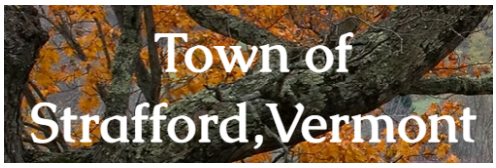


Town of Strafford 2023 Flood Road Repairs
Design-Build (D-B) RFP/RFQ
2/04/2025

Background

Town of Strafford has retained the services of Matt Young of Ascent Consulting LLC as their Municipal Project Manager (MPM) to assist with the preconstruction phase of the design-build RFP/RFQ road repair projects. The purpose of this phase is to select a contractor to make road repairs and replacement affected by the July 2023 flood. FEMA has committed to paying 90%, State of Vermont 7.8% and the Town of Strafford (TOS) 2.2%. This project will be procured through the design-build process. This would require that the prime contractor is responsible for engineering the project solution in accordance with local, state and federal standards and codes.

Schedule

The anticipated schedule is outlined below. The owner reserves the right to modify the schedule as they deem necessary.

1. Post D-B RFP/RFQ	02/03/25
2. Pre-bid Meeting	02/13/25 8am EDT
3. RFI Close	02/24/25 4pm EDT
4. Addendum Issue	03/04/25
5. **Bid Date**	**03/10/25 4pm EDT**
6. Bid Award	04/07/25
7. Start Work	Spring 2025

Instructions to Bidders

1. The town will only accept bids via email, have your bid form in a pdf format and ensure the file size has been reduced. All bids will be due no later than bid date, late bids will not be accepted. Email bids to Matt Young myoung@ascentconsultingllc.com and Lisa Bragg townclerk@straffordvt.org. Make a note on the subject line "**Strafford Road Repairs Bid**". There will not be a public bid opening. The owner reserves the right to award the project in the best interest of the owner and based on best value. The owner also has the right to waive or correct any irregularities in their best interest.

2. There will be a mandatory pre-bid meeting at the current garage at 8am. Email the name and contact of folks who will be attending from your firm by end of day prior to meeting day. Subcontractors are not required to attend but are more than welcome to join.

3. All questions re: this project must be directed to Matt Young, Lisa Bragg and Paul Hardy, Highway Road Foreman, phardy@straffordvt.org. Do not correspond with town employees or town board members regarding this bid, otherwise you may be disqualified. Bidder RFI's are due no later than date noted via email. All RFI questions and answers will be shared with all the bidders in the form of an addendum. This document and any addenda will become part of the final construction contract.

4. The successful bidder will enter a contract with the Town of Strafford using a design-build contract.

5. The cost of preparation for this bid will be the sole responsibility of the bidder. Bidders are responsible for their own printing cost.

6. The owner may in their sole discretion award Project-1 and Project-2 to two separate bidders or award both as combined to a single bidder.

7. Bid Form: the bid form allows the bidder to submit three ways, Project-1, Project-2 or combined. Combined option is an opportunity for the bidder to reduce their overall bid if they were awarded Project-1 and Project-2 simultaneously. The bidder will still be required to identify the individual costs of both projects even though the total for the Combined Total may be less than the individual project bids.

Selection Process
The bidder selection will be based on experience, cost, project approach, schedule, references and best value to the owner.

Scope of Work
The scope of work has been separated into two projects. Project-1 Ward Road Bridge and Project-2 Van Dyke Road Culvert. The scope of work includes design, permitting and construction as described and per the attachments.

Project-1 FEMA-739759 Ward Road Bridge: The bridge was replaced by the town and the weight limit has been posted. The work consists of mitigation to the embankment, see FEMA worksheets and attached aerials.

Project-2 FEMA-739756 Van Dyke Road Culvert: There are two options for replacing the culvert, see VTrans report and FEMA worksheet for additional information. Provide a bid for both options. In addition to the options below, 60 lineal feet of guardrail will be required per each side of the road.

A. Option-A: A concrete box with an inside opening span of 12 feet and minimum height of 8 feet. The box invert should be buried 2 feet. This will result in a clear height of 6 feet above streambed, providing 72 square feet of waterway area. Bed retention sills should be added in the bottom of the structure. Sills should be 12 inches high across the full width of the structure and should be buried so the top of the sills will not be visible. Sills should be spaced no more than 8 feet apart throughout the structure with one sill placed at both the inlet and the outlet. The structure should be filled level to the streambed with E-Stone, Type II, allowing flow to be kept above the surface, providing the conditions necessary for aquatic organism passage. This structure results in a headwater depth of 4.5 feet at 4% AEP and 5.8 feet at 1% AEP.

B. Option-B: An open bottom pipe arch with a minimum clear span of 14 feet and clear height of 7.25 feet, providing a waterway area of 80 square feet. E-Stone, Type II, may be needed to be used to build the channel through this structure. The bottom of abutment footings should be at least 6 feet below the channel bottom, or to ledge, to prevent undermining. This structure results in a headwater depth of 4.3 feet at 4% AEP and 5.9 feet at 1% AEP.

Additional scope of work to be included as listed below.

1. Permit cost, application and coordination.
2. Builder’s risk insurance with $5,000 owner deductible.
3. Special inspections coordination but cost to be paid by owner.
4. Engineering, design and work completion to be in accordance with applicable requirements of Federal, State, VTrans and Town of Strafford. Secure certification that the design meets all applicable standards, codes and requirements for design and public safety standards.

5. Compliance with FEMA, all work will be accomplished in accordance with FEMA Public Assistance (PA) Program and the following as a guide:
   • Municipal Assistance Section (MAS) Guidebook for Municipally Managed Projects (found on the VTrans MAS website: https://vtrans.vermont.gov/highway/local-projects
   • Specifications for Contractor Services (found on the VTrans MAS website).
6. Secure and submit to FEMA documentation by an engineer registered under the laws of the State of Vermont to practice structural or civil engineering attesting to required structural capacity requirements for all work. Provide certification from an engineer of adherence of all traffic control devices per the Manual on Uniform Traffic Control Devices.
7. Compliance with Davis-Bacon Act will be required in coordination with Vermont Department of Labor in particular regards to wage documentation.

Attachments

1. Aerial map with photos-Project 1 & Project 2
2. FEMA Worksheet-Ward Road Bridge
3. FEMA Worksheet-Van Dyke Road Culvert
4. VTrans Hydrology Report-Van Dyke Rd. dated 7/20/23
5. Vtrans Hydrology Report-Ward Rd. Bridge date 7/24/23
6. Town road and bridge standards

Insurance Requirements

The following insurance certificates will be required within 5 days of Notice of Award or Notice to Proceed letter is issued.

1. The certificate of insurance shows coverage for general liability, umbrella, property, auto, and workers' compensation.
2. Proof of 100% payment and performance bond.
3. Professional liability on behalf of engineering firm.
4. Builders risk insurance.
5. Bid bond will not be required.

Required Information

The following information is required. Please keep your response brief and limited to 25 pages.

1. Team Experience
   a. Firm outline
   b. Team experience: Superintendent and project manager, resumes, how long with firm
   c. Project experience, similar client and project, minimum 3
   d. References, minimum 3
   e. Proof of bonding

2. Signed Contractor Qualification Form
3. Signed Bid Form

Contractor Qualification Form

Box-A Company Info

Company: _____ Address: _____
City: _____ State: ____ Zip Code: _____
Primary Contact: _____ Title: _____
Company Phone: _____ Cell: _____
Email: _____ Website: _____

Box-B Your Work

Describe work you self-perform: _____
How many employees? _____
What is the geographic area of your work? _____
Have you ever failed to finish a contracted work? If so, explain on a separate sheet.
Have you worked with Town of Strafford before? Yes No If yes, when? _____
_____

Box-C Financial

How many years has your company been in business: _____
Annual revenue for the last 3 years 2024 $_____, 2023 $_____, 2022 $_____
Can you provide a bond? If so, what is your single limit $_____ aggregate limit $_____
Bonding rate: _____Bonding company: _____
What is your EMR? _____Type of corporation: _____
Attach a Certificate of Insurance: Yes No

*We may request additional financial and insurance information.

Box-D Principals

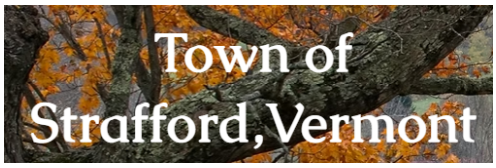
List principals and or those who are authorized to bid or sign a contract on behalf of your firm:

1. Name: _____ Title: _____ Email: _____
2. Name: _____ Title: _____ Email: _____
3. Name: _____ Title: _____ Email: _____
4. Name: _____ Title: _____ Email: _____

I attest that I am the duly authorized person to sign this pre-qualification statement and deem that it is all true and accurate.

