1 BALDWIN STREET,
MONTPELIER, VT 05633-5701

PHONE: (802) 828-2295
FAX: (802) 828-2483

STATE OF VERMONT
JOINT FISCAL OFFICE

MEMORANDUM

To: James Reardon, Commissioner of Finance & Management

From: Nathan Lavery, Fiscal Analyst

Date: April 25, 2012

Subject: JFO #2556, #2557, #2558

No Joint Fiscal Committee member has requested that the following items be held for review:

JFO #2556 – $159,776 grant from the Federal Emergency Management Agency (FEMA) to the Vermont Department of Public Safety. This grant is pass-through funding for hazard mitigation projects in the towns of Pawlet and Waitsfield in response to the December 2010 ice storm.
[*JFO received 3/22/12*]

JFO #2557 – $10,000 grant from National Alcohol Beverage Control Association to the Vermont Department of Liquor Control. This grant will be used to create, produce and purchase community outreach and educational materials designed to prevent underage drinking.
[*JFO received 3/22/12*]

JFO #2558 – $15,000 grant from National Historic Publications and Records Commission to the Vermont Secretary of State. This grant will be used to establish a program support local officials and other archives in the state to preserve and make accessible Vermont's historical records.
[*JFO received 3/22/12*]

The Governor's approval may now be considered final. We ask that you inform the Secretary of Administration and your staff of this action.

cc: Keith Flynn, Commissioner
Michael Hogan, Commissioner
Jim Condos, Secretary of State

1 BALDWIN STREET,
MONTPELIER, VT 05633-5701

PHONE: (802) 828-2295
FAX: (802) 828-2483

STATE OF VERMONT
JOINT FISCAL OFFICE

MEMORANDUM

To: Joint Fiscal Committee Members

From: Nathan Lavery, Fiscal Analyst

Date: March 23, 2012

Subject: Grant Requests

Enclosed please find four (4) items that the Joint Fiscal Office has received from the administration.

JFO #2555 – $790,018 grant from the U.S. Department of Health and Human Services to the Vermont Department of Mental Health. This grant will be used to provide regular crisis counseling services to survivors of Tropical Storm Irene in Addison, Bennington, Caledonia, Chittenden, Franklin, Lamoille, Orange, Rutland, Washington, Windham and Windsor Counties.
[*JFO received 3/19/12*]

JFO #2556 – $159,776 grant from the Federal Emergency Management Agency (FEMA) to the Vermont Department of Public Safety. This grant is pass-through funding for hazard mitigation projects in the towns of Pawlet and Waitsfield in response to the December 2010 ice storm.
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[*JFO received 3/22/12*]

Please review the enclosed materials and notify the Joint Fiscal Office (Nathan Lavery at (802) 828-1488; nlavery@leg.state.vt.us) if you have questions or would like an item held for legislative review. Unless we hear from you to the contrary by April 9 we will assume that you agree to consider as final the Governor's acceptance of these requests.

VERMONT

State of Vermont
Department of Finance & Management
109 State Street, Pavilion Building
Montpelier, VT 05620-0401

[phone] 802-828-2376
[fax] 802-828-2428

Agency of Administration

JFO 2556

STATE OF VERMONT
FINANCE & MANAGEMENT GRANT REVIEW FORM

Grant Summary:	Pass-thru financial assistance from the Federal Emergency Management Agency (FEMA) for hazard mitigation projects in the towns of Pawlet and Waitsfield in response to the December 2010 ice storm.					
Date:	3/19/2012					
Department:	Department of Public Safety - Vermont Emergency Management (VEM)					
Legal Title of Grant:	Hazard Mitigation Grant Program					
Federal Catalog #:	97.039					
Grant/Donor Name and Address:	U.S. Dept of Homeland Security/FEMA Region I, Boston, Mass.					
Grant Period: From:	1/30/2012	**To:**	1/29/2014			
Grant/Donation	159,776					

	SFY 1	SFY 2	SFY 3	Total	Comments
Grant Amount:	$0	$79,888	$79,888	$159,776	

	# Positions	Explanation/Comments
Position Information:	NA	

Additional Comments:		

Department of Finance & Management	3/19/12	(Initial)
Secretary of Administration	ME 03/19/12	(Initial)
Sent To Joint Fiscal Office		**Date** 3/20/12

DB 3-19-12

RECEIVED
MAR 22 2012
JOINT FISCAL OFFICE

STATE OF VERMONT REQUEST FOR GRANT ACCEPTANCE (Form AA-1)

BASIC GRANT INFORMATION

1. Agency:	
2. Department:	Public Safety
3. Program:	Emergency Management
4. Legal Title of Grant:	Hazard Mitigation Grant Program
5. Federal Catalog #:	97.039

6. Grant/Donor Name and Address:
U.S. Dept. of Homeland Security/FEMA Region I
99 High St, Sixth Floor
Boston, MA 02110-2132

7. Grant Period:	**From:**	1/30/2012	**To:**	1/29/2014

8. Purpose of Grant:
The Hazard Mitigation Grant Program provides States and local governments financial assistance to implement measures that will permanently reduce or eliminate future damages and losses from natural hazards through safer building practices and improving existing structures and supporting infrastructure.

9. Impact on existing program if grant is not Accepted:
The severe storm that occurred December 2010 resulted in Vermont cities and towns suffering ice storms. The President declared this a federal disatster (#1951) and made federal aid available to mitigate future reoccurring flood problems.

10. BUDGET INFORMATION

	SFY 1	SFY 2	SFY 3	Comments
Expenditures:	**FY** 2013	**FY** 2014	**FY** 2015	
Personal Services	$	$	$	
Operating Expenses	$	$	$	
Grants	$106,517	$106,518	$	
Total	$106,517	$106,518	$	
Revenues:				
State Funds:	$	$	$	
Cash	$	$	$	
In-Kind	$	$	$	
Federal Funds:	$	$	$	
(Direct Costs)	$79,888	$79,888	$	
(Statewide Indirect)	$	$	$	
(Departmental Indirect)	$	$	$	
Other Funds:	$	$	$	
Grant (source Local Match)	$26,629	$26,630	$	
Total	$106,517	$106,518	$	

Appropriation No:	2140030000	**Amount:**	$159,776
			$
			$

MAR 1 4 2013

STATE OF VERMONT REQUEST FOR GRANT ACCEPTANCE (Form AA-1)

			$
			$
			$
			$
		Total	$159,776

PERSONAL SERVICE INFORMATION

11. Will monies from this grant be used to fund one or more Personal Service Contracts? ☐ Yes ☒ No
If "Yes", appointing authority must initial here to indicate intent to follow current competitive bidding process/policy.

Appointing Authority Name: Agreed by: _____ (initial)

12. Limited Service Position Information:	**# Positions**	**Title**
Total Positions		

12a. Equipment and space for these positions: ☐ Is presently available. ☐ Can be obtained with available funds.

13. AUTHORIZATION AGENCY/DEPARTMENT

I/we certify that no funds beyond basic application preparation and filing costs have been expended or committed in anticipation of Joint Fiscal Committee approval of this grant, unless previous notification was made on Form AA-1PN (if applicable):

Signature:	Date: 3/8/12
Title: Commissioner	
Signature:	Date:
Title:	

14. ACTION BY GOVERNOR

☐	Check One Box: Accepted		
☐	Rejected	(Governor's signature)	Date: 3/20/12

15. SECRETARY OF ADMINISTRATION

☒	Check One Box: Request to JFO		03/19/12
☐	Information to JFO	(Secretary's signature or designee)	Date:

16. DOCUMENTATION REQUIRED

Required GRANT Documentation

☐ Request Memo	☐ Notice of Donation (if any)
☐ Dept. project approval (if applicable)	☐ Grant (Project) Timeline (if applicable)
☒ Notice of Award	☐ Request for Extension (if applicable)
☐ Grant Agreement	☐ Form AA-1PN attached (if applicable)
☐ Grant Budget	

End Form AA-1

U.S. Department of Homeland Security
Region I
99 High Street, Sixth Floor
Boston, MA 02110-2132

FEMA

February 27, 2012

Mr. Joe Flynn, Director
Vermont Emergency Management Agency
103 South Main Street
Waterbury, VT. 05617

Re: FEMA-DR-1951-VT
Hazard Mitigation Grant Program (HMGP) Project # 1-R
Betts Bridge road Culvert, Pawlet, VT

Dear Mr. Flynn:

Enclosed please find the obligation reports for the following Hazard Mitigation Grant Program project:

1951-1-R	Town of Pawlet, Vermont Betts Bridge road Culvert	$	51,431
	Total:	**$**	**51,431**

The project performance period shall be three years from the date of this letter.

If you have any questions, please do not hesitate to call Richard Verville with the FEMA Region I Mitigation Division at (617) 956-7524.

Sincerely,

Michael Goetz, Branch Chief
Risk Analysis Branch

Enclosures

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANTS PROGRAM

Allocation Request with Signature

Disaster Number : 1951 Allocation Number : 2 IFMIS Status : Accept IFMIS Date : 02/22/2012

FEMA Project Number	Proj Amend Number	State Appl ID	FY	Project Amount	Grantee Admin Est	Subgrantee Admin Est	Total Allocation	Proj Total Fed Share	Proj Fed Share Prev Alloc	Max Avail for Curr Alloc
1 - R	0	1	2012	$51,431	$0	$0	$51,431	$51,431	$51,431	$0
			TOTALS	$51,431	$	$0	$51,431			

Comments

Date: 02 / 21 / 2012 User Id: RVERVIL1

Comment: Allocation of $51,431 approved by MA

Date: 02 / 21 / 2012 User Id: SLEYDON

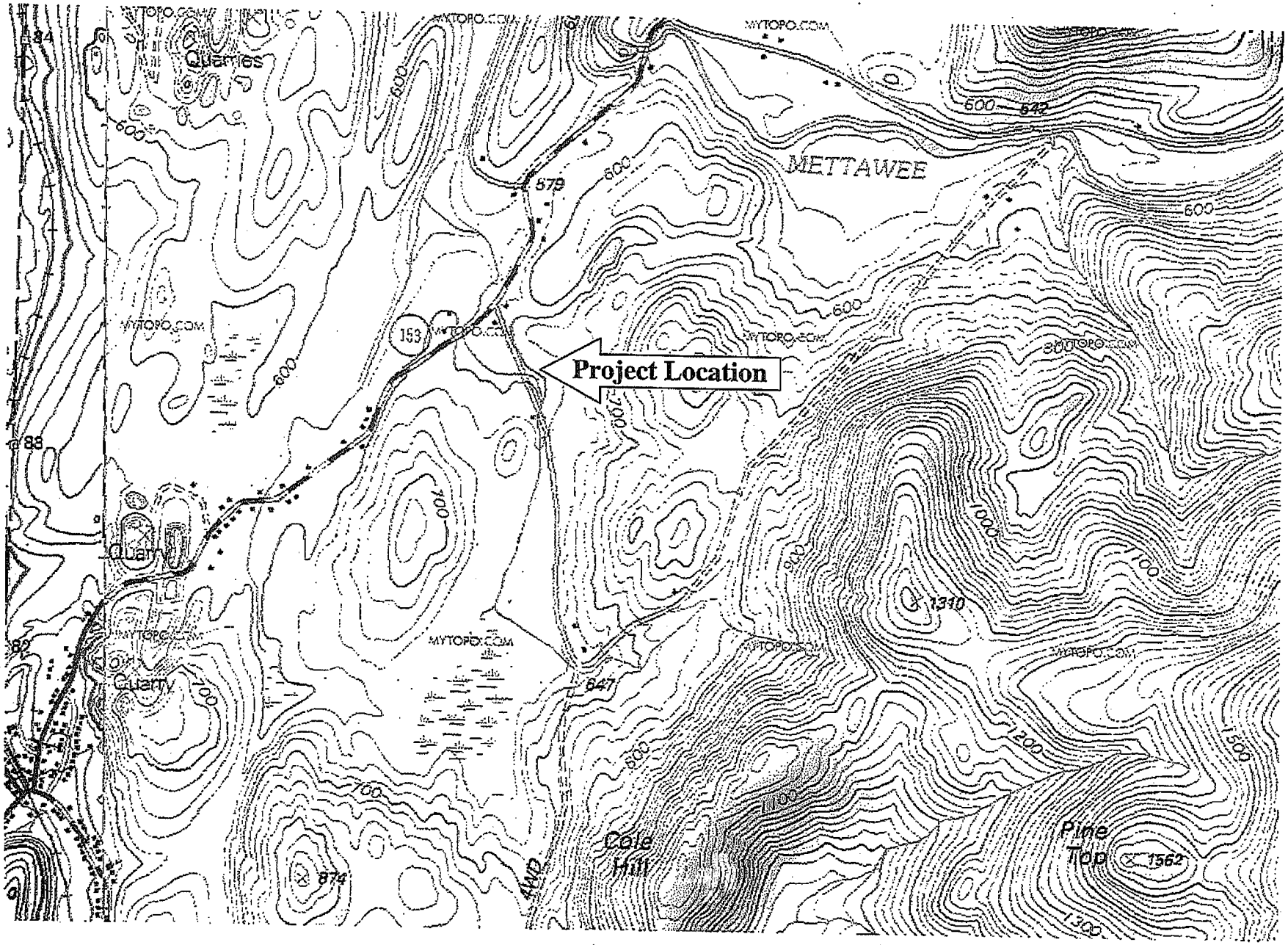
Comment: Allocation of $51,431 approved by HMO

Authorization

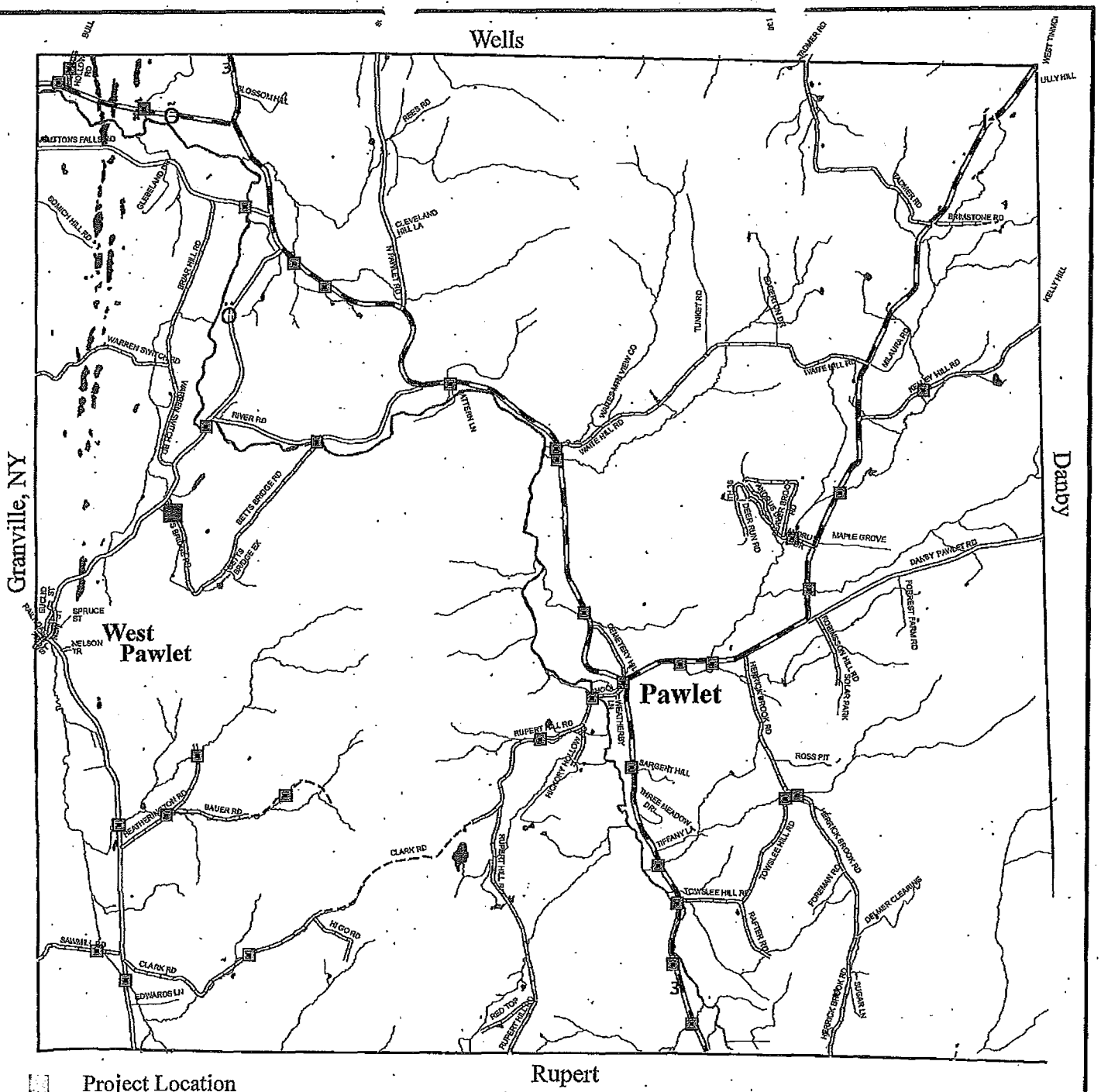
Preparer Name : RICHARD VERVILLE Preparation Date : 02/21/2012

HMO Authorization Name : STEPHANIE LEYDON HMO Authorization Date : 02/21/2012

Authorizing Official Signature	Authorizing Official Title	Authorizaton Date
	RA Branch Chief	2/27/12
Authorizing Official Signature	Authorizing Official Title	Authorization Date


Project Location
METTAWEE
Quarries
Quarry
Quarry
Cole Hill
Pine Top
1562
1310
874
647
579
153
4WD

6 17 88



Project Location

Bridges

Roads

- State Highway
- Class 2 Town Road
- Class 3 Town Road
- Class 4 Town Road
- Private Road
- Rivers & Streams
- Lakes & Ponds

Pawlet, Vermont

Transportation Map

Miles

0 0.25 0.5 1 1.5 2

Town of Pawlet
Hazard Mitigation Grant Program
October 3, 2011

FEMA DR-1951-VT

Estimated Costs TH 16 Betts Bridge Road

Equipment Rental		
Dozer	$3,000.00	
Compactor	$300.00	
Excavator - 38000 lbs. rental	$13,000.00	
Trucking - 56 hours	$4,260.00	
Loader - 18 hours	$990.00	
Backhoe - 12 hours	$600.00	
Crane	$2,900.00	
Mulcher	$150.00	
	Equipment Total	**$25,200.00**
Gravel		
Bank Run (160 yards)	$1,600.00	
3/4 inch Crushed (96 yards)	$1,152.00	
2 inch Crushed Stone (32 yards)	$307.20	
Shot-Rock	Donated	
	Gravel Total	**$3,059.20**
Other		
Joint Grout	$600.00	
Membrane	$375.00	
Mulch Hay	$75.00	
Silt Fence	$200.00	
Grass Seed	$100.00	
	Other Total	**$1,350.00**
Concrete Box Culvert		
8'0" Span x 3'0" Rise x 32' Long		
including wing walls, headwalls, and cutoff walls		
	Culvert Total	**$33,440.00**
Labor		
including equipment operator and regular labor		
	Labor Total	**$5,526.00**
Total Estimated Cost		**$68,575.20**

U.S. Department of Homeland Security
Region I
99 High Street, Sixth Floor
Boston, MA 02110-2132

FEMA

January 30, 2012

Mr. Joe Flynn, Director
Vermont Emergency Management Agency
103 South Main Street
Waterbury, VT. 05617

Re: FEMA-DR-1951-VT
Hazard Mitigation Grant Program (HMGP) Project # 2-R
Project Title, City/Town, VT

Dear Mr. Flynn:

Enclosed please find the obligation reports for the following Hazard Mitigation Grant Program project:

1951-2-R	Town of Waitsfield, Vermont Mad River Bank Stabilization Project	$	108,345
	Total:	$	108,345

The project performance period shall be three years from the date of this letter.

If you have any questions, please do not hesitate to call Richard Verville with the FEMA Region I Mitigation Division at (617) 956-7524.

Sincerely,

Michael Goetz, Branch Chief
Risk Analysis Branch

Enclosures

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANTS PROGRAM

Allocation Request with Signature

Disaster Number : 1951 Allocation Number : 1 IFMIS Status : Accept IFMIS Date : 01/27/2012

FEMA Project Number	Proj Amend Number	State Appl ID	FY	Project Amount	Grantee Admin Est	Subgrantee Admin Est	Total Allocation	Proj Total Fed Share	Proj Fed Share Prev Alloc	Max Avail for Curr Alloc
2 - R	0	2	2012	$108,345	$0	$0	$108,345	$108,345	$108,345	$0
			TOTALS	$108,345	$	$0	$108,345			

Comments

Date: 01 / 25 / 2012 User Id: RVERVIL1

Comment: Allocation of $108,345 approved by MA

Date: 01 / 25 / 2012 User Id: RNADEAU1

Comment: HMO approves allocation of $108,345

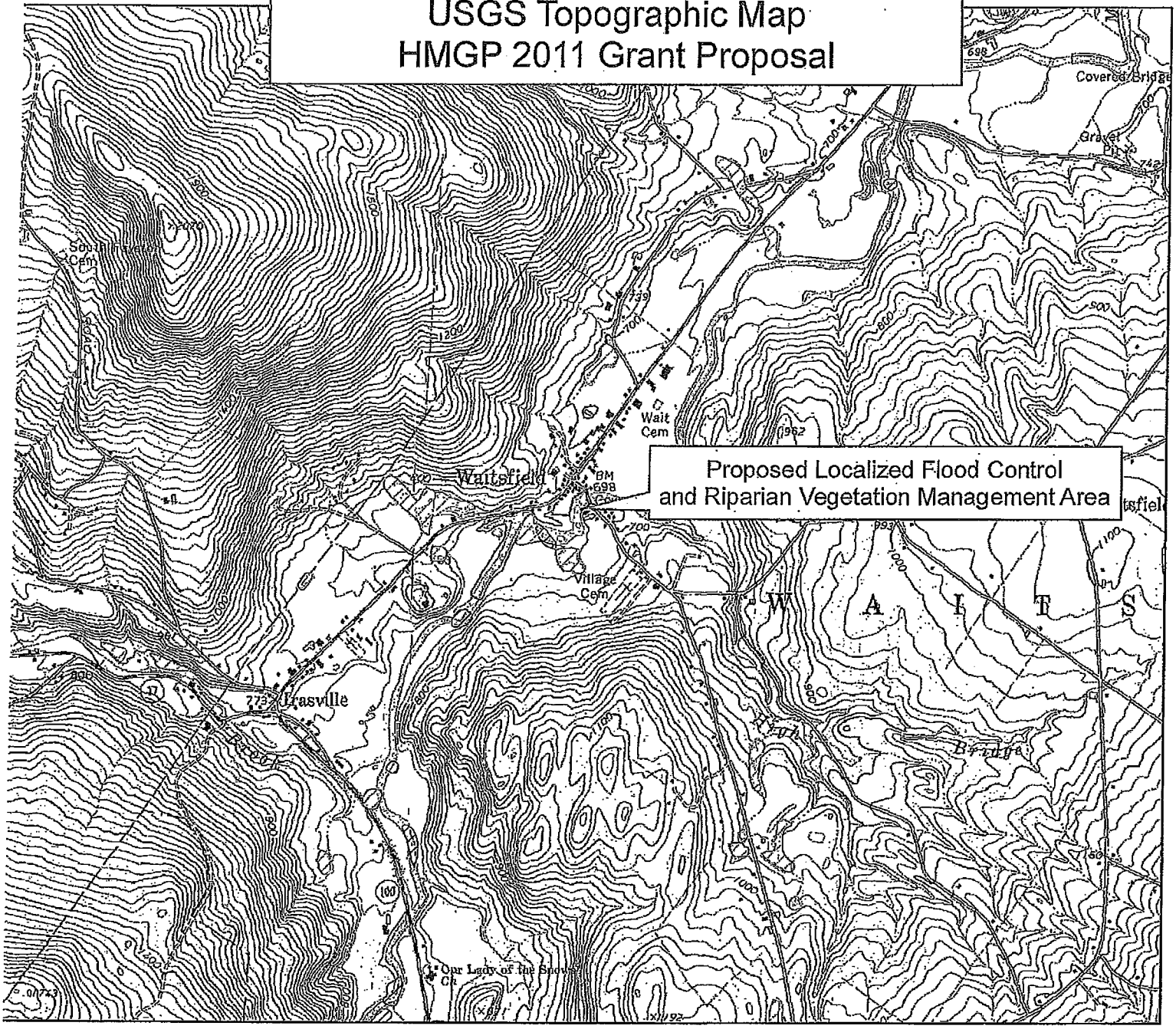
Authorization

Preparer Name : RICHARD VERVILLE Preparation Date : 01/25/2012

HMO Authorization Name : ROBERT NADEAU HMO Authorization Date : 01/25/2012

Authorizing Official Signature	Authorizing Official Title	Authorizaton Date
	RA Branch Chief	1/30/12
Authorizing Official Signature	Authorizing Official Title	Authorization Date

Waitsfield Vermont Flood Mitigation Project
Mad River, Waitsfield, VT
USGS Topographic Map
HMGP 2011 Grant Proposal



Legend

- VT Class 1 Wetland
- VT Class 2 Wetland
- VT Class 3 Wetland
- 2008 National Wetland Inventory

Map created on 08/05/2011
2009 NAIP Orthophotography

2,000 1,000 0 2,000 Feet

1" = 2000'

N
W E
S

26. Great Eddy Bridge (1833)

This combination multiple king-post and Burr truss covered bridge was entered in the National Register of Historic Places on September 6, 1974. For a complete decription of the bridge, please refer to that nomination form.

