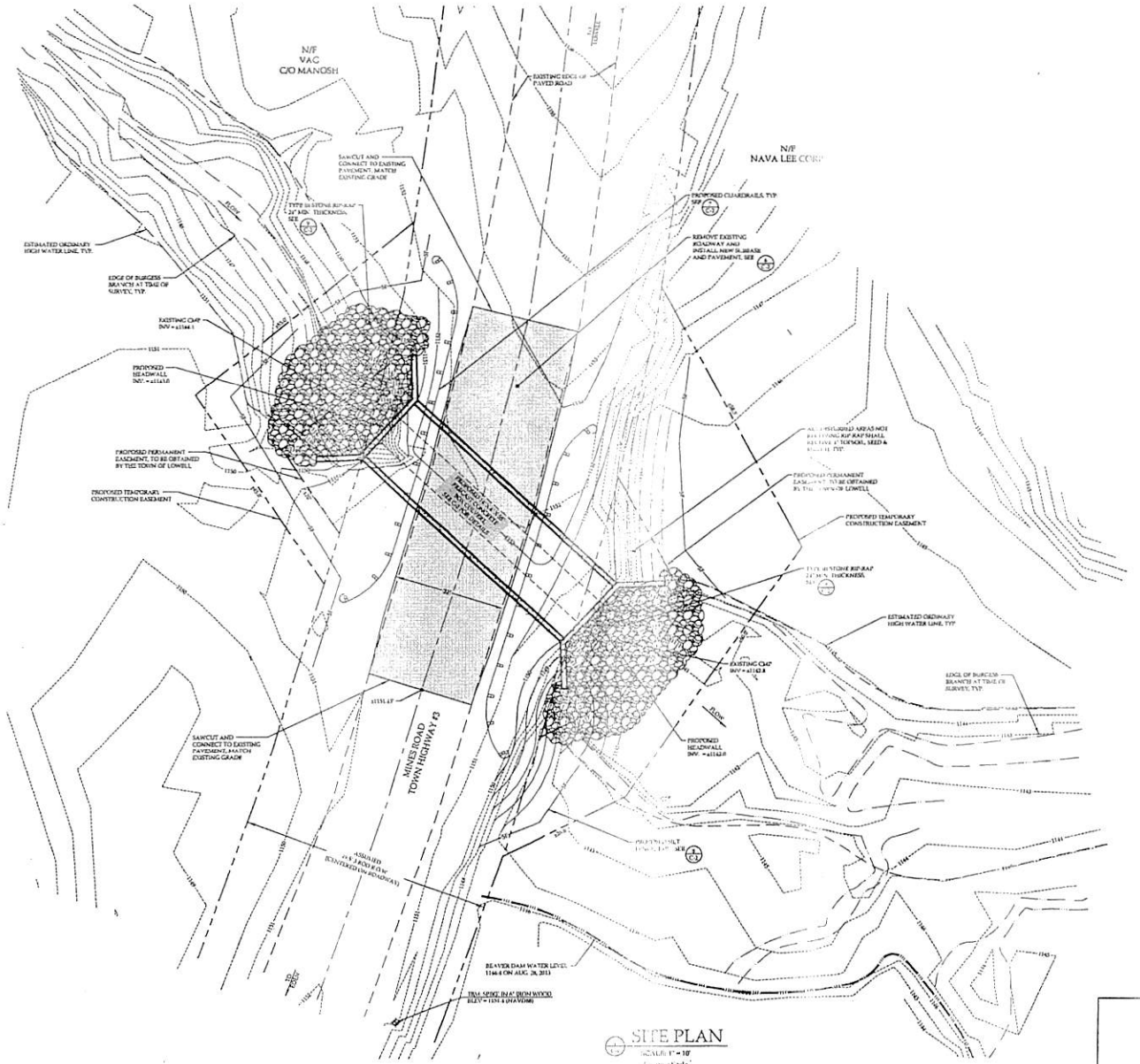


SITE PLAN
SCALE: 1" = 10'
Graphic Scale
10 0 10 20 40

NORTH

SITE LOCATION MAP
NOT TO SCALE

LIST OF DRAWINGS

C-1 PRELIMINARY SITE PLAN
C-2 DETAILS

LEGEND

N/F	NOW OR FORMERLY OWNED BY
	ELEVATION BENCHMARK
	EXISTING RIGHT OF WAY EASEMENT
	PROPOSED RIGHT OF WAY EASEMENT
	EXISTING EDGE OF STREAM
500	EXISTING CONTOUR
600	PROPOSED CONTOUR
SF	PROPOSED SILT FENCE

CONSTRUCTION NOTES:

1) THE CONTRACTOR SHALL PROVIDE APPROPRIATE SIGNAGE INDICATING ROAD CLOSURE DURING CONSTRUCTION AND DETOURING VEHICULAR TRAFFIC [illegible] PRIOR TO ANY EXCAVATION OF THE ROADWAY. THE CONTRACTOR SHALL ALSO PROVIDE [illegible] BARRIERS TO BLOCK THE ROADWAY AT THE LIMITS OF CONSTRUCTION. A SIGNAGE AND [illegible] SHALL BE APPROVED BY THE TOWN OF LOWELL ROAD FOREMAN OR SELECTMAN PRIOR TO THE START OF [illegible]

2) THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION OF THE BROOK, INCLUDING UNCURED CONCRETE, AUTOMOBILE OR MACHINERY FLUIDS, ETC.