Sign: _____ Title: _____ Date: _____

Print Name: _____ Email: _____



Town of Strafford 2023 Flood Road Repairs
Design-Build (D-B) RFP/RFQ
Bid Date 3/10/25 4pm
Bid Form

Project-1 FEMA-739759 Ward Road Bridge

Lump Sum Bid: $ _____ (includes all site work, design and permitting)

Schedule Weeks: _____ (from the time Notice to Proceed is issued, based on Spring 2025 start)

Project-2 FEMA-739756 Van Dyke Culvert

Option-A Lump Sum Bid: $ _____ (includes all site work, design and permitting)

Schedule Weeks: _____ (from the time Notice to Proceed is issued, based on Spring 2025 start)

Option-B Lump Sum Bid: $ _____ (includes all site work, design and permitting)

Schedule Weeks: _____ (from the time Notice to Proceed is issued, based on Spring 2025 start)

Combined Bid DEDUCT: $_____ or _____**%**
(optional, project-1 and project-2)

Bidder has examined and acknowledged the following addenda, if applicable.
Addendum No. & Date:

_____ _____

_____ _____

By signing this bid, I attest that I am the duly authorized officer of the company and have the authority to commit company resources to complete the work at the price bid and in accordance with the terms and conditions of the bidding documents.

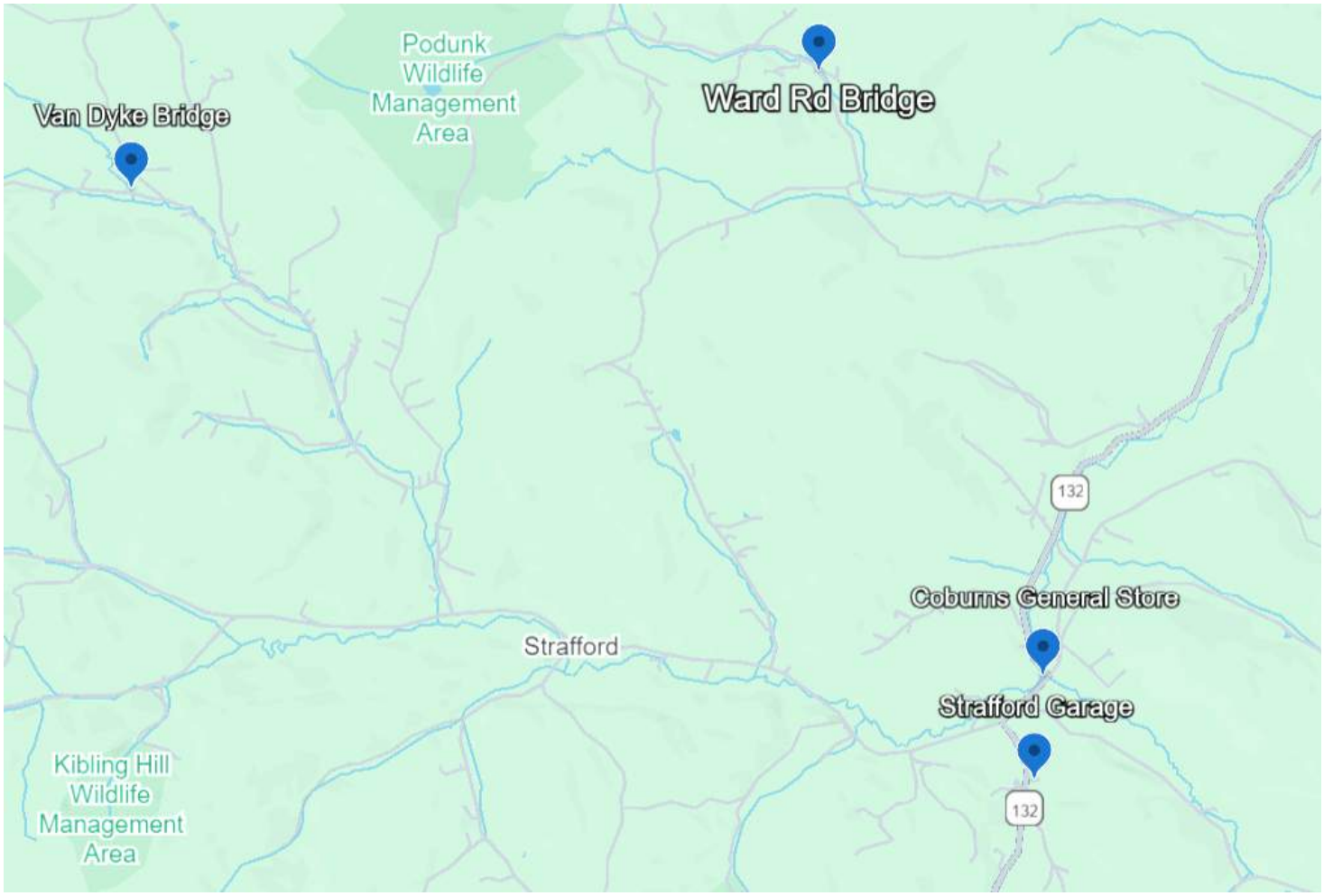
Company: _____ Date: _____

Address: _____

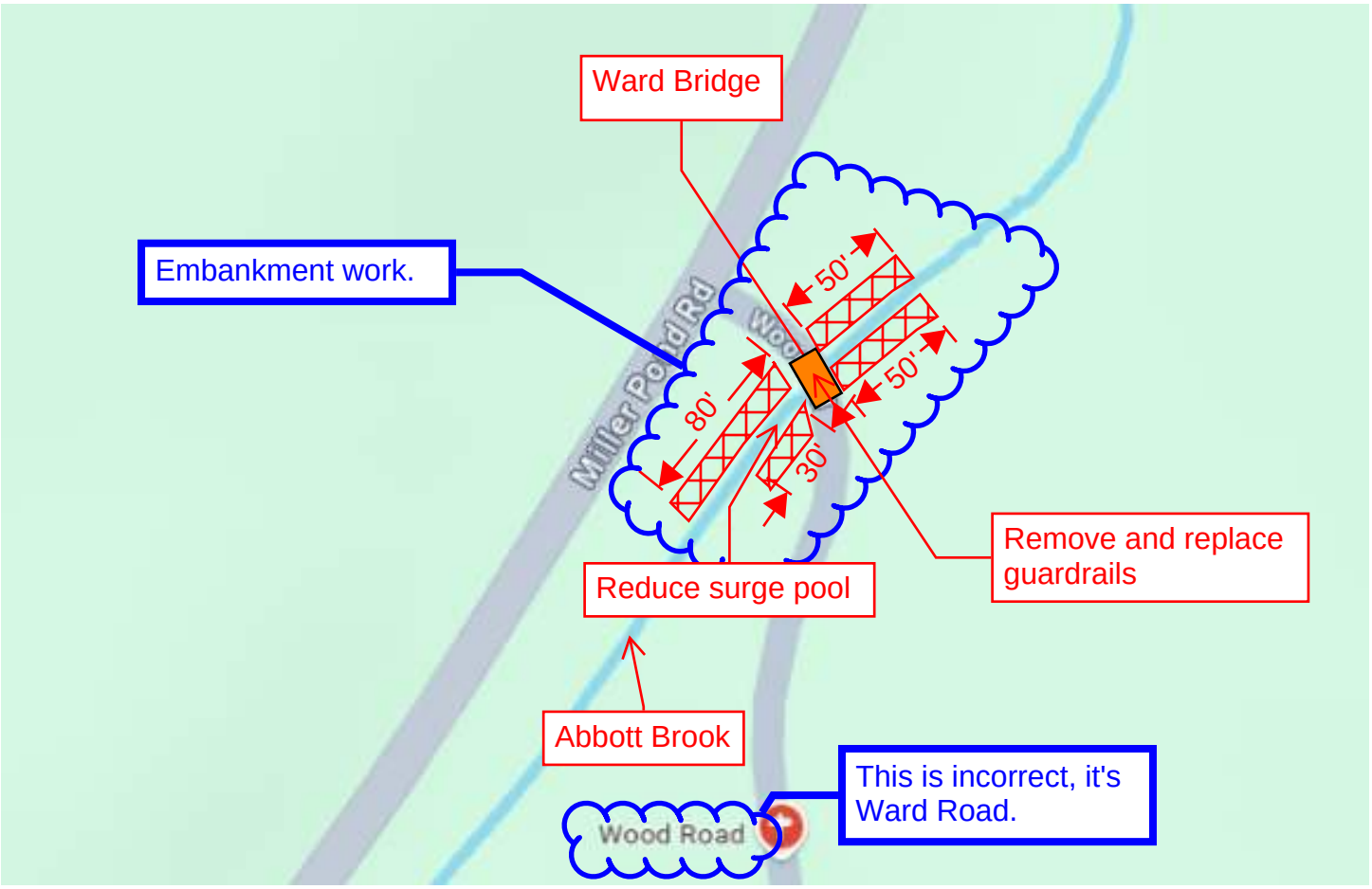
Print Name: _____ Title: _____

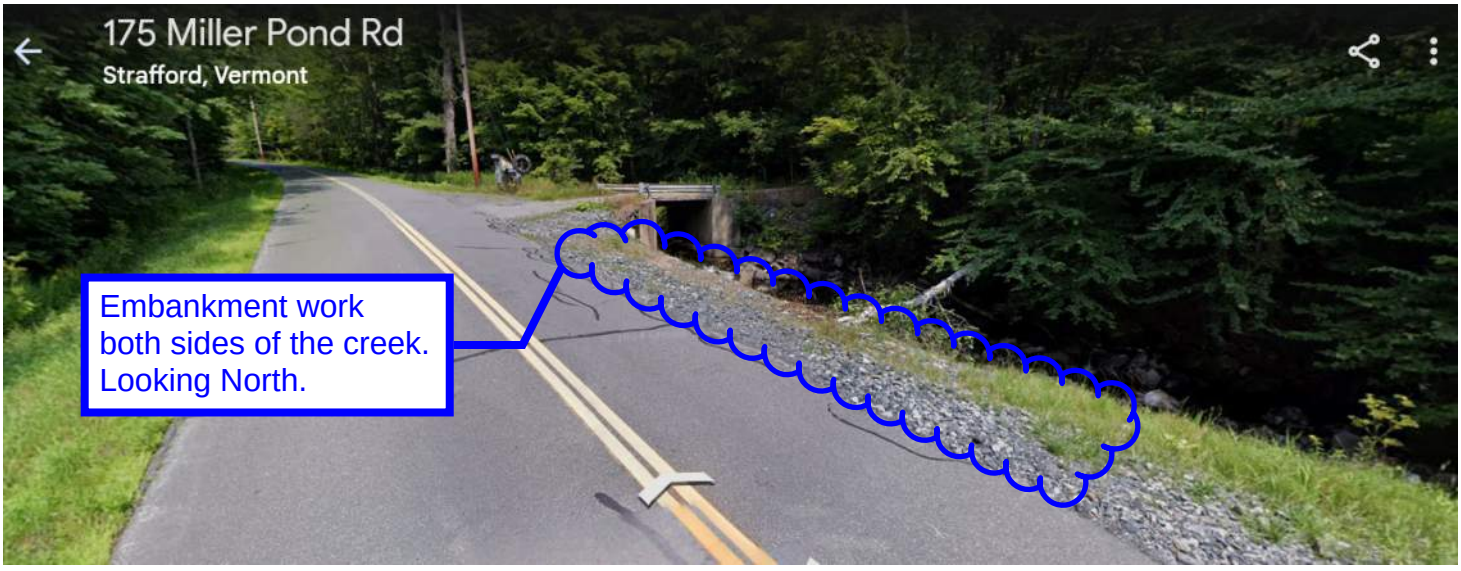
Signature: _____ Email: _____

Town of Strafford, VT-Project Location



Town of Strafford, VT: Project-1 Ward Rd Bridge





Town of Strafford, VT-Ward Rd Bridge

Flood picture 2023, view from Ward Rd.

Post flood picture 2023, view from Miller Pond Rd. looking North.

Town of Strafford, VT-Ward Rd Bridge

Post flood picture 2023, view from Miller Pond Rd. looking South.

Town of Strafford, VT: Project-2 Van Dyke Culvert

Town of Strafford, VT-Van Dyke Rd.

Town of Strafford, VT-Van Dyke Rd.

v0

Department of Homeland Security
Federal Emergency Management Agency

General Info

Project #	739759 **P/W #** 1585	**Project Type**	Standard
Project Category	C - Roads and Bridges	**Applicant**	Strafford, Town of (017-70675-00)
Project Title	Ward Road Bridge	**Event**	4720DR-VT (4720DR)
Project Size	Small	**Declaration Date**	7/14/2023
Activity Completion Date	1/14/2025	**Incident Start Date**	7/07/2023
		Incident End Date	7/21/2023
Process Step	Pending DIU Final Validation		

Damage Description and Dimensions

The Disaster # 4720DR, which occurred between *07/07/2023* and *07/21/2023*, caused:

Damage #1359538; TH77 Ward Bridge

General Facility Information:

- **Facility Type:** Bridges
- **Facility:** Th 77 Ward Bridge
- **Facility Description:** 2 span wooden beam timber planks
- **Approx. Year Built:** 1924
- **Location Description:** Ward Road TH77 Foo Miller Pond Road TH03
- **GPS Latitude/Longitude:** 43.86772, -72.31426
- **Bridge Span Type:** Simple
- **Number of Spans:** 2
- **Type of Decking:** wooden beam planks
- **Length (ft):** 12
- **Width (ft):** 8
- **Height (ft):** 6.5
- **Number of Lanes:** 1

General Damage Information:

- **Date Damaged:** 7/14/2023
- **Cause of Damage:** Surface water and heavy velocity creek flow flooding

Bridge Damage:

Site 1 - 1 Northwest Side:
- Embankment, 22.8148 CY of northwest embankment slope GPS: 43.86772,-72.31426, 11Ft W x 14Ft L x 8Ft Th / 2/27 , embankment eroded away during the flood, 0% work completed.

Site 1 - 2 Southwest Side:
- Embankment, 136.1388 CY of Southwest side after bridge GPS: 43.89772,-72.31426, 13Ft W x 87Ft L x 6.5Ft th /2 /27, embankment eroded away during the flood, 0% work completed.

