Clear From

United States Department of Agriculture

NRCS-PDM-20

Natural Resources Conservation Service

DAMAGE SURVEY REPORT (DSR)

Emergency Watershed Protection Program – Recovery

NRCS Entry Only	
Eligible:	Yes ✔ No ___
Approved:	Yes ✔ No ___
Funding priority number (from sect. 4)	3e
Limited Resource Area:	Yes ___ No ✔
✔ 1	Major disaster declaration
2	Emergency declaration
3	Fire management assistance declaration
4	Local declaration

Section 1A

Date of report: 12/16/2024

DSR number: 50-01-24-5042-017

Project number: 5042-017-140

Section 1B - Sponsor Information

Sponsor Name: Town of Plainfield

Address: 149 Main Street PO Box 217

City/State/Zip: Plainfield, VT 05667

Telephone Number: (802) 454-8461 Fax:

Section 1C - Site Location Information

County: 023 State 50 Congressional District 01

Latitude 44.274113° Longitude -72.423933° UTM Coordinates

Drainage name: Unnamed tributary of Winooski River Site name 125 Barre Hill

Reach:

Damage description: Slope failure on a 40-45 foot-high bank, within 20ft of house with slopes steeper than 1.5:1.Slope failed next to garage in July 2023 event. Corner of foundation undermined.

Section 1D - Site Evaluation

All answers in this section must be YES to be eligible for EWP assistance.

Site Eligibility	YES	NO	Remarks
Damage was a result of a natural disaster?[1]	✔		
Recovery measures would be for runoff retardation or soil erosion prevention?[1]	✔		
Threat to life and/or property?[1]	✔		
Event caused a sudden impairment in the watershed?[1]	✔		
Imminent threat was created by this event?[2]	✔		
For structural repairs, not repaired twice within 10 years?[2]	✔		
Site Defensibility			
Economic, environmental, and social documentation adequate to warrant action? (See completed NRCS-CPA-52 and sections 3 and 4 of DSR.[3])	✔		
Proposed action technically viable? (See section 6.[3])	✔		

[1] Statutory

[2] Regulation

[3] The completed DSR and Form NRCS-CPA-52, "Environmental Evaluation Worksheet," are required to support the decisions recorded on this summary page. If additional space is needed on this or any other page in this form, add appropriate pages.

Have all the appropriate steps been taken to ensure that all segments of the affected population have been informed of the EWP program and its possible effects? YES ☑ NO ☐

Comments:

Only protecting house.

Section 1E - Proposed Action

Describe the preferred alternative (same as NRCS CPA-52, boxes M and G)

Armor 90 feet of bank with 14-foot-high x 5-ft-thick riprap and install earthen slope on a 1.5:1 slope and cover with erosion control blanket.

Total installation cost identified in this DSR from section 6:	$ 108,463.00
NRCS 75% cost-share:	$ 81,347.25
Sponsor 25% cost-share:	$ 27,115.75

Section 1F - NRCS State Office Review and Approval

Reviewed by: _____ Date reviewed 12/19/24

State EWP Program Manager

Approved by: _____ Date approved 12/20/24

State Conservationist

DSR NO: 50-01-24-5042-017

Section 2 - Environmental Evaluation and Special Environmental Concerns

See attached NRCS-CPA-52, Environmental Evaluation Worksheet

Section 3 - Economic Considerations

This section must be completed for each alternative considered (attach additional sheets as necessary).

	Future Damages ($)	Damage Factor (%)	Near Term Damage Reduction
Properties protected (private)			
125 Barre Hill Road	$ 196,428.00	100	$ 196,428.00
			$ 0.00
			$ 0.00
			$ 0.00
Properties protected (public)			
			$ 0.00
			$ 0.00
			$ 0.00
			$ 0.00
Business losses			
			$ 0.00
			$ 0.00
			$ 0.00
			$ 0.00
Other			
			$ 0.00
			$ 0.00
			$ 0.00
			$ 0.00
			$ 0.00
Total near term damage reduction $			$ 196,428.00
Net benefit (total near term damage reduction minus Cost from section 6)			$ 87,965.00

Completed by: M. Lapointe Date: 12/19/24

DSR NO: 50-01-24-5042-017

Section 4 - Social Consideration

This section must be completed for each alternative considered (attach additional sheets as necessary).

	YES	NO	Remarks
Has there been a loss of life as a result of the watershed impairment?	☐	☑	
Is there the potential for loss of life due to damages from the watershed impairment?	☐	☑	
Has access to a hospital or medical facility been impaired by watershed impairment?	☐	☑	
Has the community as a whole been adversely impacted by the watershed impairment (life and property ceases to operate in a normal capacity)	☑	☐	
Is there a lack or has there been a reduction of public safety due to watershed impairment?	☐	☑	

Completed by: A. Hook Date: 12/16/24

DSR NO: 50-01-24-5042-017

Section 5 - Group Representation Information

This section is completed only for the preferred alternative selected.

Group Representation	Number
American Indian/Alaska Native Female Hispanic	1
American Indian/Alaska Native Female Non-Hispanic	4
American Indian/Alaska Native Male Hispanic	1
American Indian/Alaska Native Male Non-Hispanic	5
Asian Female Hispanic	0
Asian Female Non-Hispanic	1
Asian Male Hispanic	0
Asian Male Non-Hispanic	1
Black or African American Female Hispanic	1
Black or African American Female Non-Hispanic	3
Black or African American Male Hispanic	1
Black or African American Male Non-Hispanic	4
Hawaiian Native/Pacific Islander Female Hispanic	0
Hawaiian Native/Pacific Islander Female Non-Hispanic	0
Hawaiian Native/Pacific Islander Male Hispanic	0
Hawaiian Native/Pacific Islander Male Non-Hispanic	0
White Female Hispanic	4
White Female Non-Hispanic	594
White Male Hispanic	5
White Male Non-Hispanic	601
Total Group	1,226

Census tract(s) 55825

Completed by: A. Hook Date: 12/16/24

DSR NO: 50-01-24-5042-017

Section 6 - Engineering Cost Estimate

This section must be completed for each alternative considered (attach additional sheets as necessary).

Proposed recovery measure (including mitigation)	Quantity	Units	Unit cost ($)	Amount ($)
Armor 90 feet of bank with 14-foot-high x 5-ft-thick riprap and	1	LS	$ 86,770.00	$ 86,770.00
install earthen slope on a 1.5:1 slope and cover with erosion control				$ 0.00
blanket.				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
Subtotal				$ 86,770.00
25%	1	LS		$ 21,693.00
Total installation cost (enter in sections 1E and 3) $				$ 108,463.00

Unit Abbreviations

AC	acre
CY	cubic yard
EA	each
HR	hour
LF	linear feet
LS	lump sum
SF	square feet
SY	square yard
TN	ton
Other (specify)	

Completed by: M. Lapointe Date: 12/19/24

DSR NO: 50-01-24-5042-017

Section 7 - NRCS EWP Funding Priority

Complete the following section to compute the funding priority for the recovery measures in this application (see instructions on page 9).

Priority Ranking Criteria	Yes	No		Ranking Number Plus Modifier
1. Is this an exigency situation?	☐	☑		
2. Is this a site where there is serious, but not immediate threat to human life?	☐	☑		
3. Is this a site where buildings, utilities, or other important infrastructure components are threatened?	☑	☐		e
4. Is this site a funding priority established by the NRCS Chief?	☐	☑		
The following are modifiers for the above criteria			**Modifier**	
a. Will the proposed action or alternatives protect or conserve federally-listed threatened and endangered species or critical habitat?				
b. Will the proposed action or alternatives protect or conserve cultural sites listed on the National Register of Historic Places?				
c. Will the proposed action or alternatives protect or conserve prime or important farmland?				
d. Will the proposed action or alternatives protect or conserve existing wetlands?				
e. Will the proposed action or alternatives maintain or improve current water quality conditions?			x	
f. Will the proposed action or alternatives protect or conserve unique habitat, including but not limited to, areas inhabited by State-listed species, fish and wildlife management area, or State identified sensitive habitats?				

Enter priority computation in section 1A, "NRCS Entry Only" box, in "Funding priority number."

Remarks:

DSR NO: 50-01-24-5042-017

Section 8 - Findings

Enter NEPA compliance finding from section Q of the NRCS-CPA-52.

3) is a federal action that has been sufficiently analyzed in an existing Agency state, regional, or national NEPA document and there are no predicted significant adverse environmental effects or extraordinary circumstances.

The DSR was reviewed with the sponsors. Yes ☐ No ☑

NRCS representative of the DSR team: Allyson Hook

Title: Supervising Engineer Date: 12/16/24

Section 9 - Attachments:

A. Location map
B. Site plan or sketches
C. NRCS-CPA-52, Environmental Evaluation Worksheet
D. Other (explain)

Instructions for Completing the NRCS-PDM-20, DSR

-	Explanation of Requested Item	Who Completes
Section 1	Enter Site Sponsor, Location, Evaluation, Selected Alternative, and Reviewed and Approval Signatures.	NRCS completes with voluntary assistance from Sponsor except for NRCS-only portion of section 1A.
1A	Enter the Date, DSR Number, and Project Number. For NRCS only enter Eligible Yes/No, Approved Yes/No, Funding Priority Number, and Limited Resource Area Yes/No.	
1B	Enter Sponsor Name, Address, Telephone, Fax	
1C	Enter site location County, State, Congressional District, Latitude, Longitude, Section, Township, Range, UTM Coordinates, Drainage name, Reach within drainage, and Damage description.	
1D	Enter Yes/No and any Remarks for the Site Evaluation information. Any No response means the site is not eligible for EWP assistance and no further information is necessary to complete the DSR. (See NEWPPM 390-502.03 and 390-502-04) Enter Yes/No regarding whether the affected public has been informed of the EWP program.	
1E	Enter the proposed treatment and the cost of installation.	NRCS only.
1F	NRCS Review and Approval.	
Section 2	Attach NRCS-CPA 52 that addresses environmental evaluation and special environmental concerns	NRCS only.
Section 3	Identify Property protected both private and public, business losses and other economic impacts considered for each alternative. Enter the dollar value of the potential future damages if no action is taken in the Future Damage (5) column. This would be the estimate of the value lost if the EWP recovery measure is not installed. Use the repair cost or damage dollar method to determine the estimate of future damages. The repair cost method uses the costs to return the impaired property, good, or services based on their original prevent condition or value. The damage dollar method uses an estimate of the future damage to value (e.g., if the structure is condemned, then enter the value of the structure). Enter the estimated amount based upon existing information or information furnished by the sponsor, contractors, or others with specific knowledge for recovery from natural disasters for each alternative considered. Often market values for properties or services can be obtained from personnel at the local county/parish tax assessment office. The DSR team needs to determine the Damage Factor (%) which is a coefficient that indicates the degree of damage reduction to a property that is attributed to the effect of the proposed EWP recovery measures. Use an appropriate estimate of how much of the damage the EWP recovery measure will avoid for the alternative being considered. If the recovery measures from a single site will prevent 100 percent of the damage use 100 percent. The Near Term Damage Reduction is the Future Damage ($) times the Damage Factor (%). Sum the Near Term Damage Reduction values to calculate the Total Near Term Damage Reduction. Enter the Net Benefit which is computed by subtracting the Cost from Section 6 from the total near term damage reduction. The	NRCS completes with voluntary assistance from Sponsor.

-	Explanation of Requested Item	Who Completes
	economic section must be completed for each alternative considered. Attach additional sheets as necessary.	
Section 4	Enter information to describe the potential social impacts and considerations for each alternative. Answer Yes or No and any remarks necessary to adequately address each question. The information may be obtained through interviews with community leaders, government officials or sponsors. Factors such as road closures, loss of water, electricity, access to emergency services are used when answering whether the community as a whole has been impaired. This information is part of the environmental evaluation (NRCS-CPA-52) but may be pertinent in section 7 regarding funding priorities. The Social Considerations section must be completed for each alternative considered. Attach additional sheets as necessary.	NRCS completes with voluntary assistance from Sponsor.
Section 5	Enter the Group Representation for the preferred alternative. Use the most recent census tract information based upon where the EWP recovery measures are located.	NRCS completes using most recent U.S. Census data.
Section 6	Enter Proposed Recovery Measure(s) including Quantity, Units, Unit Cost, and Total Amount Cost. Enter sum of all Proposed Recovery Measure Costs to calculate Total Costs. Enter Total Installation Costs in Section 1E. The Engineering Cost Estimate must be completed for each alternative considered. Attach additional sheets as necessary.	NRCS completes with voluntary assistance from Sponsor.
Section 7	This section is used to determine the Funding Priority for the preferred alternative and sequence for initiating recovery measures. Enter Yes/No for questions 1 through 4 and enter the number (exigency 1, serious threat to human life 2, etc.) in the right column, Ranking Number Plus Modifier. Complete the Modifier portion by placing the alphabetic indicator a through f in the Modifier column. Complete the Ranking Number Plus Modifier column by entering the alphabetic indictor(s) that exists within the site. The number of the site designates the priority (e.g., a site with a designation of 2 is a higher priority that a site with a designation of 3). The modifiers increase the priority for the same numeric site (e.g., a site with a designation of 1a, would be a higher priority than a site with a designation of 1, a site with a designation of 2bc would be a higher priority than a site designated as 2b). Enter the Funding Priority in Section 1A.	NRCS completes with voluntary assistance from Sponsor.
Section 8	Insert the number of the Finding that was checked in section Q of the NRCS-CPA-52. If action is required to meet NEPA requirements, state whether an EA or EIS will be prepared or adopted."	NRCS only.
Section 9	Include attachments for location map, site sketch or plan, a completed NRCS-CPA-52, Environmental Evaluation Worksheet, and other information as needed.	NRCS completes with voluntary assistance from Sponsor.

