

Tier 2 Part 2: Verification Process and Survey123

July 10, 2024

Online Training

DEC Clean Water Initiative Program and
Lake Champlain Sea Grant

Introductions



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Lake Champlain Sea Grant and DEC

Verification Training Recap

- Tier 1 (O&M of Clean Water Projects) and Tier 2 Part 1 (Verification tools) trainings are recorded and posted
 - Please make sure you have completed the post-training surveys.
- Field Verification process uses two applications: Survey123 and Field Maps.
- Join [Clean Water Project Verification Group](#) to gain access to appropriate maps/checklists.

Verification Website

An Official Vermont Government Website

VERMONT


Conservation

Select Language | Disclaimer

Air and Climate Land Waste Water Learn More, Do More

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- About DEC
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- Administration and Innovation
- Air Quality and Climate
- Drinking Water and Groundwater
- Environmental Assistance
- Environmental Enforcement
- Geological Survey
- Waste Management and Prevention
- Water Investment**
 - Applications and Forms
 - News and Public Notices
 - Meetings and Events
 - Funding Opportunities
 - Resources, Publications and Reports
 - Statutes, Rules and Policies
 - Benefits, Outcomes and Accounts

Clean Water Project Verification and O&M



Vermont Department of Environmental Conservation (DEC) Clean Water Initiative Program (CWIP) funds, tracks, and accounts for priority clean water projects to restore Vermont's waters and communicates progress toward meeting water quality goals. Projects that are state funded are tracked in the [Watershed Projects Database](#) (WPD) and used to account progress towards clean water restoration plans known as [Total Maximum Daily Loads](#) (TMDLs). To learn more about clean water restoration tracking and clean water reporting see the [Clean Water Projects](#) page.

- [Overview & Goals](#)
- [Operation and Maintenance](#)
- [Clean Water Project Verification](#)
- [O&M Trainings and Verifier Certification](#)
- [Resources & References](#)

Overview & Goals

Regular Operation and Maintenance or O&M helps to keep clean water projects in working condition and in turn the project functions to protect our water quality.

Presentation Goals

- ✓ Learn about the Verification process: From preparing to reporting
- ✓ Become familiar with current project type checklists
- ✓ Access Verification Resources/Tools

Training Audience

Required Attendees

- Entities serving as verifiers
- Anyone interested in performing verification services

Suggested Attendees

- BWQC Members
- Maintainers who will be maintaining multiple sites
- Municipal staff
- CWSP Staff

Training Outline:



Introduction to Verification Purpose and Goals

Verification Process and Guidance

Preparing for Verification Site Visits

Conducting Verification Site Visits

Project Type Checklists

Report and Follow up

Key Takeaways, Resources, and Follow up survey

Clean Water Project Verification Purpose and Goals



✓ Verify that projects funded with DEC funds are being maintained and functioning as intended.

📊 Support tracking and accounting of clean water projects and their contribution toward Vermont's water quality goals.

🤝 Expand partnerships with landowners and Vermont's Clean Water Network.

📣 Increase confidence that state dollars are being spent effectively.

O&M Roles and Responsibilities

CWSP	Oversees O&M activities for clean water projects in their portfolio and responsible for projects staying in performance.
Landowner Liaison	The agent designated by the landowner as their preferred point of contact.
Verifier	Conducts site visits to assess project condition and function. Trained and certified in DEC verification methods.
Maintainer	Conducts routine maintenance tasks in the O&M plan. Repairs failed projects.
DEC	Provides tools, guidance, & trainings to support successful O&M across the network. Adaptively manages the program.

Verifier responsibilities:

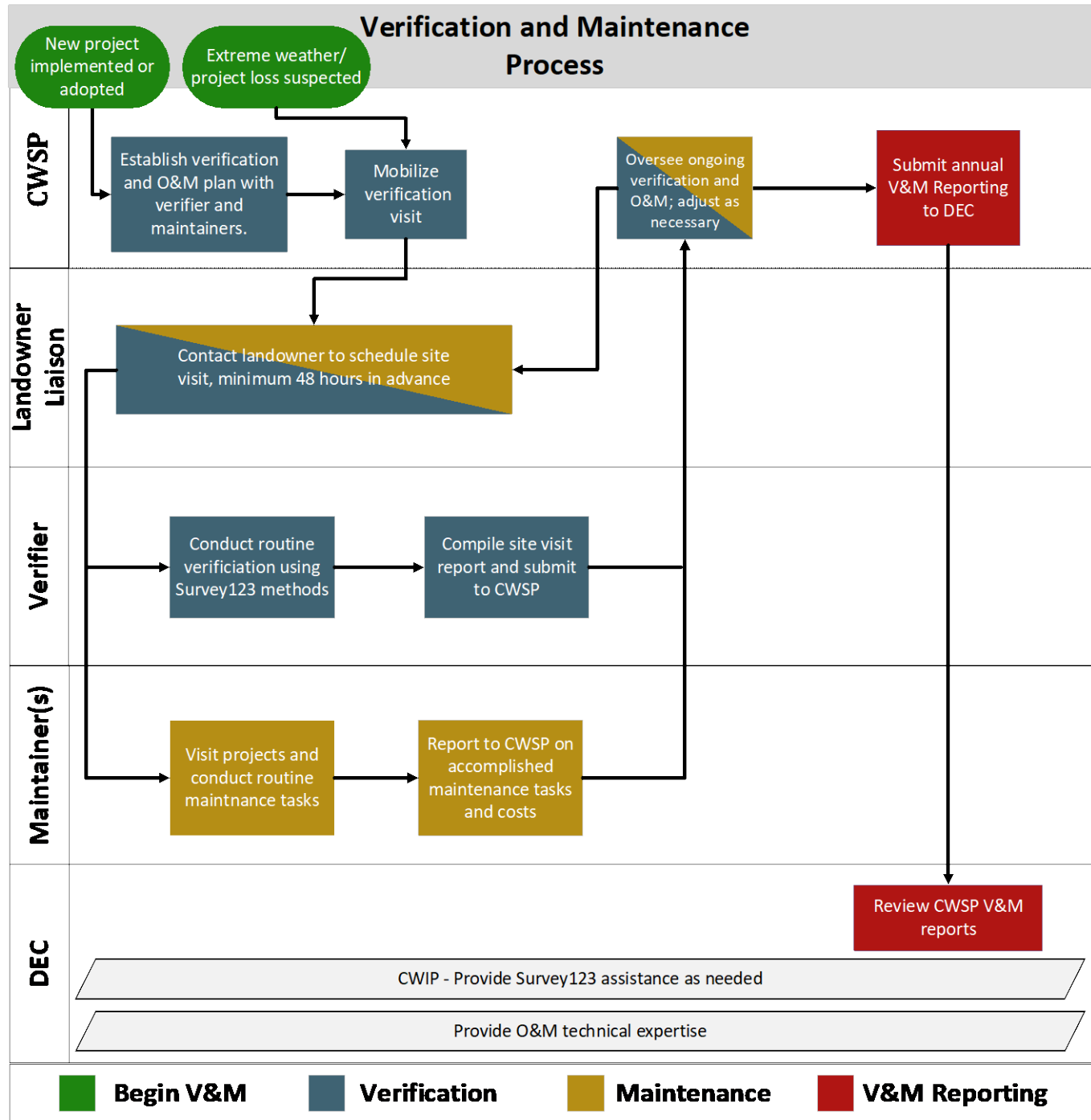
- Attend current and future DEC O&M trainings
- Work with CWSP on coordinating site visit schedule
- Prepare for verification site visits (review necessary materials)
- Conduct verification site visits following the SOP
- Report, QAQC, and follow up after the verification site visit



