onoclea sensibilis	Sensitive fern	4	94	0
Spiraea tomentosa	Steeplebush	-	17	11
Symphyotrichum novae-angliae	New England aster	2	36	32
Thelypteris palustris	Marsh fern	4	61	0
Viburnum dentatum	Arrowwood	-	5	5
		Total	**444**	**170**

Cost:
Cost estimate is from the Champlain Valley Native Plant Restoration Nursery (CVNPRN). No other quotes were solicited.

Native Plant Garden Installation and Maintenance Cost

Component	Design 1		Design 2	
	Quantity	Cost	Quantity	Cost
Plants	444	$2404	170	$1177
Mulch		$150		$60
Planting installation		$2695		$1032
Post-planting maintenance (2 years)		$1123		$431
Total		**$6372***		**$2700***

* The original cost estimate provided by CVNPRN was for a design with 593 plants. The current design options have been altered, and the estimates were scaled accordingly.

Microtopography and Plantings Zone

Summary:

- There are areas of dense reed canary grass in the project area.
- Reed canary grass creates a thick sod with its extensive roots that can exclude other plants.
- Treat dense stand of reed canary grass with an excavator in the fall prior to planting.
- Excavator turns soil over, burying much of the reed canary grass, leaving a rough and loose soil surface to recreate natural microtopography.
- Excavator treatment will be followed by a wetland seed mix, tree and shrub planting, and string trimming around plantings for two years (twice in first growing season, once in second).
- Reed canary grass is not anticipated to be eradicated but should diminish in extent due to shading.

Description:

On the Merck property, just east of the boardwalk, is a dense stand of reed canary grass. Reed canary grass is known to inhibit tree and shrub establishment because it outcompetes other plants. It also produces a thick thatch which shelters small rodents that girdle young trees and shrubs in the winter.

This stand of reed canary grass will be treated with an excavator, which will turn over the soil and create a rough and loose soil surface to recreate natural microtopography. The reed canary grass will be knocked back and the treatment will also create a soil surface easier to plant in than intact sod. The rough and loose surface will dissipate surface water flow, reduce erosion, and increase water infiltration.

Excavator work needs to occur before tree and shrub planting (described in Plantings Zone section below). Late September or early October is recommended because the soil typically is less saturated than in the springtime, and because fall is the ideal time to sow wetland seed mixes. Immediately after excavation the site should be sown with a wetland seed mix and then mulched with weed free straw. Tree and shrub planting can occur before or after the seed mix is sown in the fall, or during the following spring. String trimming around the tree and shrub plantings should be conducted for two years as described below.

This treatment is not anticipated to eradicate the reed canary grass but combined with the application of a wetland seed mix, tree and shrub plantings, string trimming around plantings, and eventual shading from the new canopy, the reed canary grass should diminish over time while native plant diversity increases.

Other patches of reed canary grass exist within the project area. These areas will not be treated with an excavator because they are either less dense or too difficult to access.

Cost:
The quote below is from Davenport Excavation out of Poultney. Other quotes were solicited but not responded to.

Microtopography Cost Estimate

Item	Cost
Equipment moving fee	$2500
Excavation work – 10 hours for 1 acre	$2000
Wetland seed mix – 35 lbs per acre	$1575
Weed free straw mulch plus labor	$1944
Total	**$8019**

Plantings Zone

Summary:

- Plant trees and shrubs immediately after the Microtopography excavator treatment in the fall, or the following spring. Plant when the ground is thawed but the plants are dormant.
- Some plants and live stakes could be set aside for students and/or volunteers to plant.
- Design density of woody stems is 500 stems per acre.
- The planting areas are categorized into 5 moisture categories. Each category has a tailored plant mix.
- 3.17 acres will be planted with 2-3’ bareroot plants.
- 0.18 acres will be planted with live stakes.
- Tree protection (5’ tall tree tubes) is required for oaks, maples, and basswoods.
- Tree protection (18” spiral tree guards) are recommended for birches and willows.
- Follow-up string trimming around the new plants should occur twice in the first growing season, and once in the second.

Description:
Tree and shrub plantings will increase biodiversity, improve water quality, and qualify the project for phosphorus credits. It is anticipated that the majority of the planting work will be completed by a professional work crew, but some plants and live stakes could be set aside as an opportunity for students and volunteers to plant.

Three-hundred stems per acre are required for phosphorus credits. The planting plan includes 500 stems per acre for 2-3’ bareroot plants to allow for expected mortality, and 6-foot stem spacing for live stake materials (1210 stakes/acre).

The 3.35 acres of planting areas are organized into 5 moisture categories: Flooded, very wet, wet, moist, and upland. Each category has a plant mix tailored to its moisture conditions. Bareroot plants will be installed in 3.17 acres of the planting areas. Tree tubes will be installed on all deer-susceptible maples, oaks, and basswoods. Live stakes will be planted in 0.18 acres of the planting areas. The Restoration Plan includes detailed species and material allocations for each planting zone.

Plantings should occur in the fall or spring when the ground is thawed but the plants are dormant. All maples, oaks, and basswoods will be protected with 5' tall tree tubes, which protect these browse-susceptible species from rodents, deer, herbicide, and string trimmers. Bird exclusion netting will be installed at the top of each tube to prevent birds from becoming trapped in the tubes, and to prevent wasps from making nests in the tubes. All birches and willows should be protected with 18" spiral tree guards.

Plantings will require three treatments of string trimming to reduce competition from nearby herbaceous plants. This will occur twice in the first growing season after planting, and once in the second growing season.

Tree tubes should be removed when the base of the trees reach 3.5" in diameter, about 5 years after planting.

Cost:
The estimate below for bareroot planting materials is from the Champlain Valley Native Plant Restoration Nursery (CVNPRN). Alternate estimates have been solicited from Redstart and the Intervale Center. When accounting for labor, both of these estimates are within $1000 of the CVNPRN plants plus labor estimate.

Cost for Bareroot Planting Materials (CVNPRN)

Species	Stems	Cost low	Cost high	Total
Acer negundo	117	$ 2	$ 5	$ 585
Acer pensylvanicum	21	$ 2	$ 5	$ 105
Acer rubrum	136	$ 5	$ 7	$ 952
Acer saccharum	21	$ 6	$ 12	$ 252
Alnus incana	200	$ 6	$ 12	$ 2,400
Betula lenta	21	$ 2	$ 5	$ 105
Betula populifolia	119	$ 6	$ 12	$ 1,428
Carpinus caroliniana	40	$ 2	$ 5	$ 200
Cephalanthus occidentalis	107	$ 6	$ 12	$ 1,284.
Ilex verticillata	67	$ 6	$ 12	$ 804
Prunus serotina	21	$ 6	$ 12	$ 252
Quercus alba	21	$ 6	$ 12	$ 252
Quercus rubra	21	$ 5	$ 7	$ 147
Salix bebbiana	134	$ 6	$ 12	$ 1,608
Salix eriocephala	165	$ 6	$ 12	$ 1,980
Sambucus canadensis	48	$ 5	$ 7	$ 336
Spiraea alba	48	$ 2	$ 5	$ 240
Spiraea tomentosa	60	$ 2	$ 5	$ 300
Swida amomum	48	$ 5	$ 7	$ 336
Swida racemosa	90	$ 2	$ 5	$ 450
Tilia americana	21	$ 2	$ 5	$ 105
Viburnum dentatum	69	$ 5	$ 7	$ 483
Total*	**1595**			**$ 14,604**

*Note: Plant costs are a range, and the total cost has been calculated from the high end of the per plant estimate range.

The cost estimate below uses planting materials and labor from CVNPRN, and tree tube and string trimming estimates from Redstart. Actual services could come from one or both of these organizations.

Cost Summary for Plantings (CVNPRN and Redstart)

Component	Estimate Source	Units	Quantity	Unit Price	Total Price
*Bareroot trees and shrubs	CVNPRN	stem	1595	$2-$12	$ 14,604.00
Live stake material	CVNPRN	stem	213	$ 2.00	$ 426.00
Tree and shrub planting labor	CVNPRN	acre	3.35	$ 2,000.00	$ 6,340.00
Live stake installation labor	CVNPRN	acre	0.18	$ 2,000.00	$ 360.00
Spiral tree guards (rodent protection) + labor	CVNPRN	stem	500	$1.00	$500.00
Tree tubes (deer and rodent protection) + stakes + labor	Redstart	stem	358	$ 17.00	$ 6,086.00
String trimming - Year 1 early summer	Redstart	stem	1595	$ 3.50	$ 5,582.50
String trimming - Year 1 late summer	Redstart	stem	1595	$ 3.50	$ 5,582.50
String trimming - Year 2 early summer	Redstart	stem	1595	$ 3.50	$ 5,582.50
				Total	**$ 45,063.50**

* Note that plant costs are a range, and the total cost has been calculated from the high end of the per plant estimate range.

Full-service quotes were also solicited from Redstart ($45,718) and the Intervale Center ($84,046). Redstart is ~$700 more expensive than the hybrid CVNPRN/Redstart scenario above. The Intervale Center has similar plant material and installation costs to both CVNPRN and Redstart. Their string trimming costs are similar to Redstart's. Their livestake material and labor is more expensive (~$30,000), as are their tree protection costs ($16,959.50), presumably because they estimated for living fascines instead of livestakes, and because they protect more or all of their tree species with tubes.

Natural Succession Zone (i.e., No-Mow)

Summary:

- Some areas of meadow within the project area will be left to passively follow natural succession. This means that mowing should no longer occur, and trees or shrubs will not be actively planted.

Description:

Many parts of the existing meadows within the project area have high native plant diversity without NNIS present. Discontinuing existing vegetation management (i.e., stop mowing) and allowing for natural succession is a preferred practice in these areas.

Cost:
$0.00 This is a passive practice with no cost.