U.S. Department of Agriculture
Natural Resources Conservation Service

NRCS-CPA-52
04/2023

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name: Town of Plainfield

B. Conservation Plan ID # (as applicable): 50 01 24 5042 017-140
Program Authority (optional): EWP

D. Client's Objective(s) (purpose):
To stabilize an actively eroding stretch of Great Brook that is threatening infrastructure along Brook Road in the Town of Plainfield.

C. Identification # (farm, tract, field #, etc. as required):
125 Barre Hill Road, Plainfield, VT

E. Need for Action:
To address the resource concerns identified in Section F by stabilizing actively eroding streambanks and protecting infrastructure.

H. Alternatives

No Action √ if RMS ☐	*Alternative 1* √ if RMS ☐	*Alternative 2* √ if RMS ☐
Streambank will continue to erode, further threatening infrastructure.	580 (Streambank & Shoreline Protection). Rock riprap will be installed to stabilize the streambank.	

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. Effects of Alternatives**					
	No Action		***Alternative 1***		***Alternative 2***	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
SOIL						
Bank erosion from streams, shorelines or water conveyance channels Banks are NOT stable and NOT protected by roots of natural vegetation, wood, or rock or a combination of materials.	Increased concerns without NRCS assistance due to further streambank erosion.	☑ NOT meet PC	Banks will be stabilized with structural measures (rock riprap), protecting against further erosion and threats to infrastructure.	☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
WATER						
Sediment transported to surface water Excessive sediment entering the surface water from bank failure.	Sediment will continue to enter the surface water from the eroding streambank.	☑ NOT meet PC	Sediment loss from the streambank will be significantly reduced.	☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	I. (continued)					
	No Action		*Alternative 1*		*Alternative 2*	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified	No Effects	☐ NOT meet PC	No Effects	☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
PLANTS						
No resource concern identified	No Effects	☐ NOT meet PC	No Effects	☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
ANIMALS						
Aquatic habitat for fish and other organisms Current level of sedimentation reduces the quality of aquatic habitat.	Excessive sediment from continued erosion of the streambank degrades aquatic habitat.	☑ NOT meet PC	Impacts to aquatic habitat due to sediment loss will be decreased with bank stabilization.	☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
ENERGY						
No resource concern identified	No Effects	☐ NOT meet PC	No Effects	☐ NOT meet PC		☐ NOT meet PC
		☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
Human Economic and Social Considerations						
Risk Infrastructure at risk.	Increased risk with actively eroding streambank.		Decrease risk associated with stable streambank.			
Labor Town labor time.	Town crew time wil be required to repair damage.		Bank will be stabilized decreasing town labor in the future.			
Capital Town costs.	Town will have to cover cost of continued maintanence and repair		Bank will be stabilized minimizing costs of maintanence and repair.			

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	No Action		***Alternative 1***		***Alternative 2***	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act *Guide Sheet* Clean Air Act: No Nonattainment or Maintenance areas designated for non-attainment of air quality standards AND there are no Class 1 areas nearby. Source: https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors	No Effect Not applicable	☐	No Effect Not applicable	☐		☐
●Clean Water Act / Waters of the U.S. *Guide Sheet* Clean Water Act: Surface waters in the planning area are potential Waters of the US	May Effect Clean Water Act: Without NRCS assistance, continued erosion will increase sediment in stream.	☐	May Effect Sediment in stream will be decreased as a result of stabilizing bank. Potential permitting consultation should occur with Army Corps of Engineers and State of Vermont, as applicable.	☑		☐
●Coastal Zone Management *Guide Sheet* Coastal Zone Management Areas are not in or near the planning area.	No Effect Not applicable	☐	No Effect Not applicable	☐		☐
Coral Reefs *Guide Sheet* Coral Reefs or associated water bodies are not present in or near the planning area.	No Effect Not applicable	☐	No Effect Not applicable	☐		☐
●Cultural Resources / Historic Properties *Guide Sheet* Cultural Resources or historic properties may be present in the Area of Potential Effect. See documentation in case file.	May Effect Cultural Resources may be present in the planning area. Chance for negative impacts exists with continued streambank erosion.	☐	May Effect Cultural Resources evaluation to be conducted to determine impacts of planned practices.	☑		☐
●Endangered and Threatened Species *Guide Sheet* E&T Species: Northern long-eared bat presence and habitat is statewide. Wood Turtle habitat mapped in project proximity. Based on: USFWS, VTFWS & VTDEC Datasets.	No Effect E&T Species: No Effect from client's actions without NRCS assistance.	☐	May Effect E&T Species: Practices will be implemented in accordance with the Terms and Conditions and Reasonable and Prudent Measures of the Biological Opinion from USFWS & VTFWS.	☑		☐
Environmental Justice *Guide Sheet* Environmental Justice: 15 percentile people of color and 51 percentile low income in the planning area. Source: https://ejscreen.epa.gov/mapper/	No Effect Not applicable	☐	No Effect Environmental Justice: No disproportionately high and adverse environmental or human health effect on a low-income population, minority population, or Indian Tribe will occur because no adverse environmental or human health effects are anticipated to result from planned practices.	☐		☐
●Essential Fish Habitat *Guide Sheet* Essential Fish Habitat is not present in or downstream of the planning area. Source : https://www.habitat.noaa.gov/protection/efh/efhmapper/	No Effect Not applicable.	☐	No Effect Not applicable.	☐		☐
Floodplain Management *Guide Sheet* Floodplain Mgnt: A 100-year floodplain is present in or near the planning area. Source: https://msc.fema.gov/portal/search & VT Natural Resource Atlas	No Effect Not applicable	☐	No Effect Floodplain Mgnt: No increased flood hazard or other adverse effect to the existing natural and beneficial values of the floodplain or lands adjacent or downstream is likely.	☐		☐

Invasive Species *Guide Sheet* Invasive species are not noted in the planning area.	No Effect Not applicable	☐	No Effect No invasive species in area of potential impact - disturbance sites should be monitored	☐		☐
●Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds, bald or golden eagles habitat is not present in or near the planning area. Source: Field observations & https://ecos.fws.gov/ipac/	No Effect Not applicable	☐	No Effect Migratory Birds: No take of any migratory bird, nest, or egg is expected to occur and planned practices will not take or disturb eagles.	☐		☐
Natural Areas *Guide Sheet* Natural Areas: There are no designated natural areas present in or near the planning area. Source: https://fpr.vermont.gov/vermont-natural-areas	No Effect Not applicable	☐	No Effect Not applicable	☐		☐
Prime and Unique Farmlands *Guide Sheet* Prime or unique farmlands or farmlands of statewide or local importance are present in the planning area.	No Effect Not applicable	☐	No Effect Prime/unique Farmlands: No conversion of farmland to nonagricultural use is planned.	☐		☐
Riparian Area *Guide Sheet* Riparian areas are present along impacted surface waters in the planning area.	May Effect Riparian Areas: Continuation of benchmark conditions will degrade/decrease water quality/water quantity/fish and wildlife benefits.	☐	May Effect Riparian Areas: Practice(s) will maintain or improve water quality, water quantity, and fish and wildlife benefits provided by the riparian area(s).	☐		☐
Scenic Beauty *Guide Sheet* Planning area is currently a residential development.	No Effect Scenic Beauty: No change from benchmark conditions.	☐	No Effect Scenic Beauty: Planned practice(s) are typical for the surrounding area and will blend into the scenic quality of the general landscape.	☐		☐
●Wetlands *Guide Sheet* Wetlands are not present in the planning area. Source: Field determinations & Vermont State Wetland Inventory	No Effect Not applicable	☐	No Effect Not applicable	☐		☐
●Wild and Scenic Rivers *Guide Sheet* WildScenic Rivers: No Federal or State designated Wild, Scenic, or Recreational river segments or rivers listed in the Nationwide Rivers Inventory (NRI) are present in or near the planning area. Source: https://www.rivers.gov/	No Effect Not applicable	☐	No Effect Not applicable	☐		☐

K. Other Agencies and Broad Public Concerns		No Action	Alternative 1	Alternative 2
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.		None Required	Vermont Stream Alteration and Army Corps 404 permit are potentially needed, consultation should occur.	
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)		Direct impacts to infrastructure, along with continued degradation of water quality, soil resources and aquatic habitat.	Stabilized streambank will protect infrastructure. Decreased sediment impacts to stream.	
L. Mitigation (Record actions to avoid, minimize, and compensate)		None Required	Any potential actions will be dictated by individual permits.	
M. Preferred Alternative	√ preferred alternative	☐	☑	☐
	Supporting reason		Selected alternative in anticipation of receiving EWP assistance. Will protect existing infrastructure and reduce sediment load to surface water.	

N. Context (Record context of alternatives analysis) The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.	Local
	Regional

O. To the best of my knowledge, the data shown on this form is accurate and complete:

In the case where a non-NRCS person (e.g. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block to verify the information's accuracy.

Signature (TSP if applicable)	Title	Date
Signature (NRCS)	**Title**	**Date**
	Resource Conservationist	**12/20/2024**

If preferred alternative is not a federal action where NRCS has control or responsibility and this NRCS-CPA-52 is shared with someone other than the client, then indicate to whom this is being provided.

The following sections are to be completed by the Responsible Federal Official (RFO)

NRCS is the RFO if the action is subject to NRCS control and responsibility (e.g., actions financed, funded, assisted, conducted, regulated, or approved by NRCS). These actions do not include situations in which NRCS is only providing technical assistance because NRCS cannot control what the client ultimately does with that assistance and situations where NRCS is making a technical determination (such as Farm Bill HEL or wetland determinations) not associated with the planning process.

P. Determination of Significance or Extraordinary Circumstances

To answer the questions below, consider the severity (intensity) of impacts in the contexts identified above. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.

Yes	No	
☐	☑	• Is the preferred alternative expected to cause significant effects on public health or safety?
☐	☑	• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
☐	☑	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?
☐	☑	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?
☐	☑	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?
☐	☑	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?
☐	☑	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.
☐	☑	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?

Q. NEPA Compliance Finding (check one) The preferred alternative:		Action required
☐	1) is **not a federal action** where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
☐	2) is a federal action **ALL** of which is **categorically excluded** from further environmental analysis **AND** there are **no extraordinary circumstances as identified in Section "O".**	Document in "R.2" below. No additional analysis is required
☑	3) is a federal action that has been **sufficiently analyzed** in an existing Agency state, regional, or national NEPA document **and** there are no predicted significant adverse environmental effects or extraordinary circumstances.	Document in "R.1" below. No additional analysis is required.
☐	4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects **and has been formally adopted by NRCS**. NRCS is required to prepare and publish its own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. (**Note: This box is not applicable to FSA)**	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
☐	5) is a federal action that has **NOT** been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.

R. Rationale Supporting the Finding	
R.1 Findings Documentation	Emergency Watershed Protection Program, Natural Resources Conservation Service, Programmatic Environmental Impact Statement, April 2005
R.2 Applicable Categorical Exclusion(s) **(more than one may apply)** 7 CFR Part 650 *Compliance With NEPA*, subpart 650.6 *Categorical Exclusions* states prior to determining that a proposed action is categorically excluded under paragraph (d) of this section, the proposed action must meet six sideboard criteria. See NECH 610.116.	

I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy and based on that made the finding indicated above.

S. Signature of Responsible Federal Official:

	Resource Conservationist	12/20/2024
Signature	**Title**	**Date**

Additional notes

Jesse Armfield
MA Office

451 West Street
Suite #1
Amherst
MA, 01002

Ph: 413.253.4561
Fx: 855.596.7668

SUBJECT: Geologic Consultation, Bank Stability **DATE:** 06/11/2025

TO: Ally Hook
Bob Thompson

FILE CODE: ENG - Geology

Purpose: This report presents a review of available geologic data used to evaluate conditions which may affect the planning, design and scope of a proposed stream bank protection project. After a brief initial desk review it was determined that a field reconnaissance investigation was required to properly assess the site. The results and interpretations of the desktop and field investigations are summarized here.

The field investigation was conducted on 05/08/2025, in attendance was Jesse Armfield (Geologist, NRCS), Ally Hook (Supervisory Engineer, NRCS), and George Springston (Professor & Volunteer, Norwich University & Plainfield Friends).