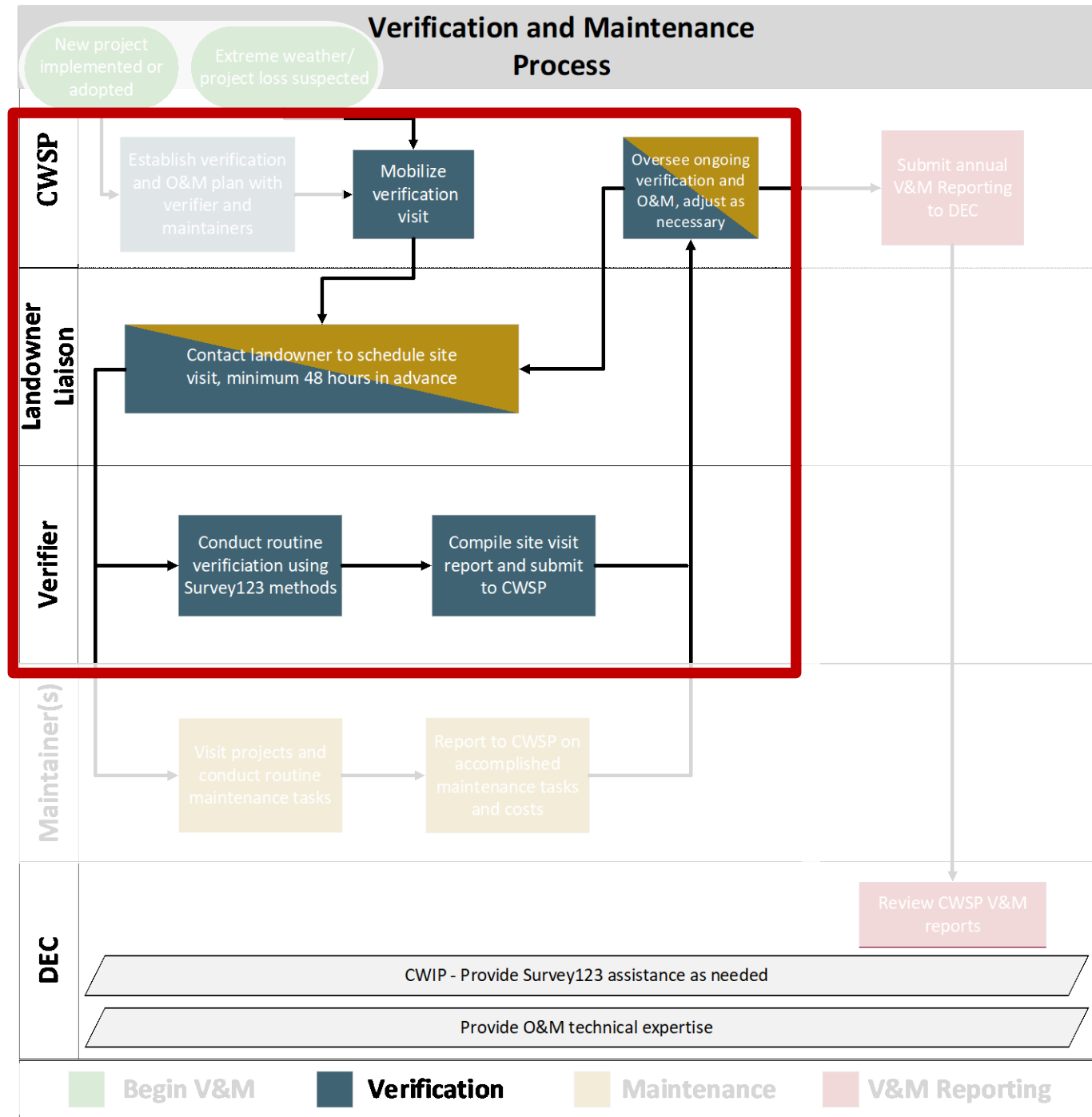
Verifier and CWSP agreements

Agreement should include (not limited to):

- Frequency for site visits
- Process for scheduling site visits
 - Best practices for contacting landowner liaison
 - Landowner communication and troubleshooting.
 - Site access
- Preferred methods for reporting site visit findings
- Discuss with verifiers what degree of maintenance verifiers should engage in while out on a site visit.



Verification



Verification Process



Prepare

Research Project Designs/Reports
Plan Verification Visit
Gather Verification Tools and Materials



Visit

Consider Safety During Fieldwork
Verify Using Project Specific Checklist



Report and Follow up

Review Data Submission
Report Verification Findings

Richmond Volunteers Green Buffer Planting

Project Details

- ~1 acre of forested riparian buffer
- Located along the Winooski River at the Volunteers Green in Richmond
- Implemented in 2020-2021 by Friends of the Winooski River, with partnerships with Town of Richmond, US Fish and Wildlife, The Nature Conservancy, and Camels Hump Middle School



Credit: Friends of the Winooski



Prepare



Visit



Report and
Follow up

Research the project

- Review project information and records:
 - Recent maintenance activities and past verification visit reports
 - O&M plan
 - [DEC Watershed Projects Database](#)
 - As-built designs and planting plans
 - Project photos
 - O&M Manual practice sheet

Richmond Volunteers Green Riparian Buffer Planting

Type: River - Planting
Program: Clean Water Initiative Program
State Funds: \$3,773
Funded SFY: 2019
Completed SFY: 2021

[Project Report](#)

Zoom to

Richmond

Richmond Volunteers Green Riparian Buffer Planting
 AGENCY OF NATURAL RESOURCES

Towns: Richmond
County: Chittenden
Watershed: Winooski
State Funding: \$3,773
Funding Source: Capital Fund

Description: This project plants 0.6 acres of forested riparian buffer along the Winooski River at the Volunteers Green in Richmond. Riparian buffers support restoration of riparian corridors and floodplains, filter nutrient and sediment pollution from runoff, and provide habitat benefits.