Site Maintenance NNIS Treatment: Natural Succession, Plantings, Microtopography and Plantings, Lives Stakes, Brush Hog Every Other Year Zones

Summary:

- Areas that have been regularly mown often see an increase in woody NNIS once mowing stops.
- Proactively treating these areas and then following up for a couple of years, can help native woody plants establish and out-compete NNIS species.
- Initiate treatments (foliar herbicide spray) the year after planting.
- Coordinate timing and methods with MCS principal and Merck.
- Two follow-up treatments should occur in years 2 and 4 after planting.

Description:
This practice treats potential NNIS issues in the areas of the site not covered by the other NNIS treatments. This includes the natural succession, planting, live stakes, and the brush hog zones. All of these areas (5.6 acres in total) are currently dominated by herbaceous vegetation, and most of them are areas where mowing will stop. Areas that have been regularly mown often see an increase in woody NNIS once mowing stops, and so proactively treating these areas can help native woody plants establish and out-compete NNIS species in the natural succession areas and the planting areas.

Foliar herbicide spray is likely the most effective and cost-effective option. The first treatment should occur the year following plantings, late in the growing season. A second treatment should occur the year after the first, late in the growing season. The third treatment should occur two years after the second (fourth year after plantings), late in the growing season. The timing and methods of treatment must be coordinated with the MCS principal and Merck.

Cost:
The estimate below is from Redstart using foliar spray.

Cost summary for Natural Succession, Plantings, Microtopography and Plantings, Lives Stakes, Brush Hog Every Other Year: NNIS Treatment (Redstart)

Component	Unit Price	Total Price
Herbicide Treatment Year 1	$800-$1200	$2400
Herbicide Treatment Year 2	$600-$800	$1600

Herbicide Treatment Year 3	$600-$800	$1600
	Total	**$5600**

CWSP Project Management

Summary:

- Implementation of the project will require coordination by CWSP staff.
- The South Lake Champlain CWSP put together an estimate for an implementation funding application.

Description:

Project implementation will funds to support CWSP staff bidding out the project and broadly overseeing and documenting installation of the project.

Cost:

The estimate below is from the SLC CWSP.

Cost summary for Project Management

Component	Units	Quantity	Unit Price	Total Price
General	Hours	60	$ 100.00	6,000.00
Mileage	-	-	-	$ 200.00
			Total	**$ 6,200.00**

Project Management

Summary:

- Implementation of the project will require coordination of and selection of contractors.
- Year 1 will involve project initiation and onsite management.
- Years 2-4 will involve coordination of contractors for follow-up management.

Description:

Project implementation will require selection and coordination of contractors to conduct the site prep, acquire planting materials, implement the practices, and conduct three years of follow-up management. The project manager will be present during one day of microtopography treatment and one day of planting to ensure that the site plans are being followed correctly, that natural resources are being protected, and that any day-of problem

solving can be resolved while ensuring project objectives are met and site constraints are accommodated.

Cost:
The estimate below is from Arrowwood Environmental.

Cost summary for Project Management

Component	Units	Quantity	Unit Price	Total Price
Year 1: Project management	Hours	16	$ 95.00	$ 1,520.00
Year 1: Onsite management	Hours	20	$ 95.00	$ 1,900.00
Year 1: Mileage	Miles	372	$ 0.73	$ 269.70
Year 2-4: Project Management	Hours	24	$ 115.00	$ 2,760.00
			Total	**$ 6,449.70**

Phosphorus Reduction Numbers

Project Type	Practice Type	Acres	Cost	Calculated Estimated P Load Reduction (kg/yr)	Estimated Annual P Load Reduction (kg/acre/yr)	Total Project Estimated Cost Effectiveness ($/kg/yr)
Forested Riparian Buffer	Planting	3.35		3.227	0.96	
Native Revegetation	No-mow	1.67		0.387	0.23	
Project Total		7.84*	$83,632.20**	3.687	0.470281	$22,682.99

* 7.84 acres is the entire project area including areas that do not fit into one of the above project types but are part of the entire treatment.
** This cost estimate includes NNIS treatments and the optional native plant garden design 2. This cost estimate does not include yearly inspections, tree-tube removal, or unforeseen adaptive management like replacement plantings.

VERMONT 153

METTAWEE COMMUNITY SCHOOL

SCHOOL

SCHOOL

ATHLETIC FIELD

W

189' WELL OFFSET

FORMER OUTDOOR CLASSROOM

BOARDWALK

MERCK FOREST & FARMLAND

Woody Vegetation
Herbaceous Vegetation
Open Water
Wetland
WetlandBuffer
Streams
Boardwalk
Gravel Trail
Mowed Trail
Property Boundaries

Mettawee/Merck Wetland Restoration: Existing Site Conditions

Sheet 1 of 6

Friday, March 06, 2026 | File: MettaweeMerckResto:11x17 R1_ExCond | Prepared By: A Worthley, Arrowwood Environmental | Coordinate System: NAD 1983 StatePlane Vermont FIPS 4400 | 1:960 | Feet 0 20 40 60 80 100

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VERMONT 153

METTAWEE COMMUNITY SCHOOL

SCHOOL

SCHOOL

ATHLETIC FIELD

100' WELL OFFSET

W

BOARDWALK

MERCK FOREST & FARMLAND

Trees
Shrubs
Meadow
Mowed
Open water

Goutweed
Reed Canary
Reed Canary + Goutweed
Wetland

Streams
Boardwalk
Gravel Trail
Mowed Trail

Mettawee/Merck Wetland Restoration: Existing Vegetative Conditions

Sheet 2 of 6

Friday, March 06, 2026 | File: MettaweeMerckResto:11x17 R2_ExVeg | Prepared By: A Worthley, Arrowwood Environmental | Coordinate System: NAD 1983 StatePlane Vermont FIPS 4400 | 1:960

0 20 40 60 80 100 Feet

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VERMONT 153

METTAWEE COMMUNITY SCHOOL

SCHOOL

SCHOOL

ATHLETIC FIELD

No restoration activities within 100' of water supply well

100' WELL OFFSET

Remove outdoor classroom infrastructure

See Native Plant Garden Plan

Equipment Access on Existing Mowed Trail

BOARDWALK

MERCK FOREST & FARMLAND

Refer to the Site Access License and Operation and Maintenance Plan document for post-construction instructions.

- Existing Tree/Shrub
- Maintain as Lawn
- Natural Succession
- Natural Succession + Woody Addition
- Plantings
- Microtopography + Plantings
- Live Stakes
- Brush Hog Every Other Year
- Goutweed Treatment
- Streams
- Boardwalk
- Gravel Trail
- Mowed Trail
- Well Offset Markers

Mettawee/Merck Wetland Restoration: Restoration Plan

Sheet 3 of 6

Friday, March 06, 2026 | File: MettaweeMerckResto:11x17 R3_Resto | Prepared By: A Worthley, Arrowwood Environmental | Coordinate System: NAD 1983 StatePlane Vermont FIPS 4400 | 1:960 | Feet 0 20 40 60 80 100

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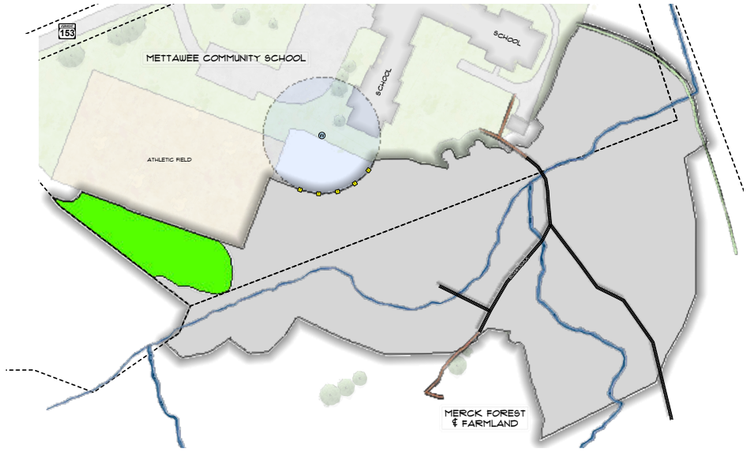
Brush Hog Zone

Restoration Notes:

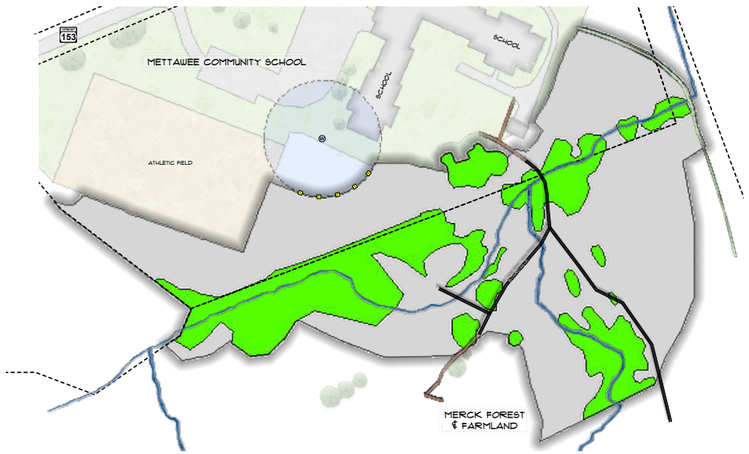
- Mow once every 2 years (recommended).
- Mow >2 weeks following goutweed herbicide treatment.