Introduction: Investigation of this site was prompted by bank failure caused by flooding in 2024. The site was initially investigated by NRCS in November 2024 as the bank failure was reportedly threatening infrastructure. Evidence of bank failure due to this event is clear when comparing pre and post flood aerial imagery (Figures 1-2). Since the 2024 flood bank failure has progressed and further failure is imminent as evidenced by comparing photos from 12/2/2024 (Figure 3) to photos from 5/8/2025 (Figure 4). Stream bank protection is currently proposed to mitigate bank failure and prevent infrastructure damage.

Previous Site-Specific Work: This site was inventoried as an active landslide due to gully erosion by George Springston in 2011 in response to Tropical Storm Irene (Springston, 2017). The inventory has little information associated with it; the study was a proof of concept for using differences in LiDAR datasets to detect landslides. This site was identified using LiDAR and was subsequently groundtruthed at which time the description of the site is recorded as a landslide caused by gully erosion encompassing an area >1000ft^2.

Site Characteristics and Interpretations: The following section briefly reviews published site characteristics (cited), summarizes field observations, as well as provides interpretations of current and past field conditions.

Stream bank protection is proposed on the approximately 45ft high bank (river left) of the unnamed stream near 125 Barre Hill Road in Plainfield VT. The site is underlain by the Waits River Formation, a calcareous/carbonaceous phyllite-schist with quartzite beds, which dips steeply to the W/NW (Kim and Ruksznis, 2011). Surficial materials are mapped as coarse-grained lake deposits (Springston, 2011). There are no reported drillers logs in a comparable local setting, but based on the exposure it is at least 45ft from the top of the bank and is interpreted to be at least 5-10ft deeper than that.

Due to flooding in 2024 the top of bank moved landward approximately 7ft (estimated by measuring differences in pre/post flood aerial images) due to loss of

material. In the field the slope of the bank was measured at about 42˚ which matched the slope calculated using the 1ft LiDAR obtained from The University of Vermont Spatial Analysis Lab (41.4˚). Based on LiDAR calculations along the left bank the post flood slope is generally steeper than the pre flood slope. The currently active stream channel is primarily composed of gravel-cobbles but grain size ranges from sand-boulders and has significant woody debris accumulation (Figure 5). There does not appear to be any floodplain in this gorge, the channel seems to be downcutting and widening and based on my interpretation is in stage 2 of the channel evolution model.

Based on field observations the interpreted stratigraphy of the bank is 25ft of glacial lake beach sands (fine-medium) overlain by 7ft of till, overlain by 10ft of bedded material interpreted to have been deposited under oscillating environmental conditions (silt-boulder, predominantly sand), overlain by 3ft of sandy soil with organics derived from the underlying bedded deposit (additional fill near garage). It should be noted that in the area upstream of the garage down to just past it nearly all of the glacial subsoils are covered by 0.3-1.5ft of brown sandy colluvium with small vegetation established and has rill erosion (Figure 6).

The fine-medium sand interpreted to have been deposited on or near the shore of glacial lake Winooski is described as loose, tan, well rounded, thinly bedded, granular, SP textured, and was dry at the time of the investigation (Figure 7). This material is highly erodible at moderate and higher flow velocities which allows this stream to incise and widen so readily. This material is also easily removed from the toe of the slope at these velocities, which contributes to the instability of the bank.

The till overlying the glacial lake deposit described above is interpreted to have been deposited during a relatively brief glacial readvance and the boundary between materials is sharp and is wavy over the scale of the depositional contact (Figure 8). This till is described as dense, dark brown, massive, multitextured, and was dry at the time of the investigation. The matrix of the till was predominantly fine grained but likely classifies as a sandy silt USCS texture. Within the fine-grained matrix there are 20-30% coarse fragments which are predominantly gravel with some cobble and potentially boulders. No boulders were observed in the till as it was nearly entirely covered in colluvium, but boulders around site the likely eroded out of the till.

The bedded deposit overlying the till is interpreted to have been deposited during oscillating conditions where changes in the elevation of the water in glacial lake Winooski caused changes in the depositional environment here. Most of this deposit appears similar to the on or near shore deposits underlying the till, which were also likely deposited when lake level was higher. During periods of lower lake level this site appears to have turned into a fluvial environment or a dune environment as evidenced by crossbedding structures that indicate flow direction (Figure 9). Despite the differing depositional environments most of this deposit can be described as loose, tan, well rounded, thinly bedded, granular, SP textured, and was dry at the time of the investigation. The upper few feet of this deposit are interpreted to have formed in a higher energy stream, this portion of the deposit is composed predominantly of medium-coarse sand (SM) with beds of gravel-cobble/boulders (GM soils, Figure 4).

The organic soil formed from the underlying subsoil is dark brown, loose, granular, has numerous roots and classifies as an SM soil. The soil overhang seems to be

held together by roots and has a very similar color to the hillslope colluvium. It is hypothesized that a significant portion of the hillslope colluvium is derived from the organic soil based on the color and grain size composition of the colluvium.

There is small channel incising below the corner of the garage building at the top of the bank. This is potentially caused by runoff from the property, roof of the garage, or both but its unclear. Comparing photos from 12/2/24 to 5/8/2025 shows that this channel has incised further and now more of the corner of the footing is unsupported by soil.

Risk Summary: The garage structure is at immediate risk of falling into the gully. This could happen through extreme event-based failure, multiple smaller event-based failures, or some combination of the two. Since the 2024 event it appears as though smaller events have caused additional erosion at this location, as evidenced by photographs and a small channel that formed from the corner of the building running down to the creek (Figures 3,4,10). Another event with a similar magnitude as the 2024 event would likely cause this structure to slide into the gully.

The house is also at risk of suffering due to gully erosion. The downstream corner of the home currently sits approximately 20ft from the edge of the unstable bank. The slope beneath the house is steep and is covered in loose colluvium which is primarily underlain by loose sand. When comparing the 2023 DEM to the 2024 DEM some bank movement is apparent but what is most apparent is how steep the slope beneath the house becomes after the event. The loose materials composing most of the steep slope, most importantly the toe, are highly erodible and could be mobilized during subsequent high-water events.

Design Recommendations: Currently the mitigation proposal consists of 90ft of rip rap bank protection, regrading the bank, and erosion control blankets at the toe of the slope beneath the house in addition to moving the garage farm from the top of the bank. I think this will adequately protect the house for the practice lifespan. If excess funds are available a more robust design could extend the rip rap toe protection further upstream to protect intact slopes or further downstream to stabilize failing slopes that are not currently threating infrastructure. Additionally including structures to slow water down could prevent further downcutting and widening of this gully.

Closing Summary: In summary this landslide is considered active and is likely to progress during subsequent high flow events without mitigation. High flow events are likely to result in widening of the valley through erosion of loose sands at the toe of the banks causing bank failures. This process is likely to occur faster where banks are composed of loose sandy material, but fortunately this loose sandy material abuts the stream for only approximately 600ft (200ft upstream, 200ft on site, 200ft downstream). Protecting the toe of the slope as proposed should prevent bank failure that would threaten the home for the practice lifespan.

This report has been prepared for the exclusive use of the Natural Resources Conservation Service for the above-mentioned project. The findings, opinions and recommendations contained in this document have been prepared exercising reasonable ordinary care and diligence in the application of professional knowledge and skill. The interpretation of subsurface conditions, conclusions, and recommendations contained herein is for in-service use only. NRCS will not be responsible for conclusions drawn from this data by others. If you have any questions or need additional information, please reach out.

Jesse Armfield
Geologist

References:

Kim, Jonathan, and Ruksznis, Abigail, 2011, Bedrock Geologic Map of the Plainfield Quadrangle, Washington County, Vermont: Vermont Geological Survey, Open-File Report VG11-3, scale 1:24,000.

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Vermont Agency of Natural Resources, 2007. Vermont Geomorphic Assessment, Appendix C Channel Evolution Models. https://dec.vermont.gov/sites/dec/files/wsm/rivers/docs/assessment-protocol-appendices/C-Appendix-C-07-Channel-Evolution-Models.pdf

Vermont Center for Geographic Information (VCGI), 2023 & 2024 Aerial Imagery. https://vcgi.vermont.gov/data-and-programs/imagery-program

Vermont Private Well Database, Vermont Agency of Natural Resources. https://anrmaps.vermont.gov/websites/anra5/

List of Figures:

2023 Aerial Imagery - Preflood

Figure 1: Pre flood aerial imagery collected in 2023. Note the area to the east of the corner of the garage and compare to figure 2.

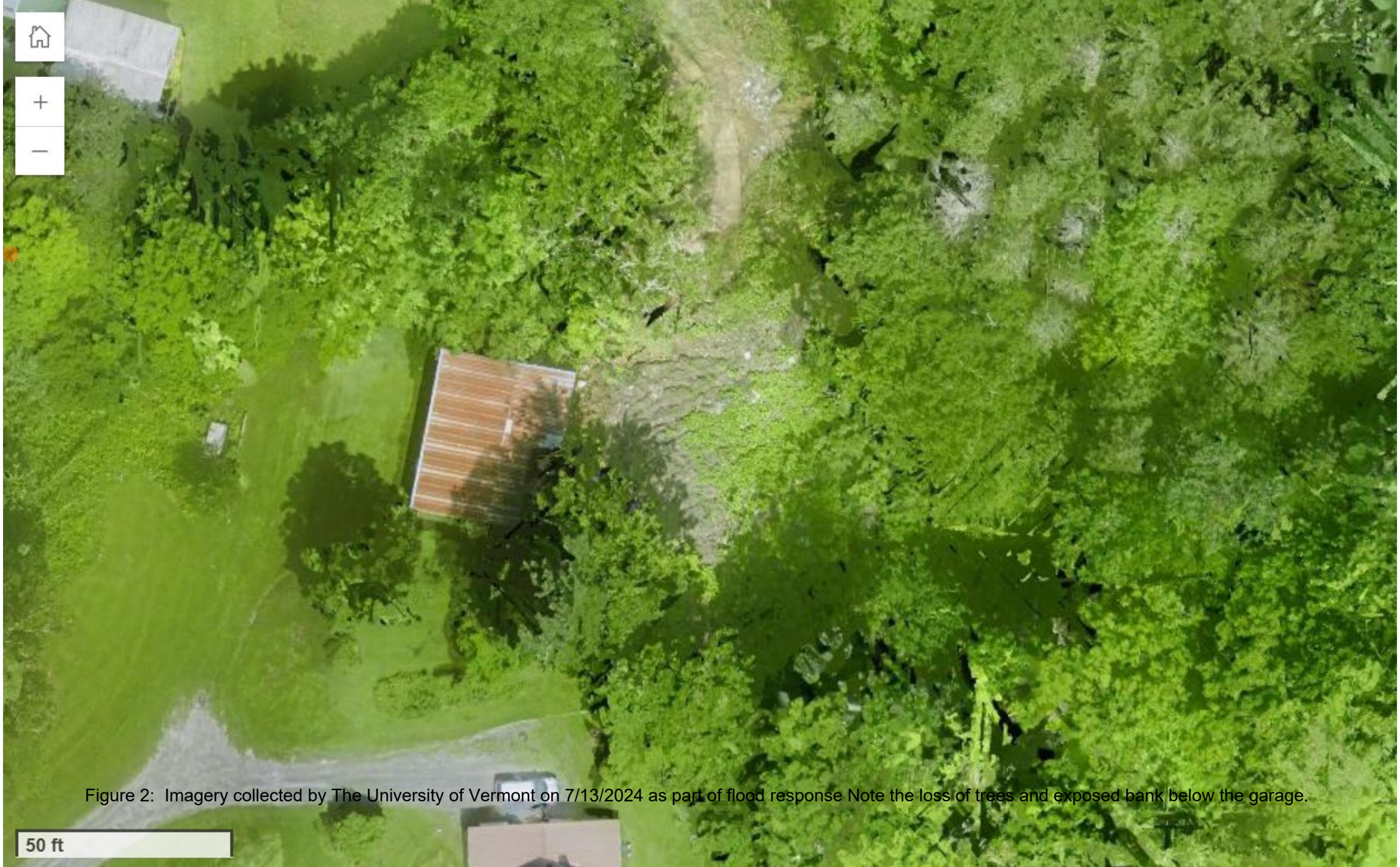

Figure 2: Imagery collected by The University of Vermont on 7/13/2024 as part of flood response Note the loss of trees and exposed bank below the garage.