Funded Partner: Watersheds United Vermont

The Richmond Volunteers Green, located directly along the Winooski River, was chosen for a riparian buffer planting.

Approximately 0.6 acres of riparian buffer was planted to treat runoff from adjacent developed and agricultural lands.

Project Status:
 Funded SFY 2019
 Completed SFY 2021

Results:

- 0.6 Acres of river corridor buffer planted or restored
- 740 Linear feet of riparian corridor buffer planted or restored
- 0.69 kg of phosphorous reduced annually, over 20 years

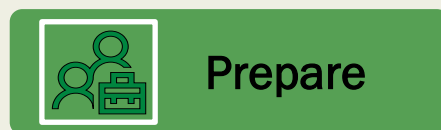
Data Source: <https://dec.vermont.gov/water-investment/cwi/projects>
 For more information visit: <https://dec.vermont.gov/water-investment/cwi/projects>

Operation and Maintenance Plan	
Operation and maintenance will include the following activities* (such as weeding, mowing, sediment and debris removal, inlet and/or outlet cleaning, and equipment maintenance) and project repairs on an as-needed basis within the reasonable discretion of the CWSP**.	Frequency (e.g., quarterly, annually, or as needed)
Monitor tree health and survival	Annually
Monitor for presence of knotweed	Annually
Replant trees that do not establish to achieve at least 50% survival	As needed

[Clean Water Project Explorer \(vt.gov\)](https://www.dec.vermont.gov/clean-water-project-explorer)

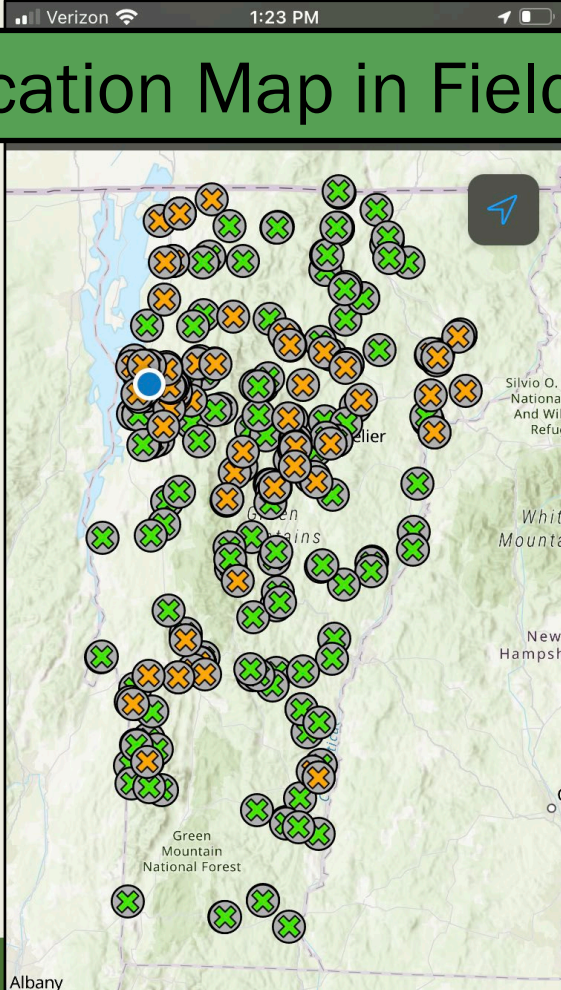


Research the project

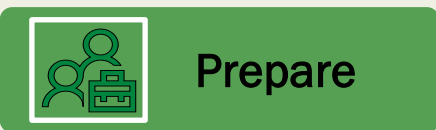
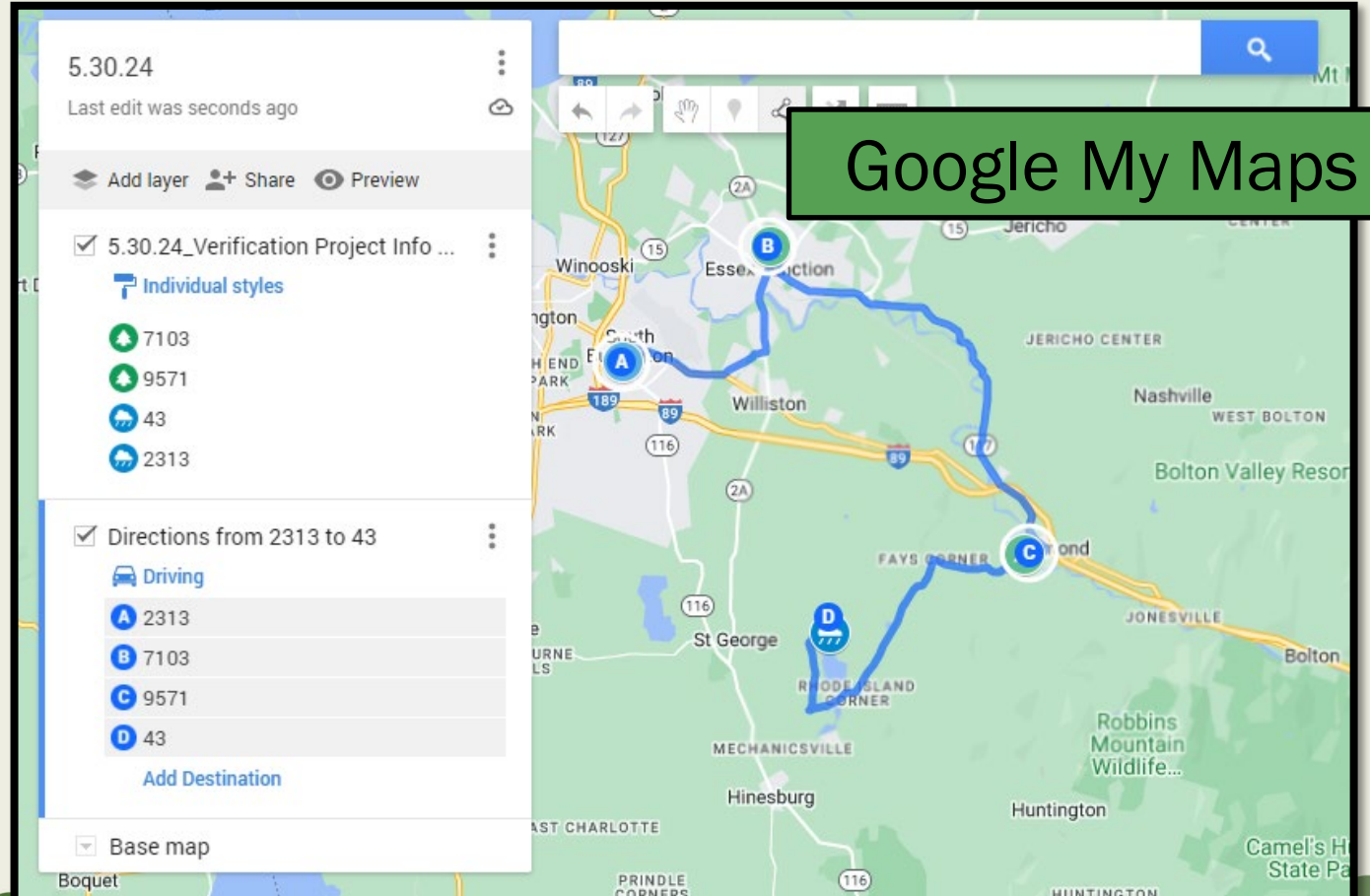