Site 1 - 3 Northeast Side :

- Embankment, 62.5925 CY of northeast embankment slope GPS: 43.86772,-72.31426, 13Ft L x 40Ft W x 6.5 Ft Th /2 /27, embankment eroded away during the flood, 0% work completed.

Site 1 - 4 West E.O.P.:

- Shoulder, 708.1481 CY of crush gravel stay-pak gravel road GPS: Start 43.86782,-72.31422 End 43.86726,-72.31470, 239 FT long x 16 FT wide x 5 FT deep, road shoulder eroded away during the flood, 90% work completed.

Site 1 - 5 conrete waste block wall:

- Scour/Undermining, 7 each of concrete blocks armor protection GPS: 43.86772,-72.31426 , 60 IN long x 18 IN wide x 36 IN deep, concrete blocks collapsed and broke from flood waters scouring and undermining on the sides of the embankments , 0% work completed.

Site 1 - 6 guard rail:

- Guard Rail, 2 each of vestil galvanized steel protection rails, 14 FT long x 16 IN wide, rails were bent from vegetative debris colliding from flood surface water, 0% work completed.

Site 1 - 7 guard rail post:

- Guard Rail, 4 each of galvanized steel support protection post, 26 IN long x 6 IN wide, rails were bent from vegetative debris colliding from flood surface water, 0% work completed.

Final Scope

1359538 TH77 Ward Bridge

Work to be completed

The applicant will utilize contracts for repairs to Brush Hill Road Bridge Erosion to bridge Embankment to restore facilities back to pre-disaster design, function and capacity with the existing footprint.

1. **Bridge Damage:**

Site 1 - 1 Northwest Side:

a. Restore 22.8148 CY of northwest embankment slope GPS: 43.86772-72.31426, 11Ft W x 14Ft L x 8Ft Th / 2/27.

Site 1 - 2 Southwest Side:

b. Restore 136.1388 CY of Southwest side after bridge GPS: 43.89772-72.31426, 13Ft W x 87Ft L x 6.5Ft th /2 /27.

Site 1 - 3 Northeast Side:

c. Restore 62.5925 CY of northeast embankment slope GPS: 43.86772-72.31426, 13Ft L x 40Ft W x 6.5 Ft Th /2 /27.

Site 1 - 4 West E.O.P.:

d. Restore 708.1481 CY of crush gravel stay-pak gravel road GPS: Start 43.86782-72.31422 End 43.86726-72.31470, 239 FT long x 16 FT wide x 5 FT deep.

Site 1 - 5 concrete waste block wall:

e. Remove and replace 7 each of concrete blocks armor protection GPS: 43.86772-72.31426, 60 IN long x 18 IN wide x 36 IN deep.

Site 1 - 6 guard rail:

f. Remove and replace, 2 each of vestil galvanized steel protection rails, 14 FT long x 16 IN wide.

Site 1 - 7 guard rail post:

g. Remove and replace 4 each of galvanized steel support protection post, 26 IN long x 6 IN wide.

Work to be Completed Estimate: $131,116.43

Project Notes

1. All site estimates for work to be complete were generated using RS means. See attachment labeled *ST739759-DR4720VT-Cost Estimate.xlxs.*
2. The Applicant provided a proposed improvement based on codes and standards. Regarding PA, a replacement reasonability must be stated before any code can trigger an improvement. Since the bridge itself did not suffer structural damage and all the items listed in the SIR/DDD can be repaired, a replacement is not reasonable. Therefore, the scope and cost included repair work.
3. GPS coordinates have been checked for accuracy.
4. Applicant will comply with local, commonwealth, federal procurement laws, regulations and procedures.
5. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

406 HMP Scope

Public Assistance

Hazard Mitigation Proposal

Applicant Name	Town of Strafford	GM Project #	739759	HMP Date	October 8, 2024
Site Name	TH77 Ward Road Bridge				
DR-	4720 – Vermont	D#	1359538		
HMP Writer and Title:	Wally Robert Krieger, 406 HM Specialist				

This HMP is based on the following Grants Manager project report, see attachment.