27. Old Barber Shop; Italianate Revival style: (c.1900)

This building functioned as the village barber shop for a number of years. The building is a small, one story, flat roofed, rectangle, three bays in length across its front, north, facade, by one bay in width. The building sits on a fieldstone and concrete foundation behind a concrete retaining wall which extends in front of the building along the south edge of the street, and has a partially exposed basement story. It is of wood frame construction with clapboard siding, and is detailed with wide corner boards and fascias, and a boxed cornice overhang around the top of the roof parapet. Across the length of the facade, a one story, shed roofed porch with exposed rafter tails bridges the gap between the facade and the retaining wall along the edge of the street. The porch is supported by four square chamfered posts and is enclosed by a double-rail railing. The entrance is located in the center bay of the facade and consist of a paneled door with single upper light. The windows are two-over-two double-hung sash except for the window to the right of the entrance which is a fixed sash- four-over-four light display window. A small shed roofed addition, supported on square posts with diagonal braces, projects from the rear elevation, and a brick chimney stack crowns the rear edge of the roof.

28. Blue Building; Italianate Revival style: (c.1860)

This building consists of two large rectangular blocks of equal size and height which are set at right angles to each other and share a common facade line on their north elevations. The right-hand section is an irregularly spaced six bays in length by

28. Blue Building; Italianate Revival style: (c.1860)

This building consists of two large rectangular blocks of equal size and height which are set at right angles to each other and share a common facade line on their north elevations. The right-hand section is an irregularly spaced six bays in length by
three bays in width across its front facade. Attached at right angles to the right-
the roof is crowned by a number of brick chimney stacks, the most prominently positioned of which is one on the east gable end. The gable facade of the right-hand section contains an original storefront, three windows across its second floor, and a single window in the gable peak. The storefront is composed of a center paneled and upper light door and two flanking, three sided polygonal display windows which extend from floor to ceiling and from the corners of the building to the edge of the door. The display windows are three panes on the side and nine on the front, are supported on ine columns set into the ground, and are capped by a shed roof which extends across

Dept. of Public Safety
Administration Division
Accounting Unit

Memo

To: David Beatty, Budget & Management Analyst

From: Karen Mae Smith, Grants Management Specialist

Date: 3/13/2012

CC: file

Re: Request for Grant Acceptance

Attached you will find a Request for Grant Acceptance (AA-1) for the Hazard Mitigation Grant Program, Disaster #1951, received from FEMA.

If you have any questions, please contact me at 802-241-5458 or KarenMae.Smith@state.vt.us.

Thank you.

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANTS PROGRAM
Obligation Report w/ Signatures

Disaster No	FEMA Project No	Amendment No	State Application ID	Action No	Supplemental No	State	Grantee
1951	1-R	0	1	1	1	VT	Statewide

Subgrantee: Pawlet
Subgrantee FIPS Code: 021-54175

Project Title : Pawlet- Betts Bridge Road Culvert

Total Amount Previously Allocated	Total Amount Previously Obligated	Total Amount Pending Obligation	Total Amount Available for New Obligation
$51,431	$51,431	$0	$0

Project Amount	Grantee Admin Est	Subgrantee Admin Est	Total Obligation	IFMIS Date	IFMIS Status	FY
$51,431	$0	$0	$51,431	02/22/2012	Accept	2012

Comments

Date: 02/22/2012 User Id: RVERVIL1

Comment: Obligation of $51,431 approved by MA

Date: 02/22/2012 User Id: DNELSO15

Comment: Second obligation of $51,431, approved by HMO

Authorization

Preparer Name: RICHARD VERVILLE Preparation Date: 02/22/2012

HMO Authorization Name: DONNA NELSON HMO Authorization Date: 02/22/2012

Authorizing Official Signature	Authorizing Official Title	Authorization Date
[signature]	R A Branch Chief	2/27/12

Project Management Report

Disaster Number	FEMA Project Number	Amendment Number	App ID	State	Grantee
1951	**1-R**	**0**	**1**	**VT**	**Statewide**

Subgrantee: Pawlet
FIPS Code: 021-54175 Project Title : Pawlet- Betts Bridge Road Culvert

Mitigation Project Description

Amendment Status : Approved **Approval Status:** Approved

Project Title : Pawlet- Betts Bridge Road Culvert

Grantee : Statewide **Subgrantee :** Pawlet

Grantee County Name : Rutland Subgrantee County Name : Rutland

Grantee County Code : 21 Subgrantee County Code : 21

Grantee Place Name : Pawlet Subgrantee Place Name : Pawlet

Grantee Place Code : 0 Subgrantee Place Code : 54175

Project Closeout Date : 00/00/0000

Work Schedule Status

Amend #	Description	Time Frame	Due Date	Revised Date	Completion Date
0	Set-up site	30 days	00/00/0000	00/00/0000	00/00/0000
0	Remove existing culvert	30 days	00/00/0000	00/00/0000	00/00/0000
0	Excavate for new culvert	30 days	00/00/0000	00/00/0000	00/00/0000
0	Install new box culvert	30 days	00/00/0000	00/00/0000	00/00/0000
0	Grade Road	30 days	00/00/0000	00/00/0000	00/00/0000

Approved Amounts

Total Approved Net Eligible	Federal Share Percent	Total Approved Federal Share Amount	Non-Federal Share Percent	Total Approved Non-Fed Share Amount
$68,575	75.000000000	$51,431	25.00000000	$17,144

Allocations

Allocation Number	IFMIS Status	IFMIS Date	Submission Date	FY	ES Support Req ID	ES Amend Number	Proj Alloc Amount Fed Share	Grantee Admin Amount	Subgrantee Admin Amount	Total Alloc Amount
2	A	02/22/2012	02/21/2012	2012	2154660	1	$51,431	$0	$0	$51,431
						Total	$51,431	$0	$0	$51,431

Obligations

Action Nr	IFMIS Status	IFMIS Date	Submission Date	FY	ES Support Req ID	ES Amend Number	Suppl Nr	Project Obligated Amt - Fed Share	Grantee Admin Amount	Subgrantee Admin Amount	Total Obligated Amount
1	A	02/22/2012	02/22/2012	2012	2177410	1	1	$51,431	$0	$0	$51,431
							Total	$51,431	$0	$0	$51,431

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANT PROGRAM
Funding Estimate Financial Activity Report

Disaster Number: 1951 State: VT Region: 1 Declaration Date: 12/22/2010 Grantee : Statewide

	Projected A	Total Allocated in NEMIS B	Available C (A - B)	Total Obligated in NEMIS D	Available E (A - D)
HMGP Project Funds	$338,662	$159,776	$178,886	$159,776	$178,886
Regular Projects	$298,023	$159,776	$138,247	$159,776	$138,247
Initiative Projects	$16,933	$0	$16,933	$0	$16,933
Planning Projects	$23,706	$0	$23,706	$0	$23,706
Subtotal	$338,662	$159,776	$178,886	$159,776	$178,886
State Management Cost	$16,561	$0	$16,561	$0	$16,561
TOTALS	$355,223	$159,776	$195,447	$159,776	$195,447

For disasters declared on or after 11/13/2007:

HMGP Project funds = Regular Projects + Initiative Projects + Planning Projects.

State Management Cost is separate from the HMGP Project Funds.

Record of Environmental Consideration

See 44 Code of Federal Regulation Part 10.

Project Name/Number: Betts Bridge Road Culvert / HMGP-DR-1951-1R

Project Location: Latitude 43.3644 **Longitude** -73.2348

Project Description: The Town proposes to replace the existing undersized 24" culvert with an 8'x3'x32' concrete box culvert to prevent the overtopping of Betts Bridge Road.

Documentation Requirements

☐ No Documentation Required **(Review Concluded)**

☐ **(Short version)** All consultation and agreements implemented to comply with the National Historic Preservation Act, Endangered Species Act, and Executive Orders 11988, 11990 and 12898 are completed and no other laws apply. **(Review Concluded)**

☒ **(Long version)** All applicable laws and executive orders were reviewed. Additional information for compliance is attached to this REC.

National Environmental Policy Act (NEPA) Determination

☐ Statutorily excluded from NEPA review. **(Review Concluded)**
☒ Categorical Exclusion - Category xv & xvi Type Single Project
  ☒ No Extraordinary Circumstances exist.
    Are project conditions required? ☒ Yes (see section V) ☐ No **(Review Concluded)**
  ☐ Extraordinary Circumstances exist (See Section IV).
    ☐ Extraordinary Circumstances mitigated. (See Section IV comments)
      Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
    ☐ Environmental Assessment required. See FONSI for determination, conditions and approval.
☐ Environmental Assessment required. See FONSI for determination, conditions and approval.

Comments: This project has been determined to be Categorically Excluded from the need to prepare either an Environmental Impact Statement or Environmental Assessment in accordance with 44 CFR Part 10.8(d)(2)(xv & xvi). Particular attention should be given to the project conditions before and during project implementation. Failure to comply with these conditions may jeopardize federal assistance including funding.
Correspondence/Consultation/References: 44 Code of Federal Regulation: Emergency Management and Assistance, Part 10—Environmental Considerations.

Reviewer and Approvals

FEMA Environmental Reviewer.
Name: Richard H. Verville

Signature Richard H Verville. Date 11/30/11.

FEMA Regional Environmental Officer or delegated approving official.
Name: John P. Sullivan

Signature John Sullivan. Date 12/6/11.

I. Compliance Review for Environmental Laws (other than NEPA)

A. National Historic Preservation Act

☐ Not type of activity with potential to affect historic properties. **(Review Concluded)**
☒ Applicable executed Programmatic Agreement May 2011 . Otherwise, conduct standard Section 106 review.
  ☒ Activity meets Programmatic Allowance # Appendix C III Roads & Bridges B&C
    Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**

HISTORIC BUILDINGS AND STRUCTURES

☒ No historic properties 50 years or older in project area. **(Review Concluded)**
☐ Building or structure 50 years or older in project area and activity not exempt from review.
  ☐ Determination of No Historic Properties Affected (FEMA finding/SHPO/THPO concurrence on file)
    Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
  ☐ Determination of Historic Properties Affected (FEMA finding/SHPO/THPO concurrence on file)
    ☐ Property a National Historic Landmark and National Park Service was provided early notification during the consultation process. If not, explain in comments
    ☐ No Adverse Effect Determination (FEMA finding/SHPO/THPO concurrence on file).
      Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
    ☐ Adverse Effect Determination (FEMA finding/SHPO/THPO concurrence on file)
      ☐ Resolution of Adverse Effect completed. (MOA on file)
        Are project conditions required ☐ Yes (see section V) ☐ No **(Review Concluded)**

ARCHEOLOGICAL RESOURCES

☒ Project affects only previously disturbed ground. **(Review Concluded)**
☐ Project affects undisturbed ground.
  ☐ Project area has no potential for presence of archeological resources
    ☐ Determination of no historic properties affected (FEMA finding/SHPO/THPO concurrence or consultation on file). **(Review Concluded)**
  ☐ Project area has potential for presence of archeological resources
    ☐ Determination of no historic properties affected (FEMA finding/SHPO/THPO concurrence on file)
      Are project conditions required ☐ Yes (see section V) ☐ No **(Review Concluded)**
    ☐ Determination of historic properties affected
      ☐ NR eligible resources not present (FEMA finding/SHPO/THPO concurrence on file).
        Are project conditions required ☐Yes (see section V) ☐ No **(Review Concluded)**
      ☐ NR eligible resources present in project area. (FEMA finding/ SHPO/THPO concurrence on file)
        ☐ No Adverse Effect Determination. (FEMA finding/ SHPO/THPO concurrence on file)
          Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
        ☐ Adverse Effect Determination . (FEMA finding/ SHPO/THPO concurrence on file)
          ☐ Resolution of Adverse Effect completed. (MOA on file)
            Are project conditions required? ☐ Yes (see section V) ☐ No
            (Review Concluded)

Comments:
Correspondence/Consultation/References:

B. Endangered Species Act

☒ No listed species and/or designated critical habitat present in the action area. **(Review Concluded)**
☐ Listed species and/or designated critical habitat present in the action area.
- ☐ No effect to species or designated critical habitat. (See comments for justification) **(Review Concluded)**
- ☐ May affect, but not likely to adversely affect species or designated critical habitat (FEMA determination/USFWS/NMFS concurrence on file) **(Review Concluded)**
- ☐ Likely to adversely affect species or designated critical habitat
  - ☐ Formal consultation concluded. (Biological Assessment and Biological Opinion on file)
    Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: There are no listed Species or critical habitat in this project area
Correspondence/Consultation/References: http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm

C. Coastal Barrier Resources Act

☒ Project is not located in Coastal Barriers Resource System or Otherwise Protected Area.
☐ Project does not affect a coastal barrier within the COBRA System (regardless of in or out) **(Review Concluded)**
☐ Project is located in a coastal barrier system and/or affects a coastal barrier. (FEMA determination/USFWS consultation on file)
- ☐ Proposed action an exception under Section 3505.a.6? **(Review Concluded)**
- ☐ Proposed action not excepted under Section 3505.a.6.
  Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: *Correspondence/Consultation/References:*

D. Clean Water Act

☐ Project site located outside of and would not affect any waters of the U.S. **(Review Concluded)**
☒ Project site located in or would affect waters, including wetlands, of the U.S.
- ☐ Project exempted as in kind replacement or other exemption. **(Review Concluded)**
- ☒ Project may require Section 404/401/10 permit, including qualification under Nationwide Permits or Programmatic General Permit.
  Are project conditions required? ☒ YES (see section V) ☐ NO **(Review Concluded)**

Comments: The Applicant shall ensure that Best Management Practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the Clean Water Act and Executive Order 11990.

E. Coastal Zone Management Act

☒ Project does not affect a coastal zone area (regardless of in or out)- **(Review concluded)**
☐ Project is not located in a coastal zone area – **(Review concluded)**
☐ Project is located in a coastal zone area and/or affects the coastal zone
- ☐ State administering agency does not require consistency review. **(Review Concluded)**.
- ☐ State administering agency requires consistency review.
  Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:

☐ Project adversely affects Essential Fish Habitat (FEMA determination/USFWS/NMFS concurrence on file)
☐ NOAA Fisheries provided no recommendation(s) **(Review Concluded).**
☐ NOAA Fisheries provided recommendation(s)
☐ Written reply to NOAA Fisheries recommendations completed.
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

K. Wild and Scenic Rivers Act

☒ Project is not along and does not affect Wild or Scenic River - **(Review Concluded)**
☐ Project is along or affects Wild or Scenic River
☐ Project adversely affects WSR as determined by NPS/USFS. **FEMA cannot fund the action.**
(NPS/USFS/USFWS/BLM consultation on file)
☐ Project does not adversely affect WSR. (NPS/USFS/USFWS/BLM consultation on file)
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

L. Other Relevant Laws and Environmental Regulations

Identify relevant law or regulations, resolution and any consultation/references

II. Compliance Review for Executive Orders

A. E.O. 11988 - Floodplains

☒ Outside Floodplain and No Effect on Floodplains/Flood levels - **(Review Concluded)**
☐ Located in Floodplain or Effects on Floodplains/Flood levels
☐ No adverse effect on floodplain or can be adversely affected by the floodplain. **(Review Concluded).**
☐ Beneficial Effect on Floodplain Occupancy/Values **(Review Concluded).**
☐ Possible adverse effects associated with investment in floodplain, occupancy or modification of floodplain environment
☐ 8 Step Process Complete - documentation on file
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: The project is outside the flood plain
Correspondence/Consultation/References: FIRM 50021CO655D Panel # 0655D

B. E.O. 11990 - Wetlands

☐ Outside Wetland and No Effect on Wetland(s) - **(Review Concluded)**
☒ Located in Wetland or effects Wetland(s)
☒ Beneficial Effect on Wetland - **(Review Concluded)**
☐ Possible adverse effect associated with constructing in or near wetland
☐ Review completed as part of floodplain review
☐ 8 Step Process Complete - documentation on file
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: The Applicant shall ensure that Best Management Practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. This includes equipment storage and staging of construction to prevent erosion and sedimentation to ensure that wetlands are not adversely impacted per the Clean Water Act and Executive Order 11990.

C. E.O. 12898 - Environmental Justice For Low Income and Minority Populations

☒ No Low income or minority population in, near or affected by the project - **(Review Concluded)**
☐ Low income or minority population in or near project area
  ☐ No disproportionately high and adverse impact on low income or minority population- **(Review Concluded)**
  ☐ Disproportionately high or adverse effects on low income or minority population
  Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

III. Other Environmental Issues

Identify other potential environmental concerns in the comment box not clearly falling under a law or executive order (see environmental concerns scoping checklist for guidance).

Comments:
Correspondence/Consultation/References:

IV. Extraordinary Circumstances

Based on the review of compliance with other environmental laws and Executive Orders, and in consideration of other environmental factors, review the project for extraordinary circumstances.

* A "Yes" under any circumstance may require an Environmental Assessment (EA) with the exception of (ii) which should be applied in conjunction with controversy on an environmental issue. If the circumstance can be mitigated, please explain in comments. If no, leave blank.

Yes

☐ (i) Greater scope or size than normally experienced for a particular category of action
☐ (ii) Actions with a high level of public controversy
☐ (iii) Potential for degradation, even though slight, of already existing poor environmental conditions;
☐ (iv) Employment of unproven technology with potential adverse effects or actions involving unique or unknown environmental risks;
☐ (v) Presence of endangered or threatened species or their critical habitat, or archaeological, cultural, historical or other protected resources;
☐ (vi) Presence of hazardous or toxic substances at levels which exceed Federal, state or local regulations or standards requiring action or attention;
☐ (vii) Actions with the potential to affect special status areas adversely or other critical resources such as wetlands, coastal zones, wildlife refuge and wilderness areas, wild and scenic rivers, sole or principal drinking water aquifers;
☐ (viii) Potential for adverse effects on health or safety; and
☐ (ix) Potential to violate a federal, state, local or tribal law or requirement imposed for the protection of the environment.
☐ (x) Potential for significant cumulative impact when the proposed action is combined with other past, present and reasonably foreseeable future actions, even though the impacts of the proposed action may not be significant by themselves.

Comments:

V. Environmental Review Project Conditions

General comments:

1. If ground disturbing activities occur during implementation, the applicant will monitor excavation activity, and if any artifacts or human remains are found during the excavation process all work is to cease and the applicant will notify FEMA, Grantee, and SHPO/THPO.

2. The applicant must follow all applicable local, state, and federal laws, regulations, and requirements for the abatement and disposal of lead, asbestos, and other routinely encountered hazardous substances. If there is an unusual material encountered or there is an extraordinary amount of lead, asbestos, or other routinely encountered material the applicant must contact the Grantee and the Grantee must contact FEMA. The applicant must also contact the relevant agency with authority for regulation of the material.

3. If deviations from the proposed scope of work result in design changes, the need for additional ground disturbance, additional removal of vegetation, or result in any other unanticipated changes to the physical environment, the Grantee must contact FEMA, and a re-evaluation under NEPA and other applicable environmental laws will be conducted by FEMA.

Other Required Project Specific Conditions

1. The culvert must be constructed in such a way as to not inhibit the movement of aquatic organisms, particularly fish. The culvert invert must be placed approximately 6" in the streambed or an arch or bottomless structure must be used.

2. As long as the appropriate soil erosion/siltation control measures and the best management practices for roads and culverts (e.g. placing culvert inverts at or slightly below grade in the bed of the stream to accommodate fish passage, working during low flow summer periods, etc.) are utilized, harm to fish and wildlife will be minimized.

3. The applicant must seed, mulch, and replant any disturbed ground with native shrubs and vegetation. A special effort shall be made to plant native vegetation at higher bank elevations.

4. The applicant must ensure that best managing practices for roads and culverts are utilized, and installation of erosion control. Construction activities that result in disturbed ground must be protected against erosion into the stream. The Town must follow the Clean Water Act's: "Best Management Practices, BMP" for erosion control during construction of this project. This includes, the applicant applying for all local, state, and federal permits and easements necessary to complete the project and obtaining these permits prior to commencement of any work. Any conditions of these permits become conditions of this grant, project, and environmental review. In accordance with FEMA Guidelines, applicants are required to comply with the federal law provisions of: the Water Pollution Control Act, as amended; Section 10 of the Rivers and Harbors Act; and Section 404 of the Clean Water Act, requirements regarding acquisition of appropriate permits or determinations from the U.S. Army Corps of Engineers (USACE) for projects funded by FEMA. All correspondence (including copies of any permits issued by USACE) regarding these determinations should be coordinated with and copies forwarded to FEMA. The applicant must follow all applicable local, state, and federal laws, regulations, and requirements and/or obtain proper local, state, and federal permit concerning this project. Any

conditions of this process or these regulations, laws, and policies become conditions of this grant, project, and environmental review.

5. The applicant is required to obtain any applicable permits with the Vermont Department of Environmental Protection and the U.S. Army Corps of Engineers prior to construction if this project will impact wetlands. All conditions of any permit acquired become conditions of this grant, and a copy of such permit(s) should be forwarded to FEMA.

6. Applicant must obtain floodplain permit or approval from the local floodplain administrator before work begins.

Monitoring Requirements:

Quarterly Reports and final inspection of scope of work, accounting records and copies of any easements and permits are required.

Vermont Emergency Management
Department of Public Safety
103 South Main Street
Waterbury, Vermont 05671-2101
www.dps.state.vt.us/vem

[toll-free] 800-347-0488
[phone] 802-244-8721
[TTY] 888-545-7598
[fax] 802-241-5556

October 13, 2011

Ms. Deb Hawkins, Town Administrator
Town of Pawlet
P.O. Box 128
Pawlet, VT 05761

Dear Ms. Hawkins,

The State Mitigation Project Selection Subcommittee met recently to review grant applications for FEMA's Hazard Mitigation Grant Program (HMGP) in connection with disaster DR 1951. I am pleased to inform you that the proposal for the Betts Bridge Road culvert upgrade project has been selected and was forwarded to FEMA for their review and approval.

The next step in the process entails a full FEMA review of the technical aspects of the proposal as well as an environmental review. Once FEMA has concluded its final review and approval, the project must be submitted to the state's Joint Fiscal Office in Montpelier for additional state review and concurrence. Once we receive the final FEMA and state approvals for the project, the town will be issued a sub-grant agreement and then work may proceed on the project. No work should begin on the project before the town has received all the final approvals from FEMA and the state's Joint Fiscal Office. Also, all necessary state and federal permits must be in place before work can commence on the project.

Feel free to contact me at your convenience if you have any questions or concerns regarding the HMGP grant process.

Sincerely,

Ray Doherty, State Hazard Mitigation Officer
Vermont Emergency Management
103 South Main Street
Waterbury, VT 05671
Tel (802) 241-5258
Email rdoherty@dps.state.vt.us

State of Vermont

Hazard Mitigation Grant Program

Project Application

	FEMA- DR- 1951 VT	**Date Submitted:**	October 3, 2011

Part 1: Applicant Information

Applicant Name: *(Eligible Applicant i.e. local government, state agency, non-profit)*	**Town of Pawlet**
County:	Rutland County, Vermont
Name of Local Hazard Mitigation Plan: *(County or Town)*	Rutland Region All-Hazards Mitigation Plan & Annex O
Date of FEMA approval of Local Plan:	Pending

Primary Contact Information

Name:	Clarence Decker		
Title:	Selectboard Member and Board Liaison for Highways		
Organization:	Town of Pawlet		
Mailing Address:	PO Box 128, Pawlet, VT 05761		
Work Phone Number:	(802) 325-3309	**Alternate Phone Number:**	(802) 325-3121 (home)
Fax Number	(802) 325-6109	**Email:**	pawletclerk@vermontel.net

Secondary Contact Information

Name:	Deb Hawkins		
Title:	Town Clerk		
Organization:	Town of Pawlet		
Mailing Address:	PO Box 128, Pawlet, VT 05761		
Work Phone Number:	(802) 325-3309	**Alternate Phone Number:**	
Fax Number	(802) 325-6109	**Email:**	pawletclerk@vermontel.net

Part 2: Problem Description

Location of Project:	Latitude:	43.3644	Longitude:	-73.2348	*(in decimals)*
Identify adjacent roads/streets and bodies of water:	Betts Bridge Road Crossing of Unnamed Tributary to Mettawee River				

Required Maps:	☑	**Local General Highway Map *(attached)***
	☑	**Flood Insurance Rate Map with panel number *(attached)***
	☑	**Topographic Map *(attached)***

Problem Statement: *(What's Happening?)*

This project will replace a 2-foot culvert that is not large enough to accept the water discharge that is required during spring snow melts and during flash flooding. The water overflows on this Class III road that serves several residents, businesses, and agricultural operations. When flooded, the road is impassable for response for fire and rescue vehicles, forcing responders to detour up to 6 miles.

Supporting Documentation: *(Attach)*	☑	**Photos**
	☐	**Engineering Studies**
	☐	**Site Diagrams**

Part 2: Problem Description

continued

Statement of Damages				
Date	**Event**	**Description of Direct Damages**	**Description of Indirect Damages**	**Cost of Damage**
Annual Spring Flooding 2002-2011	Flooding	Water overtopping roadway and causing surface and sub-surface damage	Closure of road for 2 days to allow repair; requires detour of up to 6 miles for residents and visitors	$6000 repair costs + emergency measures + detour costs
			Annual Damage	$6,976
			Total Damage	$69,760

Part 3:	**Project Objective**
Project Objective	The project objective is to reduce the impact of high water events on Betts Bridge Road. The result will reduce regular repair costs, reduce the need to close the road, and reduce required travel distances for residents, visitors, and emergency vehicles.