Plan the Route

Verification Map in Field Maps



Google My Maps



Verification Materials

Required materials:

- Phone/tablet with confirmed access to Survey123 and Field maps
- Printed copies or digital versions (that are accessible without cell service) of the O&M plan, final reports, photos, and designs for reference while in the field.
- Field measuring tape (for riparian buffer plantings)
- Yard stick

Suggested materials:

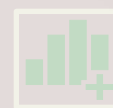
- First Aid Kit
- High visibility safety vests
- Clipboard and pencil



Prepare



Visit



Report and
Follow up

Field Safety

Be aware and prepare for :

- Poisonous Plants
 - Poison parsnip
 - Poison Ivy
- Ticks
- Environmental Conditions
 - Extreme heat
 - Inclement weather

An infographic titled "HEAT-RELATED ILLNESSES" with a red and white striped background. It is divided into two columns: "WHAT TO LOOK FOR" and "WHAT TO DO".

HEAT-RELATED ILLNESSES	
WHAT TO LOOK FOR	WHAT TO DO
HEAT STROKE	
<ul style="list-style-type: none">• High body temperature (103°F or higher)• Hot, red, dry, or damp skin• Fast, strong pulse• Headache• Dizziness• Nausea• Confusion• Losing consciousness (passing out)	<ul style="list-style-type: none">• Call 911 right away-heat stroke is a medical emergency• Move the person to a cooler place• Help lower the person's temperature with cool cloths or a cool bath• Do not give the person anything to drink
HEAT EXHAUSTION	
<ul style="list-style-type: none">• Heavy sweating• Cold, pale, and clammy skin• Fast, weak pulse• Nausea or vomiting• Muscle cramps• Tiredness or weakness• Dizziness• Headache• Fainting (passing out)	<ul style="list-style-type: none">• Move to a cool place• Loosen your clothes• Put cool, wet cloths on your body or take a cool bath• Sip water <p>Get medical help right away if:</p> <ul style="list-style-type: none">• You are throwing up• Your symptoms get worse• Your symptoms last longer than 1 hour
HEAT CRAMPS	
<ul style="list-style-type: none">• Heavy sweating during intense exercise• Muscle pain or spasms	<ul style="list-style-type: none">• Stop physical activity and move to a cool place• Drink water or a sports drink• Wait for cramps to go away before you do any more physical activity <p>Get medical help right away if:</p> <ul style="list-style-type: none">• Cramps last longer than 1 hour• You're on a low-sodium diet• You have heart problems
SUNBURN	
<ul style="list-style-type: none">• Painful, red, and warm skin• Blisters on the skin	<ul style="list-style-type: none">• Stay out of the sun until your sunburn heals• Put cool cloths on sunburned areas or take a cool bath• Put moisturizing lotion on sunburned areas• Do not break blisters
HEAT RASH	
<ul style="list-style-type: none">• Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases)	<ul style="list-style-type: none">• Stay in a cool, dry place• Keep the rash dry• Use powder (like baby powder) to soothe the rash

The infographic includes the CDC logo at the bottom left.

The Verification SOP has more information and links to resources to learn more.



Any questions so far?



Checklist User Guides

[Clean Water Project
Verification and O&M |
Department of
Environmental
Conservation
\(\[vermont.gov\]\(http://vermont.gov\)\)](#)

Clean Water Project Verification Survey 123 Checklist

2024 Field Season Survey123 Form



Summary: This checklist should be used by qualified and trained verifiers to assess CWSP riparian buffer planting projects. See the Verification Program Standard Operating Procedure (SOP) for details on the verification process and to access the applications. Prior to a visit, review project details including as-built site plans, planting plans, reports, and notes from prior verification visits. **THIS USER GUIDE PROVIDES A BREAKDOWN OF ALL THE QUESTIONS IN THE RIPARIAN BUFFER CHECKLIST AND BEST PRACTICES ON COLLECTING DATA AND IMAGES.**

Checklist scoring: Verifiers are encouraged to use their best judgment when scoring the project's condition. **QUESTION RESPONSES RANGE FROM "NONE" (NO PRESENCE) TO "SEVERE" (HIGH PRESENCE), AND EACH RESPONSE HAS A NUMERICAL SCORE ASSOCIATED WITH THE RESPONSE. THE SCORES ARE GIVEN IN THIS GUIDE, BUT NOT IN THE CHECKLIST ITSELF. AT THE END, THE CHECKLIST AUTOMATICALLY CALCULATES AN AVERAGE SCORE (SCORES RANGE FROM 4-0, WITH 4 BEING FUNCTIONAL). BASED ON THE CALCULATED SCORE, A SECTION "GRADE" WILL INDICATE IF THAT SECTION OF THE PROJECT IS FUNCTIONAL (4-2.5, MEETS REQUIREMENTS), MARGINAL (<2.5-.5, MAINTENANCE MAY BE NEEDED), FAILED (<0.5-0, NOT FUNCTIONAL, NEEDS REPAIRS, OR DOES NOT EXIST). SEE TABLE 2 OF THE VERIFICATION SOP FOR ADDITIONAL INFORMATION ON SCORE AND GRADE.**

SURVEY QUESTIONS (* INDICATES REQUIRED FIELD)

Project Information

1. **Project ID*** Implementation Phase Watershed Projects Database ID (auto populated)
2. **Project Name*** (auto populated)
3. **Project Type*** (auto populated)
4. **Town(s)*** (auto populated)
5. **BMP ID*** (auto populated)
6. **BMP System Name*** (auto populated)
7. **Project Completion Date*** (auto populated)
8. **Select Clean Water Service Provider (CWSP)***
9. **Verifier Name(s)**
10. **Verifier Organization***
11. **Verification Date and Time*** (auto populated)
12. **Date of Last Rain Event** (select the appropriate date)
13. **Does the Project Exist?***

Verifier note: If the project as a whole does not exist, select "No" and include any relevant information in the notes section that will appear. Then complete Question's 14-16 to the best of your ability.