PRJ_Report_739759_20241008.pdf

Select Work Completed Status: Work to be Completed

I. Related Damaged Items to be Protected

During the declared incident period of July 7, 2023, through July 21, 2023, the Town of Strafford was impacted by heavy rain and flooding resulting in stream embankments, bridge guardrails, and road shoulder damages. As a direct result of this event, flood waters eroded the river embankments at the TH77 Ward Road Bridge at the following three (3) sites: ***Site 1-1 NW Side, GPS: 43.86772, -72.31426 measuring 14FT L x 11FT W x 8FT Th /2/27 = 22.81 CYs,*** Site 1-2 SW Side, GPS: 43.86772, -72.31426 measuring 87FT L x 13FT W x 6.5FT Th/2/27 = 136.14CYs, ***Site 1-3 NE Side, GPS: 43.86772, -72.31426 measuring 40FT L x 13FT W x 6.5FT Th/2/27 = 62.59 CYs, as well as ***Site 1-4 West E.O.P. shoulder damage GPS: Start 43.86782, -72.31422 to End 43.86726, -72.31470 measuring 239FT L x 16FT W x 5FT D = 708.15 CY of crush gravel stay-pack gravel and bridge guard rail damage approximately 14FT L .

Total repair cost of damaged elements being protected by the HMP at this site*= $ 131,116.43

*Before Cost Estimating Format (CEF) factors if a large project.

Comments: NA

II. Hazard Mitigation Proposal (HMP) Scope of Work

The proposed mitigation consists of extending the bridge concrete wingwalls at the structure's inlet and outlet and armoring the 3 damaged channel banks with geotextile fabric and Type II Stone Fill (rip-rap). The stone fill should not constrict the channel or structure opening. For mitigation costs, see Document: Vermont Agency of Transportation, Average prices – 2-year, March 2022 – March 2024, pdf (Page 5, Items 613.11, Page 9, Items 649.31, 651.15) and 4720_VT_HM Cost Estimate_P#739759_DI-135538_TH77Ward Bridge_Strafford, Town of LineNumber 323213103000 (RS Means).xlsx.

Cast-in place retaining walls, reinforced concrete cantilever, 33-degree slope embankment, 8' high, includes excavation, backfill & reinforcing:

4 wingwalls x 8FT L = 32LF = $13,632.64

Type II Stone Fill (H&H study recommendation):

Site 1-1, 20FT L x 11FT W x 3FT D = 660CF/27 = 24.44 CYs x $106.82 = $2,610.68

Site 1-2, 100FT L x 13FT W x 3FT D = 3,900CF/27 = 144.44CYs x $106.82 = $15,429.08

Site 1-3, 50FT L x 13FT W x 3FT D = 1,950CF/27 = 72.22 CYs x $106.82 = $7,714.54

Geotextile under stone fill:

Site 1-1 (24 SYs) + Site 1-2 (144SYs) + Site 1-3 (72 SYs) = 240*SYs x $3.16/SY = $758.40

Seed: 25 LB @ $12.85 = $321.25

NOTE: The Stone Fill length dimensions have been enlarged to account for over-excavation.

Total Mitigation Cost: $40,466.59

The mitigation measures will reduce the risk of future damage by minimizing erosion around this bridge, as well as better direct water into them, improving the performance of this bridge and therefore minimizing the risk of overtopping and causing damage to this road, during future storm and/or rain events.

III. Hazard Mitigation Proposal (HMP) Cost: Worksheet

- Reference and attach a detailed, itemized cost estimate and/or CEF.

A. Cost of items if the HMP is approved=	$40,466.59
B. Cost of items deducted from the repair scope of work (SOW)=	0
C. Net Hazard Mitigation Cost (before CEF factors) =	$40,466.59

D. Is there a CEF?	No
E. Net Hazard Mitigation Cost (after CEF factors)=	N/A
F. What is the CEF ratio (CEF Total Cost/Base Cost)?	N/A
Comments:	Enter Text

Hazard Mitigation Proposal Cost: Summary	
Net Hazard Mitigation Cost =	$ 40,466.59
See attachment(s).	Vermont Agency of Transportation, Average Prices - 2 year, March 2022 - March 2024.pdf and 4720_VT_HM Cost Estimate_P#739759_DI-135538_TH77Ward Bridge_Strafford, Town of LineNumber 323213103000 (RS Means).xlsx.
Comments:	Enter Text

IV. Cost Effectiveness Calculation

(Net HMP Cost/Total Repair Cost of the damaged portions of the facility for which the mitigation measure applies) x 100

	$ 40,466.59	/	$ 131,116.43	x 100 =	30.86 %	= 100%	

The Benefit-Cost Analysis (BCA) ratio is	N/A	= 1.0

V. HMP Cost-Effectiveness

The mitigation measures meet the cost effectiveness criteria based on:

Mitigation measure is listed in Appendix J and is within 100% of the total eligible repair cost of the facility or facilities for which the mitigation applies.
In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4 June 2020, Chapter 8. Section IV and Appendix J. Section I. Drainage Structures Part B reads: “Depending on the severity of erosion, solutions for bank protection may include gabion baskets, rip rap, cast-in-place concrete, crushed stone or rock, grouted rip rap, sheet piling, geotextile fabric, or similar measures to control erosion.”; these mitigation measures do not exceed 100 percent of the eligible repair cost and are considered to be cost-effective.

VI. Compliances and Assurances

For ‘work to be completed,’ this HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, procurement, permits and compliance with all regulatory codes and standards.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the site(s).

HMP Notes

1. The mitigation proposal estimates were generated using:

2. See attachment labeled DR-4720_ Document: Vermont Agency of Transportation, Average prices – 2-year, March 2022 – March 2024, pdf (Page 5, Items 613.11, Page 9, Items 649.31, 651.15) and 4720_VT_HM Cost Estimate_P#739759_DI-135538_TH77Ward Bridge_Strafford, Town of LineNumber 323213103000 (RS Means).xlsx.

Cost

Code	Quantity	Unit	Total Cost	Section
9001 (Contract)	1.00	Lump Sum	$131,116.43	Uncompleted

CRC Gross Cost	$131,116.43
Total 406 HMP Cost	$40,466.59
Total Insurance Reductions	$0.00
CRC Net Cost	$171,583.02
Federal Share (90.00%)	$154,424.72
Non-Federal Share (10.00%)	$17,158.30

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of all of its small projects and compliance with all environmental and historic preservation requirements within 180 days of the applicant's completion of its last small project, or the latest approved deadline, whichever is sooner.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

10/11/2024

Does the Applicant have a Commercial Policy: Yes.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No.

Property insurance coverage for road(s), road right-of-ways, embankment erosion, bridges or culvert damage represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. The applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

Virginia Hernandez Rivera,PA Insurance Specialist
CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **Ward Road Bridge**.

406 Mitigation

10/11/2024 ~ The Hazard Mitigation Proposal for this Project #739759 is $40,466.59 & 30.86% and is deemed appropriate, technically feasible, and cost-effective in accordance with the 100% Rule of the FEMA Public Assistance Program Policy Guide (PAPPG) Version 4, June, 2020, Appendix J, Section I. Drainage Structures Part B reads: "Depending on the severity of erosion, solutions for bank protection may include gabion baskets, rip rap, cast-in-place concrete, crushed stone or rock, grouted rip rap, sheet piling, geotextile fabric, or similar measures to control erosion." CdIRS

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Condition: artifacts National Historic Preservation Act (artifacts): Stop Work if archaeological deposits (for example Indian pottery, stone tools, shell, old house foundations, old bottles) are found/uncovered during construction. The project proponent and/or their contractor must immediately stop all work in the vicinity of the find, take reasonable measures to

avoid or minimize harm to the finds, secure all archaeological finds (without removing them), and restrict access to the area of the find. The project proponent must immediately report the archaeological discovery to the State Emergency Management Agency and the FEMA Regional Environmental Officer Mary Shanks, 617-901-2204. FEMA will determine the next steps.