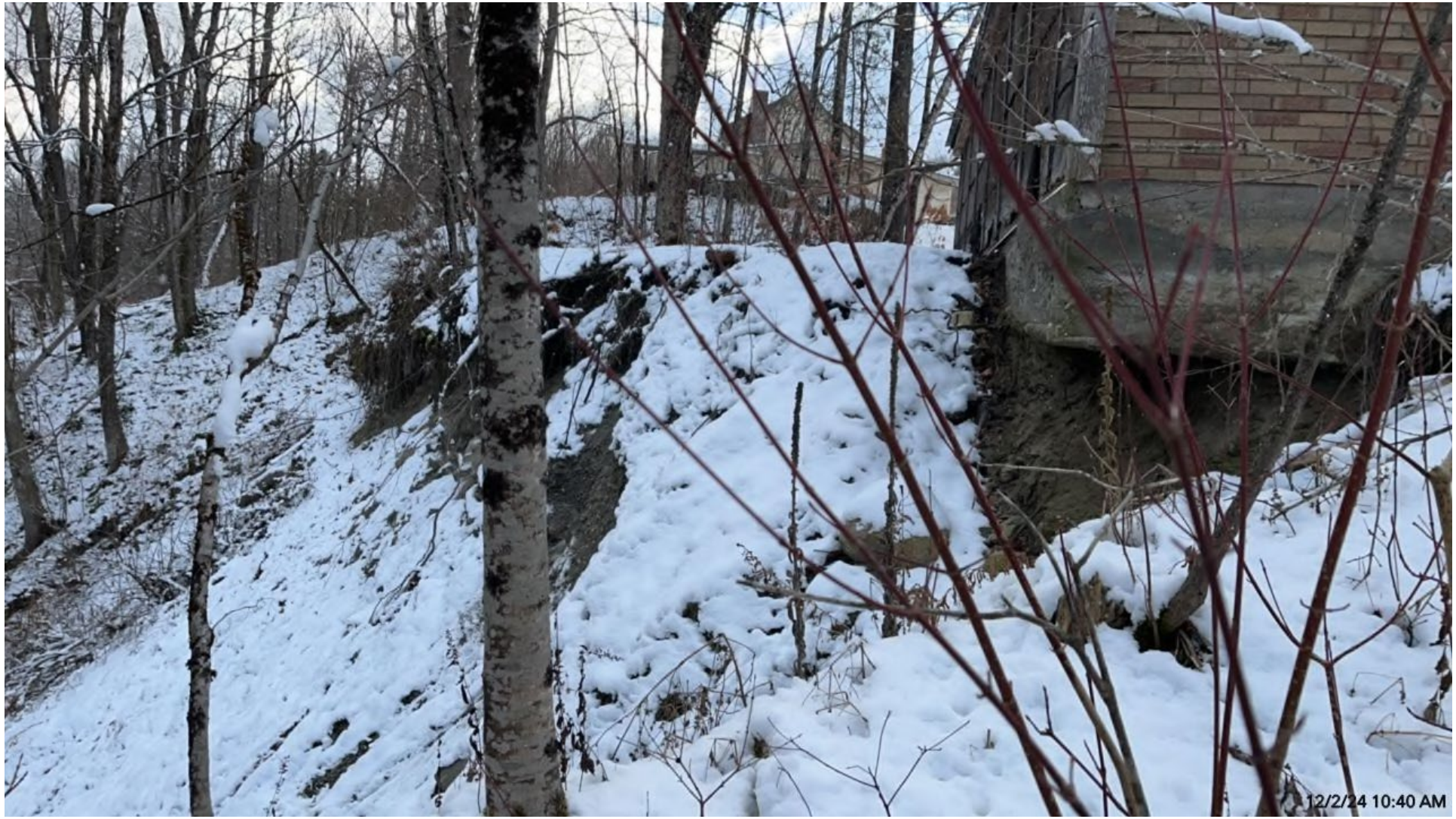

Figure 3: Photo taken on 12/2/2024 showing the garage and slope below. Note that the footing of the garage is exposed but compare this to the exposure in Figure 4.

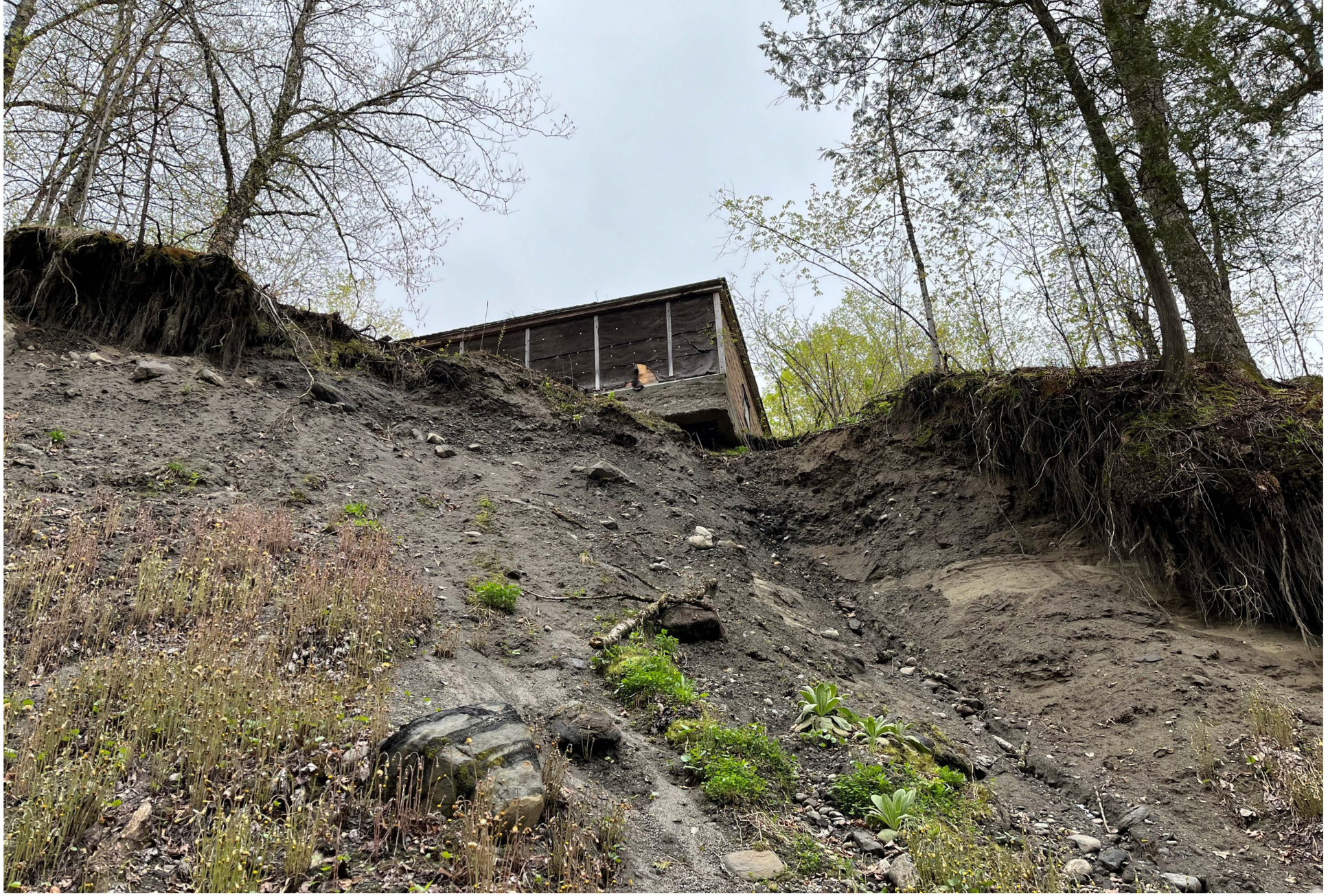

Figure 4: Photo of garage on 5/8/2025. This photo shows the footing of the garage unsupported by soil. This photo also shows the small channel/ rill forming below this structure.

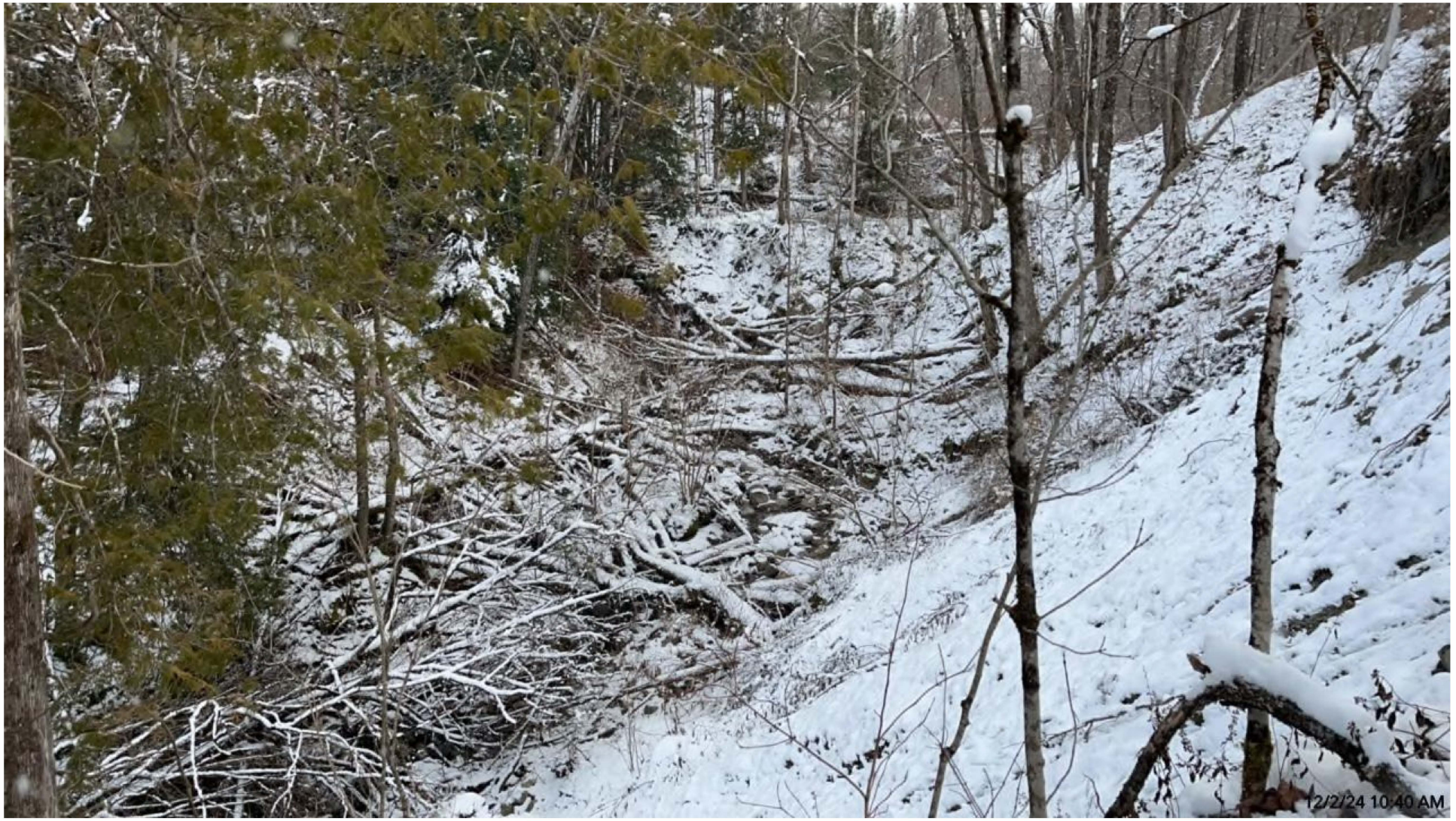

Figure 5: Photo taken on 12/2/2024 showing large woody debris pile up in the gorge. This debris pile up appeared similar during the subsequent investigation.