1

Verifier note: If the project area cannot be located, select "No" and include any relevant information in the notes section that will appear. Then complete Question's 14-16 to the best of your ability.

14. Project Location

Verifier note: if GPS location is enabled, use that to enter location info. Can also enter manually.

15. Capture / Browse to Photo

Verifier note: photo quality is best when taken with tablet/phone's camera app and then uploaded to Survey123. Try to take a photo that shows the full extent of the practice (take multiple photos as needed). Best practice is to take the photo(s) from same location or using a landmark, such as a large tree or structure that is visible as the forest grows. Enter this information in the photo description question below. If helpful, mark photo point location using latitude/longitude (some phones/tablets automatically log location in image metadata).



Photo of buffer planting showing full extent of planting area

16. Photo Description*

Verifier note: write in details shown in photos and their locations.

Riparian Buffer Planting Checklist

17. Record the buffer width in three sections of the river planting zone.*

Average Buffer Width (survey auto calculates, read-only)

Verifier note: select three locations distributed throughout the planting area to measure buffer width (ft) using a field tape measure. Best practice is to select the monitoring locations during the first verification visit and use those same during all subsequent visits for consistency and to monitor change over time. Measurements should be taken perpendicular to the streambank edge. Use planting map to determine initial planting zone and mark monitoring locations.

2



Prepare



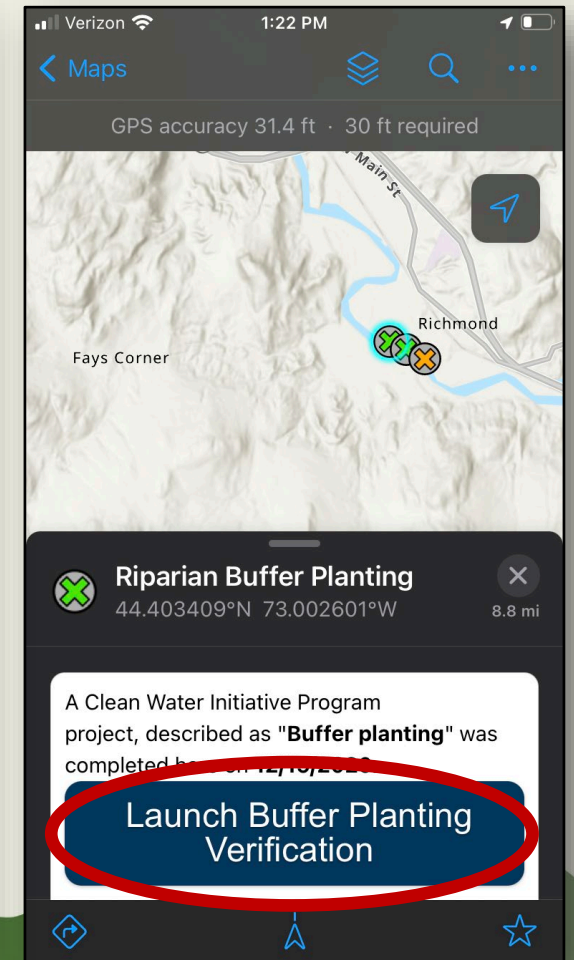
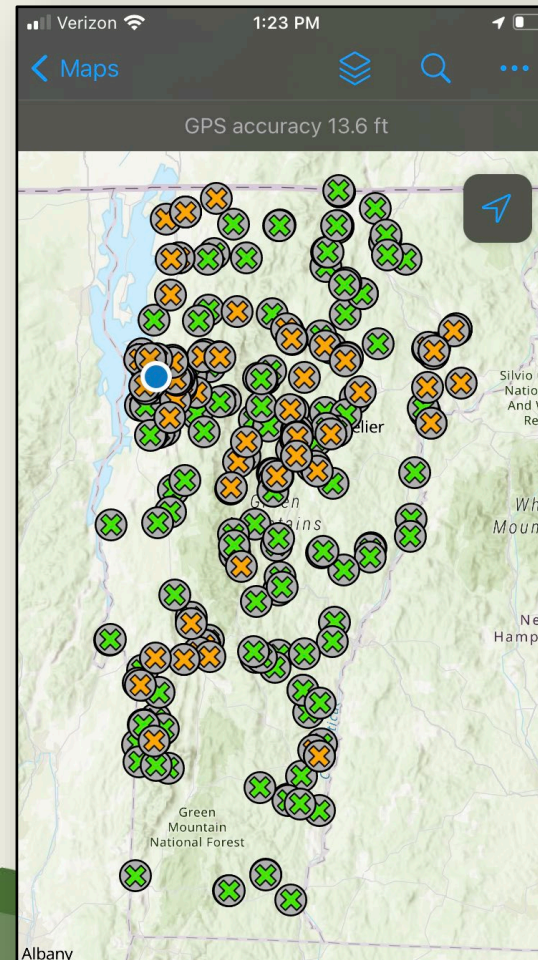
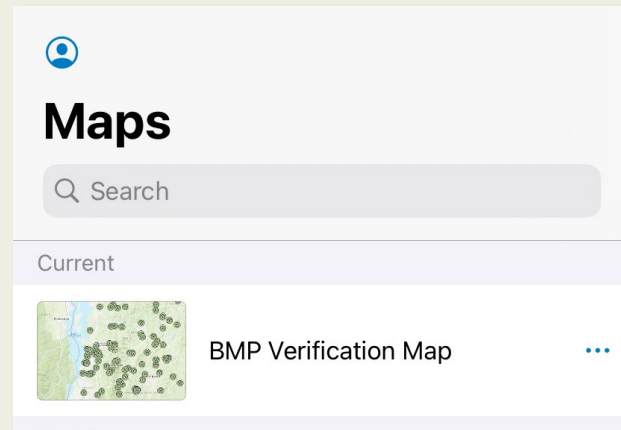
Visit