Existing Tree / Shrub Zone

Restoration Notes:

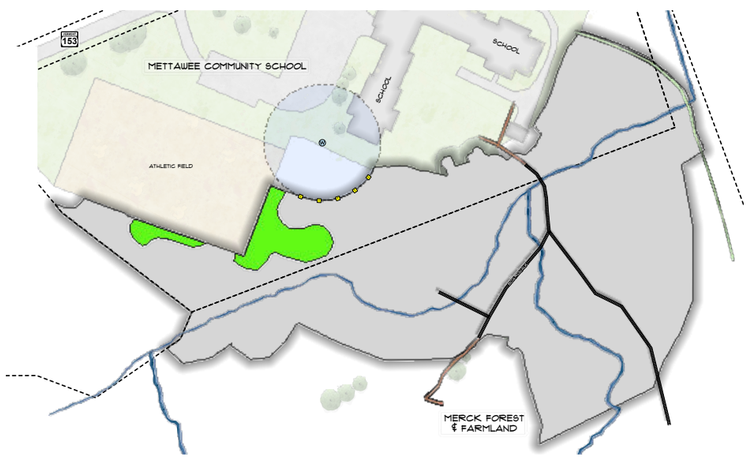
- NNIS contractor to treat zone as needed prior to planting.
- Cut/dab application preferred, foliar spray with caution where required.



Goutweed Treatment Zone

Restoration Notes:

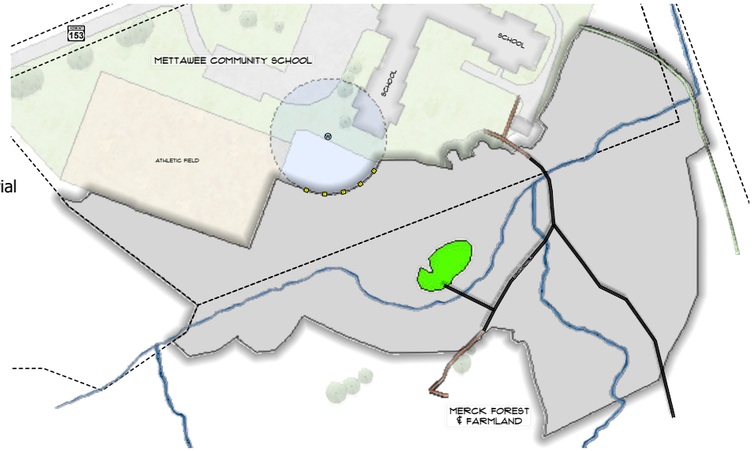
- Initiate treatment prior to restoration plantings.
- Plant no sooner than 2 weeks after treatment.
- Treat w/ foliar spray in early spring and late summer for 3 years.
- Do not spray native species or new plantings.



Natural Succession + Woody Addition Zone

Restoration Notes:

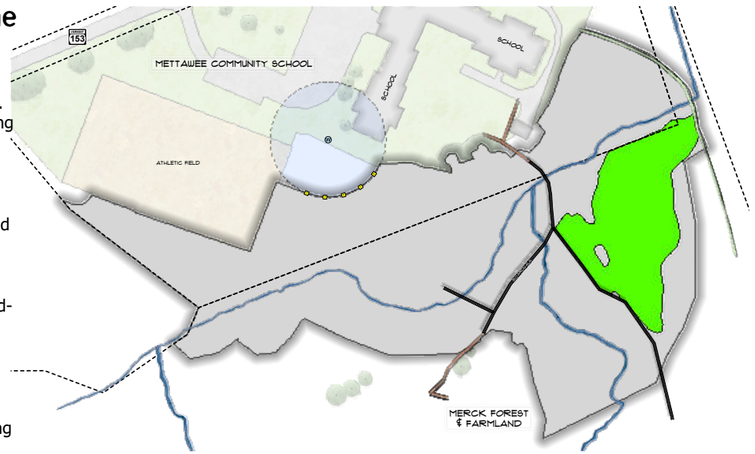
- Obtain woody material (dead trees, logs, limbs, etc.) from Merck property.
- Do not use non-native invasive species.
- Large material preferred, combine smaller material into bundles, piles, or log-cabin style "fish cribs"

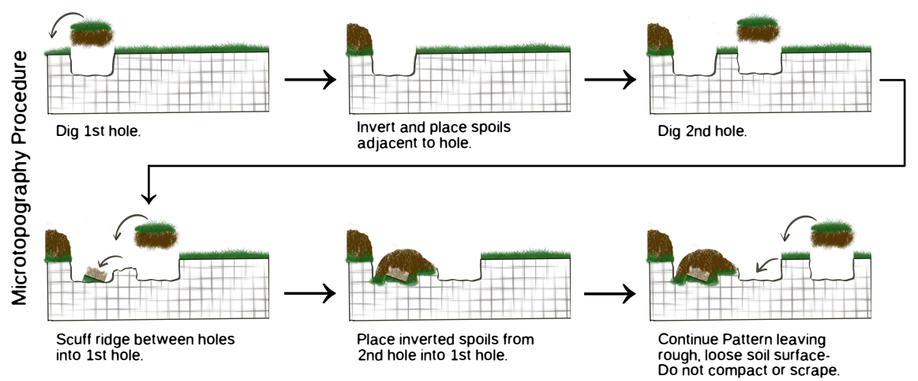


Microtopography + Plantings Zone

Restoration Notes:

- Stake zone perimeter prior to commencing work.
- Schedule work to commence in late August during dry conditions.
- Install microtopography with excavator prior to restoration plantings. See below.
  - Use existing mowed path access route
  - Install temp. swamp mats to cross stream and avoid ruts
  - Exclude excavator from areas with actively running or standing water
  - Turn over all soil in Zone to bury existing reed-canary grass sod
  - Start at far southern end of Zone, work backwards (northerly) toward access road
- Seed with native wetland seed mix immediately following excavation.
- Mulch with weed-free straw immediately following seed application.
- Install plantings per Planting Plan, Sheet 6.





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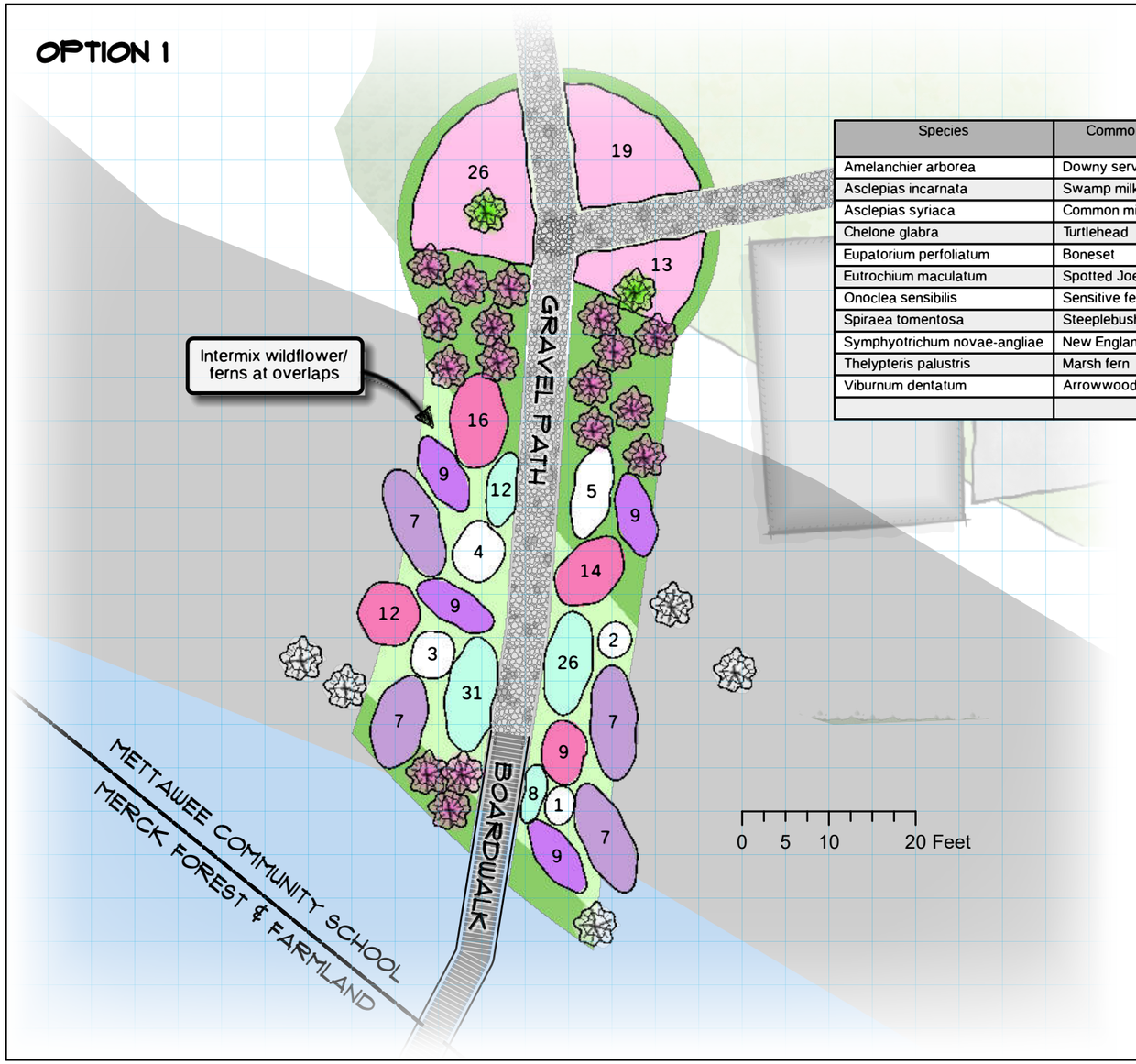
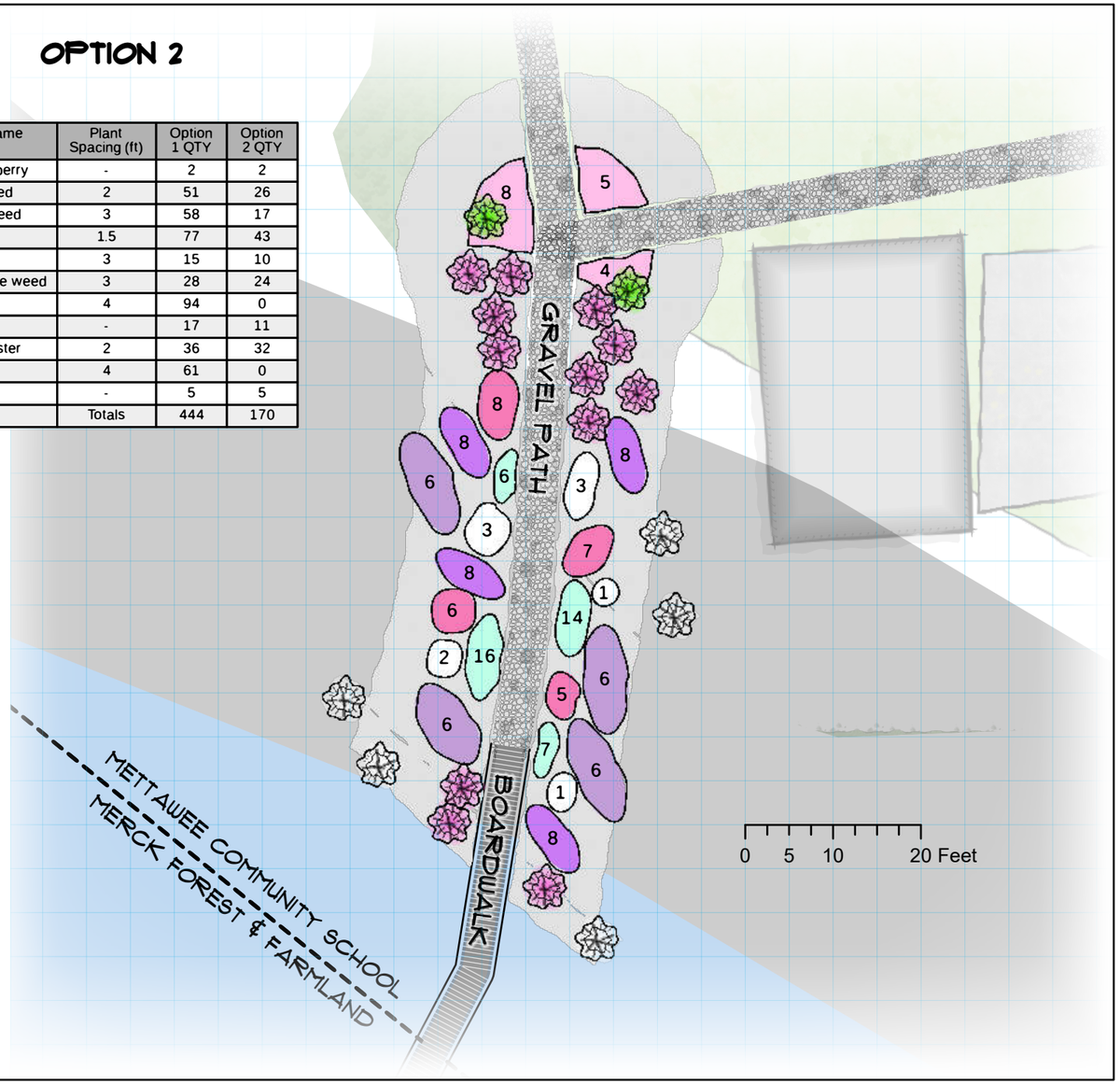
OPTION 1