PLAN REFERENCES:

1) EXISTING FEATURES AND TOPOGRAPHY [illegible] FROM DIGITAL FILE ENTITLED "LOWBRIDGE-GROUND-TO-REL090313.DWG" PROVIDED BY SUTTON PROFESSIONAL LAND SURVEYORS, PC OF SOUTH BURLINGTON, VERMONT.

2) PROPERTY BOUNDARIES, ABUTTERS [illegible] FROM TAX MAP PROVIDED BY TOWN OF LOWELL, VERMONT.

NOTES:

1) THIS DRAWING IS NOT A BOUNDARY SURVEY. THE BOUNDARY LINE INFORMATION SHOWN IS BASED ON PLAN REFERENCE #1 AND #2. THE PROPERTY [illegible] AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED ON THIS DRAWING ARE FOR ILLUSTRATION PURPOSES ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY [illegible] PUBLISHED "AS A TITLE 27 SECTION 1401 AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHTS.

2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES OR UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION. APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BY THE CONTRACTOR WITH THE WORK.

3) THE TOPOGRAPHIC SURVEY WAS CONDUCTED WITH A THE BENEFIT OF "DIG SAFE" MARKING. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND ARE NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "DIG SAFE" BEFORE COMMENCING ANY [illegible] AND SHALL PRESERVE ALL EXISTING UTILITIES NOT SPECIFIED TO BE REMOVED OR ABANDONED AS PART OF THE PROJECT.

4) NORTH ORIENTATION IS BASED ON [illegible] STATIC GPS OBSERVATIONS MADE ON JUNE 3, 2013. THE RESULTANT HORIZONTAL DATUM IS NAD 83. THE VERTICAL ELEVATION IS CALCULATED NAD 83(2011) EPOCH 2010.0 GEOID 12A MODEL (GEOID12A). THE RESULTING ORTHOMETRIC HEIGHTS ARE NAVD 88 (GEOID12A).

5) THE FEATURES SHOWN AND DESCRIBED BELOW ARE SUBJECT TO EXISTING BURIED UTILITIES, EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, COVENANTS, [illegible] REGULATIONS, AND/OR SETBACK LINES. CLEAR EVIDENCE OF STRUCTURES THAT ARE READILY APPARENT ON THE PREMISES ABOVE GROUND VIEW ARE DELINEATED HEREON. NO LAND SURVEY RESEARCH HAS BEEN PERFORMED [illegible] IN THE ACQUISITION OF THIS TOPO ACTIVITY.

6) THE TOPOGRAPHIC SURVEY WAS CONDUCTED [illegible] EXISTING CONDITIONS MAY HAVE CHANGED SINCE TIME OF SURVEY. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND INFORM ENGINEER IN WRITING OF ANY SIGNIFICANT DEVIATIONS.

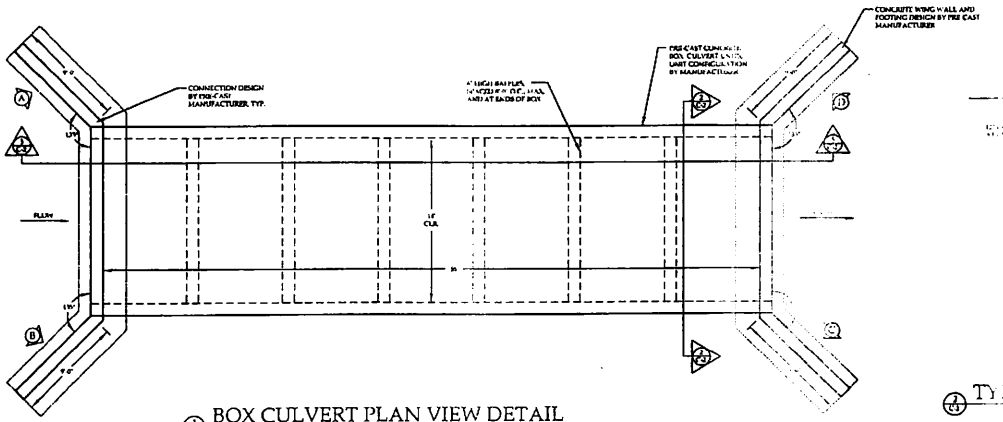
REVISION 07/17/14 - ADDED ESTIMATED ORDINARY HIGH WATER LINE AND ADDED PROPOSED PERMANENT EASEMENTS.