- Condition: human remains National Historic Preservation Act (human remains): Stop Work if human remains are discovered. The project proponent and their contractor must immediately stop all work in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the remains, project all human remains discoveries, and restrict access to discovery sites. The project proponents and their contractor must follow all state laws associated with the discovery of human remains, including immediately notifying the proper authorities. Violation of state law will jeopardize FEMA funding for this project. The project proponent will inform the Office of the Chief Medical Examiner, the State Archaeologist, the State Emergency Management Agency, and the FEMA Regional Environmental Officer Mary Shanks, 617-901-2204. FEMA will consult with the SHPO and Tribes, if remains are of tribal origin. Work in the vicinity of the discovery(s) may not resume until consultation is completed and appropriate measures have been taken to ensure that the project is compliant with the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act.
- Condition: Inadvertent Effects to Structures National Historic Preservation Act (Inadvertent Effects to Structures): Stop Work if any unanticipated damage, alteration, collapse, or demolition (complete or partial) occurs to any structure over 45 years of age during construction. The project proponent and their contractor shall immediately stop all work in the vicinity of the damage and take reasonable measures to avoid or minimize additional harm to the structure and make it safe and secure. For Example, structures include, but are not limited to culverts, bridges, stone walls [including those along water channels], and buildings) that are over 45 years of age within or adjacent to the project area. As soon as possible the project proponent shall report the unanticipated impact to structures to the State Emergency Management Agency and the FEMA Regional Environmental Officer Mary Shanks, 617-901-2204; FEMA will determine the next steps.
- Condition: Borrow Sources/Pits National Historic Preservation Act (borrow sources): All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Subrecipient must notify FEMA and VEM prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a Subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.
- Condition: Staging and Access Areas National Historic Preservation Act (staging and access): Staging of equipment and materials and temporary access routes including, but not limited to, routes between staging and work areas shall take place on existing hardened surfaces such as paved or gravel roadways or parking lots. If additional staging areas or access routes are to be established on non-hardened surfaces, the Subrecipient must notify FEMA prior to construction or use. FEMA must review the staging area(s) and/or access route(s) for compliance with all applicable federal environmental planning and historic preservation laws and executive orders. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation in the form of photographs showing the staging and temporary and permanent access areas in use and shortly after construction is complete is required at closeout.
- Resource Conservation and Recovery Act: The Applicant must ensure that all debris, materials, and unusable equipment is disposed of in a manner and location that is compliant with local, state, and federal regulations, e.g., at a permitted facility/landfill. These materials may include, but are not limited to, propane cylinders, paints and solvents, coolants containing chlorofluorocarbons (CFCs), used oil and oil filters, other petroleum products, fuel, cleaning chemicals, reagents, pesticides, batteries, and unlabeled tanks and containers. Equipment that may include these materials are ice machines, refrigerators, generators, computers, televisions, mercury switches, fluorescent lights, fluorescent light ballasts, sandblast units, paint sprayers, etc. Contact Vermont DEC Waste Management and Prevention Division https://dec.vermont.gov/waste-management/waste-management-and-prevention-division-contact for further information.
- Executive Order 11988, Floodplain Management: Before construction begins, the Applicant must obtain approval from the local permitting official responsible for floodplain development. A copy of the approval/permit, or documentation from the permitting official that an approval/permit is not required, must be forwarded to the State and FEMA for inclusion in the administrative record. Hydrologic and Hydraulic (H&H) Analysis: In accordance with 44 C.F.R. Part 9 and the FEMA Public Assistance Program Policy Guide (PAPPG) Appendix J, the Applicant is required to prepare a Hydrologic and Hydraulic (H&H) analysis to properly size the structure opening. The Applicant must provide a copy of the H&H to the State and FEMA for inclusion in the administrative record.
- Conditions: Clean Water Act Section 404: Before construction begins, the Applicant must obtain any required Clean Water Act section 404 permit from the U.S. Army Corps of Engineers. A copy of the approval/permit, or documentation from the permitting official that an approval/permit is not required, must be forwarded to the State and FEMA for inclusion in the administrative record.

- State Water and Soil Laws: Before construction begins, the Applicant must obtain a permit/authorization from the VT ANR River Management Program. A copy of the approval/permit, or documentation from the permitting official that an approval/permit is not required, must be forwarded to the State and FEMA for inclusion in the administrative record.

EHP Additional Info

There is no additional environmental historical preservation on **Ward Road Bridge**.

Final Reviews

Final Review

Reviewed By COSTELLA, ANGELA C. **Reviewed On** 11/01/2024 1:49 PM EST

Review Comments

No comments available for the Final Review step

Recipient Review

Reviewed By Canarecci, Kim **Reviewed On** 11/01/2024 3:02 PM EST

Review Comments

No comments available for the Recipient Review step

Project Signatures

Signed By Bragg, Lisa **Signed On** 11/07/2024

Department of Homeland Security
Federal Emergency Management Agency

General Info

Project #	739756 **P/W #** 1583	**Project Type**	Standard
Project Category	C - Roads and Bridges	**Applicant**	Strafford, Town of (017-70675-00)
Project Title	Van Dyke Road Culvert	**Event**	4720DR-VT (4720DR)
Project Size	Small	**Declaration Date**	7/14/2023
Activity Completion Date	1/14/2025	**Incident Start Date**	7/07/2023
		Incident End Date	7/21/2023
Process Step	Obligated		

Damage Description and Dimensions

The Disaster # 4720DR, which occurred between *07/07/2023* and *07/21/2023*, caused:

Damage #1359541; TH 11 Van Dyke Road Culvert to Bridge

General Facility Information:

- **Facility Type:** Culverts
- **Facility:** Culvert Bridge
- **Facility Description:** 72 In Diameter Corrugated Metal Pipe
- **Approx. Year Built:** 60
- **Location Description:** Van Dyke Road TH11 Off Old City Falls Road TH06
- **GPS Latitude/Longitude:** 43.90966, -72.35466
- **Shape:** Circular
- **Material:** Corrugated Metal/Steel
- **Dimensions Description:** 6 FT Dia
- **Number:** Single

General Damage Information:

- **Date Damaged:** 7/14/2023
- **Cause of Damage:** Due to surface water and high creek flooding the existing culvert 6Ft Dia CMP x 20FT long, 2FT of the 6Ft Dia CMP header at the outlet side dislodged and became missing

Culvert Damage:

Site 1 GPS:43.90966. -72.35466:

- Culvert Header, 1 each of corrugated metal pipe, 2 FT long x 72 IN in diameter, header dislodged missing from the heavy flood surface water, 0% work completed.

Associated Road Damage:

Van Dyke Road, a 24ft wide x 113ft long, 2 lane Gravel roadway

Site 1 GPS: 43.90966, -72.35466:

- Guard Rail, 2 each of vestil galvanized steel guard rails, 38 FT long, rills, gullies and trenches eroded shoulder of stay pak gravel road from overtop surface water flooding , 0% work completed.

Site 1 GPS: 43.90966, -72.35466:

- Surface, 462.0444 CY of stay-pak gravel, 113 FT long x 24 FT wide x 4.6 FT deep, stay pak gravel washed off the road from overtop surface water flooding, 0% work completed.

The Application stated during the SI at Van Dyke Road Incline contour was where the surplus amount of surface water came from and eroded the stay-pak gravel road and over topped the culvert section.

Measurement and GPS Start and End were documented in the SIR for the PDMG.

295 Ft Long 4 Ft Wide x 18 Inches Deep

GPS: Start: 43.90966, -72.35466 End 43.91036, -72.35514

Final Scope

1359541 TH 11 Van Dyke Road Culvert to Bridge

Work to be Completed

The applicant will utilize contract or force account for repairs to **Van Dyke Road Culvert, Vermont** to restore this facility back to its pre-disaster function per the applicant provided method of repair (MOR).

Culvert Damage:

Site 1 GPS:43.90966. -72.35466:

A. Culvert Header, 1 each of corrugated metal pipe, 2 FT long x 72 IN in diameter.

Associated Road Damage:

Van Dyke Road, a 24ft wide x 113ft long, 2 lane Gravel roadway

Site 1 GPS: 43.90966, -72.35466:

B. Guard Rail, 2 each of vestil galvanized steel guard rails, 38 FT long.

Site 1 GPS: 43.90966, -72.35466:

C. Surface, 462.0444 CY of stay-pak gravel, 113 FT long x 24 FT wide x 4.6 FT deep.

Work to be Completed: $278,700.00

Project Notes:

1. All project costs were generated using Applicant provided costs and verified according to the PA Simplified Procedures Policy (FEMA Policy FP-104-23-001). See attachments labeled: “739756-DR4720VT-Small Permanent Work Project Certifications and Acknowledgements (Van Dyke Culvert) signed.pdf. & 739756-DR4720VT - TH 11 Van Dyke Proposal 7.25.24.docx.pdf.

1. The Road Culver were utilized the MOR. Following the H&H Study recommendations. See file named: “DI-1359541-DR4720VT - Strafford - Van Dyke H&H Memo.pdf”.

3. GPS coordinates have been checked for accuracy.

4. Applicant will comply with local, federal procurement laws, regulations, and procedures. For work to be completed, the applicant is required to obtain any necessary Federal, State, and Local environmental permits prior to the start of construction.

5. All borrow material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provide the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g. a new pit, agricultural field, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environment planning and historic preservation laws and executive orders prior to a subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

6. The anticipated ground disturbance and staging area for this project’s activities were estimated to be within the right-of-way of the subject road facility.

7. As per Site Inspection Report, "DR4720 - VT - Strafford Town of - WO 95368 - DI 1359541 - SIR.pdf" the year built for the culverts are 1964.