Species	Common Name	Plant Spacing (ft)	Option 1 QTY	Option 2 QTY
Amelanchier arborea	Downy serviceberry	-	2	2
Asclepias incarnata	Swamp milkweed	2	51	26
Asclepias syriaca	Common milkweed	3	58	17
Chelone glabra	Turtlehead	1.5	77	43
Eupatorium perfoliatum	Boneset	3	15	10
Eutrochium maculatum	Spotted Joe-Pye weed	3	28	24
Onoclea sensibilis	Sensitive fern	4	94	0
Spiraea tomentosa	Steeplebush	-	17	11
Symphyotrichum novae-angliae	New England aster	2	36	32
Thelypteris palustris	Marsh fern	4	61	0
Viburnum dentatum	Arrowwood	-	5	5
		Totals	444	170

OPTION 2



Shrubs
- Arrowwood
- Downy Serviceberry
- Steeplebush

Wildflowers
- Swamp milkweed
- Common milkweed
- White turtlehead
- Boneset
- Joe-Pye weed
- New England Aster

Ferns
- Sensitive fern
- Marsh fern

- Wetland
- WetlandBuffer
- 5' x 5' layout grid

Native Plant Garden: Installation Sequence

- Stake out Garden limits.
- Dig holes 2x wider than root ball in existing sod.
- Install with root crown flush with existing ground.
- Refill around root ball with native soil- pressing to remove air gaps.
- Cover exposed earth with weed-free straw mulch leaving 1" gap between stem and surrounding mulch.

Mettawee/Merck Wetland Restoration: Native Plant Garden

Sheet 5 of 6

Tuesday, March 10, 2026 | File: MettaweeMerckResto:11x17 R5_Garden | Prepared By: A Worthley, Arrowwood Environmental | Coordinate System: NAD 1983 StatePlane Vermont FIPS 4400 | 1:192 | 0 4 8 12 16 20 Feet

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Bareroot Allocated Plant Count/Planting Zone						
Species	Flooded	Very wet	Wet	Moist	Upland	Sum
Acer negundo	0	17	62	38	0	117
Acer pensylvanicum	0	0	0	0	21	21
Acer rubrum	0	17	62	57	0	136
Acer saccharum	0	0	0	0	21	21
Alnus incana	22	85	93	0	0	200
Betula lenta	0	0	0	0	21	21
Betula populifolia	0	0	62	57	0	119
Carpinus caroliniana	0	0	0	20	20	40
Cephalanthus occidentalis	22	85	0	0	0	107
Ilex verticillata	0	17	31	19	0	67
Prunus serotina	0	0	0	0	21	21
Quercus alba	0	0	0	0	21	21
Quercus rubra	0	0	0	0	21	21
Salix bebbiana	0	34	62	38	0	134
Salix eriocephala	0	34	93	38	0	165
Sambucus canadensis	0	17	31	0	0	48
Spiraea alba	0	17	31	0	0	48
Spiraea tomentosa	0	0	0	39	21	60
Swida amomum	0	17	31	0	0	48
Swida racemosa	0	0	35	38	17	90
Tilia americana	0	0	0	0	21	21
Viburnum dentatum	0	0	31	38	0	69

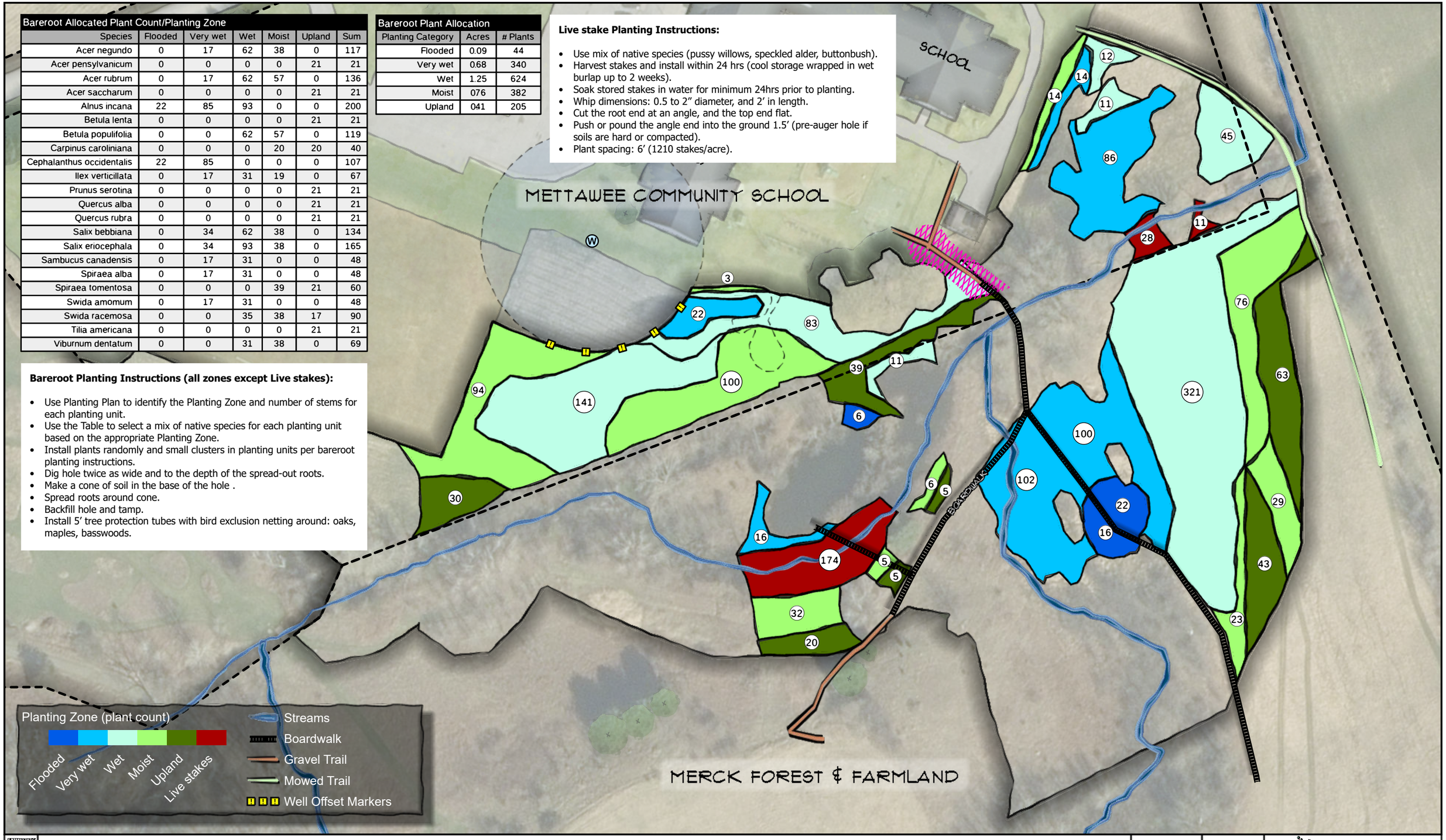
Bareroot Plant Allocation		
Planting Category	Acres	# Plants
Flooded	0.09	44
Very wet	0.68	340
Wet	1.25	624
Moist	076	382
Upland	041	205