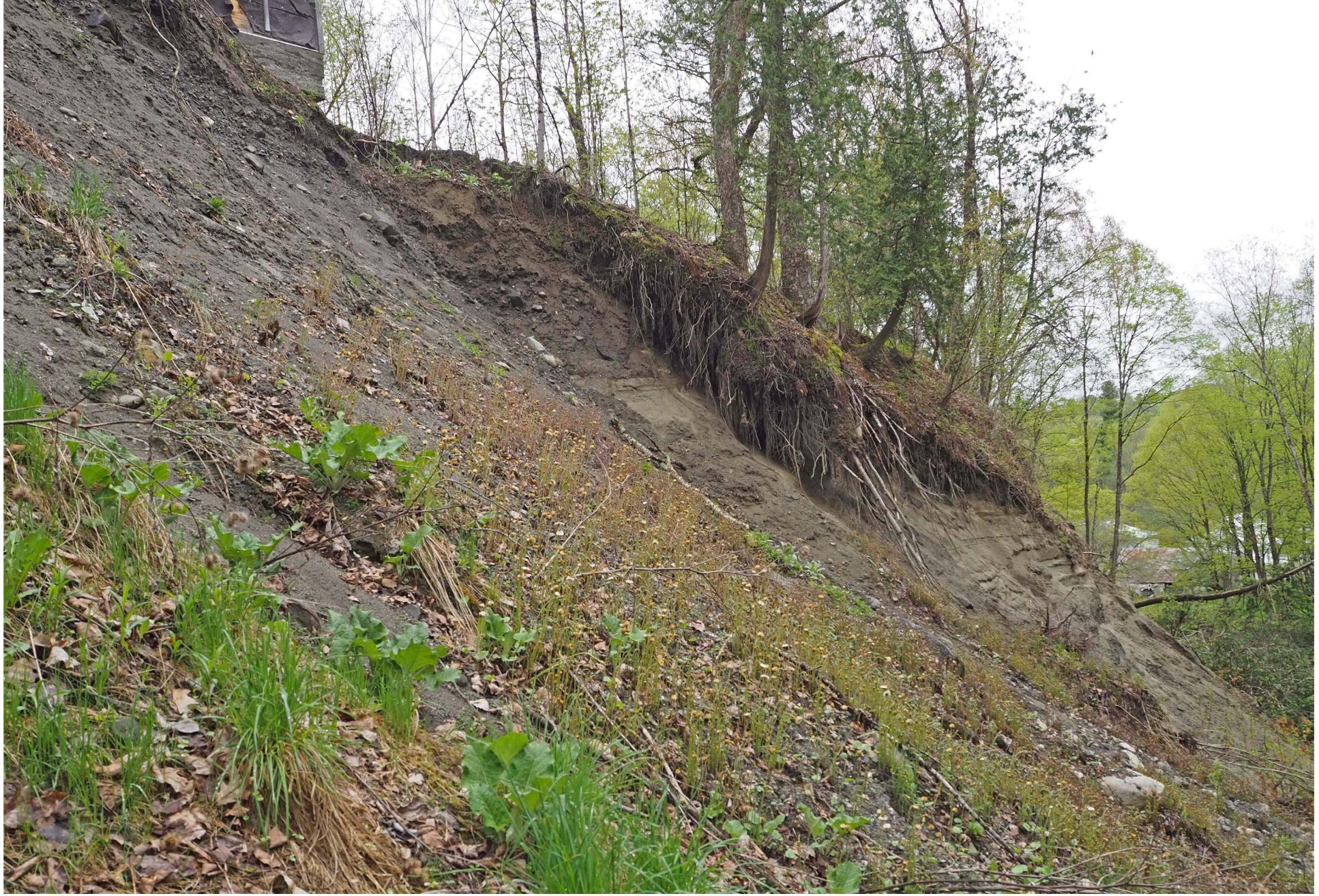

Figure 6: Photo from 5/8/2025 that shows colluvium with small plants and exposed subsoils in the distance.

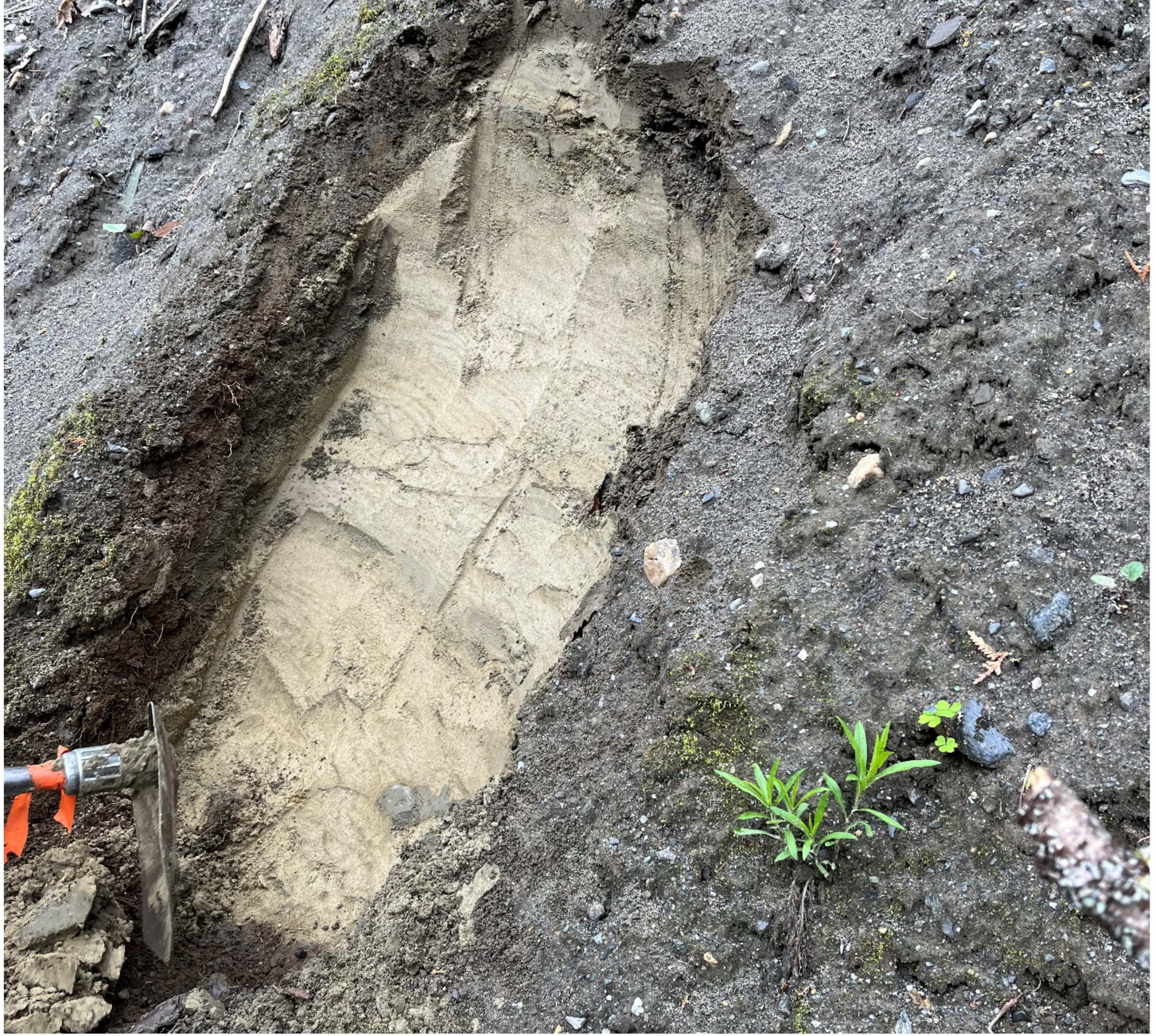

Figure 7: Photo taken on 5/8/2025 showing exposed glacial lake sands as well as overlying colluvium that was removed.

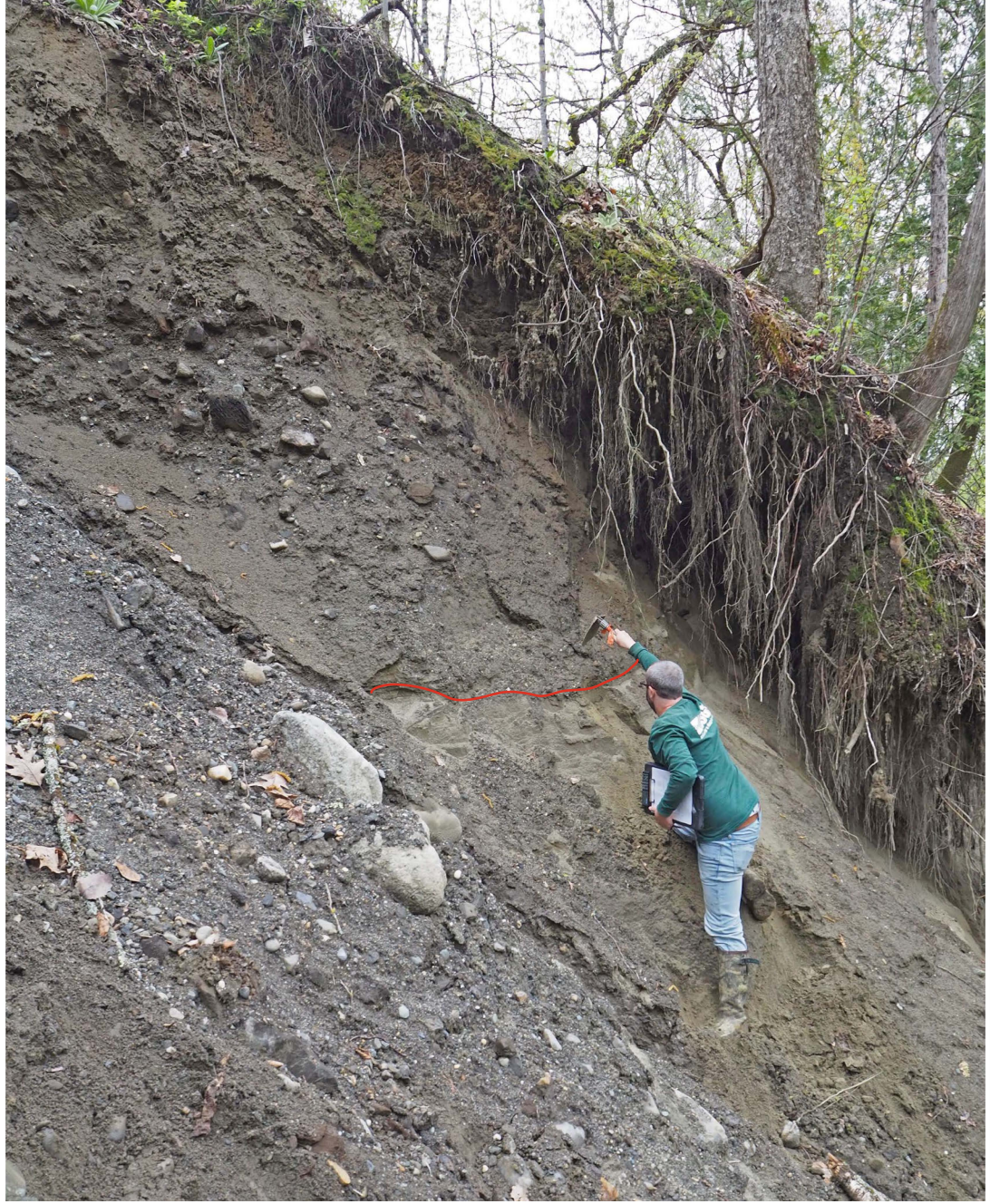

Figure 8: Photo taken on 5/8/2025 revealing wavy boundary between till and underlying glacial lake deposit (see line).

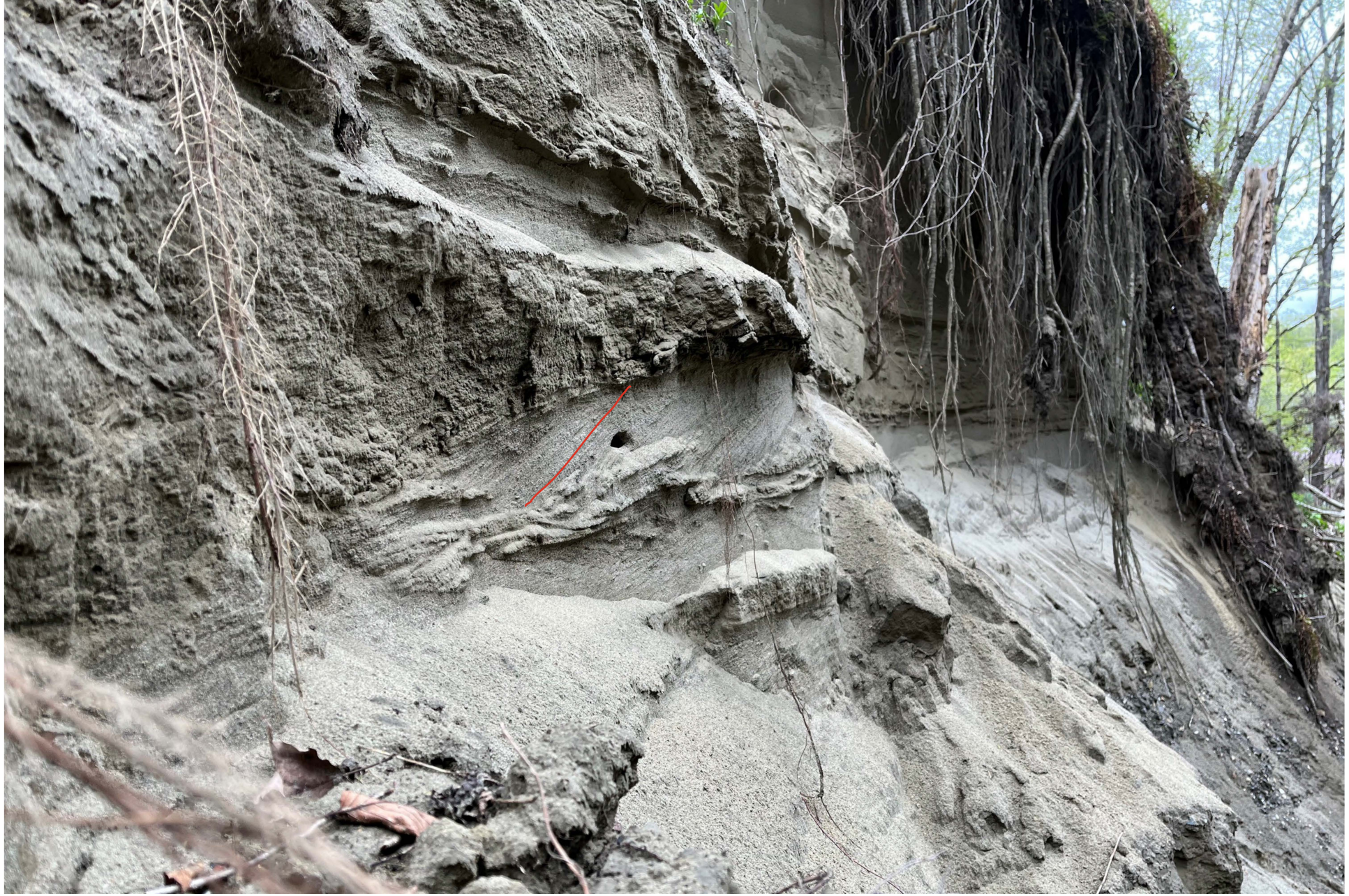

Figure 9: Photo taken on 5/8/2025 showing the variability in the depositional environments of the uppermost deposit. Despite the changing environmental conditions the deposit largely classifies as SP soils and coarsens upwards where some beds may classify as GM.