Report and
Follow up

Verification Tools: Field Maps

Tier 2 Part 1 training provides a step-by-step guide on how to access and download tools



Questions 1-10: Project Information Section

Riparian Buffer Planting Verification Checklist

Project Information

1. Project ID *
9571

2. Project Name *
Richmond Volunteers Green Riparian Buffer Planting

3. Project Type *
River - Planting

4. Town(s) *
Richmond

5. BMP ID *
2194

6. BMP System Name *
Buffer planting

7. Project Completion Date *
Monday, December 14, 2020

Questions 1-7 autofill

Riparian Buffer Planting Verification Checklist

8. Select Clean Water Service Provider (CWSP): *

Addison County Regional Planning Commission

Central Vermont Regional Planning Commission

Chittenden County Regional Planning Commission

Northwest Regional Planning Commission

Rutland Regional Planning Commission

Vermont Housing and Conservation Board

N/A

9. Verifier Name(s) *
Rachel and Jill

10. Verifier Organization *
DEC and LCSG

Questions 8-10 verifier information



Questions 11-16: Project Information Section

DEC and LCSG

11. Verification Date and Time *

Monday, July 8, 2024 2:34 PM

12. Date of Last Rain Event

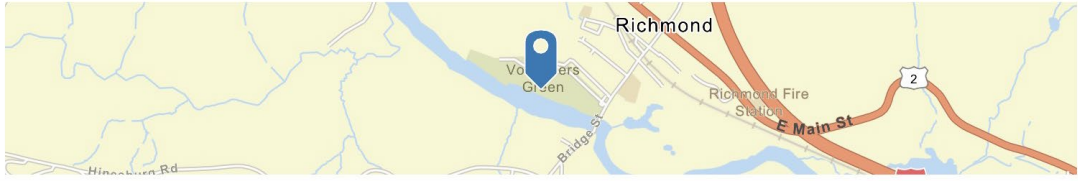
Date

13. Are you able to locate the project area? *

Yes No

14. Project Location

44°24'N 73°0'W



15. Capture / Browse to Photo *

15. Capture / Browse to Photo *

16. Photo Description


Select image from?

Photos

Files

15. Capture / Browse to Photo *

1 of 1



photobmp-20240708-160655.JPG

15. Capture / Browse to Photo *

16. Photo Description



Question 17: Measure Buffer Width

✕ Riparian Buffer Planting Verification Checklist

▼ Riparian Buffer Planting Checklist

17. Record the buffer width in three sections of the river planting zone.

Buffer Width 1 *

67 ⊗

Buffer Width 2 *

97 ⊗

Buffer Width 3 *

77 ⊗

Average Buffer Width

80



Use tape measure with field partner to measure buffer width



Question 18 & 19: Buffer Width and Tree Density

18. Is the average buffer width at least 35 feet (edge of the bank to the edge of the buffer planting area) or the width specified in the plan? *

- Buffer width is greater than 35 feet or greater than the amount specified in the plan.
- Buffer width is about 35 feet or meets the width specified.
- No, less than 35 feet, or less than the width specified.
- Less than 10 feet or does not exist in some places.
- No plantings appear to exist.

19. What is the density of the surviving planted trees (300 stems/acre = approx. 1 tree every 12 feet)? *

- Yes, noticeably more than 300 stems per acre.
- Yes, about 300 stems per acre.
- No, less than 300 stems per acre.
- Very sparse or there are large gaps between stems.
- NA. No planted trees survived.



Prepare



Visit



Report and
Follow up

Question 20 -22: Plant Health and Distribution

Riparian Buffer Planting Verification Checklist

20. Do the plantings appear healthy? *

- 90% or more of the plantings appear healthy.
- Most plantings are healthy (approx. 70-89%).
- About half of the plants appear healthy.
- More than 50% of the plantings do not appear healthy.
- N/A No planted trees survived.

21. Are some species doing better (or more poorly) than others?

22. Are trees and shrubs (volunteer and planted) evenly distributed and thriving throughout the planting area? *

- 90% or more of trees or shrubs are thriving within the area specified for planting.
- Trees or shrubs are present, but some are doing better than others. 70-89% of the area is thriving.
- Few living trees or shrubs, grasses are predominant. Half of the area is thriving.
- Area contains sparse stable vegetation. Less than half of the area is thriving.
- Large patches of bare soil or large eroding areas are present.

Healthy plants: signs of new growth, leafed out.

Unhealthy Plants: discolored or small leaves, dead branches, and evidence of deer browse, voles, or disease.

Assess all vegetation in the planting area.

Do any areas need to be replanted?



Question 23 – 26: Human Activities and Invasives

3:06 PM Mon Jul 8

Riparian Buffer Planting Verification Checklist

23. What is the extent of human activities in the buffer (e.g., mowing, parking lots, roads, lawns, crops, trails)? *

- More than 90% of buffer area intact. No human impacts.
- 70-90% of contract area intact. Minimal human impacts.
- 50-70% of contract area intact. Significant human impacts.
- Less than 50% of contract area intact.
- Entire area has been mowed or planted with crops or has other development.

24. Indicate if you see any of the following invasive species: *

Bindweed (*Persicaria perfoliata*), Phalaris (*Phalaris arundinacea*), Japanese Knotweed (*Fallopia japonica*)

25. Capture / Browse to Invasive Photo

26. Photo Description



Bindweed



Reed canary grass



Question 27-31: Impacts from wildlife and maintenance notes

27. Is there evidence of wildlife impact to the buffer plantings (e.g., deer or beaver browse, vole girdling)? *

Yes

No

28. Capture / Browse to Wildlife Impact Photo



29. Photo Description

30. Indicate if there are any maintenance needs or other follow up notes (e.g., removing sheltering tubes, watering, mowing, replanting woody vegetation, installing beaver protection).

A few trees still have tree tubes that should removed. Monitor invasive species. Monitor for impacts of mowing and human access trails.

31. Enter any other comments not covered already in this checklist.

Riparian Buffer Score

4

BMP Grade: **Functional** (meets requirements).