SITE PLAN
TOWN OF LOWELL
BURGESS BRANCH CULVERT REPLACEMENT
MINES ROAD, LOWELL, VERMONT

RUGGIANO engineering, inc.
5 LAKE STREET
ST. ALBANS, VERMONT 05478
PHONE - (802) 524-9300 FAX - (802) [illegible]

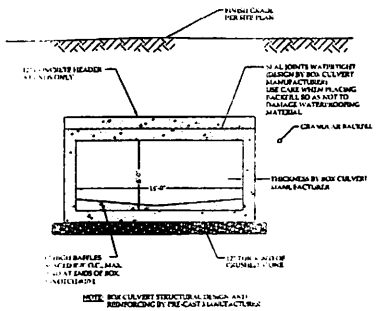
PROJECT NO. 13062
DRAWN BY ..... DJL/NJL
CHECKED BY ..... TJM
SCALE ..... 1" = 10'
DATE 06/23/13

SHEET NO.
C-1
1 OF 2 SHEETS



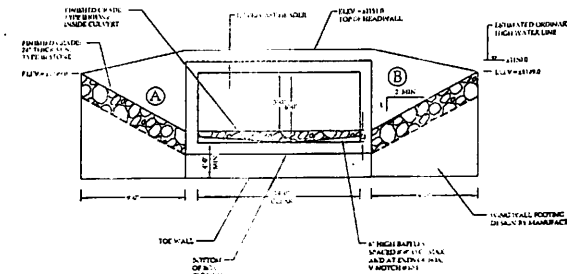
BOX CULVERT PLAN VIEW DETAIL

SCALE: 1" = 5'



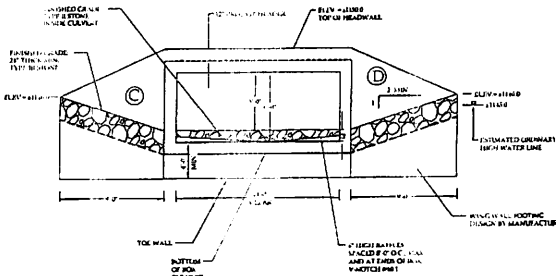
TYPICAL BOX CULVERT SECTION

SCALE: 1" = 5'



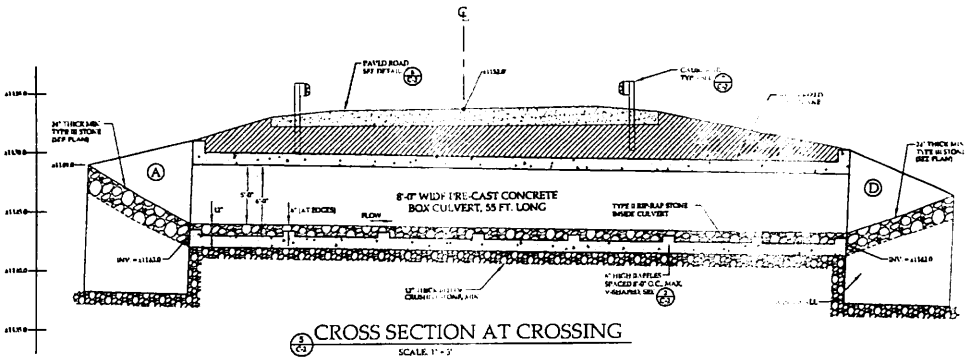
WEST END ELEVATIONS

SCALE: 1" = 5'



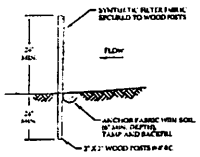
EAST END ELEVATIONS

SCALE: 1" = 5'



CROSS SECTION AT CROSSING

SCALE: 1" = 5'



SILT FENCE

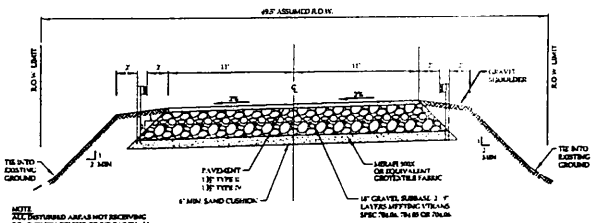
NOT TO SCALE

TYPE III STONE SPECIFICATIONS

[illegible]

TYPE II STONE SPECIFICATIONS

[illegible]



NOTE:
ALL DISTURBED AREAS NOT RECEIVING ROAD FINISH COURSE OR RIP RAP SHALL BE RESTORED USING 4" TOPSOIL, SEED & MULCH

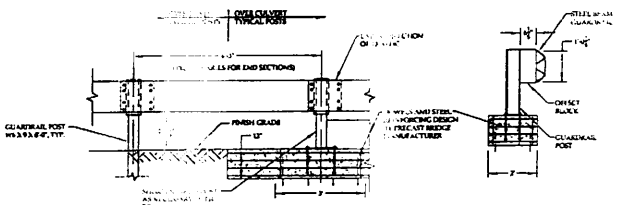
TYPICAL ROAD CROSS SECTION

NOT TO SCALE

NOTES:

1) SEE SHEET C-1d IN VTRANS STANDARD CONSTRUCTION DETAILS

2) CONTRACTOR SHALL INSTALL GUARDRAIL [illegible] ON ALL APPROACHES PER VTRANS [illegible] DETAIL C-1d AND PLAN.