Bareroot Planting Instructions (all zones except Live stakes):

- Use Planting Plan to identify the Planting Zone and number of stems for each planting unit.
- Use the Table to select a mix of native species for each planting unit based on the appropriate Planting Zone.
- Install plants randomly and small clusters in planting units per bareroot planting instructions.
- Dig hole twice as wide and to the depth of the spread-out roots.
- Make a cone of soil in the base of the hole .
- Spread roots around cone.
- Backfill hole and tamp.
- Install 5' tree protection tubes with bird exclusion netting around: oaks, maples, basswoods.

Live stake Planting Instructions:

- Use mix of native species (pussy willows, speckled alder, buttonbush).
- Harvest stakes and install within 24 hrs (cool storage wrapped in wet burlap up to 2 weeks).
- Soak stored stakes in water for minimum 24hrs prior to planting.
- Whip dimensions: 0.5 to 2" diameter, and 2' in length.
- Cut the root end at an angle, and the top end flat.
- Push or pound the angle end into the ground 1.5' (pre-auger hole if soils are hard or compacted).
- Plant spacing: 6' (1210 stakes/acre).



Mettawee/Merck Wetland Restoration: Planting Plan

Sheet 6 of 6

Tuesday, March 10, 2026 | File: MettaweeMerckResto:11x17 R6_Planting | Prepared By: A Worthley, Arrowwood Environmental | Coordinate System: NAD 1983 StatePlane Vermont FIPS 4400 | 1:960 | 0 20 40 60 80 100 Feet

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PROJECT APPLICATION FOR THE SOUTH LAKE CWSP
ROUND 12: APRIL 30, 2026

Cover Page Information

Contact Information: Lake St. Catherine Association (LSCA)

Jerremy Jones, LSCA
PO Box 631, Wells, VT 05774
(802) 287-6027/ Jerremy.jones@lakestcatherine.org

Project Name: Lochlea Lane Stormwater Final Design and Implementation – Wells (2 projects)

Project ID number: LL-01A FD and Imp (14720 and 14723) and LL-01B FD and Imp (14721 and 14722)

Project Location: South Lake Watershed, Wells, VT

Project Type: Stormwater – Final Design and Implementation

Project Sector: Developed Lands

Project Stage: Final Design and Implementation

Funds being requested: $58,000 (divided between the four projects)
Matching funds: if needed

Project Summary

The Lochlea Lane project includes a suite of projects on three properties designed to convey and collect stormwater draining from a steep uphill slope and being intercepted by the Lochlea Lane drainage ditches. The site, identified through both the Lake St. Catherine Stormwater Master Plan and the Lake St. Catherine Watershed Action Plan (LWAP), is a high-priority site for both the Lake St. Catherine Association and the homeowners along Lochlea Lane. Conceptual designs for these projects (found in the studies listed above) estimate roughly 1.58 kg per year of phosphorus would be remediated by this collective project. The total cost efficiency for this project is $36,708 per Kg phosphorus.

Project Description

This project appears in both the Lake St. Catherine Stormwater Master Plan and Watershed Action Plan (LWAP). The Lake St. Catherine Association (LSCA) hopes to collaborate with interested landowners to carry out these projects as soon as possible. Members of the Association held several public meetings, where stakeholders responded enthusiastically to this proposal. Now, LSCA aims to build on that momentum from the outreach events to move forward with a variety of projects around the lake, including this one.

The project area includes three properties and three projects. The design for project LL-01A consists of two projects, a water conveyance with a bioretention area and a stabilized drainage ditch in the treed right of way (ROW) between the two houses. The design for LL-01B consists of the final project, a drainage swale and a bioretention area. All three projects drain under the private road to the lake. The LSCA will hire a consultant to complete a final design that maximizes the volume of water treated. The LSCA will work with the neighboring property owners to identify any concerns and to complete required permits and documents for the project.

This project is a relatively small project, but the landowners are excited to move forward and to continue working with partners such as the LSCA, SLC CWSP, and PMNRCD into the future through the ongoing verification and O&M process.

The goals of this project include:

- Create a final design to maximize phosphorus mitigation and stormwater filtration,
- Get written landowner support (Site Access License and O&M Plan),
- The final design will include phosphorus calculation/interim phosphorus calculator outputs with some detail about the parameters used and major assumptions. LSCA will use accepted DEC tools, such as the DEC Stormwater Treatment Practice Calculator.
- Additionally, the LSCA and the SLC CWSP will manage, track, and report the results of this project per DEC requirements and will interface with Vermont DEC technical staff as needed.

Applicable strategies from the 2022 South Lake Tactical Basin Plan:

- Strategy 13: Provide technical assistance and funding to develop high and medium priority projects
- Strategy 48: Design… projects identified through Lake Wise (and other) assessments

Applicable Milestones from the CWIP Funding Policy for final design and implementation:

- Project initiated; proposal/bid solicitations issued and contractor selected
- Stakeholder/landowner meetings
- 10-year O&M and Site Access License completed and signed
- **Other permit-required assessments or applications/review completed/secured** (must include review by DEC stormwater program)
- Final (100%) design complete
- **VDHP Project Review**
- Pre-construction meeting including a walkthrough with the engineering firm and contractor
- **Clean water project sign** installed (South Lake CWSP has signs)

- Project installation and final site walkthrough
- Project complete

Applicable Deliverables from the CWIP Funding Policy for final design and implementation:

- Signed Site Access License and O&M Plan
- Permit materials and/or proof of permit review from appropriate DEC Programs
- Signed VDHP Project Review Form (if applicable)
- **Final Design Report**
- **Media announcement**
- **Photos of project installation and Clean Water sign at the project site**
- **Final Performance Report or ANR Online Clean Water Project - Project Closeout Form**

Applicable Performance Measures from the CWIP Funding Policy:

- **Number of 100% designs completed**
- **Acres of impervious surface treated and/or removed, if applicable**

Project Budget

Table 1: Preliminary budget for the Lochlea Lane Projects.

Category	Amount	Match	Total
Personnel	($0 or up to) $1,000	Potentially, yes	$1,000
Fringe	Included in rate		$0
Travel	N/A		$0
Supplies	N/A		$0
Professional Services	$57,000		$57,000
Indirect	$0 (or up to $1000)		$0
Total	$58,000		$58,000

Budget Narrative

Personnel: Up to $1,000 of project funds will be used by LSCA staff to administer the project. Typical activities will include putting the project out to bid, writing the subcontract for the consultants to complete the conceptual design, and outreach to landowners.

Professional services: Up to $57,000 will be used to hire a consultant to complete a final design (~$14,000) and oversee construction and a contractor (~$43,000) to install the projects.

Match will occur when partners are involved with site visits and project review. Match will be recorded and submitted for DEC use, as requested.

Indirect: LSCA reserves the right to charge up to $1000 indirect instead of taking $1000 as personnel costs.

Attachments

- CWIP project eligibility screening form
- Preliminary design plans for LL-01A and LL-01B

Site Photos

Photo 1: Project Lochlea Lane LL-01A – includes installation of a sediment forebay and bioretention basin in the grassy area located between the two FEA staff members.

Photo 2: LL-01B – includes diverting runoff so it doesn't flow to this eroded section of gravel driveway (where PMNRCD and FEA staff are standing with a homeowner) but instead flows through a grassy conveyance to a bioretention basin (to the left of the photo).

References

2025, Lake St. Catherine Watershed Action Plan, LL-01A (May 5, 2025)

2026, Stormwater and Stream Project Development Final Report, LL-01B (May 30, 2025)

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:	Protect and restore aquatic and riparian habitats

Step 2: Conduct Eligibility Criteria #2 Screening: Project Types and Standards

Table 2A: Project Types and Standards		
Please select the most representative project type from the drop-down list to the right.[1,2] If multiple BMPs are included in the project, please list below: Restore the wetlands behind th Mettawee Community School.	Wetland Restoration - Implementation	
Is the project type an eligible project type for the funding program you are applying to as listed in column B of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◯	No ◯
Does the project meet the project type definitions and minimum standards as provided in column C of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◯	No ◯
Will the project result in the standard performance measures, milestones, and deliverables as defined by project type in columns D-F of the CWIP Project Types Table? (Answer must be YES to proceed)	Yes ◯	No ◯
Is the project listed as an ineligible project or activity in the CWIP Funding Policy? If Yes, please explain below how project meets the allowable exceptions within the CWIP Funding Policy. (Answer must be NO to proceed, unless reasonable justification is provided above)	Yes ◯	No ◯

Step 3: Conduct Eligibility Criteria #3 Screening: Watershed Projects Database

Verify project has been recorded in the Watershed Project Database (WPD). Each project must have a Watershed Project Database number specific to the proposed project phase (for example,

[1] Note that Road/Stormwater Gully project-types must not otherwise be considered intermittent or perennial streams by the DEC Rivers Program and therefore project proponent must show documentation of this determination in order to select this project type.