2024 DEM

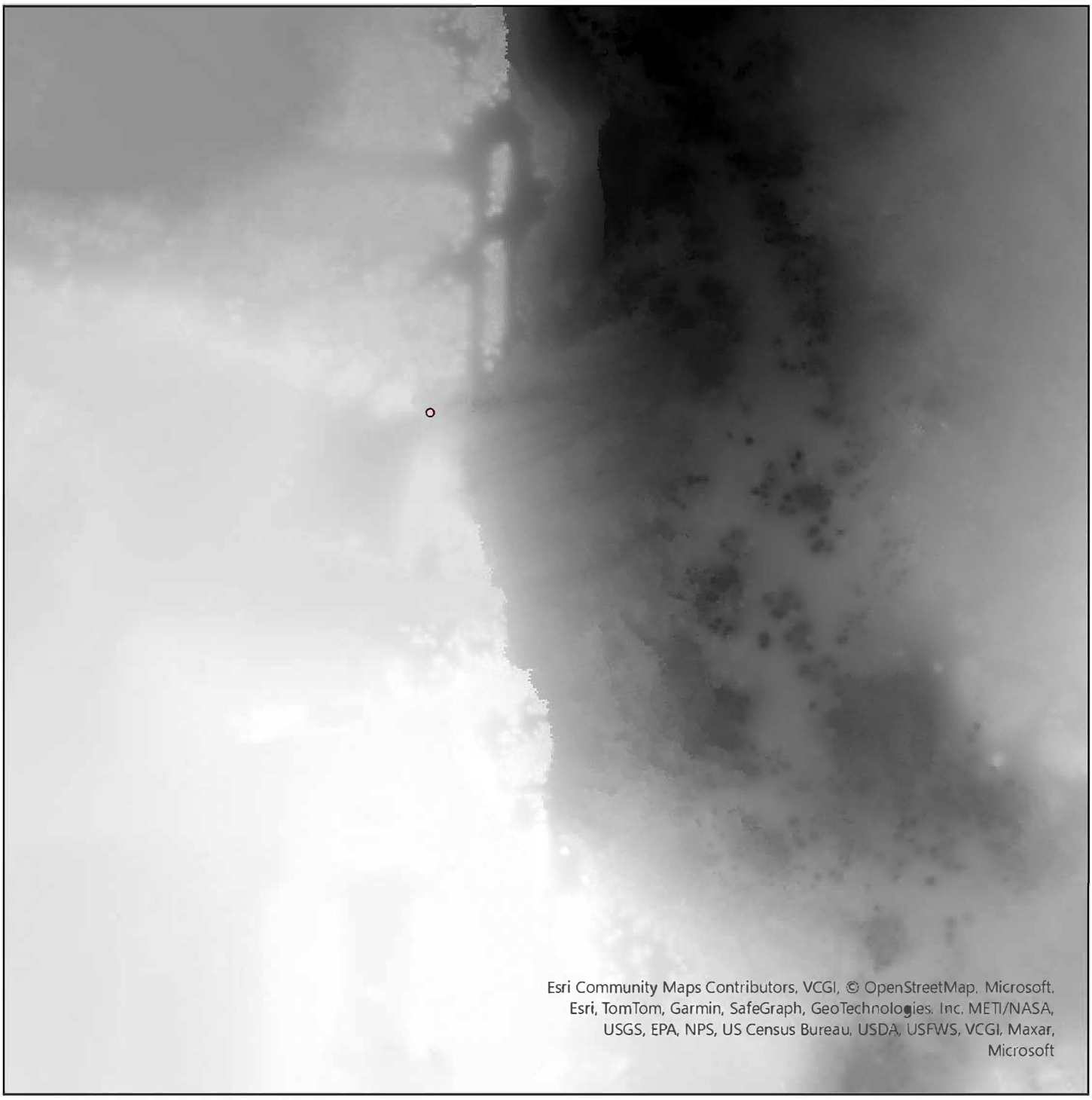

Figure 10:2024 DEM derived from LiDAR taken by The University of Vermont as part of flood response. Note how irregular the bank and channel become, as well as how steep the bank is as compared to Figure 11.

2023 DEM

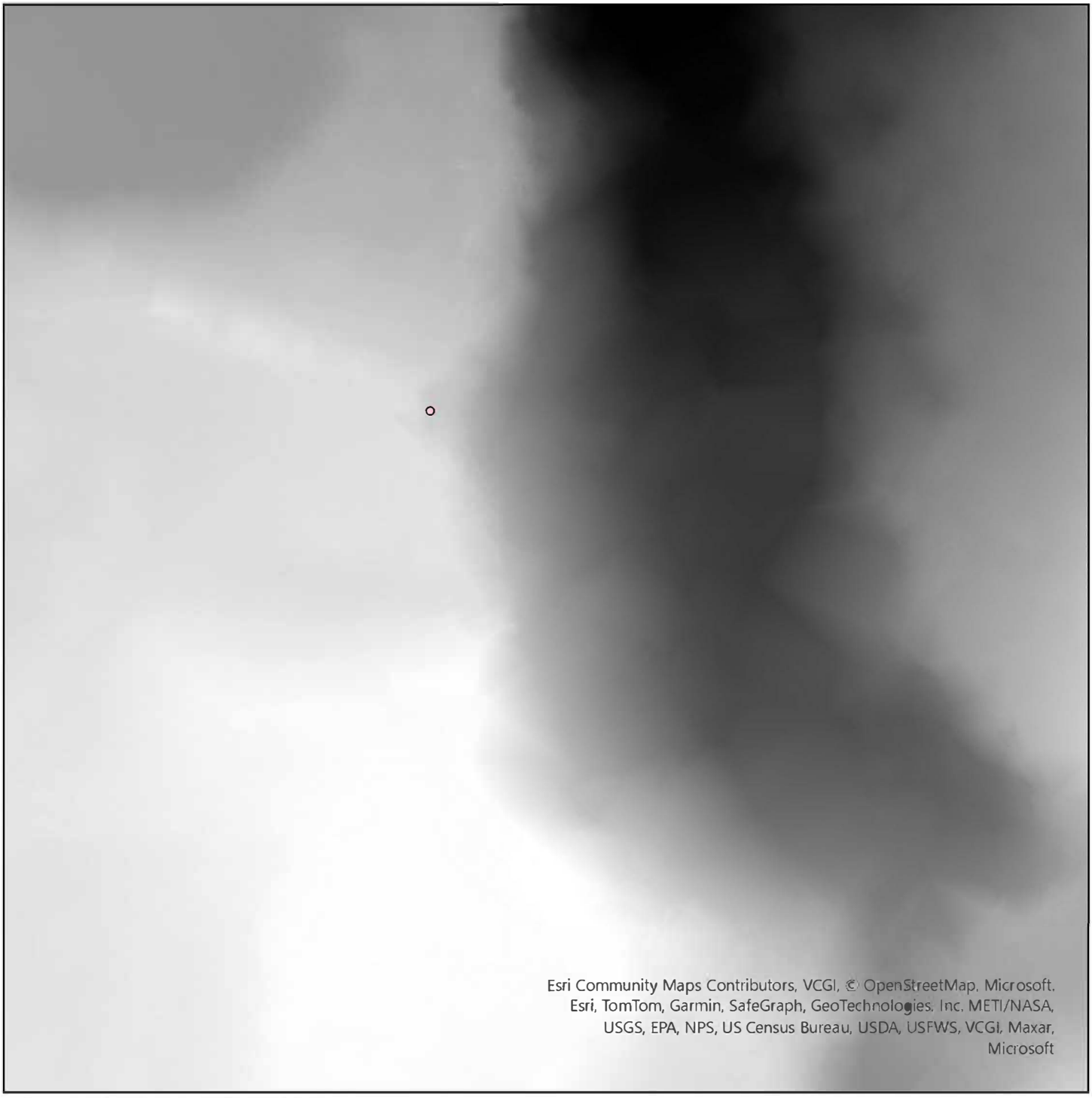

Figure 11: 2023 DEM derived from LiDAR. Note how the bank slopes more regularly down into \ the channel and the channel is a normal parabolic shape.

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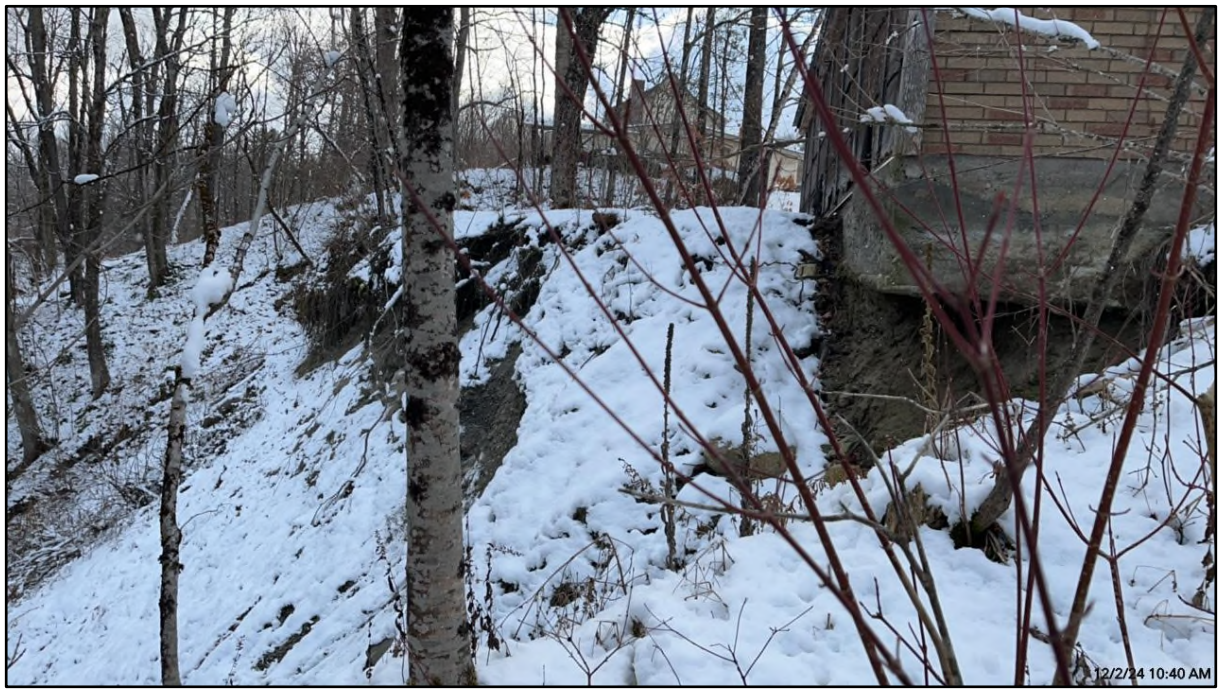
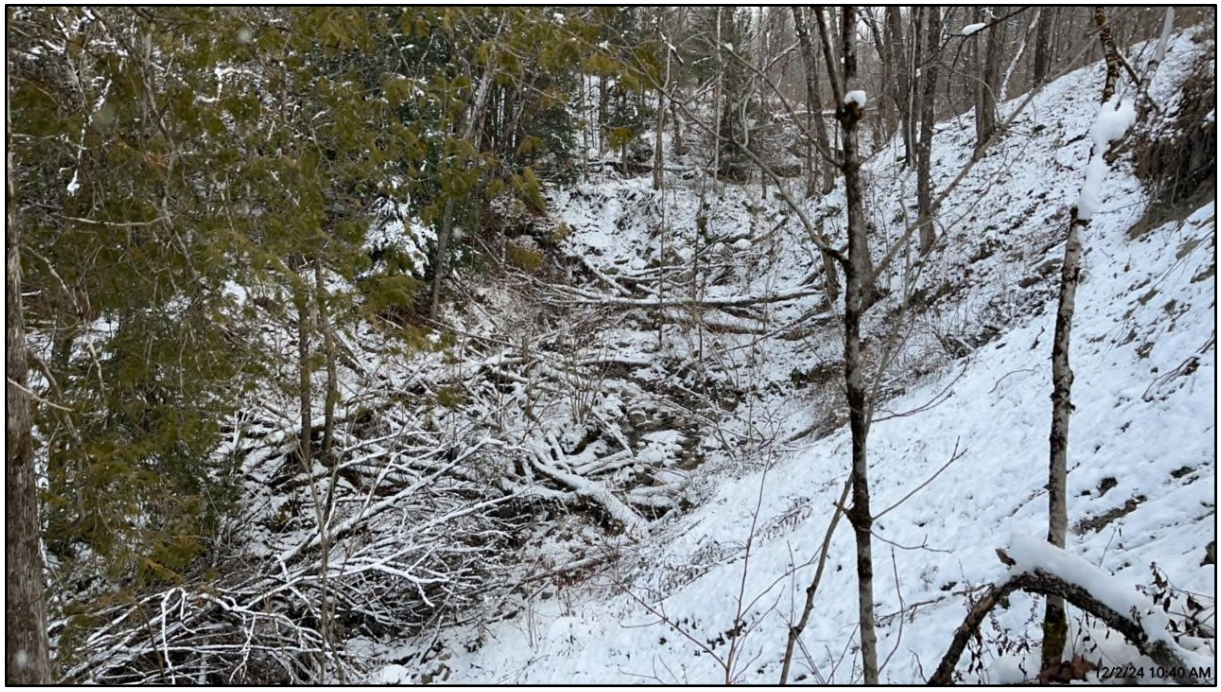
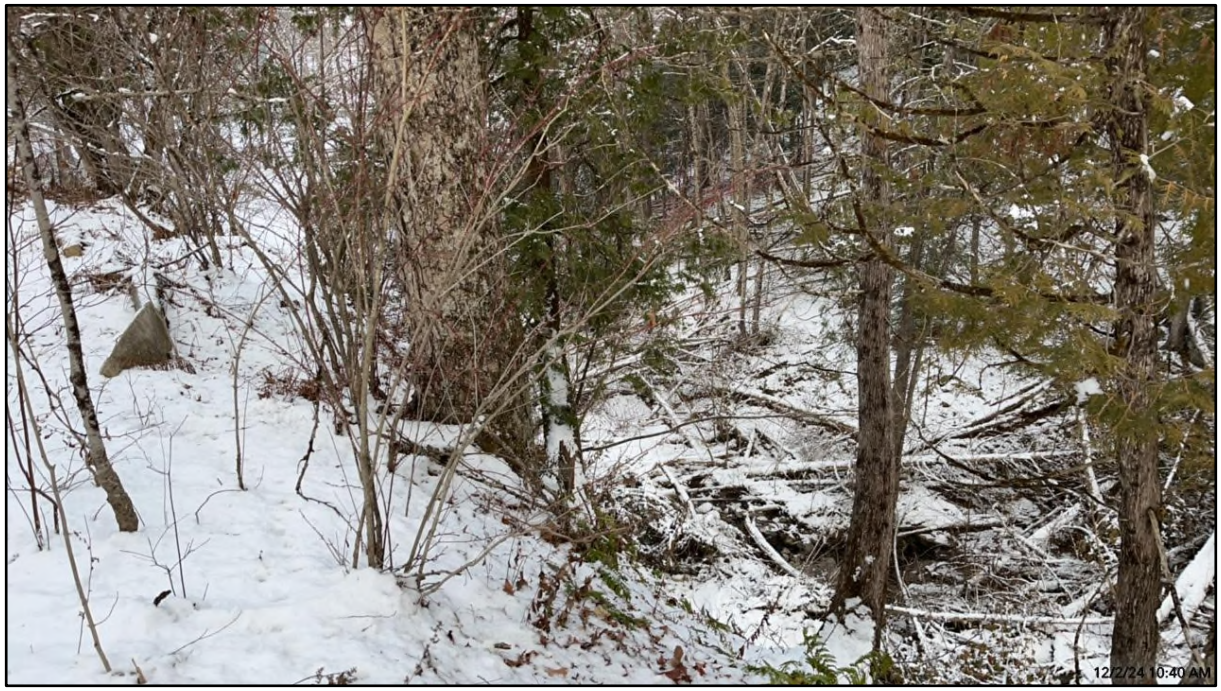
December 2, 2024 Plainfield