Prepare



Visit

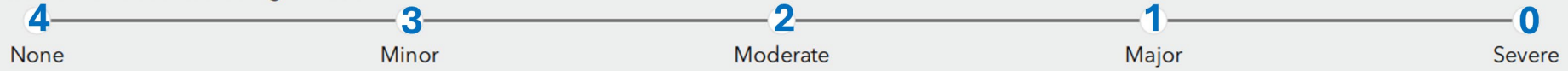


Report and Follow up

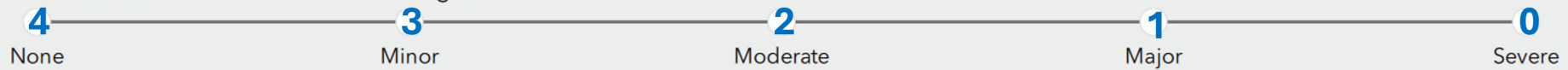
Scoring

What is the extent of...

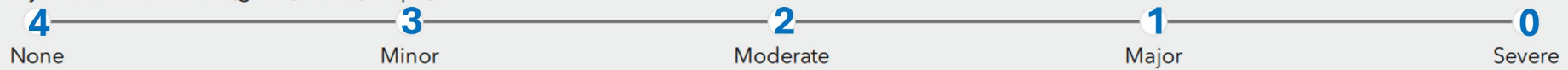
I-3. **Erosion** at the inlet or channel leading to inlet? *



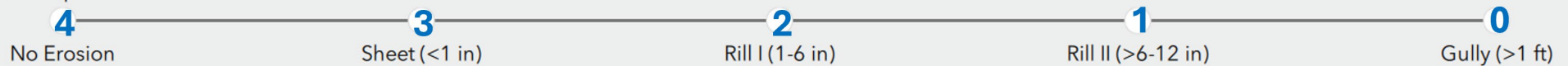
I-4. **Sediment accumulation** at the inlet or channel leading to inlet? *



I-5. **Leaf** or woody **debris** at the inlet (grate, swale, slope)? *



I-6. What is the depth of **erosion** at the inlet? *



Additional Notes:

Average Inlet Score

Takes average or answers selected above (range 0-4)

Inlet Grade: **Functional, Marginal, or Failed**



Prepare



Visit



Report and
Follow up

Verification Findings

Score	Grade Equivalent	Action
4 – 2.5	Functional	Practice is operating to meet requirements, no additional maintenance required.
< 2.5 - 0.5	Marginal	Practice needs maintenance to meet requirements.
< 0.5	Failed	Practice is not functional or does not exist and needs significant repairs or replacement to meet requirements.

Full process outlined in detail in Verification Standard Operating Procedure



Submitting a Survey

Riparian Buffer Score

4

BMP Grade: **Functional** (meets requirements).

- When all questions are complete (starred questions are required), select check mark at the very bottom of the survey.
- Pop up will come up.
- Save in outbox.
- After reviewing answers, select “send now”

Photo Description



Survey Completed

Your device is online.

▶ Send now

↪ Continue this survey

📁 Save in Outbox

Riparian Buffer Score

4

BMP Grade: **Functional** (meets requirements).



Any questions so far?



Riparian Buffer Planting Projects: Visual Indicators

- ✓ Buffer Width
- ✓ Plant Health
- ✓ Plant Density
- ✓ Human Activity
- ✓ Invasive Species



Stormwater Checklist: Visual Indicators

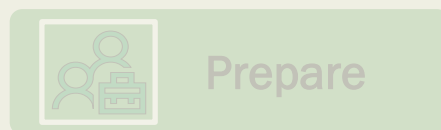
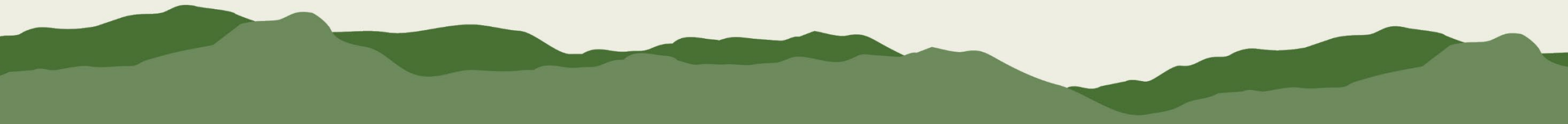
✓ Erosion

✓ Sediment

✓ Standing Water

✓ Vegetation

✓ Debris



Stormwater Checklist

- **6 Sections**

- Project Information
- Pretreatment
- Inlet
- Within the Practice
- Outlet
- Permeable Pavement (only if practice type selected)

- **8 Practice Types**

- Bioretention
- Dry Detention Pond
- Gravel Wetland
- Infiltration Trench/Basin
- Permeable Pavement
- Sand Filter
- Vegetated Swale
- Wet Pond



Best practices for answering survey questions

- Use your experience and best judgment when scoring the project's condition
- Refer to user guide for details on each question
- Bring a team – discuss answers and scores
- Take additional photos

Clean Water Project Verification Survey 123 Checklist
2024 Field Season Survey123 Form

Project Information

1. **Project ID*** Implementation Phase Watershed Projects Database ID (auto populated)

2. **Project Name*** (auto populated)

3. **Project Type*** (auto populated)

4. **Town(s)*** (auto populated)

5. **BMP ID*** (auto populated)

6. **BMP System Name*** (auto populated)

7. **Project Completion Date*** (auto populated)

8. **Select Clean Water Service Provider (CWSP)***

9. **Verifier Name(s)**

10. **Verifier Organization***

11. **Verification Date and Time*** (auto populated)

12. **Date of Last Rain Event** (select the appropriate date)

13. **Does the Project Exist?***

Verifier note: If the project as a whole does not exist, select "No" and include any relevant information in the notes section that will appear. Then complete Question's 14-16 to the best of your ability.



Survey123 Verification View Results

ArcGIS Survey123 My surveys

My Surveys + New survey Search

All surveys Count: 13

Stormwater Verification
Records: 0
Stormwater Verification Checklist
by cleanwatervt

Riparian Buffer Verification
Records: 0
Riparian Buffer Planting Verification ...
by cleanwatervt