STEEL BEAM GUARDRAIL

NOT TO SCALE

REVISION 4/01/14 - ADDED GRAVEL SHOULDER DETAIL, REVISED DETAILS

DETAILS
TOWN OF LOWELL
BURGESS BRANCH CULVERT REPLACEMENT
MINES ROAD, LOWELL, VERMONT

RUGGIANO Engineering, Inc.
ST. ALBANS
PHONE - (802) [illegible]
COPYRIGHT [illegible]

PROJECT NO.	13062
DRAWN BY	DJL/NRL
CHECKED BY	[illegible]
SCALE	1" = 10'
DATE	10/21/13

SHEET NO. C-2

2 OF 2 SHEETS

VERMONT

REVIEWED
By Bob Melillo, FEMA PS at 6:04 pm, May 27, 2015

Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main 2
Montpelier VT 05620-3522
www.watershedmanagement.vt.gov

Agency of Natural Resources

[phone] 802-828-1535
[fax] 802-828-1544

May 1, 2014

To: Town of Lowell
c/o Richard Pion
2170 VT Rte 100
Lowell, VT 05847

Re: SA-NW-008-2014 – culvert replacement

The three (3) day public notice period required for your proposed Stream Alteration project is complete. Your authorization is enclosed and is effective as of 5/1/14. Please retain a copy for your records and keep it onsite during construction.

If you have any questions do not hesitate to contact us.

Morgaine Bell
Administrative Assistant
Rivers Program
802-490-6195
morgaine.bell@state.vt.us

cc: Chris Brunelle, River Management Engineer (email)
Maria Shrugg (email)
Lowell Town Clerk (email)

VERMONT

Vermont Department of Environmental Conservation
Watershed Management Division
Essex Regional Office
111 West Street
Essex Junction, VT 05452
www.watershedmanagement.vt.gov

Agency of Natural Resources

[cell/text] 802-777-5328
[fax] 802-879-3871
[email] chris.brunelle@state.vt.us

AUTHORIZATION TO CONDUCT STREAM ALTERATION ACTIVITIES

Pursuant to Section C.2.2 of the VT Stream Alteration General Permit (Reporting activities not requiring an application)

Project Number: SA-NW-008 -2014

Applicant Name: TOWN OF LOWELL % RICHARD PLOW

Mailing Address: 2170 VT RTE 100, LOWELL, VT 05847 Phone: 744-6559

Project Location MINES RD, BURGESS BRANCH Email: maria@shrugg.com

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that:

1. This project authorizes REPLACEMENT OF EXISTING CULVERT WITH A NEW BOX CULVERT
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit.
3. The proposed activity will meet the terms and conditions of the General Permit provided:
   a) The project will be completed as shown on the plan(s) dated 9/23/13, prepared by RUGGIANO ENGINEERING, INC., titled "TOWN OF LOWELL, BURGESS BRANCH CULVERT REPLACEMENT MINES RD, LOWELL VT" SHEETS C-1 AND C-2
   b) The project will not adversely affect the public safety by increasing flood hazards.
   c) The project will not significantly damage fish life or wildlife.
   d) The project will not significantly damage the rights of riparian owners.
   e) The project will not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
   f) The project is conducted in a manner which minimizes or avoids any discharge of sediment or other pollutants to surface waters in violation of the VT Water Quality Standards.
   g) The ANR River Management Engineer is notified by phone/text (777-5328) or email (chris.brunelle@state.vt.us) when construction begins and when the project is complete.
   h) In-stream working dates for all GP activities are from ~~July~~ June 1st through October 1st, any In-stream work outside these dates will require an Individual Stream Alteration Permit authorization by the River Management Engineer.
   i) This authorization has been posted for three days public comment. This authorization constitutes final approval.
4. Do not work on the property of others without their permission.
5. N/A
6. N/A
7. N/A

If there are any changes in the project plan(s) or deviation in construction from the plan(s) affecting the watercourse, the Permittee must notify the River Management Engineer immediately.

If the project is constructed as you have described, as shown on the above referenced approved plans and according to the above conditions, there is no reason to expect any violation of Vermont Water Quality Standards.

Signed this 25TH day of APRIL, 2014
David K. Mears, Commissioner
Department of Environmental Conservation

This authorization expires October 1, 2014.

by: Chris Brunelle
Christopher Brunelle, River Management Engineer

VERMONT AGENCY OF NATURAL RESOURCES STREAM ALTERATION INDIVIDUAL PERMIT APPLICATION

10 V.S.A. CHAPTER 41 SUBCHAPTER 2

Agency Use Only
Project #: _____
Receipt Date _____

Applicant Name Town of Lowell

Mailing Address 2170 Vermont Route 100, Lowell, Vermont, 05847

Telephone: Home _____ Work 802-744-6559 Mobile _____

Project Location: Town Lowell Stream Burgress Branch

Nearby town highway or state route Mines Road **ATTACH MAP**

I am hereby applying for the following type of project (check all that apply):

- ☐ Gravel Removal _____ cubic yards
- ☐ Streambank Stabilization Work
- ☐ Stream Channel Relocation
- ☐ Gold Dredging/Mineral Prospecting
- ☐ Other (describe):
- ☐ Temporary Diversion of Stream
- ☒ Bridge/Culvert Construction
- ☐ Utility Crossing (water, sewer)
- ☐ Water/Sewer Outfall/Intake

Project Description:

Magnitude (length, volume, etc.) 14' x 6' Precast concrete box culvert, 55 ft long

Purpose Replacement – Existing culvert is in poor condition and not hydraulically adequate

Construction Procedure Install new box culvert and fill, replace roadway

Erosion/Sediment/Water Control Procedure Install temporary barriers and silt fence during construction; install Rip-Rap and seed and mulch for permanent control.