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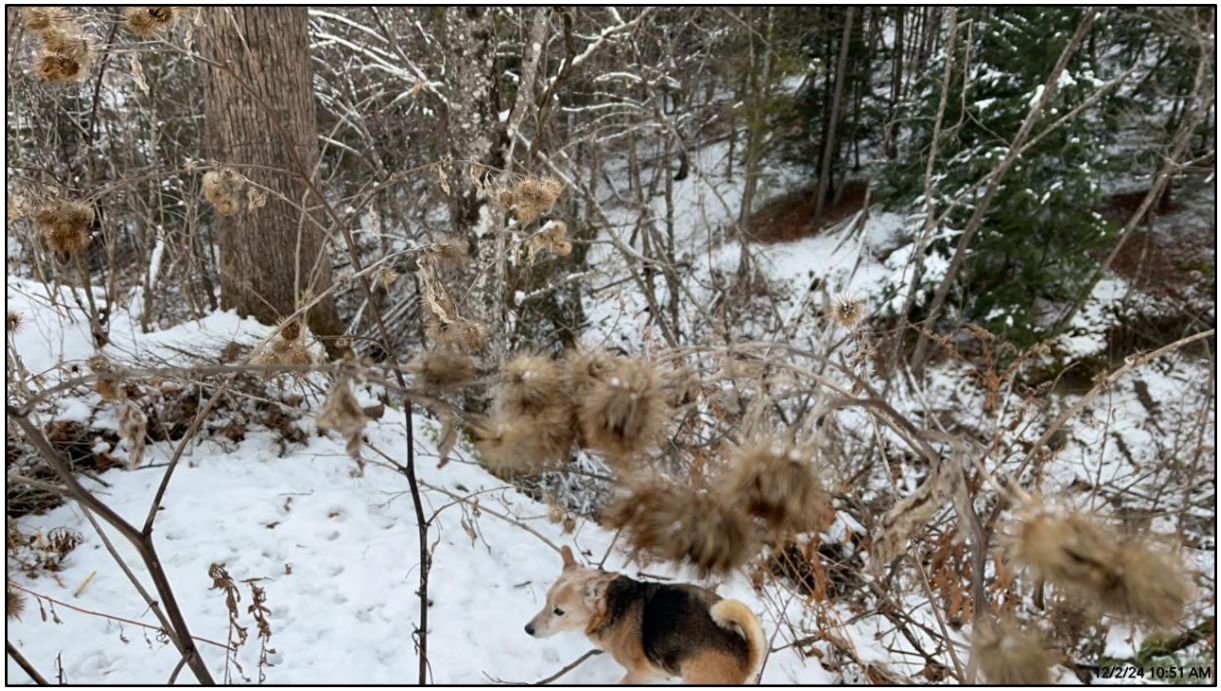
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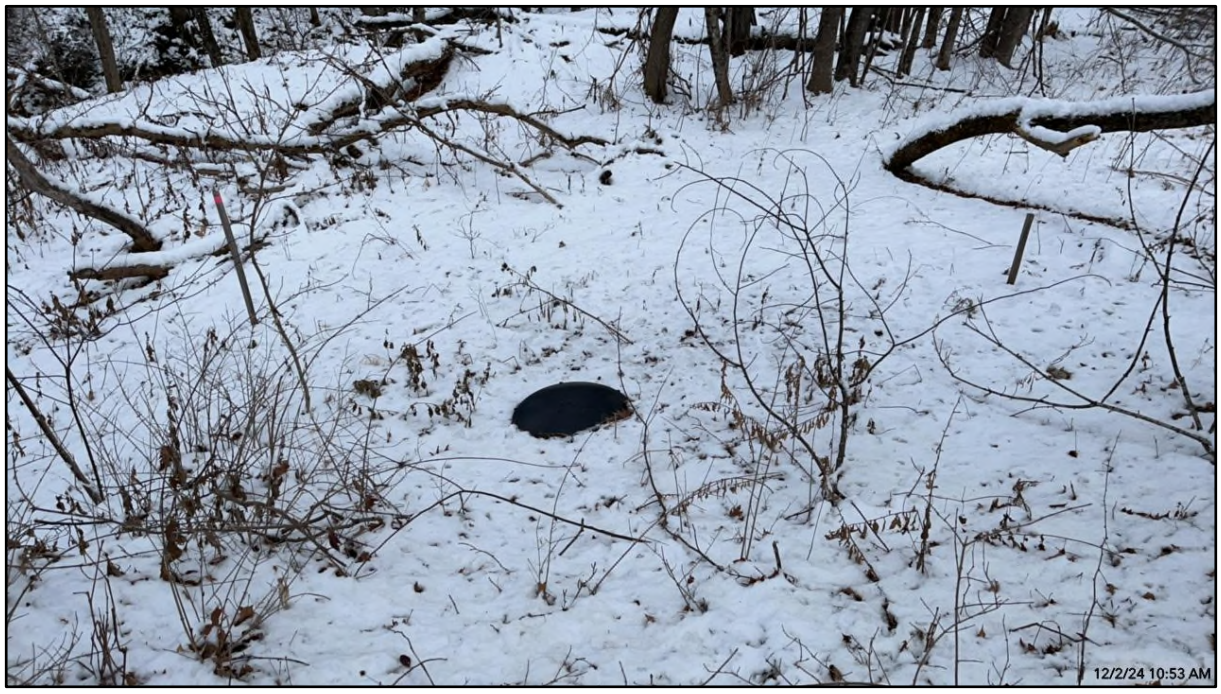
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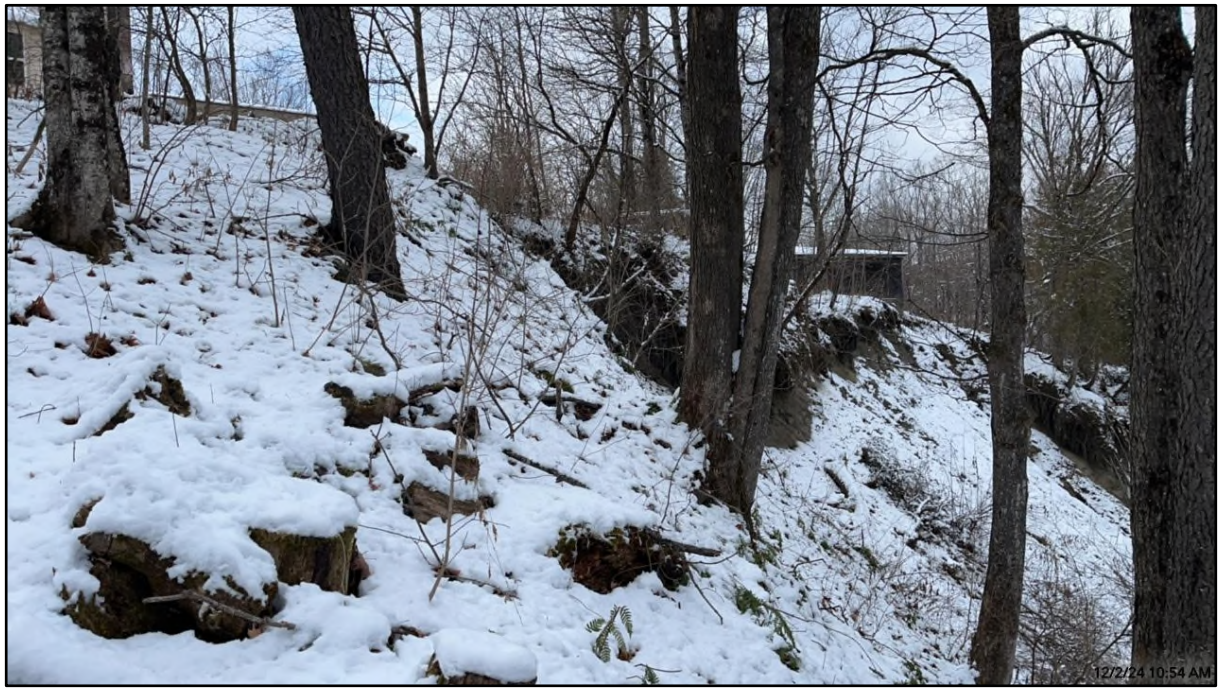
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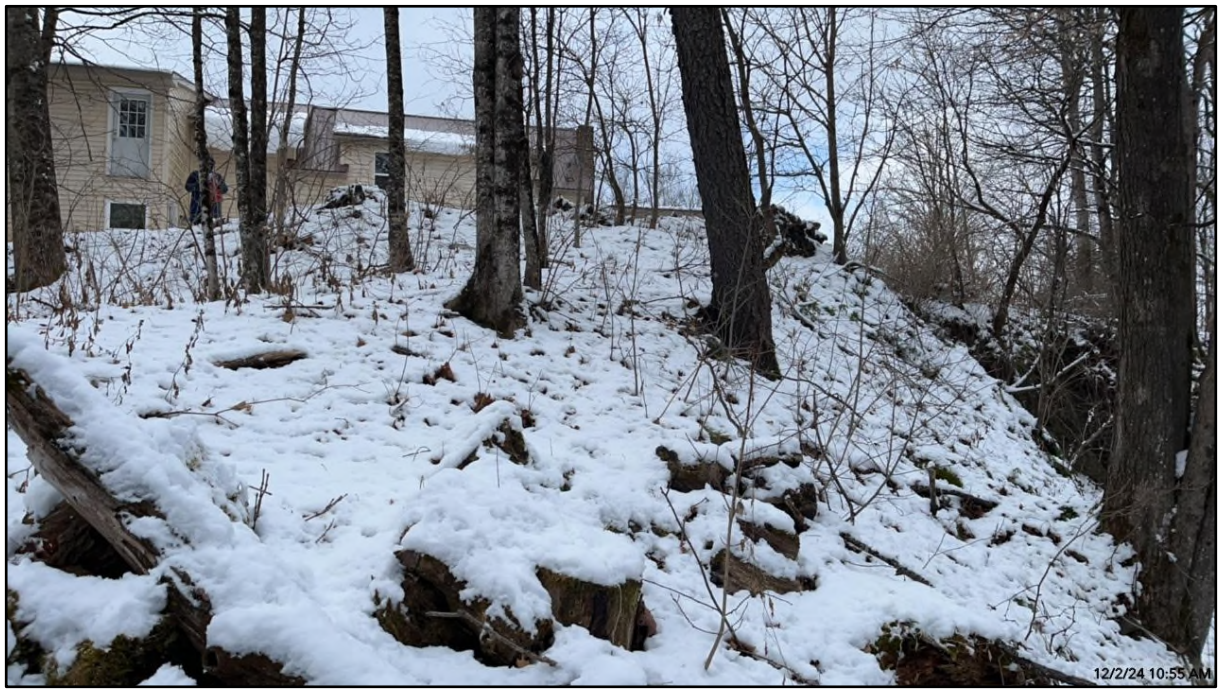
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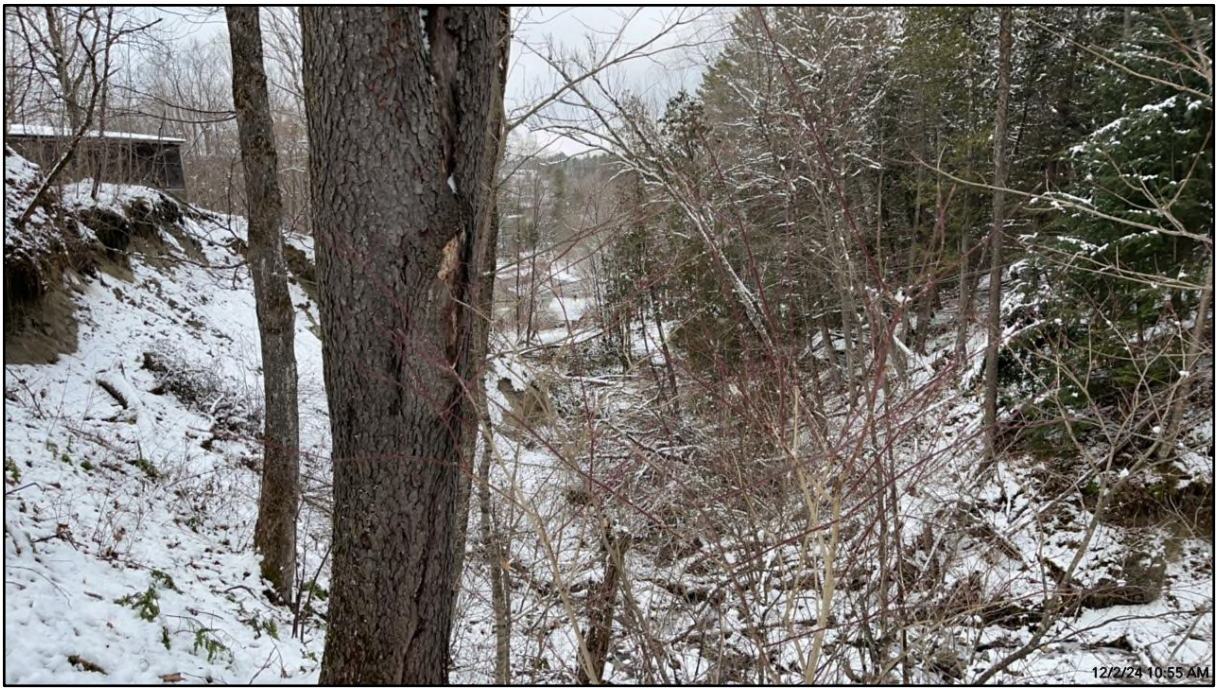
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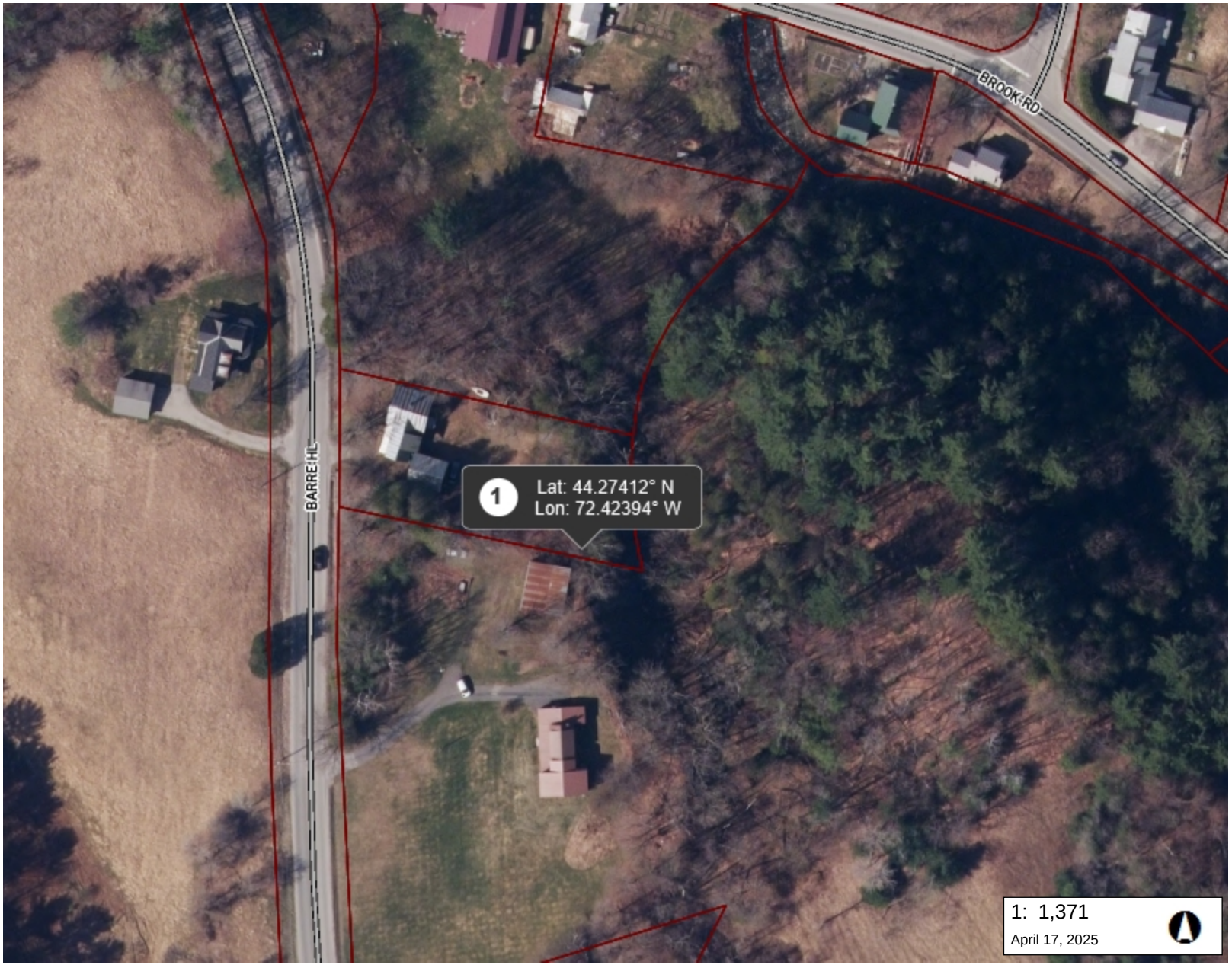
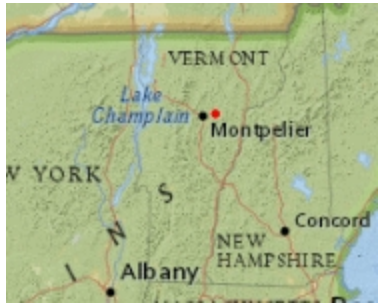
VERMONT