Part 4:	**Analysis of Alternative Solutions**	
Alternative Solutions		
Alternative Solution	**Brief Title**	**Description of Alternative**
1	Concrete Box Culvert (chosen)	This alternative uses a pre-cast concrete box culvert that is 8 ft x 3 ft x 32 ft to reduce the impact of high water events on Betts Bridge Road.
2	Corrugated aluminum culvert	This alternative uses a corrugated metal culvert to address high water flows.
3	**No Action**	**No Action**

Supporting Documentation: *(Attach)*		
	☑ Yes	**Did any of the alternatives have significant impacts or limitations?**
	☐ Yes	**If Yes, provide additional information concerning these impacts Is the information attached?**
	☑ Yes	**Hydrology/ hydraulics reports, if applicable**
	☐	**Supporting documentation for the alternatives (i.e. drawings, designs, pictures)** ***(Attached)***

Preferred Alternative	
Chosen Alternative:	Alternative 1 - Concrete Box Culvert
Justification:	This project matches the recommendation provided in the Hydraulics Report completed by the Agency of Transportation, which also reports "very little height from the stream bed to the road," requiring replacement with a wide, low structure. In addition, the concrete box culvert will have a longer lifespan than metal culvert alternatives.

Part 5:	Project Description
Project Description	This project will install a pre-cast concrete box culvert that is 8 feet wide by 3 feet high by 32 feet long to reduce the impact of high water events on Betts Bridge Road.
Expected Life of Project	FEMA Expected Life is 30 years. Anecdotal evidence suggests culvert will last far longer, likely between 50-75 years.
Supporting Documentation: *(Attach)*	☐ **Photos** ☑ **Stamped Engineering Studies will be provided by contractor, as noted** ☑ **Site Diagrams**

Project Costs for Preferred Alternative

Item	Unit Qty.	Unit Measurement	Unit Cost	Cost Estimate
Please consult detailed estimate attached.				
Equipment Rental				$25,200.00
Gravel				$3,059.20
Other (grout, membrane, and erosion measures)				$1,350.00
Pre-cast box culvert				$33,440.00
Labor				$5,526.00
		Total Project Cost Estimate		$68,575.20

Summary of Project Costs

A	**Total Project Costs**	**$68,575.20**
B	**FEMA Share (75% of Line A)**	$51,431.40
C	**Local Share (25% of Line A)** Note: The sum of lines 1-3 must equal Line C	$17,143.80
	1. Cash	$1,000.00
	2. In-Kind Service	$16,000.00
	3. Other	$143.80
D	**Total Local Share** (Equal to Line C)	$17,143.80
E	**Total Project Costs** (Line B + Line D) Note: Line A and D are equal	**$68,575.20**

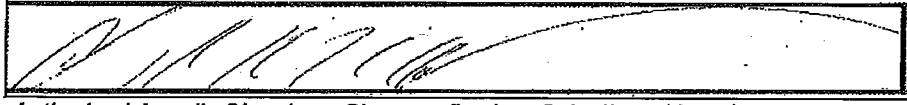
Identify source of local non-federal match:	Local funds, in-kind service, and other materials will be provided by the Town of Pawlet and town officials.

Part 6:	Benefit/Cost Analysis		
Estimated Project Cost	$68,575	Future Maintenance costs for life of project	$2,482
Total Cost = Project Cost + Future Maintenance		**Total Cost**	$71,057
Benefit/Cost Ratio = Anticipated Loss or Benefit /Total Cost		**Benefit/Cost Ratio**	1.21

Only those projects with a benefit-cost ratio of 1.0 or greater will be considered; please attach a separate benefit cost analysis (BCA). Planning applications do not require a BCA.

Part 7:	Scope of Work
Task Description	**Days to Complete**
Set-up site	0.5
Remove existing culvert	1
Excavate for new culvert	1
Install new box culvert	1
Grade road	0.5

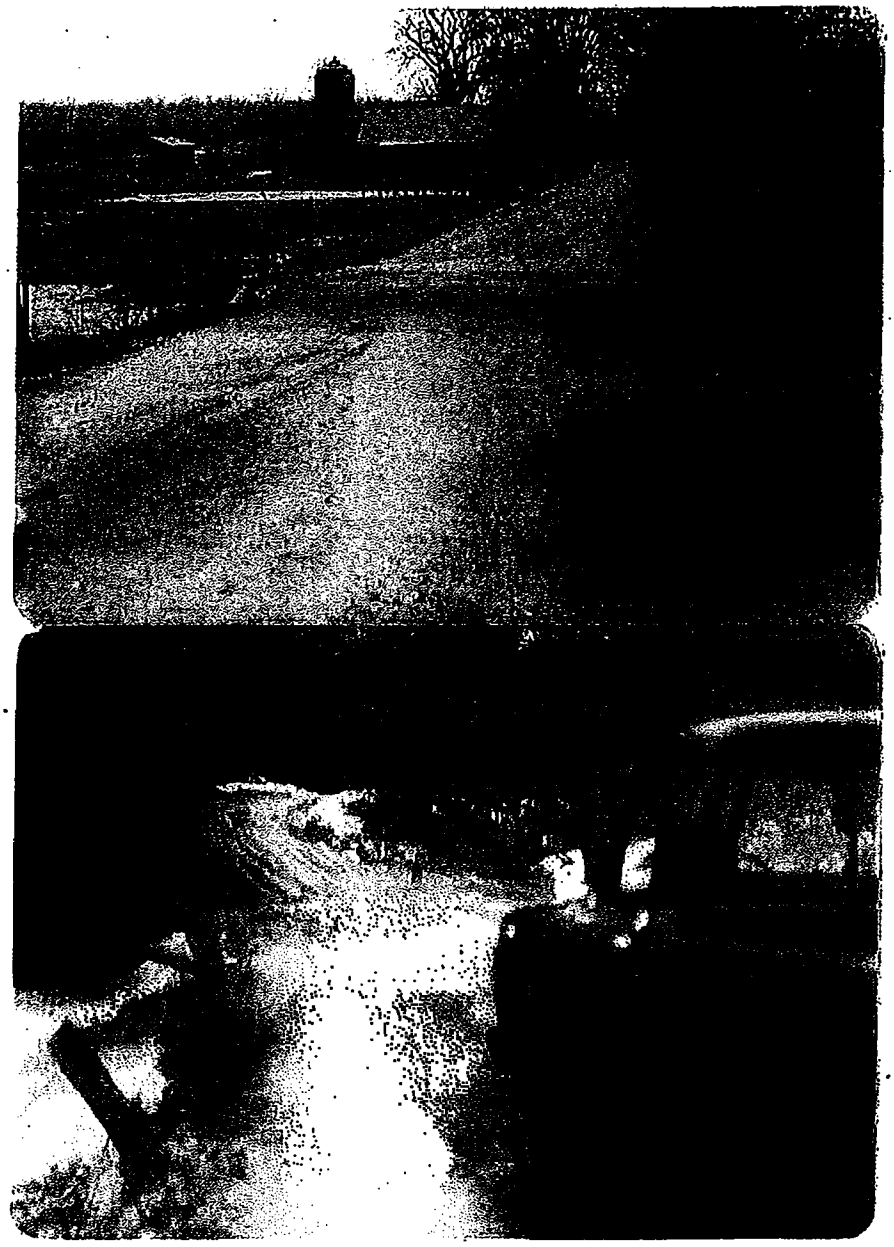
Part 8:	Technical Confirmation	
Supporting Documentation: *(Attach)*	☑	**Has the hydrology/hydraulics/structural design of this project been endorsed by the local Vtrans District Engineer, ANR Stream Alteration Engineer, consulting engineer or other technical expert?**
	☑	**Supporting letter(s) *(attached)***

Part 9:	Authorized Signature
I certify that I am the authorized agent for the applicant and have responsibility for the development and completion of this application and all the information contained herein is true and accurate.	
	Sept. 19, 2011
Authorized Agent's Signature: Clarence Decker, Selectboard Member	*Date*

Red marker indicates project location

FIRM 50021CO655D Panel 0655D

Town of Pawlet
HMGP Application
October 3, 2011



Precast Concrete Products Inc. 78 Precast Rd, Milton, VT 05468 802-893-2401 Fax: 802-893-1542

BUDGET COST

TO: Town of Pawlet
Deck

PHONE: 325-3309
FAX: 325-6109
JOB NAME: TH#16 (Betts Bridge Rd.)
Pawlet, VT

DATE: 2/3/11

Precast Reinforced Box Culvert

8'-0" Span x 3'-0" Rise x 32'-0" Long Precast Reinforced Concrete Box Culvert
Includes: AASHTO HS-20 Load rating assuming a minimum of 0'-2' earth cover. Waterpassing area of culvert will be based on a 24' Square feet.

Precast Reinforced Box Culvert Section's will consist of the following:

(5) 6'-4" Long Precast sections that weight approximately (10 +-) tons each.
Inlet box section will have a 18" high header affixed
Outlet Box section will have a 24" high header affixed

(2) Precast Reinforced concrete cutoff walls that measure 18" wide x 28" high x 9'-4" long.

(2) 6'-0" long reinforced concrete tapered wing-walls on inlet end of culvert will be fabricated with 12" thick x 4'-0" wide cantilever footings.

(2) 6'-0" long reinforced concrete wing-walls on outlet end of culvert will be fabricated with a 12" thick x 4'-0" wide cantilever footings.

(4) 6'-0" Long Separate Wingwall Footings that measure 36" Wide x 24" High will be supplied.

→ Camp Precast will supply stamped engineered working drawings and design computations for engineer's approval.

Total Cost $29,870.00

Note: Price includes delivery of box culverts and related sections to Pawlet on flatbed trailers only.
Crane Service for unloading & setting & grouting will be provided by Camp Precash.

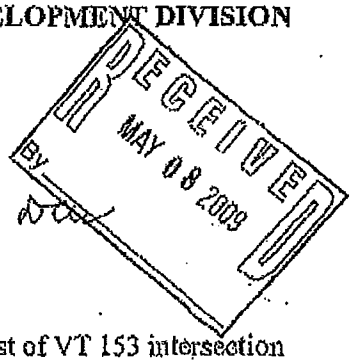
Exclusions: All guardrail posts and all related items for guardrail connections, U-Bolts for guardrail connections if required, sheet membrane waterproofing if required, compaction, all site excavation, backfill, de-watering if necessary, are all excluded and therefore are to be provided by others!

ESTIMATED: Mark Pfenning

This estimate is for completing the job as described above. It is based on our evaluation and does not include material price increases or additional labor and materials which may be required should unforeseen problems or adverse weather conditions arise after the work has started. The price of a pumpstation does not include any electrical wiring. All prices are plus sales tax and F.O.B. jobsite unless otherwise stated. Prices of tanks and pumpstations are set in a properly prepared hole at our discretion unless otherwise stated. Any item not specifically mentioned in this quote is not included and was not intended to be included. Quote Valid for 30 days.

VT AGENCY OF TRANSPORTATION PROGRAM DEVELOPMENT DIVISION

HYDRAULICS UNIT



TO: Marge Skinner, District 1 Technician

FROM: David Willey, Hydraulics Project Engineering Supervisor

DATE: May 6, 2009

SUBJECT: Pawlet TH 16 (Betts Bridge Road), site about 600' southeast of VT 153 intersection

---

We have completed our preliminary hydraulic study for the above referenced site, and offer the following information for your use:

Hydrology

This site has a hilly drainage basin. It is a mixture of forested and open areas with some wetlands. The total contributing drainage area is about 0.7 sq. mi. There is an overall length of 7920 feet from the divide to the site, with a 720-foot drop in elevation, giving an average overall channel slope of 9.1%. The stream slope at the site was estimated to be about 0.5%. Using several hydrologic methods, we came up with the following design flow rates:

Recurrence Interval in Years	Flow Rate in Cubic Feet per Second (CFS)
Q2.33	40
Q10	80
Q25	100 - Town Highway Design Flow
Q50	120
Q100	140 - Check flow

Existing Conditions

The existing structure is a 30" corrugated metal pipe, providing a waterway opening of 4.9 sq. ft. There is a scour pool at the outlet.

Our calculations show the existing pipe is not adequate hydraulically. Water overtops to road below the design Q25, and headwater to depth ratios exceed the allowable values.

Recommendations

In sizing a new structure we attempted to select structures that met the hydraulic standards, fit the natural channel width, the roadway grade and other site conditions. There is very little height from the stream bed to the road, so replacement options are limited to wide, low structures. We recommend any of the following structures as a replacement at this site:

1. A concrete box with an 8' wide by 3' high inside opening, providing 24-sq. ft. of waterway area. This structure will result in a headwater depth at Q25 = 2.9' and at Q100 = 3.7', with no roadway overtopping at Q100.

2. Any similar structure with a minimum clear span of 6' and at least 24-sq. ft. of waterway area, that fits the site conditions, could be considered.

General comments

If a new box is installed, we recommend it have full headwalls at the inlet and outlet. The headwalls should extend at least four feet below the channel bottom, or to ledge, to act as cutoff walls and prevent undermining.

It is always desirable for a new structure of this size to have flared wingwalls at the inlet and outlet, to smoothly transition flow through the structure, and to protect the structure and roadway approaches from erosion. The wingwalls should match into the channel banks. Any new structure should be properly aligned with the channel, and constructed on a grade that matches the channel.

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.

The Agency of Natural Resources (ANR), Corps of Engineers, or other permitting agency may have additional concerns regarding replacement of this structure, or any channel work. The Stream Alteration Engineer should be contacted with respect to those concerns, before a replacement culvert is ordered. If ANR requires the invert of the box to be buried to provide a natural bottom, the size of the structure will have to be larger to provide the required waterway area.

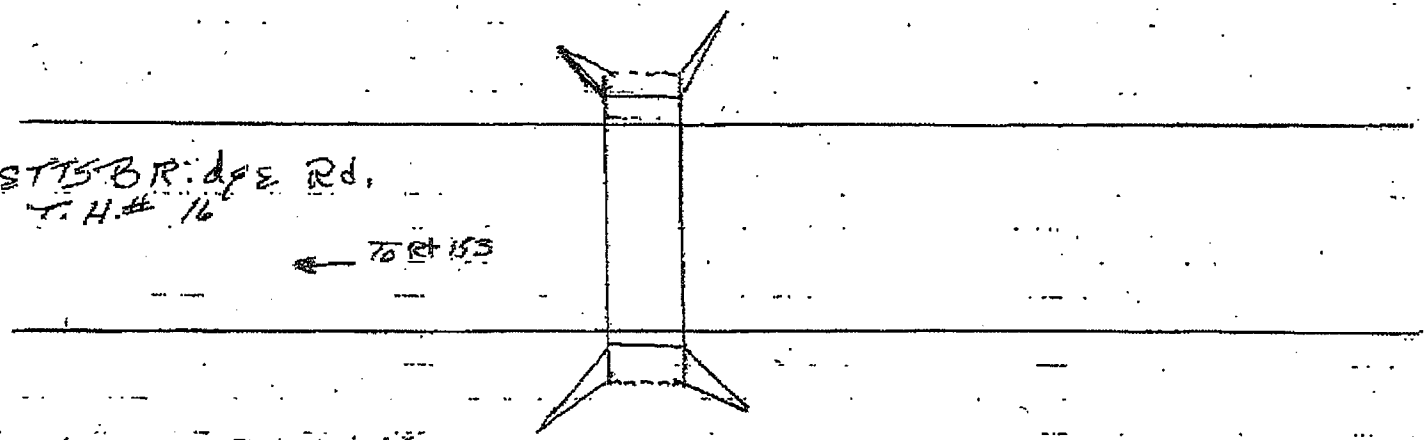
Please keep in mind that while a site visit was made, these recommendations were made without the benefit of a survey and are based on limited information. The final decision regarding the replacement of this structure should take into consideration matching the natural channel conditions, the roadway grade, environmental concerns, safety, and other requirements of the site.

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

DCW

cc: Chris Brunelle, A.N.R. Stream Alteration Engineer
Hydraulics Project File via NJW
Hydraulics Chrono File

TOWN of PAWLET

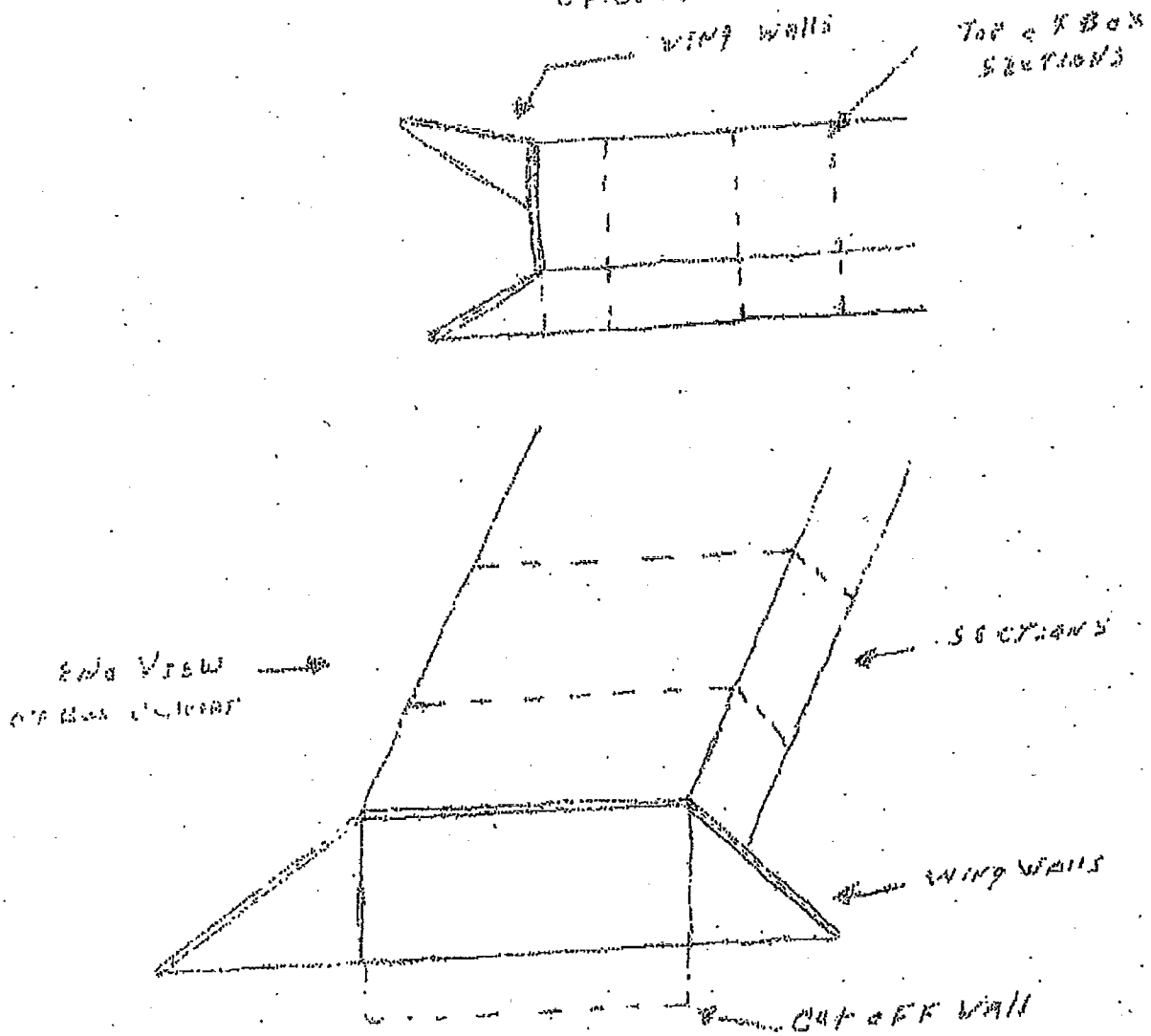


8' x 3' CONCRETE BOX CULVERT
24 sq mi WATERSHED AREA
Q25 = 2.9
Q100 = 3.7

TO REPLACE 30" METAL PIPE

TOWN OF PAWLET

PRECAST REINFORCED BOX CULVERT
NO SCALE



ANR-DEC-WQD-RIVER MANAGEMENT PROGRAM FIELD FORM

DATE: 05/21/09 TOWN: PAWLET RIVER/STREAM: VARIES ALL UNNAMED

PROJECT LOCATION: VARIES

Project Description
Bridge:_____ Culvert:_____ Bank stabilization:_____ Utility crossing:_____ Other: X MAINTENANCE/REHABILITATION OF EXISTING STRUCTURES

Property Owner:
NAME: TOWN OF PAWLET
ADDRESS: CLARENCE DECKER, SELECTMAN 128 SCHOOL ST
PAWLET 05761
PHONE#: 325-3121 x303/x301

Contractor:
NAME:
ADDRESS: UNKNOWN
PHONE#:

Conditions:
1.) All in-stream work shall be restricted to the period from 7/15 to 10/1. Construction in or adjacent to flowing water outside the working dates must be isolated from stream flow and must receive prior approval.
2.) Strictly limit extent of any riverbank disturbance. Maintain all established vegetation possible.
3.) Any stone fill use is only to stabilize the banks according to the field sketch, no new encroachment is permitted.
4.) Erosion and sediment control measures shall be employed to maintain water quality.
5.) All construction equipment shall be clean and well maintained, free of fuel, hydraulic and gear oil leaks.
6.) This form does not relieve you of the responsibility of obtaining permission from the affected property owners, nor the responsibility of obtaining other necessary local, state, or federal permits..
7.) This authorization expires on 12/31/12.
8.) CULVERT INVERT SHALL MATCH STREAM SLOPE AND BE EMBEDDED
9.) PROJECT SHALL COMPLY WITH HYDRAULIC STUDIES PERFORMED BY VTRANS AND AS LISTED BELOW:

Field sketch: 005

- PAWLET TH 12 (FARMER ROAD), DATED 4/6/09
- PAWLET VT 153, DATED 11/12/08
- PAWLET TH 16 (BETTS BRIDGE ROAD), DATED 5/6/09
- PAWLET TH 6 (BULL FROG HOLLOW ROAD), DATED 5/6/09

CHRIS BRUNELLE, STREAM ALTERATION ENGINEER

Signature: Chris Brunelle
River Management Field Engineer
777-5328

Field Form # N/A

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Project Summary:

Project Number: Disaster #: DR-1951-VT

Program: HMGP Agency: Town of Pawlet

Analyst: Philip Picotte

Point of Contact: Clarence Decker Phone Number: 802-325-3121

Address: PO Box 128, Pawlet, Vermont, 05761

Email:

Comments:

Structure Summary For:

Betts Bridge Road (TH 16), Town of Pawlet, PO Box 128, Pawlet, Vermont, 05761, Rutland

Structure Type: Other Historic Building: No Contact: Clarence Decker

Benefits: $85,783 Costs: $71,057 BCR: 1.21

Mitigation	Hazard	BCR	Benefits	Costs
Drainage Improvement	Damage-Frequency Assessment	1.21	$85,783	$71,057

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Structure and Mitigation Details For: Betts Bridge Road (TH 16), Town of Pawlet, PO Box 128, Pawlet, Vermont, 05761, Rutland

Benefits: $85,783 Costs: $71,057 BCR: 1.21

Hazard: **Damage-Frequency Assessment - Flood**

Mitigation Option: Drainage Improvement

Latitude: Longitude: Project Useful Life: 30

Mitigation Information

Basis of Damages: Historical Damages

Number of Estimated Damage Events: 10

Number of Events with Know Recurrence Intervals: 0

Roads And Bridges

Estimated Number of One-Way Traffic Trips Per Day: 75

Additional Time per One-Way Trip: 00:20

Number of Additional Miles: 6.0

Federal Rate: 0.555

Economic Loss Per Day of Loss of Function: $1,204

Facility Description:

Betts Bridge Road (TH 16)

Historic Damages Before and After Mitigation

Analysis Year: 2011 Analysis Duration: 32 Utilities ($/day):

Year Built: 1980 User Input Analysis Duration: 10 Buildings ($/day):

Roads/Bridges ($/day): $1,203.50

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Damages Before Mitigation

Damage Year: 2011
RI:
Are Damages In Current Dollars? Yes
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$8,607

Damage Year: 2010
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$8,740

Damage Year: 2009
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$8,872

Damages After Mitigation

RI: 200.00
Are Damages In Current Dollars? Yes
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$10,000
Total	$12,607

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Damage Year: 2008
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$9,009

Damage Year: 2007
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$9,300

Damage Year: 2006
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$9,476

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Damage Year: 2005
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$9,895

Damage Year: 2004
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$10,244

Damage Year: 2003
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$10,736

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Damage Year: 2002
RI:
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days): 2.0

Emergency Measures ($)	$200
Repair Costs ($)	$6,000
Total	$8,607
Total Inflated	$10,935

Summary Of Benefits

Expected Annual Damages Before Mitigation		Expected Annual Damages After Mitigation		Expected Avoided Damages After Mitigation (Benefits)	
Annual:	$6,976	Annual:	$63	Annual:	$6,913
Present Value:	$86,565	Present Value:	$782	Present Value:	$85,783