[2] One project may include multiple best management practices (BMPs) that cross "project types." For example, a single project may include both stormwater and lake shoreland BMPs. Proponents should use their best judgement in selecting the most representative project type for the purposes of eligibility screening and reporting.

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	14190
Watershed Project Database Project Name	Austin Pond Dam Removal - Implementation

Step 4: Conduct Eligibility Criteria #4 Screening: Natural Resource Impacts[3]

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 permit[7])?
   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."

[10] Note 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]	
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. **Regulatory Point of Contact Name/Position:** Olin Reed	
III. Rivers, River Corridors, and Flood Hazard Areas	
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 area[12]**?** (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.	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:** Shannon Pytlik	
2. Is any portion of the project site within a perennial river or stream channel? [13]	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:** Josh Carvajal	
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."

1. Does the Wetland Screening Tool[14] provide a result of wetlands likely, very likely, or present at the project site?	Yes ◯ No ◯
2. Does your project site involve land that is in or near an area that has any of the following characteristics: 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.)	Yes ◯ No ◯ Not Sure ◯
If you answered ***yes*** or ***not sure*** to either 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 either 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. **Regulatory Point of Contact Name/Position:**	
1. Is your project a Wetland Restoration project type?	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:** Zapata Courage	
V. Fish and Wildlife	
State law protects endangered and threatened species. No person may take or possess such species without a Threatened & Endangered Species Takings permit. 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	Yes ◯ No ◯

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

2. Is the project site within 1 mile of a mapped[15] Significant Natural Community or Rare, Threatened, or Endangered Species?	Yes ◯ No ◯
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. **Regulatory Point of Contact Name/Position:**	
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 ◯
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. **Regulatory Point of Contact Name/Position:**	
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 ◯
If yes, connect with the Waste Management & Prevention Division (dennis.fekert@vermont.gov 802-522-0195) to discuss your project and any necessary permitting. **Regulatory Point of Contact Name/Position:**	
Provide below or attach a narrative summary of Table 4 findings. Please include: a. Which permits or permit amendment are needed or might be needed? b. What type might be needed? (e.g. a general or individual permit)? c. What concerns were voiced by permitting staff? d. 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)	

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: CWSP South Lake (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).

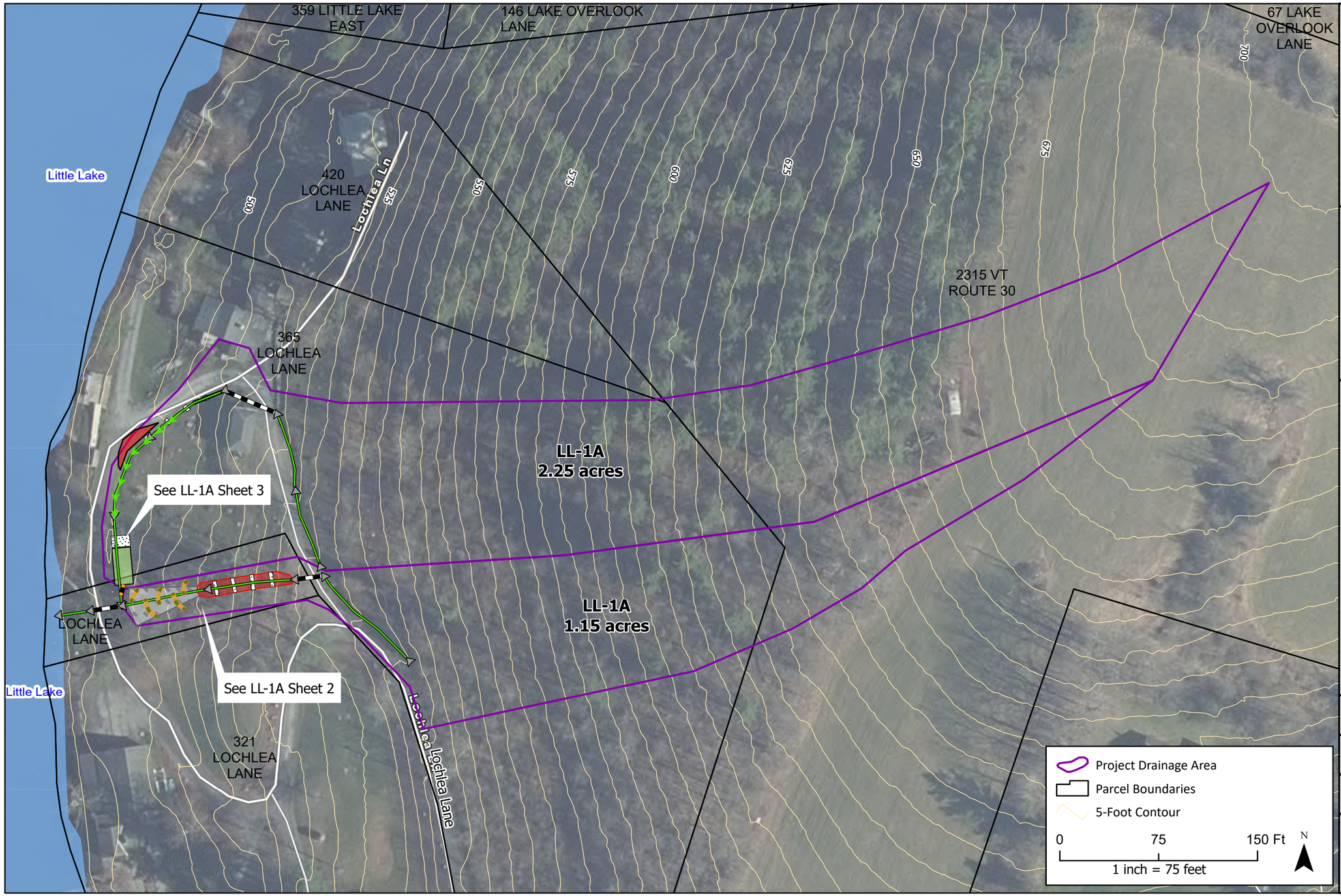
determine if it is a jurisdictional farm operation, and any case that requires consultation with AAFM will occur via the farm determination process. Please note this form must be submitted by the farm operation/landowner seeking the determination.	◯ **No**[18] - There is no additional requirements related to agricultural review for these projects.
2. Is the proposed project an agricultural project? 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.	◯ **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. ◯ **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 (VAAFM) to ensure a consistent approach on farms statewide that follows rules, regulations, and laws in place. Please follow Steps 1 & 2 below. **Step 1** - Please submit a detailed description of the project, project site, project details, landowner, farm operation, and any other relevant information to VAAFM at AGR.WaterQuality@Vermont.gov . **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.

Agricultural Project Review Status & Summary:	
Check as Applicable	**Status**
☐	Submitted/ Pending
☐	Approved
☐	Denied

[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 VAAFM.

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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Telephone: 802.876.7778
www.fitzgeraldenvironmental.com

Notes:
-Conceptual design based on FEA field visit in 2024
-Contours from 2013 0.7m LIDAR DEM (VCGI)
-Imagery sourced from VCGI (2024)