406 HMP Scope

Public Assistance

Hazard Mitigation Proposal

Applicant Name	Town of Strafford	GM Project #	739756	HMP Date	September 18, 2024
Site Name	Van Dyke Road Culvert				
DR-	4720	– Vermont	DI#	1359541	

HMP Writer and Title:	Norma Sue Higginbotham, 406 HM Specialist

This HMP is based on the following Grants Manager project report, see attachment.

PRJ_Report_739756_20240918.pdf

Select Work Completed Status:	Work to be Completed

I. Related Damaged Items to be Protected

During the declared incident period of July 7, 2023, through July 21, 2023, the the Town of Strafford was impacted by heavy rain and flooding resulting in the culvert on Van Dyke Road being blocked and damaged. As a direct result of this event, one (1) corrugated metal pipe (CMP) Culvert Header measuring 2 FT L x 72 IN diameter header became dislodged and was lost downstream, as well as 2 vestil galvanized steel guard rails, 38 FT L and road surface and shoulder washout measuring 113 FT L x 24 FT W x 4.6 FT D = 462.0444 CYs of staypack gravel. Sites are as follows: GPS: 43.90966, -72.35466, GPS start: 43.90966, -72.35466 to end 43.91013, -72.35514.

Total repair cost of damaged elements being protected by the HMP at this site*=	$ 278,700.00

*Before Cost Estimating Format (CEF) factors if a large project.

Comments:	NA

II. Hazard Mitigation Proposal (HMP) Scope of Work

The proposed mitigation consists of armoring the channel banks, roadway embankments and slopes at the structure's inlet and outlet up to a height of at least one foot above the top of the opening. The stone fill should not constrict the channel or structure opening. The channel outlet needs to be built up to connect stone (E-stone or Type II) through the culvert to the upstream end. For mitigation costs, see Document: Vermont Agency of Transportation, Average prices – 2-year, March 2022 – March 2024, pdf (Page 5, Items 613.11, 613.12, Page 9, Items 649.31, 651.15).

Dimensions:

Type III Stone Fill (16"average): 80 FT long x 10 FT wide x 3 FT deep = 90CY @ $72.52/CY = $6,526.80

Type II (through culvert-12" average): 24 FT long x 12 FT wide x 2 FT deep = 21CY @ $106.82 = $2,243.22

Geotextile under stone fill: 80 FT long x 10 FT wide = 90 SY @ $3.16/SY = $284.40

Seed: 25 LB @ $12.85 = $321.25

Total Mitigation Cost: $9,375.67

The mitigation measures will reduce the risk of future damage by minimizing erosion around this Culverts/Drains, as well as better direct water into them, improving the performance of this Culverts/Drains and therefore minimizing the risk of overtopping and causing damage to this road, during future storm and/or rain events.

III. Hazard Mitigation Proposal (HMP) Cost: Worksheet

- Reference and attach a detailed, itemized cost estimate and/or CEF.

A. Cost of items if the HMP is approved=	$9,375.67
B. Cost of items deducted from the repair scope of work (SOW)=	0
C. Net Hazard Mitigation Cost (before CEF factors) =	$9,375.67
D. Is there a CEF?	No

E. Net Hazard Mitigation Cost (after CEF factors)=	N/A
F. What is the CEF ratio (CEF Total Cost/Base Cost)?	N/A
Comments:	N/A

Hazard Mitigation Proposal Cost: Summary	
Net Hazard Mitigation Cost =	$ 9,375.67
See attachment(s).	Vermont Agency of Transportation, Average Prices - 2 year, March 2022 - March 2024.pdf
Comments:	N/A

IV. Cost Effectiveness Calculation

(Net HMP Cost/Total Repair Cost of the damaged portions of the facility for which the mitigation measure applies) x 100

	$ 9,375.67	/	$ 278,700	x 100 =	3.36 %	= 100%	

The Benefit-Cost Analysis (BCA) ratio is	N/A	= 1.0

V. HMP Cost-Effectiveness

The mitigation measures meet the cost effectiveness criteria based on:

Mitigation measure is listed in Appendix J and is within 100% of the total eligible repair cost of the facility or facilities for which the mitigation applies.
In accordance with FEMA Public Assistance Program and Policy Guide (PAPPG) V4 June 2020, Chapter 8. Section IV and Appendix J. Section I. Drainage Structures Part B reads: “Depending on the severity of erosion, solutions for bank protection may include gabion baskets, rip rap, cast-in-place concrete, crushed stone or rock, grouted rip rap, sheet piling, geotextile fabric, or similar measures to control erosion.”; these mitigation measures do not exceed 100 percent of the eligible repair cost and are considered to be cost-effective.

VI. Compliances and Assurances

For ‘work to be completed,’ this HMP is for estimating purposes only. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

The Applicant is responsible for final design, placement, configuration, procurement, permits and compliance with all regulatory codes and standards.

Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the site(s).

HMP Notes

1. The mitigation proposal estimates were generated using Insert Text. See attachment labeled DR-4720_ Document: Vermont Agency of Transportation, Average prices – 2-year, March 2022 – March 2024, pdf (Page 5, Items 613.11, 613.12, Page 9, Items 649.31, 651.15).

Cost

Code	Quantity	Unit	Total Cost	Section
9001 (Contract)	1.00	Lump Sum	$278,700.00	Uncompleted

CRC Gross Cost	$278,700.00
Total 406 HMP Cost	$9,375.67
Total Insurance Reductions	$0.00
CRC Net Cost	$288,075.67
Federal Share (75.00%)	$216,056.76
Non-Federal Share (25.00%)	$72,018.91

Award Information

Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated

Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #
0	10/25/2024	$216,056.76	75%	Accepted	4720DRVTP00015831

Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of all of its small projects and compliance with all environmental and historic preservation requirements within 180 days of the applicant's completion of its last small project, or the latest approved deadline, whichever is sooner.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding $5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.

Insurance

Additional Information

10/07/2024.

Does the Applicant have a Commercial Policy: Yes

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No

Property insurance coverage for road(s), road right-of-ways, embankment erosion, bridges or culvert damage represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. The applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

Jorge Parrilla, PA Insurance Specialist

CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **Van Dyke Road Culvert** .

406 Mitigation

10/07/2024, The Hazard Mitigation Proposal for this single DI #1359541 is $9,375.67 and is deemed appropriate, technically feasible, and cost-effective in accordance with the 100% Rule of the FEMA Public Assistance Program Policy Guide (PAPPG) Version 4, June 2020, Appendix J. Section I. Drainage Structures Part B reads: "Depending on the severity of erosion, solutions for bank protection may include gabion baskets, rip rap, cast-in-place concrete, crushed stone or rock, grouted rip rap, sheet piling, geotextile fabric, or similar measures to control erosion."; these mitigation measures do not exceed 100 percent of the eligible repair cost and are considered to be cost-effective. 406 HM Review Completed. WRK / ARP

Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders? **Yes**

EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential

archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.

- Clean Water Act Section 404: Before construction begins, the Applicant must obtain any required Clean Water Act section 404 permit from the U.S. Army Corps of Engineers. A copy of the approval/permit, or documentation from the permitting official that an approval/permit is not required, must be forwarded to the State and FEMA for inclusion in the administrative record.
- State Water and Soil Laws: Before construction begins, the Applicant must obtain a permit/authorization from the VT ANR Rivers Program. A copy of the approval/permit, or documentation from the permitting official that an approval/permit is not required, must be forwarded to the State and FEMA for inclusion in the administrative record.
- National Historic Preservation Act (artifacts): Stop Work if archaeological deposits (for example Indian pottery, stone tools, shell, old house foundations, old bottles) are found/uncovered during construction. The project proponent and/or their contractor must immediately stop all work in the vicinity of the find, take reasonable measures to avoid or minimize harm to the finds, secure all archaeological finds (without removing them), and restrict access to the area of the find. The project proponent must immediately report the archaeological discovery to the State Emergency Management Agency and the FEMA Regional Environmental Officer Mary Shanks, 617-901-2204. FEMA will determine the next steps.
- National Historic Preservation Act (staging and access): Staging of equipment and materials and temporary access routes including, but not limited to, routes between staging and work areas shall take place on existing hardened surfaces such as paved or gravel roadways or parking lots. If additional staging areas or access routes are to be established on non-hardened surfaces, the Subrecipient must notify FEMA prior to construction or use. FEMA must review the staging area(s) and/or access route(s) for compliance with all applicable federal environmental planning and historic preservation laws and executive orders. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation in the form of photographs showing the staging and temporary and permanent access areas in use and shortly after construction is complete is required at closeout.
- National Historic Preservation Act (human remains): Stop Work if human remains are discovered. The project proponent and their contractor must immediately stop all work in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the remains, project all human remains discoveries, and restrict access to discovery sites. The project proponents and their contractor must follow all state laws associated with the discovery of human remains, including immediately notifying the proper authorities. Violation of state law will jeopardize FEMA funding for this project. The project proponent will inform the Office of the Chief Medical Examiner, the State Archaeologist, the State Emergency Management Agency, and the FEMA Regional Environmental Officer Mary Shanks, 617-901-2204. FEMA will consult with the SHPO and Tribes, if remains are of tribal origin. Work in the vicinity of the discovery(s) may not resume until consultation is completed and appropriate measures have been taken to ensure that the project is compliant with the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act.
- National Historic Preservation Act (Inadvertent Effects to Structures): Stop Work if any unanticipated damage, alteration, collapse, or demolition (complete or partial) occurs to any structure over 45 years of age during construction. The project proponent and their contractor shall immediately stop all work in the vicinity of the damage and take reasonable measures to avoid or minimize additional harm to the structure and make it safe and secure. For Example, structures include, but are not limited to culverts, bridges, stone walls [including those along water channels], and buildings) that are over 45 years of age within or adjacent to the project area. As soon as possible the project proponent shall report the unanticipated impact to structures to the State Emergency Management Agency and the FEMA Regional Environmental Officer Mary Shanks, 617-901-2204; FEMA will determine the next steps.
- National Historic Preservation Act (borrow sources): All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Subrecipient must notify FEMA and VEM prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a Subrecipient or their contractor commencing borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at closeout.