Mitigation Benefits: $85,783 Mitigation Costs: $71,057

Benefits Minus Costs: $14,726 Benefit-Cost Ratio: 1.21

Cost Estimate

Project Useful Life (years):	30	Construction Type:	
Mitigation Project Cost:	$68,575	Detailed Scope of Work:	Yes
Annual Project Maintenance Cost:	$200	Detailed Estimate for Entire Project:	Yes
Final Mitigation Project Cost:	$71,057	Years of Maintenance:	30
Cost Basis Year:		Present Worth of Annual Maintenance Costs:	$2,482
Construction Start Year:		Estimate Reflects Current Prices:	Yes
Construction End Year:		Project Escalation:	

Total Benefits: **$85,783** Total Costs: **$71,057** BCR: **1.21**

Project Number: Disaster #: DR-1951-VT Program: HMGP Agency: **Town of Pawlet**

State: **Vermont** Point of Contact: Clarence Decker Analyst: Philip Picotte

Justification/Attachments

Field	Description	Attachments
Additional Time per One-Way Trip	Based on condition of roads	
Annual Project Maintenance Cost	Minimal maintenance required. Based on figure provided by FEMA DAE Richard Downer Ph.D., P.E.	
Estimated Number of One-Way Traffic Trips Per Day	Estimate based on residences and businesses on road	
Federal Rate	IRS mileage rate for July - December 2011.	
Historic damages before mitigation	Historic damage information is based on demonstrated damage occurring from every spring melt and major rainstorms.	
Mitigation Project Cost	Based on itemized contractor estimates.	
Number of Additional Miles	Based on access from other end of road	
Project useful life	The new concrete culvert has an expected life of 30 years per FEMA Default Useful Life.	
Unknown Frequency - Damages after Mitigation	The mitigation action will eliminate regular damage and is sized to meet a 100-year event per VTrans hydraulics report.	
User Input Analysis Duration	Based on recent history.	
Year Built	Based on age of culvert	

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANTS PROGRAM
Obligation Report w/ Signatures

Disaster No	FEMA Project No	Amendment No	State Application ID	Action No	Supplemental No	State	Grantee
1951	2-R	0	2	1	0	VT	Statewide

Subgrantee: Waitsfield (Town of)
Subgrantee FIPS Code: 023-75325

Project Title : Waitsfield - Bank Stabilization Project

Total Amount Previously Allocated	Total Amount Previously Obligated	Total Amount Pending Obligation	Total Amount Available for New Obligation
$108,345	$108,345	$0	$0

Project Amount	Grantee Admin Est	Subgrantee Admin Est	Total Obligation	IFMIS Date	IFMIS Status	FY
$108,345	$0	$0	$108,345	01/30/2012	Accept	2012

Comments

Date: 01/30/2012 User Id: RVERVIL1

Comment: Obligation of $108,345 is approved by MA

Date: 01/30/2012 User Id: SLEYDON

Comment: Obligation of $108,345 is approved by HMO

Authorization

Preparer Name: RICHARD VERVILLE Preparation Date: 01/30/2012

HMO Authorization Name: STEPHANIE LEYDON HMO Authorization Date: 01/30/2012

Authorizing Official Signature	Authorizing Official Title	Authorization Date
	RA Branch Chief	1/30/12

Authorizing Official Signature	Authorizing Official Title	Authorization Date

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANT PROGRAM
Funding Estimate Financial Activity Report

Disaster Number: 1951 State: VT Region: 1 Declaration Date: 12/22/2010 Grantee : Statewide

	Projected A	Total Allocated in NEMIS B	Available C (A - B)	Total Obligated in NEMIS D	Available E (A - D)
HMGP Project Funds	$338,662	$108,345	$230,317	$108,345	$230,317
Regular Projects	$298,023	$108,345	$189,678	$108,345	$189,678
Initiative Projects	$16,933	$0	$16,933	$0	$16,933
Planning Projects	$23,706	$0	$23,706	$0	$23,706
Subtotal	**$338,662**	**$108,345**	**$230,317**	**$108,345**	**$230,317**
State Management Cost	$16,561	$0	$16,561	$0	$16,561
TOTALS	**$355,223**	**$108,345**	**$246,878**	**$108,345**	**$246,878**

For disasters declared on or after 11/13/2007:

HMGP Project funds = Regular Projects + Initiative Projects + Planning Projects.

State Management Cost is separate from the HMGP Project Funds.

FEDERAL EMERGENCY MANAGEMENT AGENCY
HAZARD MITIGATION GRANT PROGRAM
Project Management Report

Disaster Number	FEMA Project Number	Amendment Number	App ID	State	Grantee
1951	2-R	0	2	VT	Statewide

Subgrantee: Waitsfield (Town of)
FIPS Code: 023-75325
Project Title : Waitsfield - Bank Stabilization Project

Mitigation Project Description

Amendment Status : Approved
Approval Status: Approved

Project Title : Waitsfield - Bank Stabilization Project

Grantee : Statewide
Subgrantee : Waitsfield (Town of)

Grantee County Name : Washington
Subgrantee County Name : Washington

Grantee County Code : 23
Subgrantee County Code : 23

Grantee Place Name : Waitsfield (Town of)
Subgrantee Place Name : Waitsfield (Town of)

Grantee Place Code : 0
Subgrantee Place Code : 75325

Project Closeout Date : 00/00/0000

Work Schedule Status

Amend #	Description	Time Frame	Due Date	Revised Date	Completion Date
0	Contractor Procurement	1 Month	00/00/0000	00/00/0000	00/00/0000
0	Survey and design	3 Months	00/00/0000	00/00/0000	00/00/0000
0	Permitting	2 Months	00/00/0000	00/00/0000	00/00/0000
0	Construction Documents	1 Month	00/00/0000	00/00/0000	00/00/0000
0	Bidding	1 Month	00/00/0000	00/00/0000	00/00/0000
0	Construction and buffer plantings	2 Months	00/00/0000	00/00/0000	00/00/0000

Approved Amounts

Total Approved Net Eligible	Federal Share Percent	Total Approved Federal Share Amount	Non-Federal Share Percent	Total Approved Non-Fed Share Amount
$144,460	75.000000000	$108,345	25.00000000	$36,115

Allocations

Allocation Number	IFMIS Status	IFMIS Date	Submission Date	FY	ES Support Req ID	ES Amend Number	Proj Alloc Amount Fed Share	Grantee Admin Amount	Subgrantee Admin Amount	Total Alloc Amount
1	A	01/27/2012	01/25/2012	2012	2154660	0	$108,345	$0	$0	$108,345
						Total	$108,345	$0	$0	$108,345

Obligations

Action Nr	IFMIS Status	IFMIS Date	Submission Date	FY	ES Support Req ID	ES Amend Number	Suppl Nr	Project Obligated Amt - Fed Share	Grantee Admin Amount	Subgrantee Admin Amount	Total Obligated Amount
1	A	01/30/2012	01/30/2012	2012	2156800	0	0	$108,345	$0	$0	$108,345
							Total	$108,345	$0	$0	$108,345

Record of Environmental Consideration

See 44 Code of Federal Regulation Part 10.

Project Name/Number: DR-1951 – VT Flood Hazard Mitigation Project – Bank Stabilization

Project Location: N 44.188889, W 72.8125 West Bank of the Mad River, Downtown Waitsfield, upstream of historic covered bridge

Project Description: Stabilize approximately 425 linear feet of the Mad River just upstream of an historic covered bridge by installing a bulk toe rock revetment, rip-rap and vegetated buffer along the actively eroding channel. Project will protect abutment of historic bridge as well as other buildings in the downtown historic district.

Documentation Requirements

☐ No Documentation Required **(Review Concluded)**

☐ **(Short version)** All consultation and agreements implemented to comply with the National Historic Preservation Act, Endangered Species Act, and Executive Orders 11988, 11990 and 12898 are completed and no other laws apply. **(Review Concluded)**

☒ **(Long version)** All applicable laws and executive orders were reviewed. Additional information for compliance is attached to this REC.

National Environmental Policy Act (NEPA) Determination

☐ Statutorily excluded from NEPA review. **(Review Concluded)**
☒ Categorical Exclusion - Category **xvi** Type Single Project
  ☒ No Extraordinary Circumstances exist.
    Are project conditions required? ☒ Yes (see section V) ☐ No **(Review Concluded)**
  ☐ Extraordinary Circumstances exist (See Section IV).
    ☐ Extraordinary Circumstances mitigated. (See Section IV comments)
      Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
    ☐ Environmental Assessment required. See FONSI for determination, conditions and approval.
☐ Environmental Assessment required. See FONSI for determination, conditions and approval.

Comments: This project has been determined to be Categorically Excluded from the need to prepare either an Environmental Impact Statement or Environmental Assessment in accordance with 44 CFR Part 10.8(d)(2)(xv & xvi). Particular attention should be given to the project conditions before and during project implementation. Failure to comply with these conditions may jeopardize federal assistance including funding.

Reviewer and Approvals

FEMA Environmental Reviewer.
Name: Richard H. Verville

Signature_____. Date _____.

FEMA Regional Environmental Officer or delegated approving official.
Name: John P. Sullivan

Signature_____. Date _____.

I. Compliance Review for Environmental Laws (other than NEPA)

A. National Historic Preservation Act

☐ Not type of activity with potential to affect historic properties. **(Review Concluded)**
☒ Applicable executed Programmatic Agreement . 7/2011 Otherwise, conduct standard Section 106 review.
☐ Activity meets Programmatic Allowance # Appendix C III B & E
Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**

HISTORIC BUILDINGS AND STRUCTURES

☐ No historic properties 50 years or older in project area. **(Review Concluded)**
☒ Building or structure 50 years or older in project area and activity not exempt from review.
☒ Determination of No Historic Properties Affected (FEMA finding/SHPO/THPO concurrence on file)
Are project conditions required? ☒ Yes (see section V) ☐ No **(Review Concluded)**
☐ Determination of Historic Properties Affected (FEMA finding/SHPO/THPO concurrence on file)
☐ Property a National Historic Landmark and National Park Service was provided early notification during the consultation process. If not, explain in comments
☐ No Adverse Effect Determination (FEMA finding/SHPO/THPO concurrence on file).
Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
☐ Adverse Effect Determination (FEMA finding/SHPO/THPO concurrence on file)
☐ Resolution of Adverse Effect completed. (MOA on file)
Are project conditions required ☐ Yes (see section V) ☐ No **(Review Concluded)**

ARCHEOLOGICAL RESOURCES

☐ Project affects only previously disturbed ground. **(Review Concluded)**
☒ Project affects undisturbed ground.
☐ Project area has no potential for presence of archeological resources
☐ Determination of no historic properties affected (FEMA finding/SHPO/THPO concurrence or consultation on file). **(Review Concluded)**
☒ Project area has potential for presence of archeological resources
☒ Determination of no historic properties affected (FEMA finding/SHPO/THPO concurrence on file)
Are project conditions required ☒ Yes (see section V) ☐ No **(Review Concluded)**
☐ Determination of historic properties affected
☐ NR eligible resources not present (FEMA finding/SHPO/THPO concurrence on file).
Are project conditions required ☐ Yes (see section V) ☐ No **(Review Concluded)**
☐ NR eligible resources present in project area. (FEMA finding/ SHPO/THPO concurrence on file)
☐ No Adverse Effect Determination. (FEMA finding/ SHPO/THPO concurrence on file)
Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**
☐ Adverse Effect Determination . (FEMA finding/ SHPO/THPO concurrence on file)
☐ Resolution of Adverse Effect completed. (MOA on file)
Are project conditions required? ☐ Yes (see section V) ☐ No
(Review Concluded)

Comments: Refer to section V for conditions outlined by the Vermont Division for Historic Preservation in their letter dated January 23, 2012
Correspondence/Consultation/References:

B. Endangered Species Act

☒ No listed species and/or designated critical habitat present in the action area. **(Review Concluded)**
☐ Listed species and/or designated critical habitat present in the action area.
- ☐ No effect to species or designated critical habitat. (See comments for justification) **(Review Concluded)**
- ☐ May affect, but not likely to adversely affect species or designated critical habitat (FEMA determination/USFWS/NMFS concurrence on file) **(Review Concluded)**
- ☐ Likely to adversely affect species or designated critical habitat
  - ☐ Formal consultation concluded. (Biological Assessment and Biological Opinion on file)
    Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: No Impacts to Listed Species or Habitat based on a review using VT Agency of Natural Resources Natural Resources Atlas, accessed 12.12.2011
Correspondence/Consultation/References: http://maps.vermont.gov/imf/imf.jsp?site=ANR_NATRESViewer

C. Coastal Barrier Resources Act

☒ Project is not located in Coastal Barriers Resource System or Otherwise Protected Area.
☐ Project does not affect a coastal barrier within the COBRA System (regardless of in or out) **(Review Concluded)**
☐ Project is located in a coastal barrier system and/or affects a coastal barrier. (FEMA determination/USFWS consultation on file)
- ☐ Proposed action an exception under Section 3505.a.6? **(Review Concluded)**
- ☐ Proposed action not excepted under Section 3505.a.6.
  Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

D. Clean Water Act

☐ Project site located outside of and would not affect any waters of the U.S. **(Review Concluded)**
☒ Project site located in or would affect waters, including wetlands, of the U.S.
- ☐ Project exempted as in kind replacement or other exemption. **(Review Concluded)**
- ☒ Project may require Section 404/401/10 permit, including qualification under Nationwide Permits or Programmatic General Permit.
  Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: The Applicant is responsible for obtaining all required federal, state and local permits including Section 404 permit from the US Army Corps of Engineers. The applicant should contact Michael Adams, Vermont Field Office, USACE (802-872-2893) to determine if the undertaking is exempt or qualifies under the USACE Programmatic General Permit for Vermont (effective until 12/05/2012)
Correspondence/Consultation/References:

E. Coastal Zone Management Act

☒ Project does not affect a coastal zone area (regardless of in or out)- **(Review concluded)**
☐ Project is not located in a coastal zone area – **(Review concluded)**
☐ Project is located in a coastal zone area and/or affects the coastal zone
- ☐ State administering agency does not require consistency review. **(Review Concluded)**.
- ☐ State administering agency requires consistency review.
  Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

F. Fish and Wildlife Coordination Act

☒ Project is not located in or affects a waterway/body of water. **(Review Concluded)**
☐ Project affects, controls or modifies a waterway/body of water.
☐ Coordination with USFWS conducted
☐ No Recommendations offered by USFWS. **(Review Concluded)**
☐ Recommendations provided by USFWS.
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

G. Clean Air Act

☒ Project will not result in permanent air emissions. **(Review Concluded)**
☐ Project is located in an attainment area. **(Review Concluded)**
☐ Project is located in a non-attainment area.
☐ Coordination required with applicable state administering agency..
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

H. Farmlands Protection Policy Act

☒ Project does not affect prime or unique farmland. **(Review Concluded)**
☐ Project causes unnecessary or irreversible conversion of prime or unique farmland.
☐ Coordination with Natural Resource Conservation Commission required.
☐ Farmland Conversion Impact Rating, Form AD-1006, completed.
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

I. Migratory Bird Treaty Act

☐ Project not located within a flyway zone. **(Review Concluded)**
☒ Project located within a flyway zone.
☒ Project does not have potential to take migratory birds. **(Review Concluded)**
☐ Project has potential to take migratory birds.
☐ Contact made with USFWS
Are project conditions required? ☒ YES (see section V) ☒ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

J. Magnuson-Stevens Fishery Conservation and Management Act

☒ Project not located in or near Essential Fish Habitat. **(Review Concluded)**
☐ Project located in or near Essential Fish Habitat.
☐ Project does not adversely affect Essential Fish Habitat. **(Review Concluded)**

☐ Project adversely affects Essential Fish Habitat (FEMA determination/USFWS/NMFS concurrence on file)
☐ NOAA Fisheries provided no recommendation(s) **(Review Concluded).**
☐ NOAA Fisheries provided recommendation(s)
☐ Written reply to NOAA Fisheries recommendations completed.
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

K. Wild and Scenic Rivers Act

☒ Project is not along and does not affect Wild or Scenic River - **(Review Concluded)**
☐ Project is along or affects Wild or Scenic River
☐ Project adversely affects WSR as determined by NPS/USFS. **FEMA cannot fund the action.**
(NPS/USFS/USFWS/BLM consultation on file)
☐ Project does not adversely affect WSR. (NPS/USFS/USFWS/BLM consultation on file)
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

L. Other Relevant Laws and Environmental Regulations

Identify relevant law or regulations, resolution and any consultation/references

II. Compliance Review for Executive Orders

A. E.O. 11988 - Floodplains

☐ Outside Floodplain and No Effect on Floodplains/Flood levels - **(Review Concluded)**
☒ Located in Floodplain or Effects on Floodplains/Flood levels
☒ No adverse effect on floodplain or can be adversely affected by the floodplain. **(Review Concluded),**
☐ Beneficial Effect on Floodplain Occupancy/Values **(Review Concluded).**
☐ Possible adverse effects associated with investment in floodplain, occupancy or modification of floodplain environment
☐ 8 Step Process Complete - documentation on file
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: Per Flood Insurance Rate Map (FIRM) community and panel number **500120 0010D** dated **09/05/1984, Washington** County; the project is located within the Special Flood Hazard Areas (SFHA) (100-year floodplain).
Correspondence/Consultation/References:

B. E.O. 11990 - Wetlands

☒ Outside Wetland and No Effect on Wetland(s) - **(Review Concluded)**
☐ Located in Wetland or effects Wetland(s)
☐ Beneficial Effect on Wetland - **(Review Concluded)**
☐ Possible adverse effect associated with constructing in or near wetland
☐ Review completed as part of floodplain review
☐ 8 Step Process Complete - documentation on file
Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: Per Vermont Agency of Natural Resources- Natural Resource Atlas, accessed 12/12/2011] this project is not located in a wetland and will not affect wetland values or functions.
Correspondence/Consultation/References:

C. E.O. 12898 - Environmental Justice For Low Income and Minority Populations

☒ No Low income or minority population in, near or affected by the project - **(Review Concluded)**
☐ Low income or minority population in or near project area
  ☐ No disproportionately high and adverse impact on low income or minority population- **(Review Concluded)**
  ☐ Disproportionately high or adverse effects on low income or minority population
    Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments:
Correspondence/Consultation/References:

III. Other Environmental Issues

Identify other potential environmental concerns in the comment box not clearly falling under a law or executive order (see environmental concerns scoping checklist for guidance).

Comments:
Correspondence/Consultation/References:

IV. Extraordinary Circumstances

Based on the review of compliance with other environmental laws and Executive Orders, and in consideration of other environmental factors, review the project for extraordinary circumstances.

* A "Yes" under any circumstance may require an Environmental Assessment (EA) with the exception of (ii) which should be applied in conjunction with controversy on an environmental issue. If the circumstance can be mitigated, please explain in comments. If no, leave blank.

Yes

☐ (i) Greater scope or size than normally experienced for a particular category of action
☐ (ii) Actions with a high level of public controversy
☐ (iii) Potential for degradation, even though slight, of already existing poor environmental conditions;
☐ (iv) Employment of unproven technology with potential adverse effects or actions involving unique or unknown environmental risks;
☐ (v) Presence of endangered or threatened species or their critical habitat, or archaeological, cultural, historical or other protected resources;
☐ (vi) Presence of hazardous or toxic substances at levels which exceed Federal, state or local regulations or standards requiring action or attention;
☐ (vii) Actions with the potential to affect special status areas adversely or other critical resources such as wetlands, coastal zones, wildlife refuge and wilderness areas, wild and scenic rivers, sole or principal drinking water aquifers;
☐ (viii) Potential for adverse effects on health or safety; and
☐ (ix) Potential to violate a federal, state, local or tribal law or requirement imposed for the protection of the environment.
☐ (x) Potential for significant cumulative impact when the proposed action is combined with other past, present and reasonably foreseeable future actions, even though the impacts of the proposed action may not be significant by themselves.

Comments:

V. Environmental Review Project Conditions

General comments:

1. If ground disturbing activities occur during implementation, the applicant will monitor excavation activity, and if any artifacts or human remains are found during the excavation process all work is to cease and the applicant will notify FEMA, Grantee, and SHPO/THPO.

2. The applicant must follow all applicable local, state, and federal laws, regulations, and requirements for the abatement and disposal of lead, asbestos, and other routinely encountered hazardous substances. If there is an unusual material encountered or there is an extraordinary amount of lead, asbestos, or other routinely encountered material the applicant must contact the Grantee and the Grantee must contact FEMA. The applicant must also contact the relevant agency with authority for regulation of the material.

3. If deviations from the proposed scope of work result in design changes, the need for additional ground disturbance, additional removal of vegetation, or result in any other unanticipated changes to the physical environment, the Grantee must contact FEMA, and a re-evaluation under NEPA and other applicable environmental laws will be conducted by FEMA.

Other Required Project Specific Conditions:

1. As long as the appropriate soil erosion/siltation control measures and the best management practices for roads and culverts (e.g. placing culvert inverts at or slightly below grade in the bed of the stream to accommodate fish passage, working during low flow summer periods, etc.) are utilized, harm to fish and wildlife will be minimized.

2. The applicant must seed, mulch, and replant any disturbed ground with native shrubs and vegetation. A special effort shall be made to plant native vegetation at higher bank elevations.

3. The applicant may be required to obtain any applicable permits with the Vermont Agency of Natural Resources and the U.S. Army Corps of Engineers prior to construction if this project will impact wetlands. All conditions of any permit acquired become conditions of this grant, and a copy of such permit(s) should be forwarded to FEMA.

4. Applicant must obtain floodplain permit or approval from the local floodplain administrator before work begins.

5. All project components will be assessed for the presence of archeological resources in the area of potential effect as defined on revised project plans.

6. The town of Waitsfield will hire a 36CFR-61 qualified consulting archeologist to complete the assessments. At a minimum, the qualified consulting archeologist shall conduct archeological resource assessments on all project components to identify any known sites and archeologically sensitive areas. Any such assessments must be reviewed and approved by the Division and all known sites and archeologically sensitive areas must be mapped and identified as not-to-be disturbed buffer zones.

7. Topsoil removal, grading, scraping, cutting, filling, stockpiling, logging or any other type of ground disturbance is prohibited within the buffer zones prior to construction unless the Town of Waitsfield completes appropriate archeological studies.

8. Archeological studies to identify or evaluate sites will be carried by a qualified consulting archeologist in all archeologically sensitive and known site areas to be impacted by the proposed project. The archeological studies will be scheduled early in the project so that mitigation measures that may be necessary can be satisfactorily planned and accomplished prior to construction.

9. All archeological studies and assessments must follow the Division's Guidelines for Conducting Archeological Studies in Vermont. The Town of Waitsfield's archeological consultant must submit any scope of work to the Division for review and approval.

10. Archeological sites within the project area will not be impacted until any necessary mitigation measures have been carried out. Mitigation may include but is not limited to further site evaluation, data recovery, redesign of one or more proposed project components, or specific conditions that may be imposed during construction, such as installation of construction barriers or protective matting etc.

11. Proposed mitigation measures will be discussed with and approved by the Division prior to implementation. The archeological studies will result in one or more final reports, as appropriate, that meet the Division's Guidelines for Conducting Archeological Studies in Vermont.

12. Copies of all reports shall be submitted to the Town of Waitsfield and the Division for review and approval.

Monitoring Requirements:

Quarterly Reports and final inspection of scope of work, accounting records and copies of any easements and permits and reports are required.

VERMONT

State of Vermont
Division for Historic Preservation
One National Life Drive, Floor 2
Montpelier, VT 05620-1201
www.HistoricVermont.org

[phone] 802-828-3211
[Division fax] 802-828-3206

Agency of Commerce and Community Development

January 23, 2012

Richard H. Verville
HMA Program Specialist
FEMA Region 1
99 High Street, 6th Floor
Boston, MA 02110

Re: FEMA DR 1951 VT- Mad River Stabilization Project, Waitsfield, Vermont. Hazard Mitigation Grant Program Section 106 Review.

Dear Mr. Verville:

Thank you for the opportunity to comment on the above-referenced project submitted for funding from the Hazard Mitigation Grant Program (HMGP) at the Federal Emergency Management Agency (FEMA). The following comments will assist FEMA in their review responsibilities under Section 106 of the National Historic Preservation Act.

The Division for Historic Preservation (Division) is providing FEMA with the following comments pursuant to 36 CFR 800.4, regulations established by the Advisory Council on Historic Preservation to implement Section 106 of the National Historic Preservation Act. Project review consists of identifying the project's potential impacts to historic buildings, structures, historic districts, historic landscapes and settings, and known or potential archeological resources.

The proposed project consists of stabilization of approximately 425 linear feet of eroding riverbank along the west bank of the Mad River upstream of the Waitsfield Covered Bridge. This project was originally one of two project components submitted for funding to the FEMA Pre-Disaster Mitigation Competitive Grant Program in 2010. The Division provided comments on the combined project on November 17, 2010. The combined project was not funded and the Town of Waitsfield separated out the stabilization component and began to pursue funding under the HMGP immediately prior to Tropical Storm Irene. The current project seeks HMGP funding to implement the bank stabilization more or less within the originally planned footprint which has been variously impacted by erosion associated with the tropical storm event.

Based on consultation with FEMA and Town of Waitsfield representatives over the past several days, the Division understands that the 2010 plans will be revised to fit the storm modified footprint. The Division also understands that funds to identify and mitigate any impacts to historic properties have been allocated in the current project budget.

Accordingly, the Division believes that this undertaking will have **No Adverse Effect** on any historic properties provided that the following actions are undertaken in accordance with 36 CFR 800.4a(ii) prior to any construction activity. This determination assumes that any adverse effects will be mitigated before project implementation:

1) All project components will be assessed for the presence of archeological resources in the Area of Potential Effect as defined on revised project plans.