Project LL-1A Overview Map
PMNRCD Stormwater Scoping

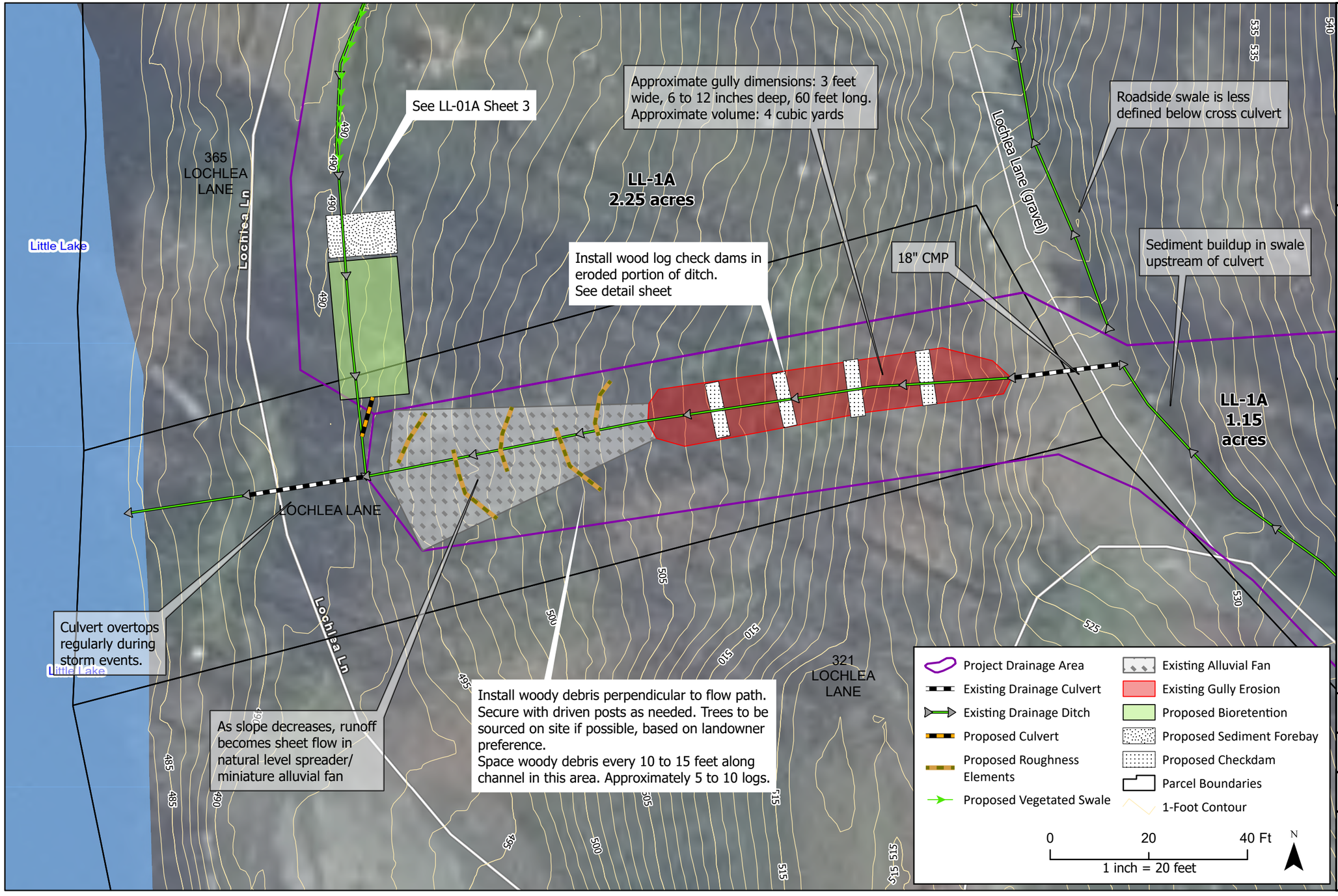
Lochlea Lane
Wells, VT

AEM	EPF
MAP BY	CHECKED

1 inch = 75 feet
SCALE

May 5, 2025
DATE

SHEET 1
SHEET NO.



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Project LL-1A Conceptual Design 1
PMNRCD Stormwater Scoping

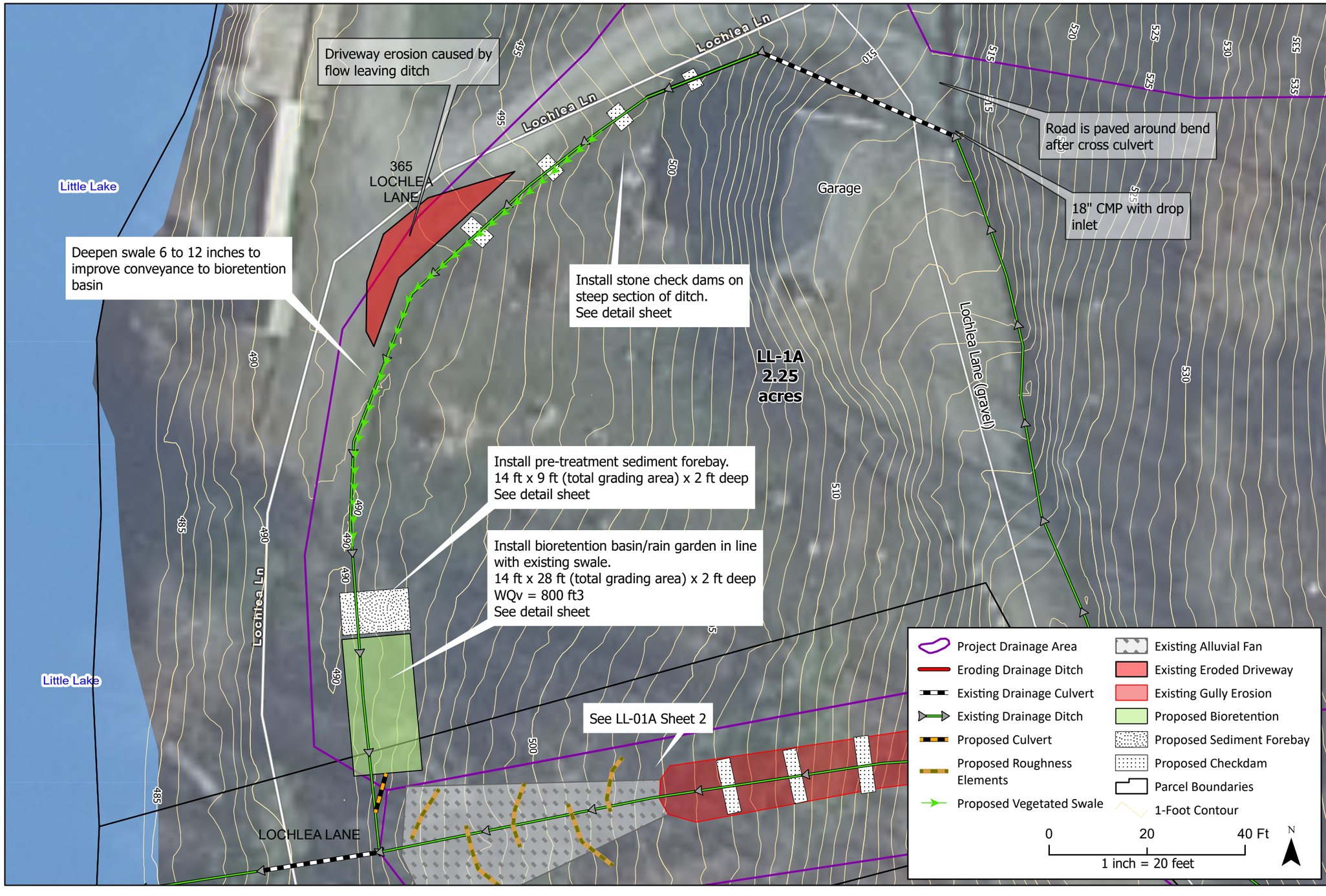
Lochlea Lane
Wells, VT

AEM	EPF
MAP BY	CHECKED

1 inch = 20 feet
SCALE

May 5, 2025
DATE

SHEET 2
SHEET NO.



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Project LL-1A Conceptual Design 2
PMNRCD Stormwater Scoping