EWP 5042-017-140

Vermont Agency of Natural Resources

vermont.gov





LEGEND

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

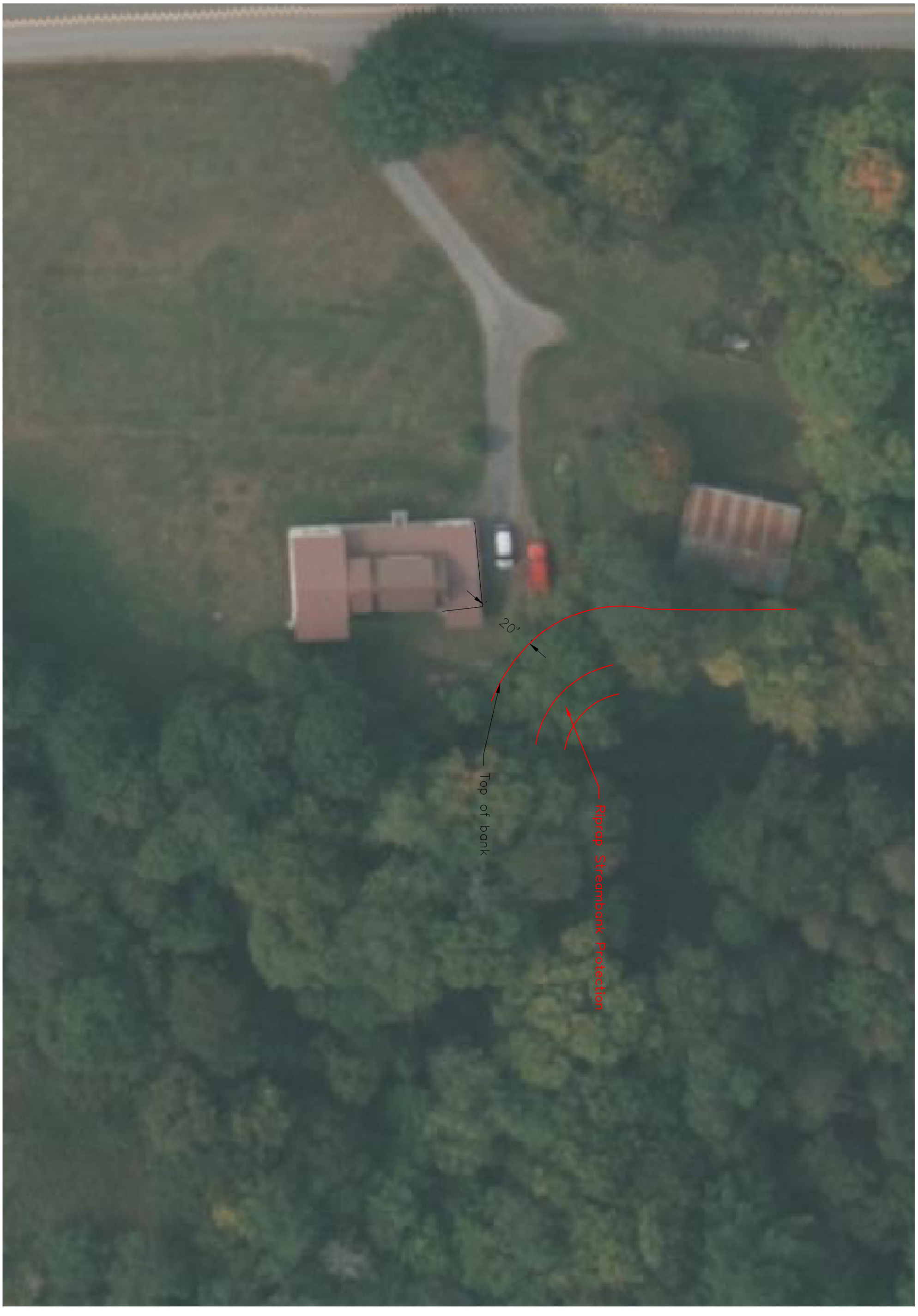
NOTES

Potential EWP Site

70.0 0 35.00 70.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 114 Ft. 1cm = 14 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION



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Streambank Protection

Plainfield VERMONT

HAZARD CLASS
Significant

JOB CLASS
VI

USDA
United States Department of Agriculture
Natural Resources Conservation Service

Date

Designed

Drawn A. Hook 12/24

Checked

Approved by

DRAFT

NOT FOR CONSTRUCTION