Vermont Emergency Management
Department of Public Safety
103 South Main Street
Waterbury, Vermont 05671-2101
www.dps.state.vt.us/vem

[toll-free] 800-347-0488
[phone] 802-244-8721
[TTY] 888-545-7598
[fax] 802-241-5556

October 13, 2011

Ms. Valerie Capels, Town Administrator
Town of Waitsfield
9 Bridge Street
Waitsfield, VT 05673

Dear Ms. Capels,

The State Mitigation Project Selection Subcommittee met recently to review grant applications for FEMA's Hazard Mitigation Grant Program (HMGP) in connection with disaster DR 1951. I am pleased to inform you that the proposal for stream bank reinforcement at the Bridge Street Marketplace location has been selected and was forwarded to FEMA for their review and approval.

The next step in the process entails a full FEMA review of the technical aspects of the proposal as well as an environmental review. Once FEMA has concluded its final review and approval, the project must be submitted to the state's Joint Fiscal Office in Montpelier for additional state review and concurrence. Once we receive the final FEMA and state approvals for the project, the town will be issued a sub-grant agreement and then work may proceed on the project. No work should begin on the project before the town has received all the final approvals from FEMA and the state's Joint Fiscal Office. Also, all necessary state and federal permits must be in place before work can commence on the project.

Feel free to contact me at your convenience if you have any questions or concerns regarding the HMGP grant process.

Sincerely,

Ray Doherty, State Hazard Mitigation Officer
Vermont Emergency Management
103 South Main Street
Waterbury, VT 05671
Tel (802) 241-5258
Email rdoherty@dps.state.vt.us

State of Vermont

Hazard Mitigation Grant Program

Project Application

	FEMA- DR- 1951 VT	**Date Submitted:**	9/28/2011

Part 1: Applicant Information

Applicant Name: *(Eligible Applicant i.e. local government, state agency, non-profit)*	**Valerie Capels on behalf of the Town of Waitsfield**
County:	Washington County
Name of Local Hazard Mitigation Plan: *(County or Town)*	Town of Waitsfield Pre Disaster Mitigation Plan
Date of FEMA approval of Local Plan:	Sep-10

Primary Contact Information

Name:	Valerie Capels		
Title:	Town Administrator		
Organization:	Town of Waitsfield		
Mailing Address:	9 Bridge Street, Waitsfield, VT 05673		
Work Phone Number:	802-496-2218	**Alternate Phone Number:**	
Fax Number	802-496-9284	**Email:**	townadmin@madriver.com

Secondary Contact Information

Name:	Kari Dolan		
Title:	River Corridor and Floodplain Manager		
Organization:	Agency of Natural Resources		
Mailing Address:	103 South Main Street, Building 10N, Waterbury, VT 05671		
Work Phone Number:	802-241-1554	**Alternate Phone Number:**	
Fax Number	802-241-4537	**Email:**	kari.dolan@state.vt.us

Part 2: Problem Description

Location of Project:	Latitude:	44.188889	Longitude:	-72.8125	*(in decimals)*
Identify adjacent roads/streets and bodies of water:	Bridge Street				

Required Maps:	☑	**Local General Highway Map *(attached)***
	☑	**Flood Insurance Rate Map with panel number *(attached)***
	☑	**Topographic Map *(attached)***

Problem Statement: *(What's Happening?)*	The Mad River's left bank is actively eroding as the river migrates laterally, threatening Historic Village District and State's oldest currently functioning Covered Bridge. The August 2011 came very close to eroding around the covered bridge; that storm event eroded more of the streamback, damaging the ground and disturbing the foundation of one of the historical buildings along Bridge Street. The objective of this project is to prevent further channel migration that could permanently damage the historic village of Waitsfield and the oldest currently functioning covered bridge in Vermont.

Supporting Documentation: *(Attach)*	☑	**Photos**
	☑	**Engineering Studies**
	☑	**Site Diagrams**

Part 5:	Project Description
Project Description	The preferred option involves the installation of a bulk toe rock revetment, riprap emplacement and buffer along the actively eroding stream bank. The engineering and technical design of this proposed project, developed by DeWolfe Engineering, completed the flooting design based on riverbed elevations and peak discharge data contained Waitsfield's current Flood Insurance Study (FIS) (please refer to Table 1 for discharge, flood frequency, and recurrence interval data at Drainage Area 78 sq. miles and Flood Profile of cross-sections V and W of the Flood Profile). The proposed project, if funded, will decrease damages to insurable structures, since it is designed to virtually eliminate acute streambank erosion from lateral stream channel migration and potential channel avulsion that are threatening the Historic village and abutments of the bridge.
Expected Life of Project	The preferred option involves the installation of a bulk toe rock revetment, riprap emplacement and buffer along the actively eroding stream bank.
Supporting Documentation: *(Attach)*	☑ Photos ☑ Engineering Studies ☑ Site Diagrams

Project Costs for Preferred Alternative

Item	Unit Qty.	Unit Measurement	Unit Cost	Cost Estimate
Please see attached itemized budget. Please note that the before mitigation damages in the Benefit/Cost Analysis (BCA) are based on certified information from the Waitsfield Village business owners located in the Bridge Street Marketplace. Those values are shown in the EXCEL spreadsheet used as supporting documentation for the BCA. Each of the four businesses provided before mitigation damages to the building, loss of content, and displacement costs. Landowners used the 1998 flood event to determine these damages. After mitigation damages were calculated using the FEMA-approved approach for using the BCA for bank stabilization projects designed to mitigate erosion hazards from flooding. FEMA Help Desk approved this approach. See attached documentation.				
		Total Project Cost Estimate		$144,460.00

Summary of Project Costs

A	**Total Project Costs**	**$144,460.00**
B	**FEMA Share (75% of Line A)**	$108,345.00
C	**Local Share (25% of Line A)** Note: The sum of lines 1-3 must equal Line C	$36,115.00
	1. Cash	$36,115.00
	2. In-Kind Service	
	3. Other	
D	**Total Local Share** (Equal to Line C)	$36,115.00
E	**Total Project Costs** (Line B + Line D) Note: Line A and D are equal	**$144,460.00**
Identify source of local non-federal match:	State of Vermont Ecosystem Restoration Grant	

TOWN OF WAITSFIELD

September 28, 2011

Ray Doherty, State Hazard Mitigation Officer
Vermont Emergency Management
103 South Main Street
Waterbury, VT 05671

Re: Town of Waitsfield HMPG Application

Dear Mr. Doherty:

Please accept, on behalf of the Town of Waitsfield, the enclosed Hazard Mitigation Grant Program application for stabilization of approximately 425 feet of the eroding bank of the Mad River upstream from the 1833 Waitsfield Village Covered Bridge. Implementation of this project would significantly reduce acute flood-related erosion risk to an historic village area and project municipal infrastructure (Bridge Street, Waitsfield Town Office) as well as the Bridge Street Markeplace and neighboring properties.

Please let me know if you need additional information.

Respectfully,

Valerie Capels

Valerie Capels
Waitsfield Town Administrator

Enc.

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Project Summary:

Project Number: 1 Disaster #: n/a

Program: HMGP Agency: VT Agency of Natural Resources

Analyst: Kari Dolan

Point of Contact: Kari Dolan Phone Number: 802-241-1554

Address: 103 South Main Street, Waterbury, Vermont, 05673

Email: kari.dolan@state.vt.us

Comments:

Structure Summary For:

Copy Of 20 Bridge Street-for DFA, 20 Bridge Street, Waitsfield, Vermont, 05673, Washington

Structure Type: Building Historic Building: Yes Contact: Four D & K Company

Benefits: $376,303 Costs: $158,656 BCR: 2.37

Mitigation	Hazard	BCR	Benefits	Costs
Drainage Improvement	Damage-Frequency Assessment	2.37	$376,303	$158,656

Copy Of 40 Bridge Street-for DFA, 40 Bridge Street, Waitsfield, Vermont, 05673, Washington

Structure Type: Building Historic Building: Yes Contact: Jason Birdy Ent.

Benefits: $0 Costs: $0 BCR: 0.00

Mitigation	Hazard	BCR	Benefits	Costs
Drainage Improvement	Damage-Frequency Assessment	0.00	$0	$0

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Structure and Mitigation Details For: Copy Of 20 Bridge Street-for DFA, 20 Bridge Street, Waitsfield, Vermont, 05673, Washington

Benefits: $376,303 Costs: $158,656 BCR: 2.37

Hazard: **Damage-Frequency Assessment - Flood**

Mitigation Option: Drainage Improvement

Latitude: Longitude: Project Useful Life: 75

Mitigation Information

Basis of Damages: Expected Damages

Number of Damage Events: 4

Number of Events with Know Recurrence Intervals: 4

Building

Expected Damages Before and After Mitigation

Analysis Year: 2010 Analysis Duration: 0 Utilities ($/day):

Year Built: User Input Analysis Duration: Buildings ($/day): $0.00

Roads/Bridges ($/day):

Damages Before Mitigation

Damage Year:
RI: 20.00
Are Damages In Current Dollars? Yes
Buildings (Days):
Utilities (Days):
Roads (Days):

Maintenance ($)	$0

Damages After Mitigation

RI: 20.00
Are Damages In Current Dollars? Yes
Buildings (Days):
Utilities (Days):
Roads(Days):

Maintenance ($)	$56,000

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Damage Year:
RI: 300.00
Are Damages In Current Dollars? Yes
Buildings (Days):
Utilities (Days):
Roads (Days):

Maintenance ($)	$0
Displacement ($)	$888,712
Content ($)	$515,581
Building ($)	$1,976,330
Total	$3,380,623
Total Inflated	

RI: 300.00
Are Damages In Current Dollars? Yes
Buildings (Days):
Utilities (Days):
Roads(Days):

Maintenance ($)	$225,039
Displacement ($)	$776,416
Content ($)	$363,532
Building ($)	$1,226,340
Total	$2,591,327

Summary Of Benefits

Expected Annual Damages Before Mitigation		Expected Annual Damages After Mitigation		Expected Avoided Damages After Mitigation (Benefits)	
Annual:	$48,726	Annual:	$22,219	Annual:	$26,507
Present Value:	$691,732	Present Value:	$315,429	Present Value:	$376,303

Mitigation Benefits: $376,303 Mitigation Costs: $158,656

Benefits Minus Costs: $217,647 Benefit-Cost Ratio: 2.37

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Justification/Attachments

Field	Description	Attachments
Analysis Year	Please refer to the document, particularly "WaitsfieldVT_Final BCA Documentation of Steps Taken," "FEMA BCA Helpline Inquiry on Erosion Control Project," and "WaitsfieldVt_Final Calculations for BCA." See also, "Waitsfield Mitigation Project Desc."	WaitsfieldVt_Final BCA Documentation on Steps Taken.pdf; FEMA BCA Helpline Inquiry Erosion Guidance.pdf; WaitsfieldVt_Transportation Values of Bridge Street Marketplace.pdf; Landowners.pdf; WaitsfieldVt_Final Calculations for BCA.pdf; WaitsfieldVt_BCA Report_before mitigation supporting documentation.pdf
Expected damages before mitigation	Please see the attachments for the description of the costs and justification for these expenses.	WaitsfieldVt_landowner documentation_4429 Main Street.pdf; WaitsfieldVt_landowner documentation_4403 Main Street.pdf; WaitsfieldVt_landowner documentation_50 Bridge Street.pdf; WaitsfieldVt_landowner documentation_40 Bridge Street.pdf; WaitsfieldVt_landowner documentation_20 Bridge Street.pdf
Unknown Frequency - Damages after Mitigation	Please see the attachments for the justification of the values in each field.	WaitsfieldVt_Final BCA Documentation on Steps Taken.pdf

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Building ($)	$0
Total	$0
Total Inflated	

Building ($)	$0
Total	$0

Damage Year:
RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0

RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Justification/Attachments

Field	Description	Attachments

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Building ($)	$0
Total	$0
Total Inflated	

Building ($)	$0
Total	$0

Damage Year:
RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0

RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Justification/Attachments

Field	Description	Attachments

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Building ($)	$0
Total	$0
Total Inflated	

Building ($)	$0
Total	$0

Damage Year:
RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0

RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Justification/Attachments

Field	Description	Attachments

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Building ($)	$0
Total	$0
Total Inflated	

Building ($)	$0
Total	$0

Damage Year:
RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 20.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0
Total Inflated	

RI: 65.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0
Building ($)	$0
Total	$0

Damage Year:
RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads (Days):

Displacement ($)	$0
Content ($)	$0

RI: 100.00
Are Damages In Current Dollars? No
Buildings (Days):
Utilities (Days):
Roads(Days):

Displacement ($)	$0
Content ($)	$0

Total Benefits: **$376,303** Total Costs: **$158,656** BCR: **2.37**

Project Number: 1 Disaster #: n/a Program: HMGP Agency: **VT Agency of Natural Resources**

State: **Vermont** Point of Contact: Kari Dolan Analyst: Kari Dolan

Justification/Attachments

Field	Description	Attachments

Richard S. DeWolfe, PE
President

Christopher J. Temple, PE
Vice President

Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES INCORPORATED

Nathan M. Phillips, PE
David L. Frothingham, PE
Zarabeth M. Duell, PE
John J. Svagzdys, PE

November 19, 2010

Kari Dolan
Vermont River Management Program
Department of Environmental Conservation
103 S. Main St., Building 10 North
Waterbury, VT 05676

Subject: **Mad River Bank Stabilization**

Dear Kari:

It is estimated that the useful life of the bank stabilization is between 50 and 75 years. The determination of the useful life of the project assumed that current regulations for stormwater runoff from new development in the watershed are followed. Also that there are no significant changes to the hydraulics of the river section and that the project is constructed correctly.

If you have any questions please do not hesitate to contact me.

Sincerely,

David Frothingham

81 River Street
P. O. Box 1576
Montpelier, Vermont
05601-1576
phone: 802.223.4727
fax: 802.223.4740
www.dirtsteel.com

: Jason Gulisano [jbirdgulisano@gmail.com]
Sent: Saturday, November 13, 2010 9:23 AM
To: Dolan, Kari
Subject: Re: FW: Need information ASAP

HI KARI SORRY FOR THE DELAY
1. DEPENDING ON THE SEASON LOSS WOULD BE 9 TO 15 THOUSAND PER WEEK IN GROSS REV.
2. THE ENTIRE FOUNDATION WAS DESTROYED AS WELL AS MUCH OF THE FIRST FLOOR. AMOUNT OF COST TO FIX. ???? I WILL ASK

1. SILENT PARTNER WITH NO INTEREST
2 BIRDY ENT.
3. 1845
4. BOTH
5. YES
6. SOME
7. CRAWL SPACE
8. NO
9. OWNER OCCUPIED
10.
11. NO
12. JAMESON AGENT MIDDLE OAK
13.
14.
15 NOT SURE WILL ASK

On Fri, Nov 12, 2010 at 10:52 AM, Dolan, Kari <Kari.Dolan@state.vt.us> wrote:
Can you provide me with this information ASAP? (I need to get the grant application to the Vermont Emergency Management by Nov 19th.) Thank YOU! I also need:
1. If a flood hits, what would be the "displacement" costs (per week or day) to your business.
2. Do you have any prior knowledge from the earlier owner what the impact to the business/structure was from the 1998 flood?
Thanks, Jason!!
Kari

From: Dolan, Kari
Sent: Wednesday, November 03, 2010 2:10 PM
To: 'caroline@birkephoto.com'; 'Craig Goss'; 'David Darr'; 'falline@yahoo.com'; Jason Gulisano; 'jeannie elias'; 'normabend@comcast.net'; 'sydney'
Cc: 'Joshua Schwartz'; 'Caitrin Noel'; townadmin@madriver.com
Subject: Need information ASAP
Importance: High

Hi, Everyone,
Could you please provide me with the following:
1. Does this property have other co-owners or holders of recorded interest?
2. Exact ownership name
3. Age of your building? (year it was built)

3. Any documentation on registry of historic places;
4. ANY documentation of damage from flooding, such as in the 1998 flood. PLEASE!!! We need this in order to make it through the Benefit/Cost Analysis portion. We need documentation.
THANKS!!!!!!!!!!
We are trying to make the grant deadline. Kari

From: Jason Gulisano [jbirdgulisano@gmail.com]
Sent: Saturday, November 13, 2010 9:26 AM
To: Dolan, Kari
Subject: Re: FW: Need information ASAP

PROPERTY PARCEL ID 105001000. I THINK THAT IS WHAT YOU NEED OR THE SPAN # ON MY TAX BILL IS 675 - 214 - 10999

On Fri, Nov 12, 2010 at 10:52 AM, Dolan, Kari <Kari.Dolan@state.vt.us> wrote:

Can you provide me with this information ASAP? (I need to get the grant application to the Vermont Emergency Management by Nov 19th.) Thank YOU! I also need:

1. If a flood hits, what would be the "displacement" costs (per week or day) to your business.
2. Do you have any prior knowledge from the earlier owner what the impact to the business/structure was from the 1998 flood?

Thanks, Jason!!
Kari

From: Jason Gulisano [jbirdgulisano@gmail.com]

Sent: Tuesday, November 16, 2010 1:58 PM

To: Dolan, Kari

Subject: Re: I need your help!

THANKS KARI MY MONTHLY RENT INCOME IS 8900.00 $ TOTAL BOTTOM FLOOR CONTENT VALUE APPROX 500 THOUSAND. HOPE THIS HELPS AND I HOPE EVERY ONE CAN PULL THROUGH. THANK YOU SO MUCH FOR PUTTING THIS ALL TOGETHER. JASON

On Mon, Nov 15, 2010 at 9:08 PM, Dolan, Kari <Kari.Dolan@state.vt.us> wrote:

From: Jason Gulisano [jbirdgulisano@gmail.com]
Sent: Tuesday, November 16, 2010 1:51 PM
To: Dolan, Kari
Subject: Re: Information Needs for FEMA Grant...almost there!

total 8400 sq feet bottom floor 5800 sq feet

On Mon, Nov 15, 2010 at 7:27 PM, Dolan, Kari <Kari.Dolan@state.vt.us> wrote:

Documentation- Landowner: Schramke, 40 Bridge Street, Waitsfield, VT 05673

From: mschramke@aol.com
Sent: Thursday, November 18, 2010 9:03 AM
To: Dolan, Kari
Subject: Re: help....

Kari,
My parcel number is 001004000, I don't see where I have a Property Tax ID number.
Pre Flood fair market value. Don't know -- after the flood my building was condemned and I purchased it 6 months later for $100,000.
Even though the flood only damaged the basement -- taking out the electrical and heating - so, I would categorize the damage at 0-49%.

-----Original Message-----
From: Dolan, Kari <Kari.Dolan@state.vt.us>
To: Dolan, Kari <Kari.Dolan@state.vt.us>; 'mschramke@aol.com' <mschramke@aol.com>
Sent: Mon, Nov 15, 2010 7:33 pm
Subject: RE: help....
And loss in rent....
☺

From: Dolan, Kari
Sent: Monday, November 15, 2010 7:27 PM
To: 'mschramke@aol.com'
Subject: help....

Hi, Mary,
I know this is a bear, but we are so close. In addition to this information, I also need the square footage of your building. Do you know that? Thanks. Deadline is this FRIDAY. Please provide me with this information as soon as you can. Thanks!!
Kari

Mary:

1. Age of your building (year it was built)
2. Parcel Number
3. Property Tax ID Number
4. Do you have flood insurance with the National Flood Insurance Program? Check with your insurance carrier. If so, please provide policy number.
5. Pre-flood event Fair Market Value
6. Damage Category during 1998 flood (choices are: 0-49%, 50-99%, 100%, not applicable)
7. Square footage (for both floors)

Thanks for your help!
Kari

Kari Dolan
Vermont River Management Program
Department of Environmental Conservation

4. ANY documentation of damage from flooding, such as in the 1998 flood. PLEASE!!! We need this in order to make it through the Benefit/Cost Analysis portion. We need documentation.

THANKS!
Kari

From: mschramke@aol.com
Sent: Thursday, November 18, 2010 8:56 AM
To: Dolan, Kari
Subject: Re: I need your help! please read

Kari, the following ans are in the order you asked:

1, Appraised value is $600,000; I would sell the property for $850,000.
2. 7000 sq. ft
3. $5,000/mo
4. $50,000
5. $5,000/mo
6. I didn't own the bldg. then
7. Built is sections -- the first section was dated 1852
8. I have flood insurance through Middlesex Mutual Assurance Co. Number 08645-00878-000
9. Fire insurance through Vt Mutual

Mary
-----Original Message-----
From: Dolan, Kari <Kari.Dolan@state.vt.us>
To: 'mschramke@aol.com' <mschramke@aol.com>
Sent: Wed, Nov 17, 2010 5:07 pm
Subject: FW: I need your help! please read
Hi, Mary,
Can you help with some of the outstanding questions, namely:
Thank you!!!! Biggies are Fair Market Value and square footage, whether you have flood insurance and if so, what that number is. Thank you!!!

Remaining Needs:

1. Fair Market Value of your property: need this from Jason and Mary and Valerie (town office);
2. Square footage of your building for entire building: I need this from everyone else;
3. If we had another 98 flood, what would be displacement costs, in $/month ideally; I need this from everyone Except Jason;
4. Building Contents costs, if possible; I could rely on default which is based on market value of the structures;
5. If we had another 98 flood, Loss of Rent ($/month);
6. ANY documentation from the 1998 flood! I only have hard evidence from Valerie. Help!
7. Age of your building (year it was built): I need this from Mary and Valerie;
8. Whether you have flood insurance with the national Flood Insurance Program? I need this from Mary and Valerie;
9. What is your insurance carrier? I need this from Mary and Valerie;

Documentation- Landowner: Bargerstock, 50 Bridge Street, Waitsfield, VT 05673

From: caroline@birkephoto.com
Sent: Tuesday, November 09, 2010 12:09 PM
To: Dolan, Kari
Subject: RE: Need information ASAP

Hi Kari,

Sorry, running a bit behind on this info. Please let me know what else I need to get to you.

Thanks for all your help!
Caroline

1. Does this property have other co-owners or holders of recorded interest? NO
2. Exact ownership name Caroline Bargerstock
3. Age of your building? (year it was built) 1904
4. Structure type: (residential; nonresidential): nonresidential
5. Does your building have a second floor? No
6. If so, it is being used for residential? NA
7. Basement type: basement, crawlspace, slab on grade, other (describe), VACANT LAND?
8. Basement? (yes or no)
9. Type of residence (not applicable, other, owner occupied –primary residence, owner-occupied – secondary residence, rental)
10. Property Tax ID number ?
11. Does this property have a NFIP Policy Number? If so, please provide number: 87047104072010
12. Insurance Company: MiddleOak
13. Fair Market Value of the property (Valerie – would you have this information in the Tax Records or Grand List?) $51,000
14. A letter accepting responsibility for any future maintenance of the project. See attached letter. Please sign and mail to me ASAP; I will scan it in.
15. ANY documentation of damage from flooding, such as in the 1998 flood. I don't have any documentation.

From: Neil Ryan [neilmadsenryan@gmail.com]
Sent: Thursday, November 18, 2010 1:39 PM
To: Dolan, Kari
Subject: Resend of Caroline's information

Hi Kari,

Here are outstanding an answers and a revision to age of building. We need clarity on what proof of maintenance means. Please let me know if you have questions.

Thanks,

Caroline

Remaining Needs:

Documentation- Landowner: Abend, 4403 Main Street, Waitsfield, VT 05673

From: Norman Abend [normabend@comcast.net]
Sent: Sunday, November 14, 2010 2:43 PM
To: Dolan, Kari
Subject: FW: Need information ASAP

From: Dolan, Kari [mailto:Kari.Dolan@state.vt.us]
Sent: Sunday, November 14, 2010 12:48 PM
To: 'normabend@comcast.net'
Cc: 'Craig Goss'
Subject: FW: Need information ASAP
Importance: High

Hi, Norm,

Can you please provide me with the following information ASAP? I am trying to finish this grant application, and we absolutely need your information. See Craig Goss' response, but I believe his response is for the Catamount Building and not 4403 Main Street, which I believe is your property?

Thank you!
Kari

1. Does this property have other co-owners or holders of recorded interest? No
2. Exact ownership name The Abend Family Limited Partnership
3. Age of your building? (year it was built) Early 1800's
4. Structure type: (residential; nonresidential):Non Residential
5. Does your building have a second floor? Yes
6. If so, it is being used for residential? No
7. Basement type: basement, crawlspace, slab on grade, other (describe), VACANT LAND? Slab on Grade
8. Basement? (yes or no) No
9. Type of residence (not applicable, other, owner occupied –primary residence, owner-occupied – secondary residence, rental) N. A.
10. Property Tax ID number 04-3514402
11. Does this property have a NFIP Policy Number? If so, please provide number: # 1478825010
12. Insurance Company: NGM Insurance Company
13. Fair Market Value of the property, prior to 1998 flood, if possible. $400,000-500,000 estimate
14. ANY documentation of damage from flooding, such as in the 1998 flood. No
15. Displacement Costs: If a flood hits, what would be the "displacement" costs (per week or day) to your business. $200/day est.

From: Norman Abend [normabend@comcast.net]
Sent: Tuesday, November 16, 2010 11:49 AM
To: Dolan, Kari
Subject: RE: I need your help!

The answers below are keyed to your list below.

4. 10,000 s.f. +/-
5. $7000/mo.