ATTACH 2 COPIES : layout plan, typical or surveyed cross sections, stream profile and pertinent hydraulic or hydrologic information.

Excavating Contractor To be determined Phone _____

Consultant/Project Supervisor Ruggiano Engineering, Inc. Phone 802-524-9300

Expected Working Dates: Start April 2014 Completion July 2014 # Days Work 90 Days

Name and addresses of landowners adjacent to or across the stream from the project: Signatures are necessary if you intend to work on adjacent property or if the project will directly affect the property of others.

Name VAG, c/o Howard Manosh Address 120 North Gate Plaza, Morrisville, VT 05661

Name Nava Lee Corp. Address P.O. Box 883, Newport, VT 05855

Name _____ Address _____

****APPLICANT MUST FILE COPY OF THIS APPLICATION WITH TOWN CLERK AND ADJOINERS****

CERTIFICATION: I hereby certify that the information on this application is, to the best of my knowledge, true and accurate and that I have forwarded a copy of this application to the Town Clerk of the town in which this project is to occur and to each landowner adjoining or across the stream from the project area as required in 10 V.S.A. Chapter 41, Section 1022. I recognize that by signing this application I am giving consent to employees of the State to enter the subject property for the purpose of processing this application and for ensuring the compliance with subsequent agency decisions relation to the project.

Signature of Applicant Richard Pion Date 2/10/14

Print Full Name Richard Pion, Chairman for Town of Lowell Select Board

NOTE: A PERMIT MAY BE REQUIRED FROM THE US ARMY CORPS OF ENGINEERS. For information contact: US Army Corps of Engineers, VT Project Office, 8 Carmichael Street Suite 205, Essex Jct VT 05452

ENCLOSE $225.00 APPLICATION FEE PAYABLE BY CHECK OR MONEY ORDER TO THE "STATE OF VERMONT"
MUNICIPALITIES ARE EXEMPT FROM FEE

(1) This application is for use by anyone proposing to alter by excavation, movement or fill of greater than 10 cubic yards any watercourse with greater than 10 square miles of watershed at the point of alteration. The limits of a watercourse extend from the top of the streambank to the top of the opposite streambank. If you have any questions regarding the jurisdiction of the statute call to inquire as directed in (3) below.

(2) Submit the application at least 2 – 3 weeks before working dates.

(3) Submit your application to the appropriate River Management Engineer as indicated below or as shown at: http://www.watershedmanagement.vt.gov/rivers/docs/rv_contact.pdf

For activities in northeastern Vermont including Lake Memphremagog watershed and the Upper Connecticut River watershed downstream to Wilder Dam, contact or send to:

Barry Cahoon, P.E., River Management Engineer; Phone: 802-751-0129; Cell: 802-343-0217; Fax: 802-748-6687
1229 Portland St. Suite 201, St. Johnsbury VT 05819 Email: barry.cahoon@state.vt.us

For activities in northwest, north, and central Vermont including all Lake Champlain tributaries from the Canadian border south to include the Lewis Creek Watershed, tributaries to Otter Creek north of the Neshobe River, and the Winooski River upstream to Bolton Falls dam, contact or send to:

Chris Brunelle, River Management Engineer; Phone: 802-879-5631; Cell: 802-777-5328; Fax: 802-879-3871
111 West Street, Essex Jct., VT 05452 Email: chris.brunelle@state.vt.us

For activities in central Vermont including the Upper Winooski River watershed from Bolton Falls dam upstream and the entire White River watershed, contact or send to:

Patrick Ross, P.E., River Management Engineer; Work Cell: 802-279-1143; Fax: 802-476-0131
5 Perry Street, Suite 80, Barre, VT 05641 Email: patrick.ross@state.vt.us

For activities in southern Vermont including the Connecticut River watershed from Wilder Dam downstream including the Ottauquechee River, West River and Deerfield River watersheds, contact or send to:

Todd Menees, P.E., P.H., River Management Engineer; Work Cell: 802-345-3510; Fax: 802-885-8890
State Office Suite 303, 100 Mineral Street, Springfield, VT 05156 Email: todd.menees@state.vt.us

For activities in the upper (southerly) portion of the Otter Creek watershed including the Neshobe River, Poultney and Mettawee River watersheds, and the Hudson river tributaries including the Battenkill, Hoosic and Walloomsac River watersheds contact or send to:

Jaron Borg, River Management Engineer; Work Cell: 802-371-8342; Fax: 802-786-5915
430 Asa Bloomer State Office Bldg, 88 Merchants Row, Rutland, VT 05701 Email: jaron.borg@state.vt.us

(4) Provide the applicant's name and contact information. Applicant can be landowner, municipality, contractor or other.