EHP Additional Info

There is no additional environmental historical preservation on **Van Dyke Road Culvert** .

Final Reviews

Final Review

Reviewed By COSTELLA, ANGELA C. **Reviewed On** 10/21/2024 9:01 AM EDT

Review Comments

No comments available for the Final Review step

Recipient Review

Reviewed By Canarecci, Kim **Reviewed On** 10/21/2024 9:11 AM EDT

Review Comments

No comments available for the Recipient Review step

Project Signatures

Signed By Bragg, Lisa **Signed On** 10/24/2024

VERMONT

State of Vermont
Structures and Hydraulics Section
219 N Main St
Barre, Vermont 05641
vtrans.vermont.gov

Agency of Transportation

[phone] 802-595-5067

TO: Chris Bump, District 4 Project Manager

CC: Jaron Borg, ANR River Management Engineer

FROM: Luke Chamberlain, AOT Civil Engineer

DATE: July 24, 2023

SUBJECT: Strafford TH-77, Ward Rd, over unnamed tributary to Abbott Brook
Site location: Br#75, 25 feet S of TH-3
Coordinates: 43.867768, -72.314218

We have completed our hydraulic study for the above referenced site and offer the following for your use. **The drainage area and structure size recommended are both large enough that when a survey of the site becomes available, a more detailed model should be developed for this structure.**

Hydrology

The following physical characteristics are descriptive of this drainage basin:

Drainage Area	**4.16** square miles
Land Cover	Forested/Residential
Water Bodies and Wetlands (NLCD 2006)	3.1 %

Using the USGS hydrologic method, the following design flow rates were selected:

Annual Exceedance Probability (AEP)	Flow Rate in Cubic Feet per Second (cfs)	
43 %	150	
10 %	270	
4 %	360	Design Flow – Local Road
2 %	440	
1 %	520	Check Flow

Channel Morphology

The channel for this perennial stream is straight with an estimated local channel slope of 2.7%. Field measurements of bankfull width varied from 20 to 24 feet at a bankfull depth of 1 to 2 feet upstream and downstream of the structure.

The drainage area for this perennial stream encompasses a large level of storage in a wetland approximately 1.5 miles north of the structure.

There is a cascade directly downstream of the structure with a slope of approximately 7% affecting tailwater conditions.

Existing Conditions

The existing structure is a bridge with a clear span of 10 feet and a clear height of 6.5 feet, providing a waterway opening of 65 square feet.

Bedrock was noted along the channel bottom at this location.

Our calculations, field observations and measurements indicate the existing structure does not meet current standards of the VTrans Hydraulic Manual nor does the existing structure meet state stream equilibrium standards for bankfull width (span length). The existing structure constricts the channel width, resulting in an increased potential for debris blockage. This complication is known to cause ponding at the inlet, increase stream velocity and scour at the outlet, and may lead to erosion and failure of channel banks.

This structure results in a headwater depth of approximately 5.9 feet at 4% AEP and 6.9 feet at 1% AEP. Bridges are required to have 1ft of freeboard at the design 4% AEP.

Replacement Recommendations

In sizing a new structure, we attempt to select structures that meet both the current VTrans hydraulic standards, state environmental standards with regard to span length and opening height, and allow for roadway grade and other site constraints.

There may be cover limitations for this structure limiting replacement options to a bridge. Pipe manufacturers can provide specific recommendations for minimum and maximum fill heights and required pipe thickness.

If ledge is encountered, and an open bottom structure may be desirable for constructability. Based on the above considerations and the information available, we recommend any of the following structures as a replacement at this site:

- A bridge or open bottom rigid frame with a minimum rectangular waterway opening of 20 feet wide by 6 feet high, providing 120 square feet of waterway area. This structure results in a headwater depth of 3.9 feet at the 4% AEP and 5.0 feet at the 1% AEP.

Note: *Any similar structure that fits the site conditions could be considered.*

To match the existing local stream slope, given the presence of ledge at the structure, the structures recommended above have been modeled with a culvert slope of 0.25%.

Stone Fill, Type II, should be used to protect any disturbed channel banks or roadway slopes at the structure's inlet and outlet, up to a height of at least one-foot above the top of the opening. The stone fill should not constrict the channel or structure opening.

Prior to any action toward the implementation of any recommendations received from VTrans structure size must be confirmed by the VT ANR River Management Engineer to ensure compliance with state environmental standards for stream crossing structures. Regulatory authorities including the US Army Corps of Engineers may have additional concerns or requirements regarding this structure.

General Comments

It is always desirable for a new structure to have flared wingwalls, matched into the channel banks at the inlet and outlet, to smoothly transition flow and protect the structure and roadway approaches from erosion. It is also recommended that full height concrete headwalls be constructed at the inlet and outlet. **If a new bridge is installed, the bottom of abutment footings should be at least 6 feet below the channel bottom, or to ledge, to prevent undermining. Abutments on piles should be designed to be free standing for a scour depth at least 6 feet below channel bottom**. Any new structure should be properly aligned with the channel, span the natural channel width, and be constructed on a grade that matches the channel.

The structures recommended above have been sized with respect to hydraulic and environmental standards and do not consider debris blockage complications.

Please note that these recommendations were made without the benefit of a survey and are based on limited information. The final decision regarding replacement of this structure must comply with state regulatory standards, and should take into consideration matching natural channel conditions, roadway grade, environmental concerns, safety, and other requirements.

A bridge of this size warrants a more detailed hydraulic study if survey becomes available.

The town may wish to discuss discontinuing the highway as a public thoroughfare. It may be possible to negotiate a settlement with the landowners to turn over ownership and maintenance of any replacement structure. This would allow the landowners to tailor a replacement to fit their needs, and relieve the town of responsibility in providing a safe public highway suitable for general use. A portion of any savings to FEMA using this approach may be made available for use elsewhere by the town. Town officials should contact FEMA for a determination.

Please contact us if you have any questions or if we may be of further assistance.

VERMONT

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[fax] 802-828-3566
[ttd] 800-253-0191

TO: Christopher Bump, District 4 Project Manager
Casey Leach, Roadway Project Engineer

CC: Scott Jenson, ANR River Management Engineer
Patrick Ross, Hydraulics Engineer

FROM: Madeline Glow, Hydraulics Project Engineer

DATE: July 20, 2023

SUBJECT: Strafford TH-11 (Van Dyke Road) over Old City Brook to West Branch Ompompanoosuc River
Site location: C5/BR58, 0.2 miles North of Rogers Road
Coordinates: 43.909556, -72.354611

We have completed our hydraulic study for the above referenced site and offer the following for your use.

Hydrology

The following physical characteristics are descriptive of this drainage basin:

Drainage Area	2.64 square miles
Water Bodies and Wetlands (NLCD 2006)	1.5%
Mean Annual Precipitation	45.6 inches

Using the USGS hydrologic method, the following design flow rates were selected:

Annual Exceedance Probability (AEP)	Flow Rate in Cubic Feet per Second (cfs)	
50 %	110	
10 %	230	
4 %	300	Design Flow
2 %	370	
1 %	440	Check Flow

Channel Morphology

The channel for this perennial stream is sinuous to straight with an estimated local stream slope of about 2.6%. A bankfull width varied from 10 to 14 feet was estimated using available LiDAR data. The Vermont Hydraulic Geometry Relationships anticipate a bankfull width of 20 feet for stream channels in equilibrium at this watershed size. The measured bankfull width from LiDAR data compared to the calculated BFW reflects the available upstream storage in the watershed.

Existing Conditions

Using available GIS data, the existing structure was a round structure with an opening of 6-ft, providing a waterway area of 28.3 sq. ft.

Our calculations, indicate the existing structure did not meet current standards of the VTrans Hydraulic Manual.

This structure results in a water overtopping the roadway before the 4% AEP.

Replacement Recommendations

In sizing a new structure, we attempt to select structures that meet both the current VTrans hydraulic standards, state environmental standards with regard to span length and opening height, and allow for roadway grade and other site constraints.