From: Norman Abend [normabend@comcast.net]
Sent: Tuesday, November 16, 2010 3:02 PM
To: Dolan, Kari
Subject: RE: I need your help!-quick question

The ground floor is about 40% of the total

From: normabend@comcast.net
Sent: Wednesday, November 03, 2010 6:53 PM
To: Dolan, Kari; 'caroline@birkephoto.com'; Craig Goss; David Darr; CHRIS PIERSON; Jason Gulisano; jeannie elias; Sydney Rose Abend
Cc: 'Joshua Schwartz'; 'Caitrin Noel'; valerie capels
Subject: Re: Need information ASAP

The following responses refer by number to your questions:

1. No
2. The abend family lp
3. Early 1800's ??
4. Wood, non-residential
5. Yes
6. No
7. Slab
8. No
9. Not applicable
10. 04-3514402
11. Can't get that till I get back
12. Same as #11
13. Assessed value or less
14. See my earlier response today to your email on maintenance
15. Owner only since 2007...don't have any such documentation.

Norm

From: "Dolan, Kari" <Kari.Dolan@state.vt.us>
Date: Wed, 3 Nov 2010 14:09:58 -0400
To: 'caroline@birkephoto.com'<caroline@birkephoto.com>; 'Craig Goss'<cgoss@madriver.com>; 'David Darr'<david@darrad.com>; 'falline@yahoo.com'<falline@yahoo.com>; Jason Gulisano<jbirdgulisano@gmail.com>; 'jeannieelias'<moosewoman@madriver.com>; 'normabend@comcast.net'<normabend@comcast.net>; 'sydney'<sydneyra@comcast.net>
Cc: 'Joshua Schwartz'<mrvpd@madriver.com>; 'Caitrin Noel'<friends@madriver.com>; townadmin@madriver.com<townadmin@madriver.com>
Subject: Need information ASAP

Documentation- Landowner: Goss, 4429 Main Street, Waitsfield, VT 05673

From: Craig Goss [cgoss@madriver.com]
Sent: Tuesday, November 16, 2010 11:52 AM
To: Dolan, Kari
Cc: 'Jeannie Elias'
Subject: RE: I need your help!

No, there are 3 floors. The first I believe is 1200 sq ft. My records are at home so that's the best I can do at the moment.

From: Dolan, Kari [mailto:Kari.Dolan@state.vt.us]
Sent: Tuesday, November 16, 2010 11:50 AM
To: 'Craig Goss'
Cc: moosewoman@madriver.com
Subject: RE: I need your help!

Do you know the square footage of the first floor only? Would it be half of 3000?
Thanks,
Kari

Kari Dolan
Vermont River Management Program
Department of Environmental Conservation
103 South Main Street, Building 10 North
Waterbury, VT 05671
Ph: (802) 241-1262
Fx: (802) 241-4537
kari.dolan@state.vt.us

From: Craig Goss [mailto:cgoss@madriver.com]
Sent: Tuesday, November 16, 2010 6:35 AM
To: Dolan, Kari
Cc: moosewoman@madriver.com
Subject: RE: I need your help!

Hi Kari:

- Catamount Building approximately 3000 square feet total
- In the 98 flood we lost only the use of our ground floor. Per month that totaled approximately $900 in lost income in addition to damages (which I don't think are counted in the displacement figure?). A similar flood now would cost us at least $1000/month.
- Building contents are difficult to estimate. If you include tenant contents it would be a big number for us given that Channel 44 operates out of our ground floor. I don't have any idea how much equipment is there – would have to ask Alex Maclay.

Kari Dolan
Vermont River Management Program
Department of Environmental Conservation
103 South Main Street, Building 10 North
Waterbury, VT 05671
Ph: (802) 241-1262
Fx: (802) 241-4537
kari.dolan@state.vt.us

From: Craig Goss [mailto:cgoss@madriver.com]
Sent: Tuesday, November 16, 2010 4:14 PM
To: Dolan, Kari
Cc: 'jeannie elias'
Subject: RE: Benefit Cost Analysis

Kari:

Jeannie sensibly suggests that what you may be looking for is a statement of annual income for the Catamount building vs individual tenants. If yes, I can send you those figures later tonight.

From: Craig Goss [cgoss@madriver.com]
Sent: Sunday, November 14, 2010 2:58 PM
To: Dolan, Kari
Cc: moosewoman@madriver.com
Subject: RE: Information Needs for FEMA Grant...almost there!

Hi Kari:

- Slab foundation
- Catamount Building repair costs from the 1998 flood totaled $8,806.93 for the period Jan-Dec 1998. These are physical repairs only and do not count the lost income we experienced as a result of having our ground floor vacant for approximately 1.5 years. Also note that I wasn't the sole owner of the building at the time and did not maintain financial records so I'm not sure how accurate this is. My recollection is that repairs and lost income totaled approximately ~$40,000. We had no flood insurance at the time so this was all out of pocket. I would expect displacement costs to be higher in the event of another similar flood. Again it depends on the degree of damage and lost income.
- My policy shows ref num 14788017262009 but not sure that is NFIP.
- 0-49% assuming you mean percentage of the building that had to be repaired/replaced.

From: Craig Goss [cgoss@madriver.com]
Sent: Wednesday, November 03, 2010 2:41 PM

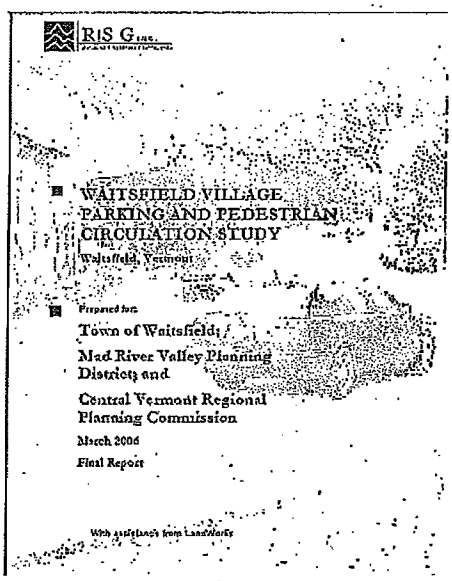
VERMONT

Vermont Department of Environmental Conservation
Water Quality Division
103 South Main Street, Building 10 North
Waterbury, VT 05671-0408

Agency of Natural Resources

[phone] 802-241-3770 or 802-241-3777
[fax] 802-241-3287 or 802-241-4537

RE: Unquantified but real values associated with transportation and parking in Bridge Street, the location of the proposed project

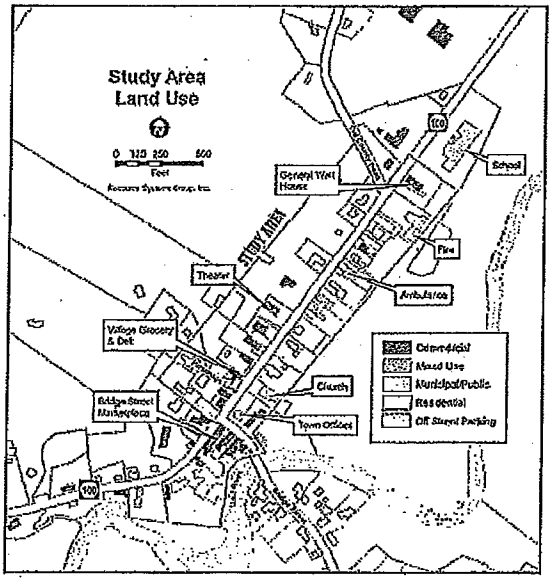


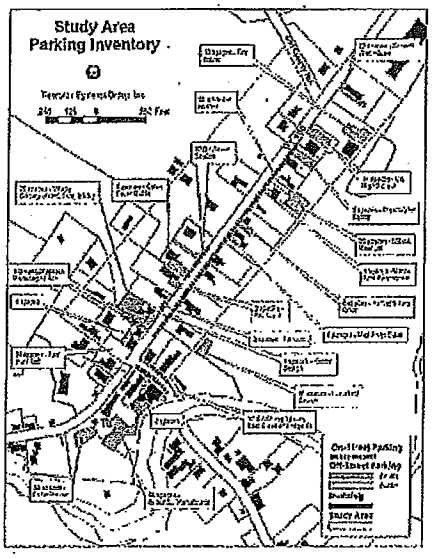
Below are excerpts from the 2006 Transportation Study of this area. These excerpts represent the value that this area provides in terms of: (a) parking: 82 spaces – 68 in the Bridge Street Marketplace, 2 additional spaces by the buildings, and 12 spaces on Bridge Street); and, (b) traffic circulation utilizing Bridge Street and the Covered Bridge.

Pg. E2: "Special events (which mostly occur during weekends) can overwhelm the parking supply at the Village's core around the VT 100-Bridge Street intersection ..."

Parking:

On the Left: Pg. E4: "Bridge Street Marketplace Lot. The Bridge Street Market Place is arguably the most important parking facility in the Village." On the Right: Pg. 36, Figure 20: Parking Inventory





TOWN OF WAITSFIELD

Waitsfield 2011 HMGP Grant Proposal Scope of Work

Introduction

The Town of Waitsfield is a small, rural, residential and tourism-based community located in the southwestern portion of Washington County. Waitsfield is located in the heart of the 143 sq mile Mad River Watershed, which drains in a northerly direction into the Winooski River and ultimately into Lake Champlain.

The project area is in Waitsfield's historic village ("Village"), which is listed on the Federal Register of Historic Places. It is also a Designated Village Center through the Vermont Downtown Program. It consists of a number of historic structures built in very close proximity to the Mad River, a covered bridge over the Mad River, and a municipal building that serves as the town offices and library. The Waitsfield Covered Bridge is the oldest operating covered bridge in Vermont. The Village serves as a regional hub for multiple uses, including civic, retail, restaurants, condominiums, homes, other businesses, and even agriculture.

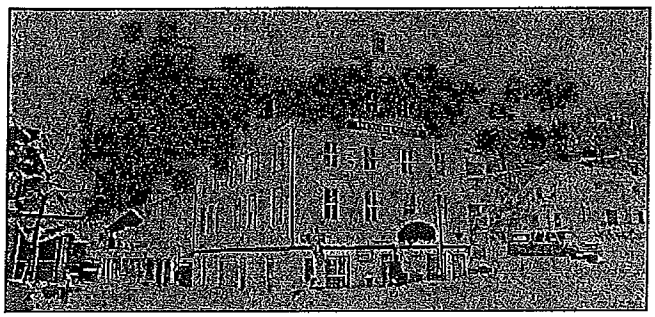
In May of 2010, the town of Waitsfield took proactive steps to protect the stream corridor by adopting both a fluvial erosion hazard (FEH) ordinance and an enhanced flood hazard ordinance using the FEH maps produced from geomorphic assessments. This effort was identified as a top priority in both the 2008 Upper Mad River Corridor Plan and the 2007 Fluvial Geomorphic Assessment of the Mad River Watershed report. Waitsfield recognized that protecting floodplain and river corridor function provides flood storage, mitigates flood hazards and enhances water quality. Mapping support from the Central Vermont Regional Planning Commission was possible due to a prior PDMC Planning Grant.

Description of Waitsfield Flood Hazard Mitigation Project

Waitsfield Vermont is seeking a Hazard Mitigation Grant Program (HMGP) grant from the Federal Emergency Management Agency (FEMA) to implement a flood mitigation project. The project is designed to significantly reduce the risk of erosion-related flood damages to the historic Waitsfield Village area with a Covered Bridge. The proposed project will stabilize approximately 425 linear feet of the eroding bank upstream of the Covered Bridge and installing riparian vegetation.

Goals and Objectives of the Proposed Activity

The primary goal of this project is flood mitigation, designed to reduce or eliminate risk to people and property from flood-related erosion hazards and their impacts. Implementation of this project would significantly reduce acute flood-related erosion risk to an historic village area and would protect the Waitsfield town offices, marketplace area and a well-traversed road that connects several rural communities. The town was able to determine where the hazards are of greatest concern and identified specific measures needed to reduce the severity of existing hazards; this project accomplishes these objectives. These mitigation objectives include avoiding flood damage from bank erosion and bank retreat and channel avulsion through the Historic District, which could damage the bridge abutment of the Covered Bridge. The proposed project seeks to stabilize approximately 425 linear feet of the eroding bank upstream of the Covered Bridge by reinforcing and riprapping the eroding bank and installing a riparian buffer. The project combines flood



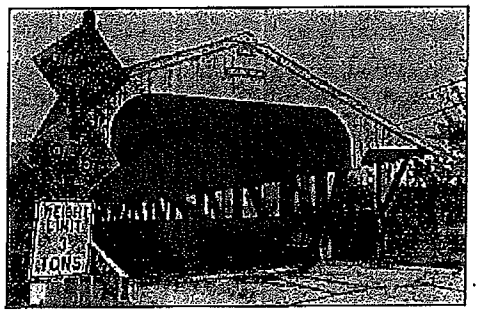


Photo on the left: Building 4403 Main Street, on the corner of Bridge Street; Photo on the right is the Covered Bridge; Photos courtesy of David Gartner and the Waitsfield Town Plan.

Alternatives Analysis

Flooding is Waitsfield's most common type of natural disaster. The town took proactive steps to reduce flood hazards town-wide by passing floodplain and river corridor bylaws that prohibit new development in these areas. Because the Waitsfield historic Village was built on the banks of the Mad River to take advantage of stream power for milling, the Historic Village was exempt from the FEH restrictions. However, the new flood hazard bylaws for the Historic Village do require freeboard, and exempt critical facilities from the 500-year floodplain.

The option to rock armor the bank and install a vegetated buffer is a long-term solution that provides the most mitigation benefit. This project, in combination with its new flood hazard and Fluvial Erosion Hazard bylaws, addresses the flood hazards directly. This project directly protects the bank and Village from the stormflows – the source of the flood damages. This is the preferred option.

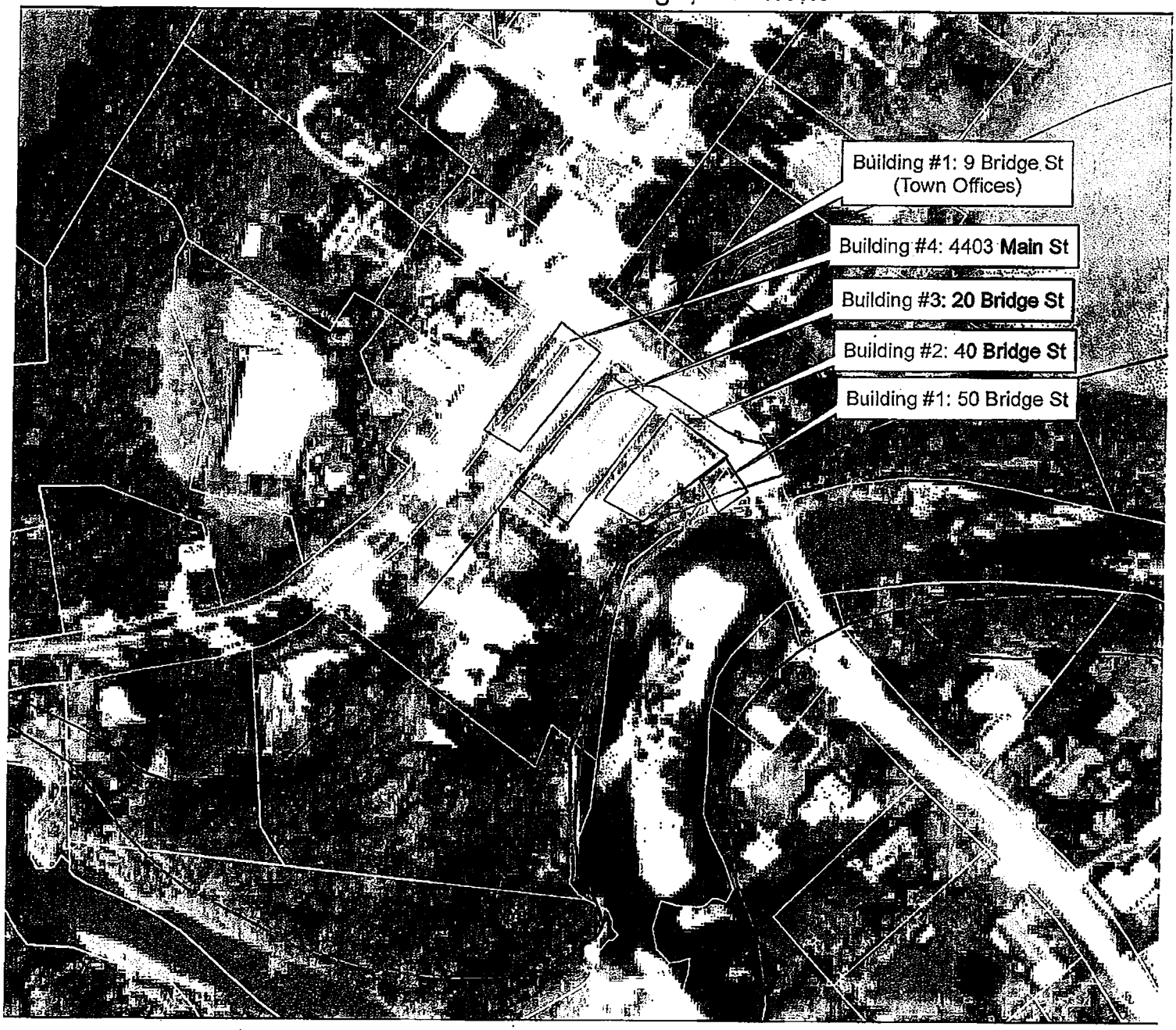
The "do-nothing" alternative would maintain the vulnerability of the Historic Village to flood hazards. Businesses and residents are facing unacceptable risk to flood damages. By doing nothing, these historic buildings and town offices would remain vulnerable to catastrophic flood damages.

Another alterative – moving the Historic Village away for this vulnerable area – is not feasible. This option is cost-prohibitive, ignores the historic features of the buildings in this area, and would disrupt the economic well-being of the commercial enterprises located there. A final option, elevating or floodproofing the buildings, does not address the flood –related fluvial erosion hazards, which is the fundamental problems that is causing the stream channel instability, threatening property damages, threatening the Covered Bridge, and heightening concerns of public safety in this location.

Timetable

Please refer to the Attached Stabilization Timetable, referred to as: "WaitsfieldVt_Flood control project_timeline1.pdf."

HMGP 2011 Grant Proposal
Project: Waitsfield Flood Hazard Mitigation Project
Waitsfield Historic Village, Vermont



Buildings in the Historic Waitsfield Village District that are Part of Proposed Flood Hazard Mitigation Project

Legend

HMGP Bank Stabilization Location

FLOODWAY

FLOODWAY

100 Year Floodplain

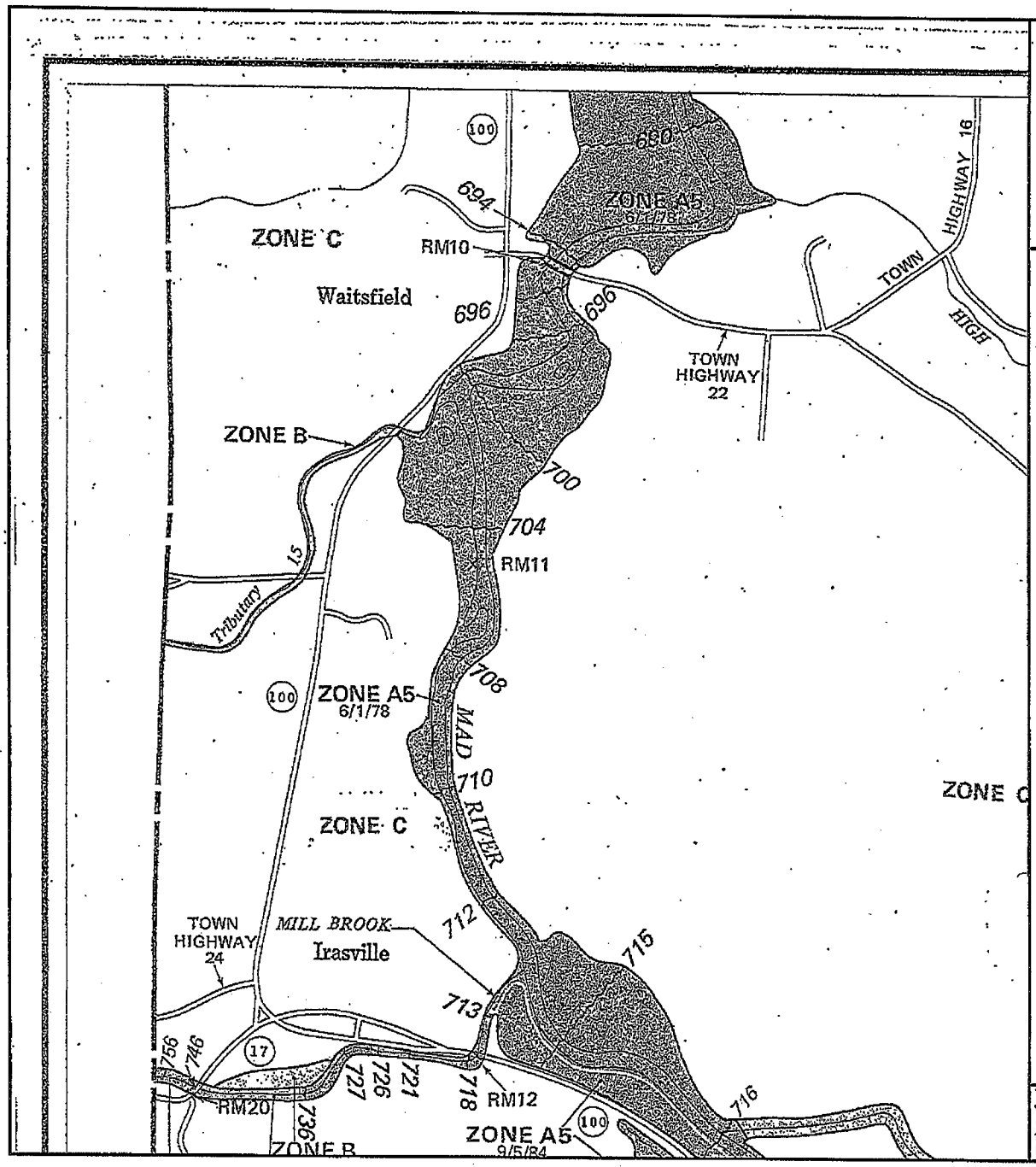
Parcel Boundaries

Map created on 08/05/2011
2009 NAIP Orthophotography

140 70 0 140 Feet

1" = 150 '

N
W
S



APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
WAITSFIELD, VERMONT
WASHINGTON COUNTY

PANEL 10 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
500120 0010 D

MAP REVISED:
SEPTEMBER 5, 1984

Federal Emergency Management Agency

the production of agricultural products and dairy farming. The Town of Waitsfield developed along the banks of the Mad River, which was used as an early source of power. Today, Waitsfield has some light industry, tourism and skiing facilities.

Waitsfield has a land area of approximately 26.5 square miles and is mostly woodland. Residential development is expected to increase as the population of the town increases.

The topography of the area is mountainous, with narrow flood plains and high stream banks. Rapid runoff occurs as a result of the steep terrain. Soils in the forested areas of Waitsfield have medium to very rapid surface runoff, contributing to increased flood flow in the streams. The cleared areas along the Mad River and the upland area of Waitsfield Common have very slow to medium runoff.

The climate of the area is typical of northern New England and is characterized by cool summers and cold winters. Normal summer temperatures are in the low 70s degrees Fahrenheit (°F), while winter temperatures can fall to well below zero°F. The average annual precipitation is over 40 inches.

The Mad River, which flows north through the western portion of Waitsfield, originates in the upland areas of Grainville to the south and drains the valley between Northfield and Green Mountains before flowing into the Winooski River. Shepard and Mill Brooks originate in the Town of Fayston to the west and flow into the Mad River. Charles Folsom Brook originates in the Northfield Mountains in southeastern Waitsfield and flows into the Mad River.