(5) Describe location by town, stream and nearby roads. Provide a map. See: http://www.watershedmanagement.vt.gov/rivers/htm/rv_management.htm

(6) Check the type(s) of activities that best describes your proposal.

(7) Describe the purpose of your project (what you wish to accomplish), its physical extent (size), the anticipated construction procedure and the erosion, sediment and water control plan.

(8) Provide plans necessary to adequately depict the proposal. Include plan view, typical or surveyed cross sections, stream profile and any other pertinent hydraulic, hydrologic, structural or property boundary information. Provide copies of FEMA flood maps wherever any floodway encroachment is anticipated.

(9) Provide two (2) copies of all design plans, elevations, sections, etc.

(10) Include name and phone numbers of excavation and/or concrete contractor, engineering consultant and project supervisor. These project participants may be required to participate in a project review meeting or site and/or subsequent pre-construction conference.

(11) Note anticipated working dates and time required to complete project.

(12) Notice of Agency's action will be sent to each landowner abutting or across the stream from the project area. The names and addresses of these property owners must be provided on the application. Signatures are preferred and will be considered to indicate consent to the project.

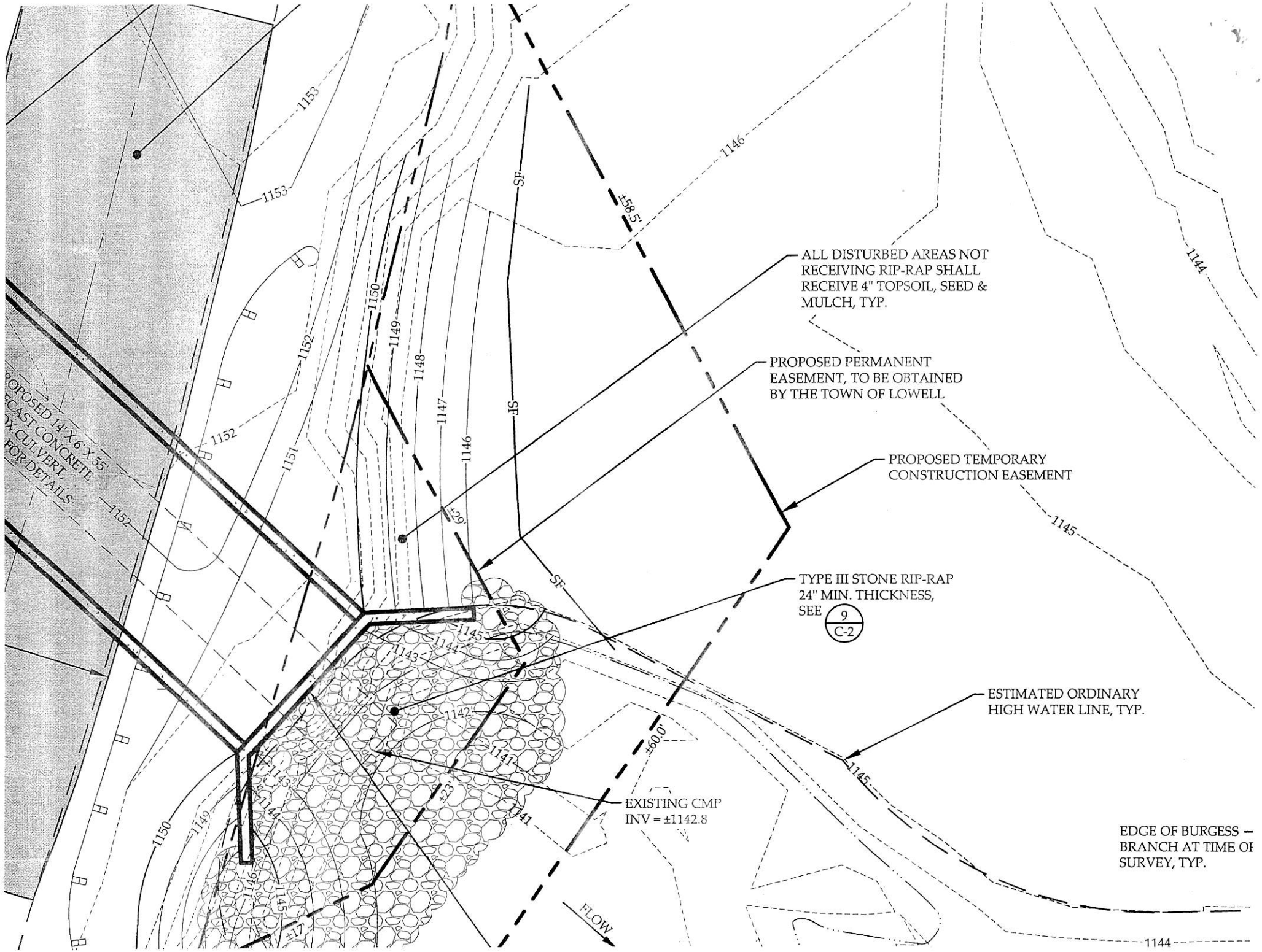
(13) Applicant must file a copy of the application with the Town Clerk of the town in which the project is located and with each abutting owner upstream, downstream and across the stream from the project location.