Based on LiDAR data and discussions with the regional ANR RME, there is a 90 degree turn in the stream just upstream of the existing structure, so realignment may be an appropriate option and should be considered when replacing this structure. If ledge is encountered, a buried structure may be difficult to install, and an open bottom structure may be desirable for constructability.

Based on the above considerations and the information available, we recommend any of the following structures as a replacement at this site:

- A concrete box with an inside opening span of 12 feet and minimum height of 8 feet. The box invert should be buried 2 feet. This will result in a clear height of 6 feet above streambed, providing 72 square feet of waterway area. Bed retention sills should be added in the bottom of the structure. Sills should be 12 inches high across the full width of the structure and should be buried so the top of the sills will not be visible. Sills should be spaced no more than 8 feet apart throughout the structure with one sill placed at both the inlet and the outlet. The structure should be filled level to the streambed with E-Stone, Type II, allowing flow to be kept above the surface, providing the conditions necessary for aquatic organism passage. This structure results in a headwater depth of 4.5 feet at 4% AEP and 5.8 feet at 1% AEP.

- An open bottom pipe arch with a minimum clear span of 14 feet and clear height of 7.25 feet, providing a waterway area of 80 square feet. E-Stone, Type II, may be needed to be used to build the channel through this structure. The bottom of abutment footings should be at least 6 feet below the channel bottom, or to ledge, to prevent undermining. This structure results in a headwater depth of 4.3 feet at 4% AEP and 5.9 feet at 1% AEP.

- A bridge or open bottom rigid frame with a minimum rectangular waterway opening of 12 feet wide by 6 feet high, providing 72 square feet of waterway area. This structure results in a headwater depth of 4.5 feet at the 4% AEP and 5.8 feet at the 1% AEP.

Note: *Any similar structure that fits the site conditions could be considered. Any structure with a closed bottom should have bed retention sills and a buried invert as described above.*

The structures recommended above have been modeled with a culvert slope of 2.6%. With this slope, the channel at the outlet will need to be built up to connect E-Stone through the culvert to the upstream end. When complete, there should be no drop at the outlet.

Stone Fill, Type II OR E-Stone Type II should be used to protect any disturbed channel banks or roadway slopes at the structure's inlet and outlet, up to a height of at least one-foot above the top of the opening. The stone fill should not constrict the channel or structure opening.

Prior to any action toward the implementation of any recommendations received from VTrans, stream type and structure size must be confirmed, and may be modified, by the VT ANR River Management Engineer to ensure compliance with state environmental standards for stream crossing structures.

Regulatory authorities including the US Army Corps of Engineers may have additional concerns or requirements regarding this structure.

General Comments

It is always desirable for a new structure to have flared wingwalls, matched into the channel banks at the inlet and outlet, to smoothly transition flow and protect the structure and roadway approaches from erosion. It is also recommended that full height concrete headwalls be constructed at the inlet and outlet. Any closed bottom structure should also be equipped with cutoff walls, extending to a depth equal to the culvert rise, up to 4 feet, or to ledge, to serve as undermining prevention.

Any new structure should be properly aligned with the channel, span the natural channel width, and be constructed on a grade that matches the channel.

The structures recommended above have been sized with respect to hydraulic and environmental standards and do not consider debris blockage complications. **To minimize maintenance and ensure constructability, it is recommended that the structure height be adequate for installation of E-Stone and passage of debris.**

Please note that a site visit was not made. These recommendations were made without the benefit of a survey and are based on the best available information. The final decision regarding replacement of this structure must comply with state regulatory standards, and should take into consideration matching natural channel conditions, roadway grade, environmental concerns, safety, and other requirements.

Please contact us if you have any questions or if we may be of further assistance.

TOWN ROAD AND BRIDGE STANDARDS

(June 5, 2019)

MUNICIPALITY OF Strafford, VERMONT

The Legislative Body of the Municipality of Strafford hereby adopts the following Town Road and Bridge Standards which shall apply to the construction, repair, and maintenance of town roads and bridges.

The standards below are considered minimums. Municipalities that have construction standards / specifications in place that meet or exceed the minimum standards: indicate adoption date and include as Appendix C. **Date of Adoption:** 7/10/2019

Municipalities must comply with all applicable state and federal approvals, permits and duly adopted standards when undertaking road and bridge activities and projects.

Any new road regulated by and/or to be conveyed to the municipality shall be constructed according to the minimum of these standards.

Circle **YES** or **NO** below to indicate town adoption of that section of the Standards

Road and Bridge Standards Sections	Hydrologically-connected road segments*	Non-hydrologically-connected road segments**
Section 1 – Municipal Road Standards	(YES) (Required by Act 64)	(YES) NO
Section 2 – Class 4 Road Standards	(YES) (Required by Act 64)	YES (NO)
	Town wide	
Section 3 - Perennial stream- bridge and culvert standards	(YES) (Required by DEC Stream Alteration Standard)	
Section 4 – Intermittent stream crossings	(YES) NO	
Section 5 - Roadway construction standards	(YES) NO	
Section 6 - Guardrail standard	(YES) NO	
Section 7 - Driveway access standard	(YES) NO	

Road segments – ANR Resources Atlas includes a map layer of all of Vermont's municipal roads divided into 100-meter (328 foot) segments, each with a unique identification number.

***Hydrologically-connected road segments** - are those municipal road segments and catch basin outlets, Class 1-4, as shown on the ANR Natural Resources Hydrologically-connected municipal road segment layer (http://anrmaps.vermont.gov/websites/anra5/) or the Road Erosion Inventory Scoring (MRGP Implementation Table portal) layer (https://anrweb.vt.gov/DEC/IWIS/MRGPReportViewer.aspx?ViewParms=True&Report=Portal).

****Adoption of standards on non-hydrologically-connected road segments** does not indicate that these road segments are then subject to the Municipal Roads General Permit (MRGP).

Municipalities may also find additional resources in the latest version of the *Vermont Better Roads Manual*.
https://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/Better%20Roads%20Manual%20Final%202019.pdf

Road and Bridge Standards Sections

Section 1 – Municipal Road Standards - See Appendix A

These standards are required by Act 64 and the DEC Municipal Roads General Permit (MRGP) for hydrologically-connected roads only.

Municipalities may adopt Section 1 Road standards by road type for non-hydrologically-connected roads/segments/catch basins.

Section 2 – Class 4 Road Standards - See Appendix A

Section 3 - Perennial stream - bridge and culvert standards

Bridge and culvert work on perennial stream crossings must conform with the statewide DEC Stream Alteration Standard.

"Perennial stream" means a watercourse or portion, segment, or reach of a watercourse, generally exceeding 0.25 square miles in watershed size, in which surface flows are not frequently or consistently interrupted during normal seasonal low flow periods. Perennial streams that begin flowing subsurface during low flow periods, due to natural geologic conditions, remain defined as perennial. All other streams, or stream segments of significant length, shall be termed intermittent. A perennial stream shall not include the standing waters in wetlands, lakes, and ponds.

Streambank stabilization and other in-stream work must conform with the statewide DEC Stream Alteration Standard.

For River Management Engineer Districts: https://dec.vermont.gov/sites/dec/files/wsm/rivers/docs/RME_districts.pdf

Section 4 – Intermittent stream crossings – See Appendix B for sizing table and graphic. These standards are above and beyond the culvert standards in Section 1.

"Intermittent streams" are defined as streams with beds of bare earthen material that run during seasonal high flows but are disconnected from the annual mean groundwater level.

Section 5 - Roadway construction standards – Sub-base and gravel standards

All new or substantially reconstructed gravel roads shall have 12 inches* thick gravel sub-base, with an additional 3 inches* top course of crushed gravel.

All new or substantially reconstructed paved roads shall have 15 inches* thick gravel sub-base.

*Municipalities shall indicate their own construction criteria.

Section 6 - Guardrail standard

When a roadway, culvert, bridge, or retaining wall construction or reconstruction project results in hazards such as foreslopes, drop offs, or fixed obstacles within the designated clear-zone, the AASHTO Roadside Design Guide will govern the analysis of the hazard and the subsequent treatment of that hazard. For roadway situations, an approved barrier system may be steel beam guardrail with 6-foot posts and approved guardrail end treatment. If there is less than 3 feet from the rail to the hazard, then steel beam guardrail with 8-foot posts shall be used. The G-1D is an example of an approved guardrail end treatment. For bridge rails systems, VTrans bridge rail standards shall be referenced

Section 7 - Driveway access standard

The municipality has a process in place, formal or informal, to review all new drive accesses and development roads where they intersect town roads, as authorized under 19 V.S.A. Section 1111. Municipality may reference Vtrans Standard *A-76 Standards for Town & Development Roads* and *B-71 Standards for Residential and Commercial Drives*; the Vtrans *Access Management Program Guidelines*; and the latest version of the *Vermont Better Roads Manual* for other design standards and specifications.

Passed and adopted by the Legislative Body of the Municipality of Strafford **, State of Vermont on** July 10 **, 20** 19

Selectboard / City Council / Village Board of Trustees:

Pat Kelly