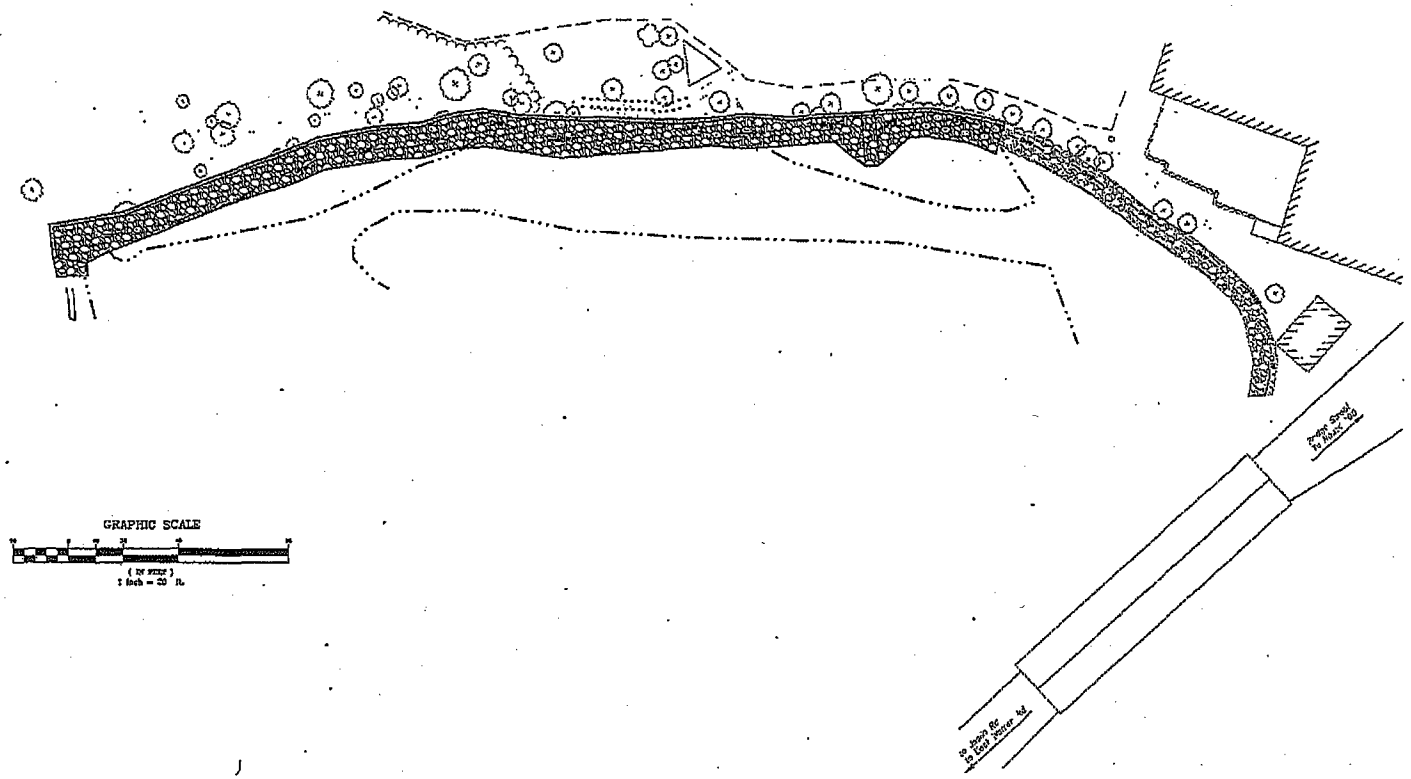
Flood plains within the community are used primarily for agriculture. Most of the older commercial and residential structures are built on higher ground, away from flooding sources, except in some areas in central Waitsfield. Most developing areas are located on areas of high ground, but an inceasing number of residences are being built in flat areas near the river.

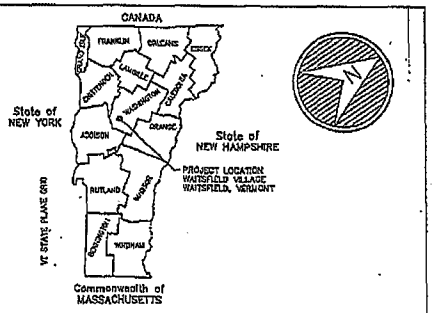
2.3 Principal Flood Problems

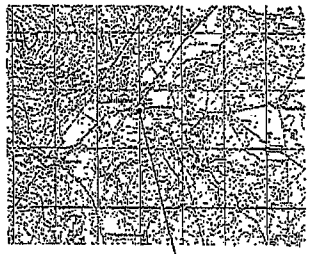
Low-lying areas of Waitsfield are subject to periodic flooding caused by the overflow of the Mad River and its tributaries. Historically, the most severe flooding has occurred during summer and fall, although flooding may occur at any time during the year. Severe floods occurred in 1830, 1850, 1858 and 1869. Severe floods have also occurred in 1927, 1938, 1947, 1971, 1973 and 1976 with recurrence intervals of 0.68 percent, 1.6 percent, 11 percent, 13 percent, 15 percent and 4.5 percent,

Engineer's Opinion of Probable Construction Cost					
Prepared by DeWolfe Engineering Associates, Inc.					
JOB DATA:					
Project #:	10179				
Project:	Mad River Bank Stabilization				
Description	Project estimate by major task				
Engineer:	DLF				
Date:	September 28, 2011				
Location:	Waitsfield, Vermont				
VAOT Item #	Item Description	Unit	$	Est. Qty	Total
	Earthwork				
201.15	Removal of Medium Trees and Stumps	each	$573.69	11.00	$6,311
203.15	Common Excavation	C.Y.	$7.09	658.00	$4,665
613.12	Type IV Stone Fill	C.Y.	$41.64	877.00	$36,518
	Materials				
649.31	Geotextile Under Stone Fill	S.Y.	$1.96	1160.00	$2,274
208.40	Cofferdam & Erosion Control	L.S.	$42,000.00	1.00	$42,000
	Incidentals				
635.11	Mobilization/Demobilization	L.S.	$14,400.00	1.00	$14,400
653.55	Project Demarcation Fence	L.F.	$1.48	542.00	$802
	Permitting				
	US Army Corp. of Engineers (Senior Engineer)	Hourly	$118.00	8.00	$944
	US Army Corp. of Engineers (Staff Engineer)	Hourly	$70.00	6.00	$420
	VT Stream Alteration Permit (Senior Engineer)	Hourly	$118.00	8.00	$944
	VT Stream Alteration Permit (Staff Engineer)	Hourly	$70.00	6.00	$420
	FEMA Floodplain Management Cert. of No-Rise (Senior Engineer)	Hourly	$118.00	50.00	$5,900
	Bid Documents				
	Contract Specifications (Senior Engineer)	Hourly	$118.00	5.00	$590
	Contract Specifications (Staff Engineer)	Hourly	$70.00	14.00	$980
	Front End Documents (Senior Engineer)	Hourly	$118.00	4.00	$472
	Front End Documents (Staff Engineer)	Hourly	$70.00	6.00	$420
	Printing		$275.00	1.00	$275
	Construction Administation				
	Pre-Bid Meeting (Senior Engineer)	Hourly	$118.00	4.00	$472
	Contract Start Up (Senior Engineer)	Hourly	$118.00	4.00	$472
	Construction Site Visits (Senior Engineer)	Hourly	$118.00	24.00	$2,832
	Final Insection & Punch lists (Senior Engineer)	Hourly	$118.00	6.00	$708
	Mileage	Miles	$0.55	450.00	$248
	Construction Subtotal ~~(20% Contingency)~~				$128,364
	Permitting Subtotal				$8,628
	Bid Documents Subtotal				$2,737
	Construction Administration				$4,732
	Total Estimated Construction Cost				$144,460

MAD RIVER BANK STABILIZATION
WAITSFIELD VILLAGE, VERMONT







GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

PROJECT DESCRIPTION:

THE PROJECT GOAL IS TO STABILIZE APPROXIMATELY 240 LINEAR FEET OF THE NORTH BANK OF THE MAD RIVER IN THE VILLAGE OF WAITSFIELD. THE PROJECT COMMENCES AT THE REMAINS OF THE DAM APPROXIMATELY 425 WEST OF THE COVERED BRIDGE, CONTINUES ALONG THE NORTH BANK OF THE RIVER IN AN EASTERLY DIRECTION TOWARDS THE COVERED BRIDGE TO A POINT WHERE THE EXISTING STONE FILL IS IN GOOD CONDITION. THE CONTRACTOR IS TO REMOVE EXISTING TREES AND OVERBURDEN AS INDICATED BY THE PLANS AND PLACE VERMONT AGENCY OF TRANSPORTATION SPEC TYPE III STONE FILL AS SHOWN ON THE ENCLOSED CROSS SECTIONS.

SHEET INDEX

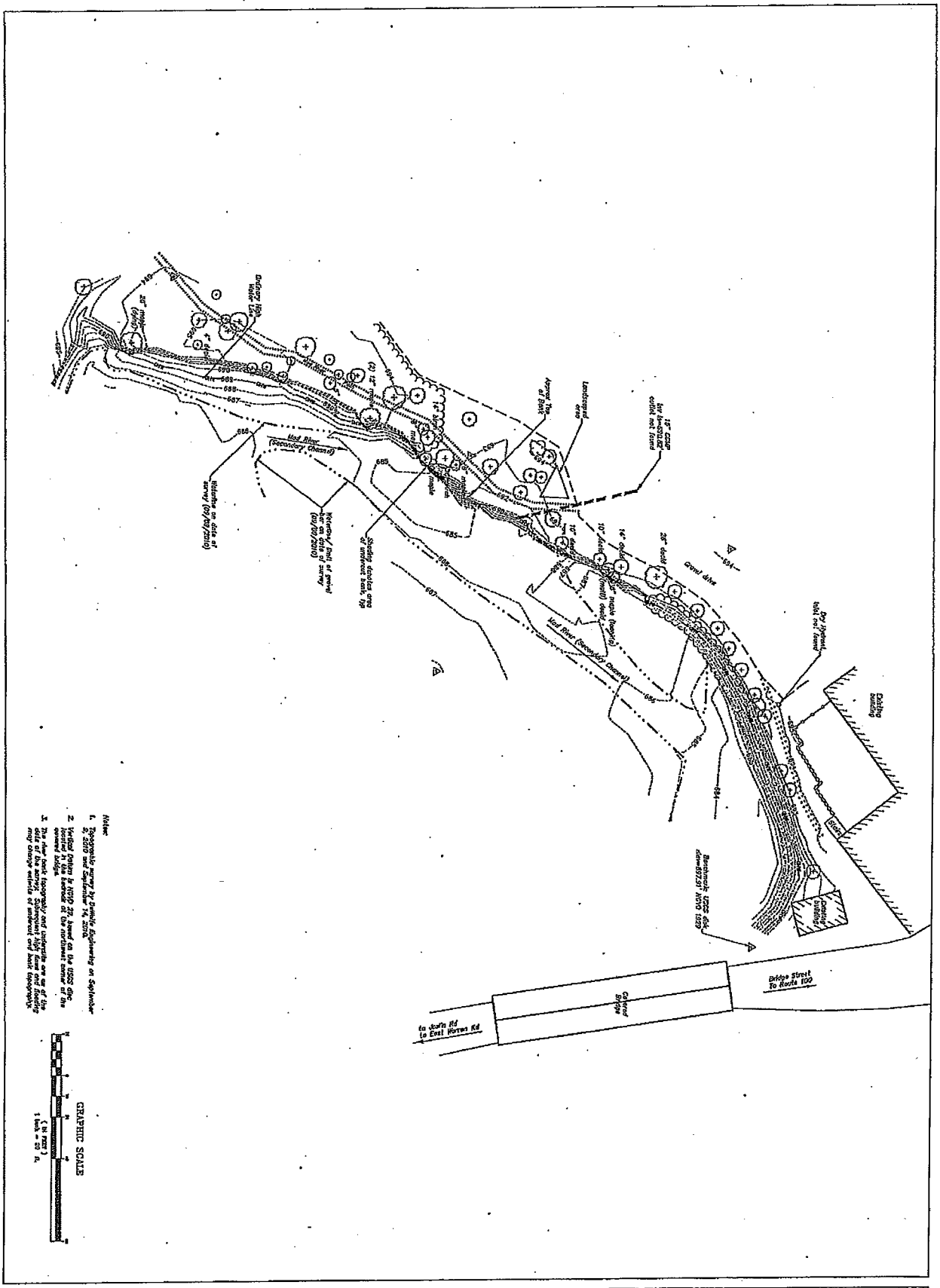
Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES

NO.	DATE	SUBMISSION	NO.	DATE	REVISION

PROJECT NO. 10179 | DATE 18 OCT 2010

C0.01

SHEET 1 OF 7



Notes:

1. Topographic survey by Dubois Engineering on September 9, 2010 and September 14, 2010.
2. Vertical datum is NAVD 29, based on the USGS disc located in the bedrock at the northeast corner of the covered bridge.
3. The river bank topography and waterline are as of the date of the survey. Subsequent high flows and flooding may change extents of undercut and bank topography.

DRAWN BY: BMJK	SCALE: 1"=20'	PROJECT NO.: 10179	SHEET DESIGNATION: EXISTING CONDITIONS
CHECKED BY:	DRAWING NO.: C1.01	DATE: 18 OCT 10	
	SHEET: SHEET 3 OF 7		

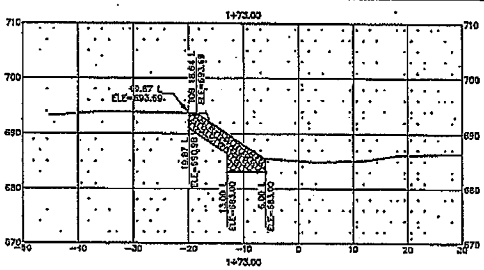
MAD RIVER BANK STABILIZATION

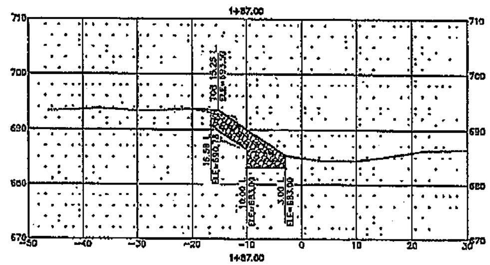
BRIDGE STREET
WAITSFIELD, VERMONT

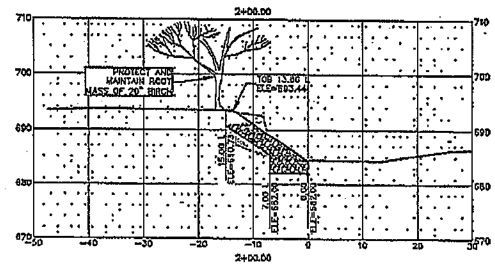
VERMONT AGENCY OF NATURAL RESOURCES

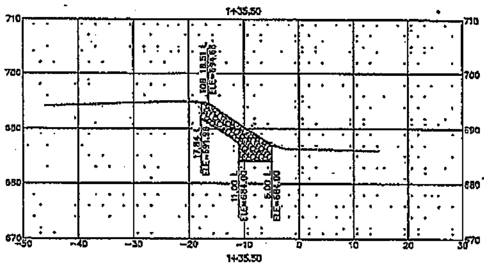
Civil & Structural Engineers
DeWolfe ENGINEERING ASSOCIATES
[illegible]

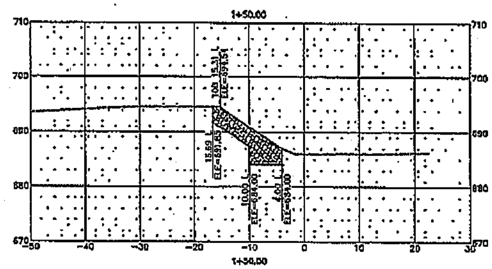
NO.	DATE	REVISION

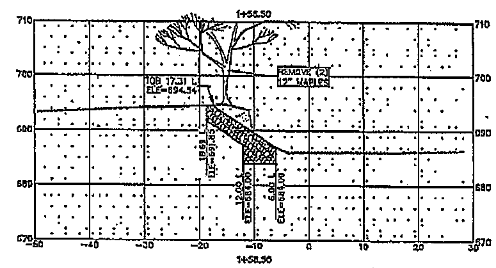


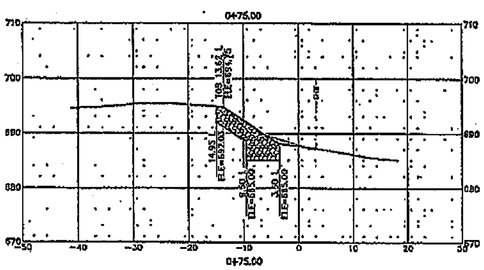


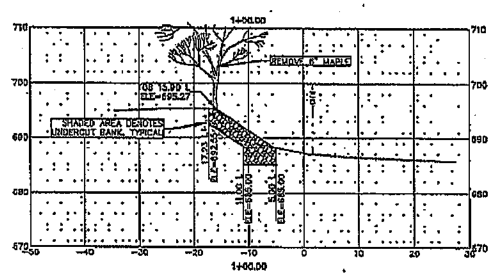


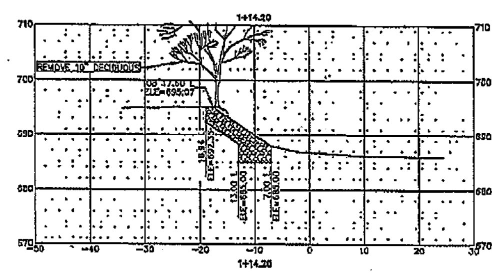


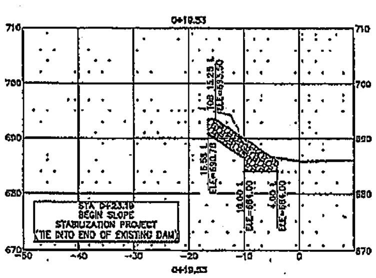


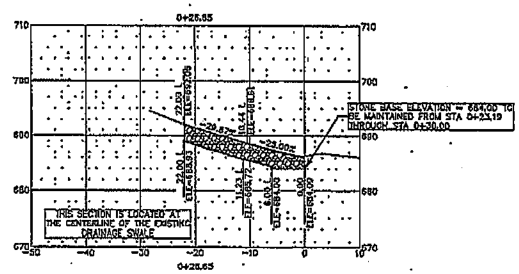


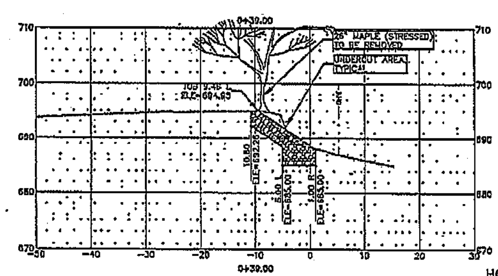


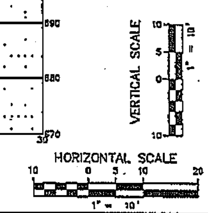












Civil & Structural Engineers
ENGINEERING ASSOCIATES

NO.	DATE	REVISION

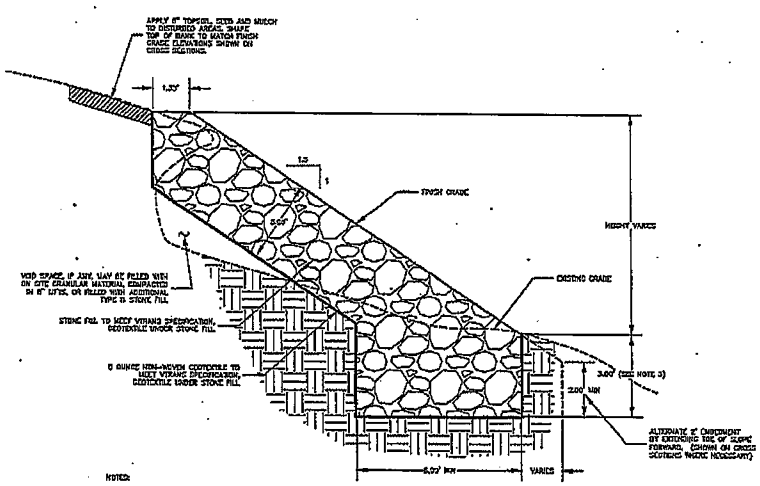
MAD RIVER BANK STABILIZATION

NORTH BANK OF MAD RIVER, WAITSFIELD VILLAGE
WAITSFIELD, VERMONT

BEAR CREEK ENVIRONMENTAL

SHEET DESCRIPTION
CROSS SECTIONS

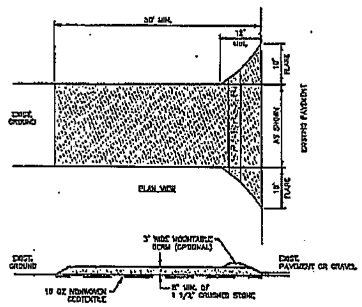
PROJECT NO. 10179	DATE 18 OCT 10
SCALE 1"=10'	C3.01
DRAWN JJS	
CHECKED	SHEET 5 OF 7



NOTES:

1. TYPE III STONE FILL TO BE PLACED PER VTRANS STANDARD SPECIFICATION SECTION 613.
2. STONE FILL MUST MEET VTRANS STANDARD MATERIAL SPECIFICATION 706.04(C), TYPE III STONE FILL.
3. THE TYPICAL EMBEDMENT AT TOE OF FILL IS 3'. THIS IS REDUCED IN SOME SECTIONS BY EXTENDING THE 1.5:1 SLOPE OUT TO MEET EXISTING GRADE. THE EMBEDMENT MUST BE A MINIMUM OF 2 FEET BELOW EXISTING GRADE.

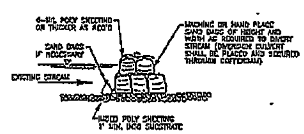
TYPICAL SECTION: TYPE III STONE FILL BANK STABILIZATION
NOT TO SCALE



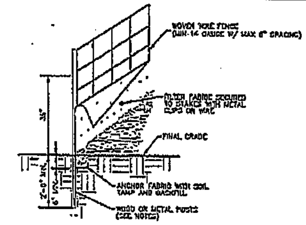
NOTES:

1. THE PURPOSE IS TO REMOVE MUD FROM TIRES OF CONSTRUCTION VEHICLES.
2. WHEN STONE BECOMES CLOGGED AND INEFFECTIVE, TOPDRESS WITH 3" OF NEW STONE OR REPLACE ENTIRE PAD.
3. IF TIRE WASHING IS REQUIRED, WASH WATER SHALL DRAIN INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. STONE SIZE- USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
5. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
6. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



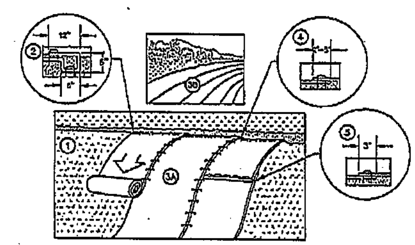
TEMPORARY SANDBAG COFFERDAM
NOT TO SCALE



INSTALLATION NOTE:
1. DRIVE POSTS A MINIMUM OF 16" INTO THE GROUND.
2. EMBED GEOTEXTILE PLACED IN A 6"x6" TRENCH.
3. PLACE STAKES A MAXIMUM OF 6'-0" APART, UNLESS A WIRE BACKING IS USED (10'-0").
4. MAINTAIN A 10'-0" BORDER BETWEEN THE SILT FENCE AND CONSTRUCTION ACTIVITY.
5. INSTALL PARALLEL TO CONTOUR LINES, I.E. AT CONSTANT ELEVATION.
6. USE A CONTINUOUS SHEET OF GEOTEXTILE TO PREVENT FAILURE AT JOINTS.
7. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. WIRE FENCE REINFORCEMENT REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.
8. GEOTEXTILE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH WIRE TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
9. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
10. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.

MAINTENANCE NOTE:
1. CHECK AFTER EVERY RAINFALL EVENT AND WEEKLY.
2. REMOVE SEDIMENT WHEN IT REACHES ⅓ OF FENCE HEIGHT.
3. PATCH TORN FENCES, OR REPLACE THE ENTIRE FENCE SECTION WHEN TEARS OCCUR.
4. IF WATER IS BREAKING THOUGH SILT FENCE THEN IT MUST BE REINFORCED W/STONE.

SILT FENCE
NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP's WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

SLOPE INSTALLATION
ROLLED EROSION CONTROL MATTING
NOT TO SCALE

NO.	DATE	REVISION
1		

Civil & Structural Engineers
DeWolfe
ENGINEERING ASSOCIATES

MAD RIVER BANK STABILIZATION

NORTH BANK OF MAD RIVER, WAITSFIELD VILLAGE
WAITSFIELD, VERMONT

BEAR CREEK ENVIRONMENTAL

SHEET DESCRIPTION: CONSTRUCTION DETAILS

PROJECT NO. 10179	DATE 18 OCT 2010
SCALE AS SHOWN	C5.01
DRAWN JJS	
CHECKED DLF	SHEET 7 OF 7

Figure 2. Grasses and erosion at top of bank
(10/5/10 M. Nealon)

Figure 3. Fallen box elder that will need to be removed
(10/5/10 M. Nealon)

Figure 4. Yellow birch tree, red oak sapling and
Japanese knotweed at top of bank (10/5/10 M. Nealon)

Photographs of digital images that show the vegetation in context of its surroundings
The proposed bank stabilization project is located on the north bank (right side looking upstream) above the historic covered bridge in Waitsfield Village (Figure 6). Just below the bridge is a popular swimming hole. The riparian buffer on the north side is bounded by a parking lot (Figures 7 through 9), and the Mad River path runs through the buffer.

Figure 6. Looking upstream from the historic covered bridge (8/30/10 M. Nealon)

Figure 7. Mad River path adjacent to parking lot in buffer on north side of channel (8/30/10 M. Nealon)

Kari,

I have inspected the eroding bank on the Mad River in Waitsfield just upstream of the covered bridge. The streambank stabilization project as shown on the plans prepared by DeWolfe Engineering will not result in any encroachment beyond the limits of the bank that existed just prior to the most recent flood event nor past the limits that existed at the time of adoption of the effective Flood Hazard Study for the Town of Waitsfield.

Therefore, there should be no change in the effective discharge, water surface elevation, or floodway or flood plain delineations.

Barry Cahoon, P.E.
River Management Engineer
Department of Environmental Conservation
barry.cahoon@state.vt.us
802-751-0129

From: Dolan, Kari
Sent: Friday, October 29, 2010 2:46 PM
To: Cahoon, Barry
Subject: RE: Waitsfield bank stabilization project

Hi, Barry,

Can you provide me with that information for the FEMA PDMC grant?

(1) A technical evaluation ought to suffice; i.e., that the armored bank will not extend beyond the limits of the bank as it existed prior to the most recent flood event nor beyond that which existed at the time the effective study was done.