(14) Sign and date the application. Recognize that your signature certifies that the information provided is true, that you have sent copies to the Town Clerk and to adjoiners and that you have consented to on-site inspections by State employees.

(15) Enclose application fee (no cash) $225.00 payable to "State of Vermont". Municipal projects are exempt.

(16) If the project involves work below USGS el. 95.5 in a tributary of Lake Champlain or USGS el. 682 in a tributary of Lake Memphremagog, a permit may be required under 29 V.S.A. Chap. 11. Contact Lakes and Ponds Section of the Vermont Department of Environmental Conservation at 802-241-3777.

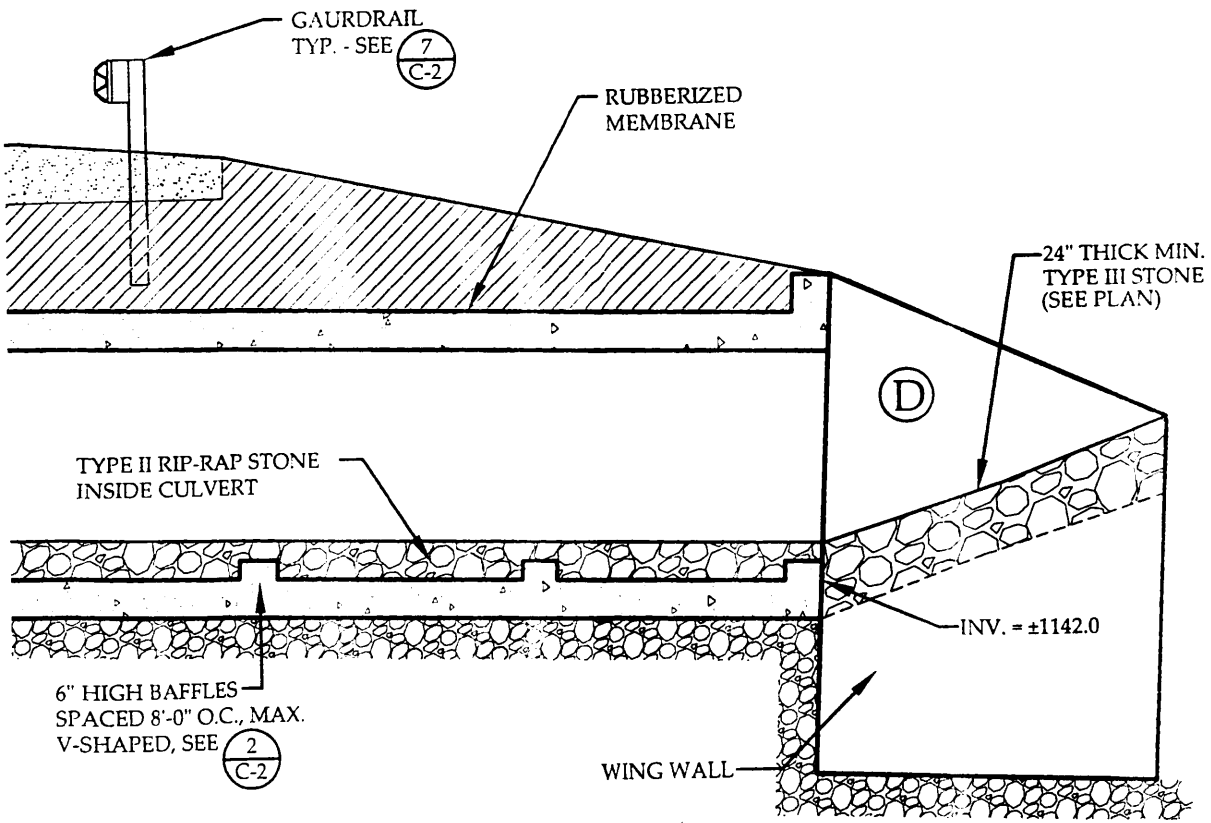
(17) Concurrent federal jurisdiction may be exerted under Section 1 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. Contact US Army Corps of Engineers, Essex VT at 802-872-2893.