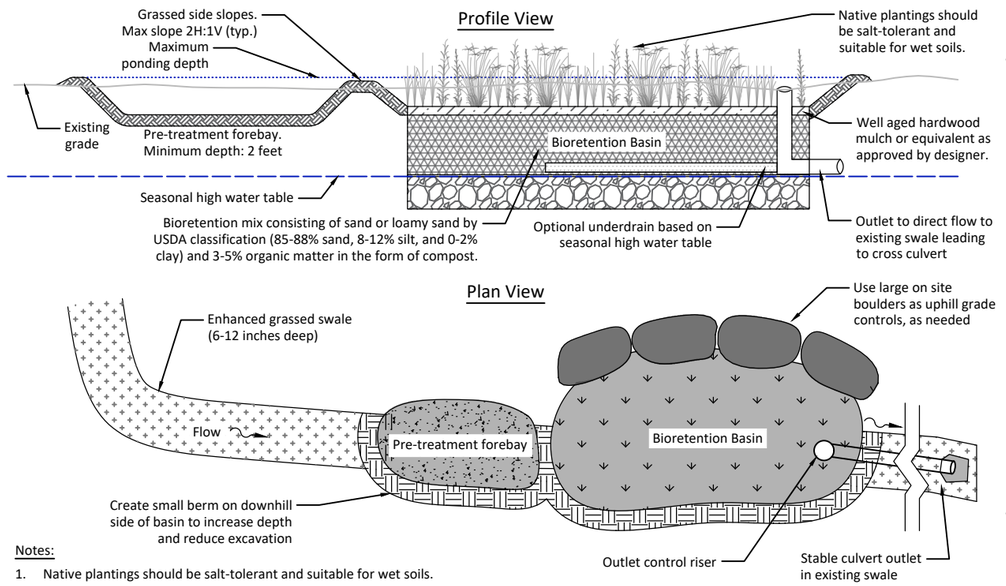
Lochlea Lane
Wells, VT

MAP BY	CHECKED
AEM	EPF

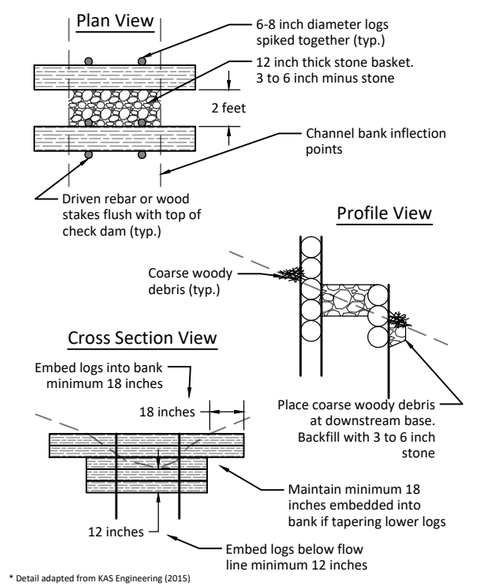
SCALE: 1 inch = 20 feet

DATE: May 5, 2025

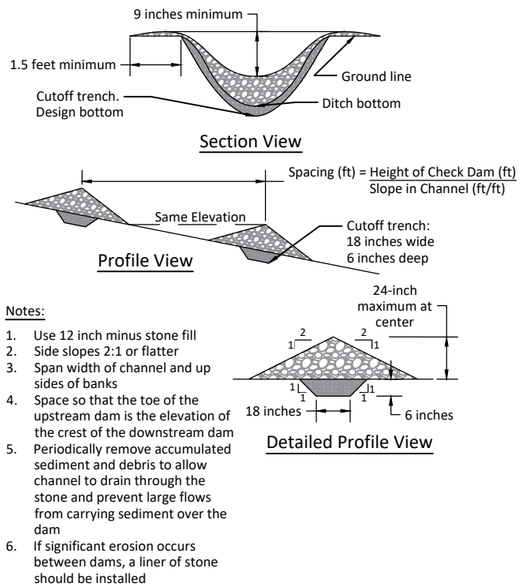
SHEET NO.: SHEET 3



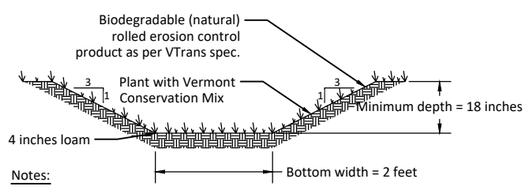
Bioretention Basin N.T.S



Log Checkdams N.T.S



Stone Checkdams N.T.S



Grass Lined Ditch N.T.S

Preliminary Cost Opinion

Project LL-1A

Item	Quantity	Unit	Unit Price	Cost
Mobilization/Demobilization	1	LS	$ 1,000	$ 1,000
Common Excavation	60	CY	$ 25	$ 1,500
Hauling	60	CY	$ 20	$ 1,200
Bioretention Soil	15	CY	$ 80	$ 1,200
Topsoil	5	CY	$ 65	$ 325
Basin Outflow Device	1	LS	$ 1,000	$ 1,000
Plantings	1	LS	$ 500	$ 500
Stone Check Dams	4	LS	$ 100	$ 400
Log Check Dams (eroded ditch)	1	LS	$ 2,500	$ 2,500
Woody Debris Dams (below eroded ditch)	1	LS	$ 2,500	$ 2,500
Misc. Erosion Control and Site Restoration	1	LS	$ 2,500	$ 2,500
Laborer (Bioretention)	30	HR	$ 50	$ 1,500
Final Design & Permitting	1	LS	$ 12,000	$ 12,000
Construction Oversight	1	LS	$ 4,000	$ 4,000
			Subtotal	$ 32,125
			Contingency (20%)	$ 6,430
			Total	**$ 38,555**

Phosphorus Credit 1.14 kg P/year

Cost Efficiency $ 33,820 /kg P/year

Bioretention = 0.88 Kg
Stabilized ditch = 0.25 Kg

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Notes:

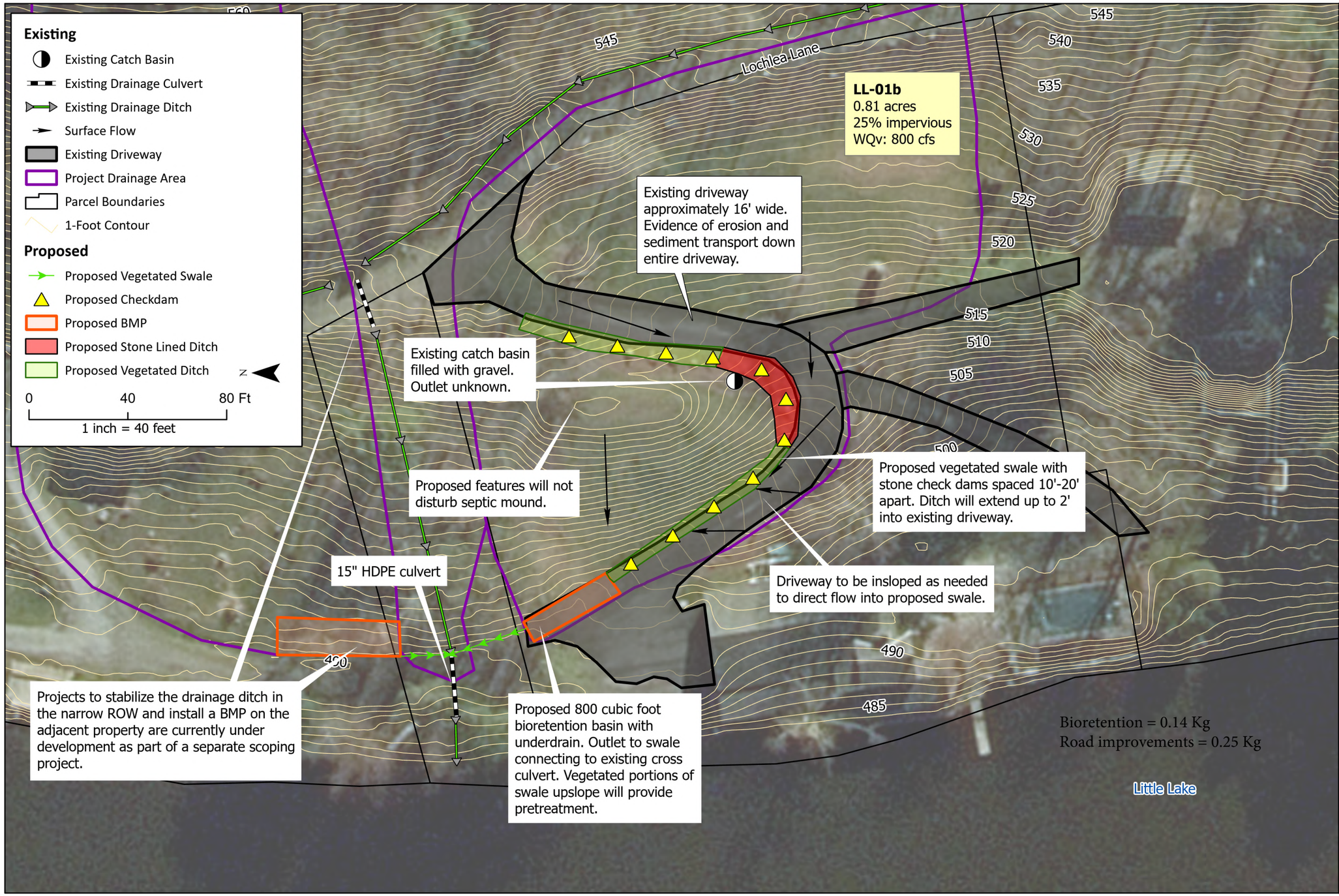
Project LL-1A Conceptual Design
PMNRCD Stormwater Scoping
Lochlea Lane
Wells, VT
NOT FOR CONSTRUCTION

AEM	EPF
DRAWN	CHECKED

Not to Scale (SCALE)

2025-05-05 (DATE)

SHEET 4 (SHEET NO.)



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Notes:
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-Imagery sourced from VCGI (2024)

Project LL-01b
Lake St Catherine LWAP

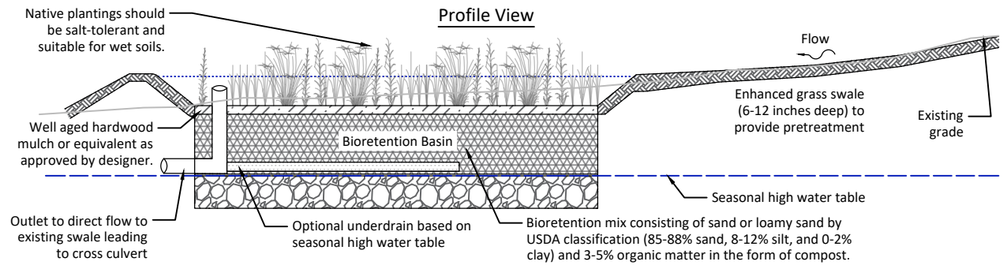
Lochlea Lane
Wells, VT

MAP BY	CHECKED
JWC	EPF

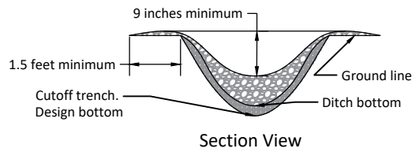
SCALE: 1 inch = 40 feet

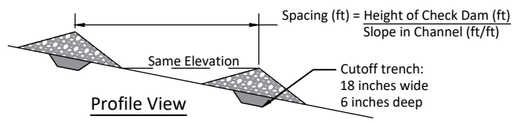
DATE: May 30, 2025

SHEET NO.: SHEET 1



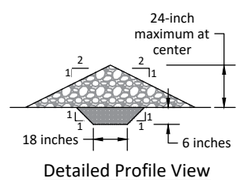
Bioretention Basin N.T.S



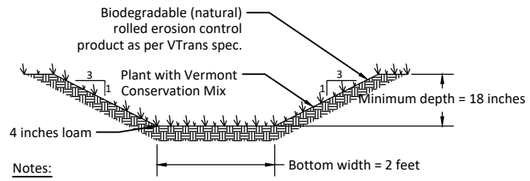


Notes:

1. Use 12 inch minus stone fill
2. Side slopes 2:1 or flatter
3. Span width of channel and up sides of banks
4. Space so that the toe of the upstream dam is the elevation of the crest of the downstream dam
5. Periodically remove accumulated sediment and debris to allow channel to drain through the stone and prevent large flows from carrying sediment over the dam
6. If significant erosion occurs between dams, a liner of stone should be installed



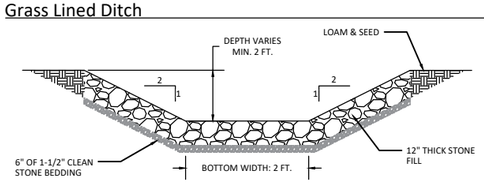
Stone Checkdams N.T.S



Notes:

1. Use for slopes 0% to 5% or 5% to 8% with stone check dams or disconnection practices every 164 feet
2. No bare soils allowed
3. Use trapezoidal or parabolic cross section

Grass Lined Ditch N.T.S



- SLOPES 5% TO 10% USE 6-8 INCH MINUS STONE FILL
- SLOPES MORE THAN 10% USE 12 INCH MINUS STONE FILL

Stone Lined Ditch N.T.S

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Notes:

Project LL-01b
Lake St Catherine LWAP
321 Lochlea Lane
Wells, VT
NOT FOR CONSTRUCTION

JWC	EPF
DRAWN	CHECKED

Not to Scale
SCALE

2025-05-22
DATE

SHEET 2
SHEET NO.

S:\2022\22029_LSCA_LAKESTCATHERINE_LWAP\CAD\LSC_LWAP_CONCEPTS.DWG 5/30/2025 12:57:27 PM