Thank you!!! I need to finish up this grant by November 8th, so any assistance would be great

Kari

Kari Dolan
Planning and Policy Coordinator
Vermont River Management Program
Department of Environmental Conservation
103 South Main Street, Building 10 North
Waterbury, VT 05671
Ph: (802) 241-1262
Fx: (802) 241-4537
kari.dolan@state.vt.us

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 1, "Summary of Discharges."

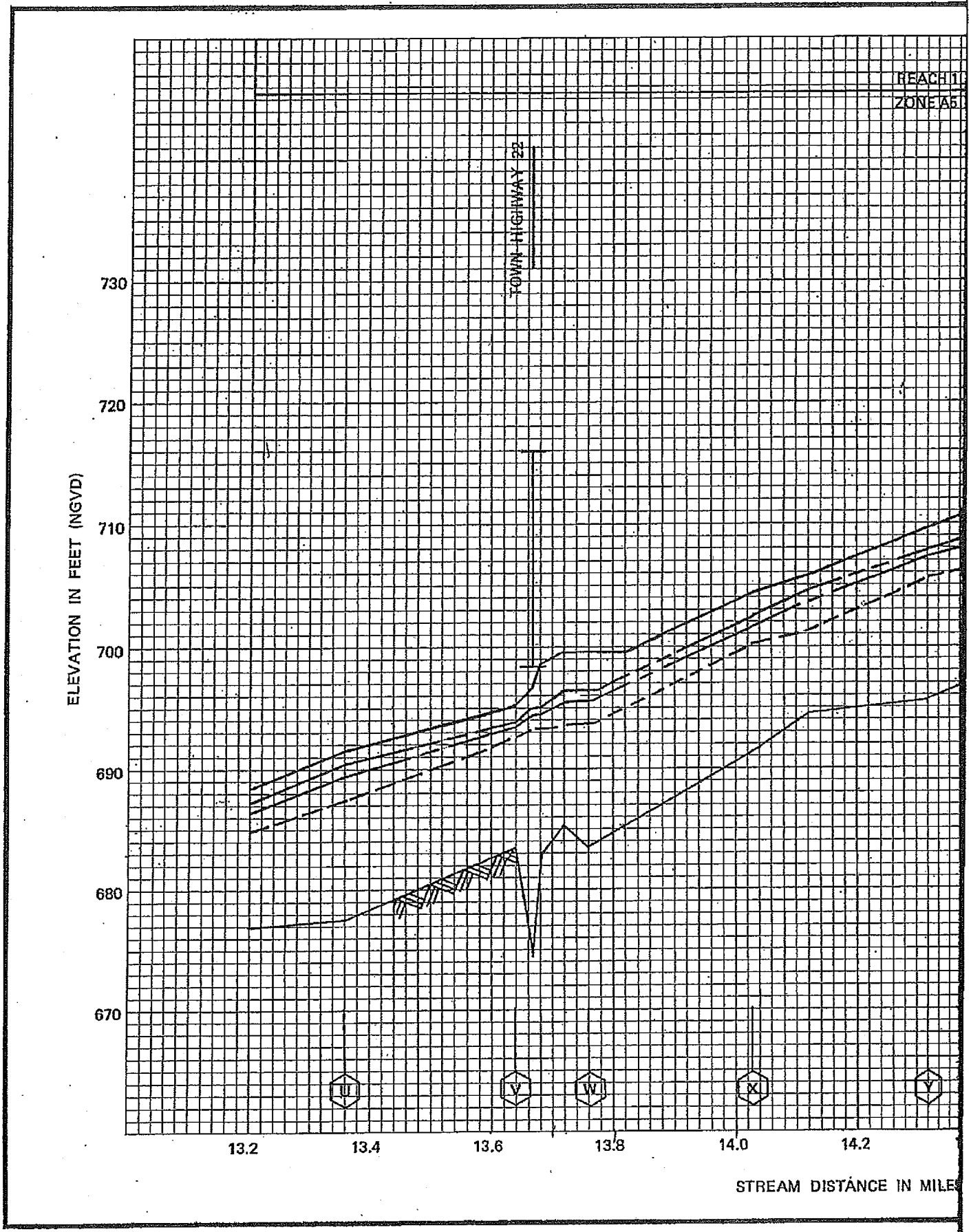
TABLE 1 - SUMMARY OF DISCHARGES

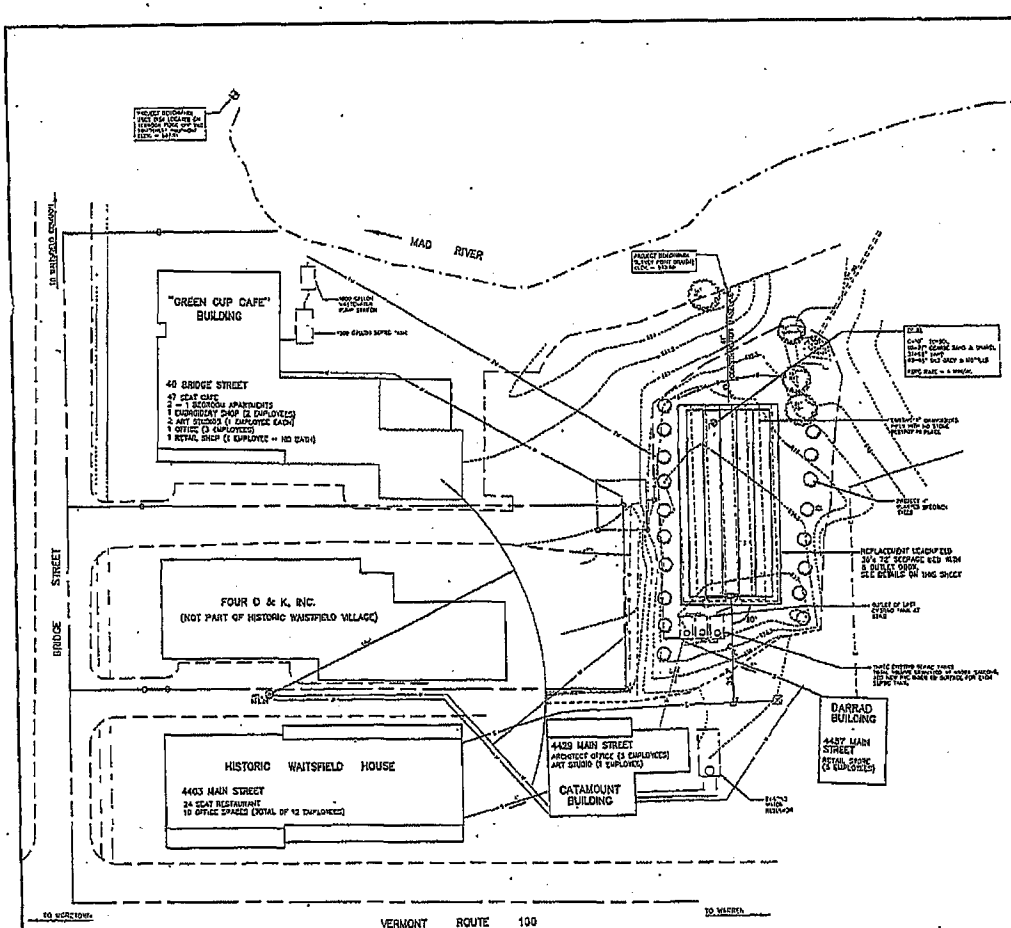
FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
MAD RIVER					
At Waitsfield-Moretown corporate limits	114	9,200	14,900	18,000	27,300
Upstream of confluence of Shepard Brook	96	8,000	12,800	15,600	23,600
Upstream of confluence of Pine Brook	88	7,400	12,000	14,500	22,000
Upstream of confluence of High Bridge Brook	78	6,800	10,900	13,200	20,100
Upstream of confluence of Mill Brook	57	5,300	8,600	10,400	15,800
Upstream of confluence of Charles Folsom Brook	47	4,600	7,400	9,000	13,700
CHARLES FOLSOM BROOK					
At State Route 100	7	750	1,300	1,600	2,500
SHEPARD BROOK					
At State Route 100	17	1,500	2,600	3,100	4,700
MILL BROOK					
At State Route 100	19	1,600	2,800	3,400	5,200

3.2 Hydraulic Analyses

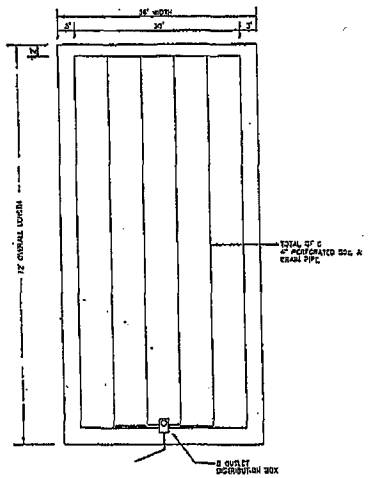
Analyses of the hydraulic characteristics of the flooding sources studied in detail were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of these flooding sources.

Cross section data for the streams studied by detailed methods were obtained using photogrammetric methods where available, and by field measurement for the remaining streams. The below-water data was obtained by field measurement. Bridges and culverts were field surveyed to obtain elevation data and structural geometry.

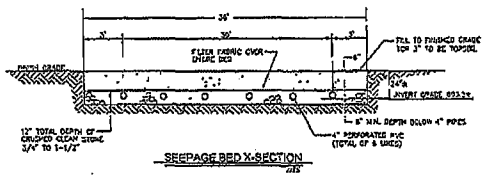

REACH 1
ZONE A5
TOWN HIGHWAY 22
730
720
710
700
690
680
670
ELEVATION IN FEET (NGVD)
13.2
13.4
13.6
13.8
14.0
14.2
STREAM DISTANCE IN MILES
U
V
W
X
Y



GRAPHIC SCALE



SEEPAGE BED PIPING DETAIL



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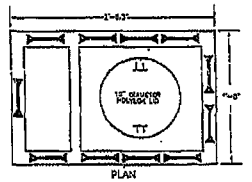

8 - OUTLET DISTRIBUTION BOX

LEACHFIELD SYSTEM SPECIFICATIONS

2. LEACHFIELD: DISTRIBUTION PIPING FOR LEACHFIELD SHALL BE 4" DIAMETER PERFORATED SEWER AND DRAIN PVC PIPE LAID AT A SLOPE OF ±0. A LAYER OF FILTER FABRIC SHALL BE PLACED OVER THE CRUSHED STONE BEFORE PLACEMENT OF ANY FILL. THE TRENCHES OR BED SHALL BE DUG TO THE PROPER GRADE SHOWN ON THE PLANS USING A BACKHOE. THE BOTTOM AND SIDE WALLS SHALL BE RAKED TO ENSURE ELIMINATION OF ANY SMEARED SURFACES. USING THE BUCKET ON THE BACKHOE OR FRONT END LOADER, DUMP THE STONE IN THE TRENCHES OR BED TO AN ELEVATION APPROXIMATELY 6" ABOVE THE FLOWLINE OF THE DISTRIBUTION PIPES. AT THE LOCATION ON THE DISTRIBUTION PIPE, MAKE CHANNELS ABOUT 4" DEEP BY USING A SHOVEL. LAY THE DISTRIBUTION PIPE IN THE TROUGH TAKING CARE TO LEVEL IT WITH HOLES FACING DOWN. REMOVE DIPS AND RISES WHICH OCCUR IN THE PIPE. FINISH PLACING THE CRUSHED STONE 2" DEEP OVER THE DISTRIBUTION PIPES AFTER THE DISTRIBUTION SYSTEM HAS BEEN INSPECTED BY THE ENGINEER. PLACE 12" OF SOIL OVER THE TRENCHES OR BED FOLLOWED BY AT LEAST 3" OF TOPSOIL OVER THE ENTIRE FIELD AREA. SHAPE THE LEACHFIELD SO THAT THERE WILL BE NO STANDING SURFACE WATER.

2. FINAL GRADING: ALL DISTURBED AREA AROUND THE LEACHFIELD SHALL BE FINE GRADED TO ENSURE CONTOURS. THIS AREA SHALL THEN BE SEEDED WITH A GRASS MIXTURE AND A LIGHT COVERING OF MULCH PLACED TO ENSURE GERMINATION OF SEEDS.

3. IT SHALL BE THE LOT OWNERS RESPONSIBILITY TO CONFORM TO THE REQUIREMENTS OF THE STATE PERMIT AND INSURE THAT THE PROJECT IS BUILT IN CONFORMANCE TO THE PLANS AND SPECIFICATIONS. A LICENSED SURVEYOR OR ENGINEER SHALL STAKEOUT THE SEPTIC SYSTEM AT THE LOCATION AND ELEVATION SHOWN ON THE PLAN VIEW PRIOR TO CONSTRUCTION. THE ENGINEER SHALL RECEIVE 24 HOURS NOTICE PRIOR TO CONSTRUCTION OF KEY ELEMENTS OF THE SEPTIC SYSTEM. THE LOT OWNER SHALL BE RESPONSIBLE FOR ARRANGING INSPECTION SERVICES WITH THE ENGINEER, TO SUPPLY AS BUILT CERTIFICATION AS REQUIRED BY THE STATE PERMIT.

4. BASIS OF DESIGN SEPTIC SYSTEM:
A. DESIGN FLOW = 3000 GPD (BY PRIOR SERIES OF PERMITS).
B. PERCOLATION TEST: 4 MINUTES/INCH.
C. SEWAGE APPLICATION RATE = .42 GAL/SF/DAY.
D LEACH AREA REQUIRED = 2500 SF
E. LEACH AREA PROVIDED = 2592 SF (36'x 72' SEEPAGE BED)
F. SEPTIC TANK SIZE = 3 EXISTING CONCRETE TANKS = 4500+ GPD TOTAL
G. WASTEWATER PUMPING STATION = NOT REQUIRED

REPLACEMENT SEPTIC SYSTEM SITE PLAN & DETAILS
HISTORIC WAITSFIELD VILLAGE CONDOMINIUM ASSOCIATION
ROUTE 100 and BRIDGE STREET
WAITSFIELD, VERMONT

CHARLES GRENIER
CONSULTING ENGINEER, P.C.
P.O. BOX 445, WATERBURY, VERMONT
(802)244-8413(Phone) (802)244-1572(Fax)

DATE	7 01 09
DRN BY	TJM
SCALE	1"=20'
SHEET	1 of 1
DWG NAME:	SITE PLAN
FILE NO:	WAITS. 1216-132

VERMONT

Fish & Wildlife Department
103 South Main St., #10 South
Waterbury, Vermont 05671-0501
www.VtFishandWildlife.com

[phone] 802-241-3700
[fax] 802-241-3295
[tdd] 802-828-3345

Agency Of Natural Resources

October 27, 2010

Kari Dolan
Vermont River Management Program
Department of Environmental Conservation
103 South Main Street, Building 10 North
Waterbury, VT 05671

Re: Comprehensive Stormwater Management/Flood Control Mitigation Project, Waitsfield, VT

Dear Kari:

I have reviewed our Department's databases for potential impacts to necessary wildlife habitat, rare, threatened and endangered species and significant natural communities. A search reveals (the following): none of these resources are in the project area.

You may be aware that the town of Waitsfield participated in a natural resource inventory of their town and the following report was produced, "The Mad River Valley Planning District, Natural Heritage Element Inventory and Assessment for Waitsfield and Fayston, Vermont." A map showing wetlands in the study area indicates a rivershore grassland community immediately upstream from the project on the same side of the river. Impacts to this natural community should be avoided or minimized to the greatest extent during the bank stabilization project.

Sincerely,

Everett J. Marshall

Everett Marshall
Biologist/Information Manager
Tel: 802-241-3715; Cell: 802-371-7333

recurrence interval should be input into the aft... ...igation section of the DFA module. The ... ...fits of this project over time are represented by the difference in damages and losses for the before-mitigation and after-mitigation scenarios.

Please contact the FEMA bchelpline@dhs.gov if you have additional questions.

Regards,
Adam Reeder, PE

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FEMA's Benefit-Cost Analysis Helpline
866.222.3580 toll free
bchelpline@dhs.gov

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The guidance in this FEMA Benefit-Cost Analysis (BCA) Helpline response is provided for FEMA Fiscal Year (FY11) Hazard Mitigation Assistance (HMA) grant programs. The BCA requirements for the FEMA Public Assistance (PA) Grant Program under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) may be different from the guidance provided herein.

7. I worked with two engineers on this project: the State River Management Program chief stream alteration engineer, Barry Cahoon, PE, and David Frothingham PE., Senior Civil Engineer with DeWolfe Engineering Associates. Mr. Frothingham verbally agreed to the determination of rate of erosion of that relevant eroding stream bank. We compared the location of the streambank in 1970 and 2009, using ortho-rectified aerial photography and topographic maps. The rate of change result was which came out to be approximately 0.76 feet per year on average. To be conservative, we used a rate of 0.5. Mr. Rothingham also agreed that although the design of this project is to withstand impacts from large flood events, we reasonably estimated that maintenance would cost approximately, $500/year. To be conservative, we doubled that assumption, arriving at a cost of maintenance of approximately $1000/year. The recent flooding in Aug. 2011 confirmed the streambank receding rate, noting more streambank eroded.

8. As recommended by the DCA Helpdesk, since the principle concern is the high risk that future flooding will continue to erode, potentially catastrophically, this actively eroding streambank and result in failure of nearby buildings, we created a "recurrence interval" for streambank erosion. We calculated the distance the buildings are the the Mad River, and, based on the rate of channel erosion, determined the recurrence interval for each buildings:

Building	Recurrence Interval (yr)	Erosion Rate (0.76 ft/yr)	Erosion Rate (1 ft/yr; to be conservative)	Actual Distance from River (ft)	Distance Used (ft, to be conservative)
50 Bridge Street	20	0.76	0.5	5	10
20 Bridge Street	60	0.76	0.5	25	30
40 Bridge Street	190	0.76	0.5	80	95
4403 Main Street	300	0.76	0.5	150	150
4429 Main Street	300	0.76	0.5	150	150

9. Since the inundation data in the flood module provides a good indication of the damages (building, content, and displacement costs) associated with the magnitude of the flood event, I used the outcome in the flood module as input into damages in the Damage Frequency Assessment (DFA). According to BCA Helpdesk, the DFA module may be used to conduct a BCA for such streambank erosion projects. I used the Non-residential structure Depth Damage Functions before mitigation. For Buildings, I used the value after reaching 50% before mitigation. For Content, I used the value that stayed the same after a certain depth, and for Displacement, as recommended by DCA Helpdesk, I assumed that displacement costs would cover one year.

10. We used expected damages for a single event, which was acceptable to the BCA Helpdesk: "For this type of project, it is permitted to enter damages for a single event and the associated recurrence interval determined in the engineering analysis into the DFA module even though guidance for the DFA requires a minimum of two events with known recurrence intervals." (see email correspondence from Adam Reeder, PE, dated 11/17/2010).

11. To determine Damages Before Mitigation, I first created an "event frequency," using the recurrence interval calculated with the erosion rate and distance of the buildings from the river. The "damages before mitigation" were the values from the flood module, becoming my estimates for expected damages for each building. Based on BCA Helpdesk guidance, we conducted the BCA "...based on the assumption that the before-mitigation damages caused by erosion can be expected at a recurrence interval (frequency) equal to the time period at which damage occurs based on the erosion rate."(Reeder).

Waitsfield, VT HMGP Project Application; BCA Module, 09/22/2011, K. Dolan, Agency of Natural Resources

Migration Rate of Streambank

Map Year	avg change in streambank over time (ft/yr)	Rate of Change/yr
1983	27.33	1.05
2009		

Costs and Benefits

Landowner Last Name	Address	Elevation of 1st Floor	1st Floor Square Footage	Tot Square Footage	FMV	FMV/f2	Displacement Costs	Displacement Costs/mo	Content	Loss of Rent
Bargerstock	50 Bridge St	694	352	352	51000	144.89	600/mo	600	10000	
Gulisano	20 Bridge St	694.5	5800	8400	575000	68.45	15000/wk	60000		
Schramke	40 Bridge St	694.5	3500	7000	600000	85.71	5000/mo	5000	50000	5000/mo
Abend	4403 Main St	695.5	4000	10000	500000	50.00		7000	30000	7000/mo
Goss	4429 Main St	695.5	1230	3000	250000	83.33	2488/mo	2488		
Town Office	9 Bridge St									
TOTAL			14882	28752	1976000	68.73		75088		

Calculation of Return Interval:

Landowner Last Name	Address	Distance from River	Rate 0.5ft/yr	RI
Bargerstock	50 Bridge St	10	0.3	33.3
Gulisano	20 Bridge St	30	0.3	100.0
Schramke	40 Bridge St	95	0.3	316.7
Abend	4403 Main St	150	0.3	500.0
Goss	4429 Main St	150	0.3	500.0

Costs/Damages

Building	Content	Displacement
51040	9100	7101
575400	140628	710137
599900	213804	59178
500000	120900	82849
249990	31149	29447

Return Interval	RI	Building	Content	Displacement		Damage Which Buildings
	33.3	51040	9100	7101	67241	50 Bridge Street
	100.0	626440	149728	717238	1493406	50 + 20 Bridge Street
	316.7	1226340	363532	776416	2366288	50 + 20+ 40 Bridge Street
	500.0	1976330	515581	888712	3380623	all five structures

VERMONT

State of Vermont
Department of Economic, Housing and Community Development
One National Life Drive [phone] 802-828-3211
Montpelier, VT 05620-0501
www.development.vermont.gov

Agency of Commerce and Community Development

November 17, 2010

Kari Dolan
Vermont Department of Environmental Conservation
Water Quality Division
103 South Main Street, Building 10 North
Waterbury, VT 05620-1201

Re: Proposed Town of Waitsfield Flood Mitigation Project, Waitsfield, Vermont. Federal Emergency Management Agency Section 106 Review.

Dear Kari:

Thank you for the opportunity to comment on the above-referenced project submitted for funding from the Pre-Disaster Mitigation Competitive Grant program at the Federal Emergency Management Agency (FEMA). The following comments will assist FEMA in their review responsibilities under Section 106 of the National Historic Preservation Act.

The Division for Historic Preservation (Division) is providing FEMA with the following comments pursuant to 36 CFR 800.4, regulations established by the Advisory Council on Historic Preservation to implement Section 106 of the National Historic Preservation Act. Project review consists of identifying the project's potential impacts to historic buildings, structures, historic districts, historic landscapes and settings, and known or potential archeological resources.

The proposed project consists of two general components: 1) stabilization of approximately 425 linear feet of eroding riverbank along the Mad River upstream of the Waitsfield Covered Bridge, and 2) construction of a storm water management system in the Bridge Street Marketplace. The project will mitigate flood damage to the Waitsfield Village and Covered Bridge and is located within the Waitsfield Village Historic District, which is listed on the National Register of Historic Places, and within archeologically sensitive areas along the Mad River.

Based on a preliminary review of the project area, the Division believes that it is likely that the undertaking will have **No Adverse Effect** on any historic properties provided that the following actions are undertaken in accordance with 36 CFR 800.4a(ii) prior to any construction activity. This determination assumes that any adverse effects will be mitigated before project implementation:

1) All project components will be assessed for the presence of historic and archeological resources in the Area of Potential Effect as defined on project plans.

2) The Town of Waitsfield will hire a 36 CFR-61 qualified architectural historian and a 36CFR-61 qualified consulting archeologist to complete the assessments.

3) For above-ground resources, the qualified architectural historian should at minimum complete the following tasks: a) identify and evaluate whether there are any properties already listed on or eligible for listing on the National Register in a project's Area of Potential Effect, b) assess whether there are any adverse effects to any eligible properties, and c) identify options for the possible mitigation to any adverse effects. All work must meet the *Secretary of the Interior's Guidelines for Identification and Evaluation* (48 FR 4471).

4) For below-ground resources, the qualified consulting archeologist shall conduct archeological resource assessments on all project components to identify any known sites and archeologically sensitive areas. Any such assessments must be reviewed and approved by the Division and all known sites and archeologically sensitive areas must be mapped and identified as not-to-be-disturbed buffer zones.

5) Topsoil removal, grading, scraping, cutting, filling, stockpiling, logging or any other type of ground disturbance is prohibited within the buffer zones prior to construction unless the Town of Waitsfield completes appropriate archeological studies.

6) Archeological studies to identify or evaluate sites will be carried by a qualified consulting archeologist in all archeologically sensitive and known site areas to be impacted by the proposed project. The archeological studies will be scheduled early in the project so that mitigation measures that may be necessary can be satisfactorily planned and accomplished prior to construction.

7) All archeological studies and assessments must follow the Division's Guidelines for Conducting Archeological Studies in Vermont. The Town of Waitsfield's archeological consultant must submit any scope of work to the Division for review and approval.

8) Archeological sites within the project area will not be impacted until any necessary mitigation measures have been carried out. Mitigation may include but is not limited to further site evaluation, data recovery, redesign of one or more proposed project components, or specific conditions that may be imposed during construction, such as installation of construction barriers or protective matting etc.

9) Proposed mitigation measures will be discussed with and approved by the Division prior to implementation. The archeological studies will result in one or more final reports, as appropriate, that meet the Division's Guidelines for Conducting Archeological Studies in Vermont.

10) Copies of all reports shall be submitted to the Town of Waitsfield and the Division for review and approval.

Thank you for your cooperation in protecting Vermont's irreplaceable archeological and historic heritage. R. Scott Dillon reviewed this project and prepared this letter. I concur with the findings and conclusions described above. I look forward to further consultation on this important project.

Sincerely:
VERMONT DIVISION FOR HISTORIC PRESERVATION

Giovanna Peebles
State Historic Preservation Officer

Cc: Joshua Schwartz, Mad River Valley Planning District