Watercraft Inspection Survey
Records: 51,171
by vtangis

Flood Response Verification
Records: 0
by cleanwatervt

<https://survey123.arcgis.com/surveys>



Survey123 Verification Visit Reports

ArcGIS Survey123 My surveys Clean Water

Riparian Buffer Plantings Overview Design Collaborate Analyze Data Settings

7/17/18 - 7/9/24 Filter **Report** Export Open in Map Viewer Form view 24/24

BMP Type	Project ID	Project Name	Project Type	Town(s)	BMP ID
Riparian Buffer Planting	88	Statewide Trees for Strea...	River - Planting	Statewide	1878
Riparian Buffer Planting	88	Statewide Trees for Strea...	River - Planting	Statewide	1877
	8,937	Statewide Trees for Strea...	River - Planting	Fairfax	2,018
Riparian Buffer Planting	88	Statewide Trees for Strea...	River - Planting	Statewide	1876
Riparian Buffer Planting	88	Statewide Trees for Strea...	River - Planting	Statewide	1,874
Riparian Buffer Planting	8,939	Statewide Trees for Strea...	River - Planting	Wolcott	2,023
Riparian Buffer Planting	238	Statewide Trees for Strea...	River - Planting	Barnet, Brattleboro, Bridg...	177
Riparian Buffer Planting	238	Statewide Trees for Strea...	River - Planting	Barnet, Brattleboro, Bridg...	176
Riparian Buffer Planting	2695	Springfield Transfer Statio...	River - Planting	Springfield	2082
Riparian Buffer Planting	88	Statewide Trees for Strea...	River - Planting	Statewide	1,883
Riparian Buffer Planting	150	Clough Farm Corridor Eas...	River Corridor Easement	Ryegate, Groton	1891
Riparian Buffer Planting	6767	Winooski Trees for Stream...	River - Planting	Northfield	13
Riparian Buffer Planting	6796	Statewide Trees for Strea...	River - Planting	Stowe	1373
Riparian Buffer Planting	6766	Winooski Trees for Stream...	River - Planting	Middlesex	49

1 of 24 selected

Riparian Buffer Plantings

Submitted by: cleanwatervt
Submitted time: Oct 25, 2019, 6:48:02 PM
Edited by: cleanwatervt
Edited time: Jul 15, 2021, 3:43:45 PM

Project Information

BMP Type
Riparian Buffer Planting

Project ID
88

Project Name
Statewide Trees for Streams/Riparian Buffer Restoration, 2015



Survey123 Verification Visit Reports



BMP Verification Inspection Report Riparian Buffer Planting

SUBMITTED BY: CLEAN WATER INITIATIVE PROGRAM

SUBMITTED TIME: JULY 10, 2020 6:15:38 PM

Project Information			
BMP Type	Riparian Buffer Planting		
Project Name	Clough Farm Corridor Easement		
BMP System Name	Clough Farm Buffer Planting		
Project ID	150	BMP ID	1891
Project Type	River Corridor Easement		
Project Completion Date	October 18, 2017		
Partner(s)	Vermont Land Trust		
Town(s)	Byegate, Groton		
Verification Date and Time	July 9, 2020 11:18 AM		
Verifier	Rachel Wood, Jordyn Geller, Stephanie Long (VLT)		
Date of Last Rain Event	July 8 th , 2020		
Does BMP Exist?	Yes		
Project Location	Lat: 44.1994R Long: -72.16898		
BMP Photo			

Riparian Buffer Planting Checklist

Average Buffer Width	65
Does the buffer planting cover the area originally proposed in the planting plan, including bank slopes, if applicable?	Plantings and natural vegetation are growing throughout area specified in the planting plan and beyond in some places.
Is the average buffer width at least 35 feet from the top of bank or the width specified in the plan?	Buffer width is greater than 35 feet or greater than the amount specified in the plan.
Is there a minimum of 300 stems per acre in density (approx. 1 tree every 12 feet = 300 stems/acre)?	Yes, about 300 per acre.
Are the plantings healthy?	Yes, 90% or more of the plantings are alive and appear healthy.
What is the overall vegetative cover on the ground?	Trees or shrubs are thriving within the area specified for planting.
What is the extent of human activities in the buffer (mowing, parking lots, roads, laws, crops)?	More than 90% of buffer area intact. No human impacts.
Indicate if you see any of the following invasive species:	Japanese Knotweed on far bank
Indicate if there are any maintenance needs such as removing sheltering tubes, watering, or other follow up notes.	Very minor die-off of planted trees in a couple hot spots and some erosion on the bank of the river.



Scoring

Average BMP Score	3.8
Average BMP Grade	Optimal



Prepare



Visit



Report and
Follow up

Survey123 Verification Visit Export

ArcGIS Survey123 My surveys

Riparian Buffer Plantings

7/17/18 - 7/9/24 Filter Report **Export** Open in Map Viewer Form

Selected records only

- CSV
- Excel
- KML
- Shapefile
- File Geodatabase

Project ID	Project Type
Planting 88	er - Plantin
Planting 88	er - Plantin
8,937	er - Plantin
Planting 88	er - Plantin
Planting 88	er - Plantin
Planting 8,939	Statewide Trees for Strea... River - Plantin
Planting 238	Statewide Trees for Strea... River - Plantin



O&M Annual Reporting Template

- Verifiers and maintainers will provide project details to enable CWSPs to complete the annual reporting template.
- Purpose:
 - Track O&M costs
 - Monitor status of projects and O&M activities
 - Collect lessons learned
 - Adaptively manage O&M program



Key Takeaways:

- Verification involves communication between the CWSP, landowner liaison, and verifier.
- Read the Verification SOP and bring the checklist user guides into the field for reference.
- Preparation is key – The more information you know about the site the better the evaluation will be.
- Bring a colleague into the field with you to help conduct the site visit.



O&M Trainings

	Training Topic	Target Audience	Description
Tier 1	★ O&M of Clean Water Projects	CWSP staff, current and potential verifiers , BWQC members, municipal staff, maintainers responsible for multiple sites, DEC technical program staff	Roles and responsibilities in the O&M program.
	Site Access Agreements	CWSP staff, interested landowners, project implementors	Provide orientation to the new agreement templates.

OPERATION & MAINTENANCE MANUAL

For Clean Water Projects in Vermont

Developed by the Clean Water Initiative Program



Coming soon! – *for now please use professional knowledge for maintenance guidance.*

Manual contains:

- Descriptions of practice types.
- Verification guidance.
- Equipment, materials, and labor for routine maintenance.
- Factors known to affect the lifespan of the clean water project.

Certification Process

- Final required training to become certified as a verifier
- DEC hold list of individuals who have taken the appropriate trainings to be a certified verifier



Resources

- **Guidance:** [Background on the Law, Rule and Guidance | Department of Environmental Conservation \(vermont.gov\)](#)
- **Site Access Agreement Templates:** [Applicant & Recipient Resources | Department of Environmental Conservation \(vermont.gov\)](#)
- **DEC O&M Website:** [Clean Water Project Verification | Department of Environmental Conservation \(vermont.gov\)](#)

Thank you for listening! Questions?

[Post Training Survey](#)

For follow up questions, please email us:

Rachel Wood, CWIP O&M Specialist, Rachel.Wood@vermont.gov

Jill Sarazen, LCSG Green Infrastructure Collaborative Coordinator, jillian.sarazen@uvm.edu