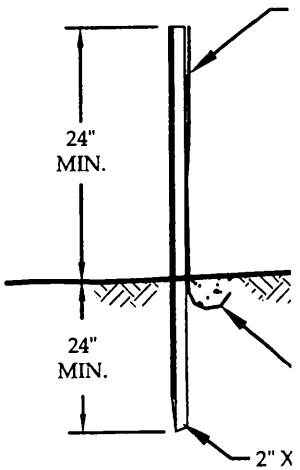

ALL DISTURBED AREAS NOT RECEIVING RIP-RAP SHALL RECEIVE 4" TOPSOIL, SEED & MULCH, TYP.
PROPOSED PERMANENT EASEMENT, TO BE OBTAINED BY THE TOWN OF LOWELL
PROPOSED TEMPORARY CONSTRUCTION EASEMENT
TYPE III STONE RIP-RAP 24" MIN. THICKNESS, SEE 9 C-2
ESTIMATED ORDINARY HIGH WATER LINE, TYP.
EXISTING CMP INV = ±1142.8
EDGE OF BURGESS BRANCH AT TIME OF SURVEY, TYP.
PROPOSED 14' X 6' X 55' PRECAST CONCRETE BOX CULVERT, SEE FOR DETAILS
FLOW
SF
±58.5'
±29'
±23'
±17'
±60.0'
1153
1152
1151
1150
1149
1148
1147
1146
1145
1144
1143
1142
1141

TYPICAL BOX CULVERT SEC

2 / C-2

SCALE: 1" = 5'





SILT

8 / C-2

NOT

DEPARTMENT OF THE ARMY
GENERAL PERMIT
STATE OF VERMONT

The New England Division of the U.S. Army Corps of Engineers (Corps) hereby issues this General Permit (GP) that expedites review of minimal environmental impact work associated with the aquatic environment of navigable and inland waters and wetlands within the State of Vermont. This general permit for Vermont is known as the Vermont General Permit.

I. GENERAL CRITERIA:

Activities with **minimal impacts**, as specified by this GP's terms (Pages 1-6), general conditions (GC) (Pages 7-16) and Appendix A - Definition of Categories, qualify for authorization under the GP in either Category 1 or Category 2.

Proponents should first review Appendix A - Definition of Categories to see if a project meets either:

- Category 1: Self-Verification, Category 1 Notification Form required
  Projects meeting Category 1 criteria and which are in full compliance with the general conditions may be authorized under this GP after submission of the Category 1 Notification Form.
- Category 2: Reporting.
  An application to and written verification from the Corps is required for these projects.

If you determine that your project is eligible for Category 1 as defined in Appendix A, you must then ensure that your project is in full compliance with this GP's terms and general conditions. If any of these terms and conditions are not met, your project must be reviewed in the Category 2 or the Individual Permit category. The Individual Permit thresholds are defined in Appendix A and the Individual Permit procedures are briefly described on Page 6. This GP does not affect the Corps Individual Permit review process or activities exempt from Corps regulation.

II. ACTIVITIES COVERED:

- Work and structures that are located in, under, or over any navigable water of the United States[1], the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters (regulated by the Corps under Section 10 of the Rivers and Harbors Act of 1899); and

- The discharge of dredged or fill material into waters of the U.S. [regulated by the Corps under Section 404 of the Clean Water Act (CWA)]. This GP also covers secondary impacts[2], which are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. The Corps does not regulate secondary impacts unless there is an actual placement of dredged or fill material.

[1] Waters of the U.S., inland waters and wetlands, and navigable waters of the U.S. are defined at Appendix A, Endnotes/Definitions.
[2] See GC 3 on Page 7 and Appendix A, Endnote 4 for more information on secondary impacts.

III. PROCEDURES:

A. State Approvals

Applicants are responsible for applying for and obtaining any required State approvals (see GC 1). Federal and State jurisdictions may differ in some instances. State permits may be required for specific projects regardless of the general permit category.

In order for authorizations under this GP to be valid, a Water Quality Certification (WQC) under Section 401 of the CWA (33 USC 1341) or waiver thereof must be obtained from the VT ANR, Water Quality Division prior to the commencement of work in Corps jurisdiction. The VT ANR has granted WQC for GP Category 1 activities provided the Corps exercises its discretionary authority to review any project covered under Category 1 when notified by the VT ANR that such project represents a threat to water quality. Therefore, a separate 401 WQC application is not required for activities involving fill in waters of the U.S. authorized under Category 1 of this GP.

The VT ANR conditionally granted WQC for GP Category 2 activities listed in Appendix A of this GP provided the Corps notifies the VT ANR and the interagency review team (USFWS, USEPA, VT ANR and the Corps) finds that the activity is reasonably likely to have minimal or no impact on water quality. The VT ANR retains the right to require an Individual WQC for any Category 2 activity. The VT ANR will respond within the same response times required of the Federal resource agencies.

B. Corps Authorizations

General permit authorizations consist of both Category 1 and 2 activities (see Appendix A). The thresholds outlined in this document are intended to ensure that the GP results in no more than a minimal impact to the aquatic environment. The Corps will coordinate review of all Category 2 activities with Federal and State agencies, as appropriate, and may require project modifications or mitigation to minimize impacts.

- **Category 1 – (Self-Verification, Category 1 Notification Form required)**
  - If you self-verify that your project qualifies for Category 1, your project is authorized under this GP and you are required to submit the Category 1 Notification Form at Appendix B to the Corps
  - Prospective permittees should carefully review this GP to determine whether applying to the Corps under Category 2 prior to commencing the authorized activity is required. Consultation with the Corps and/or outside experts may be necessary to ensure compliance with this GP's GCs and related Federal laws such as the National Historic Preservation Act (see GC 7), the Endangered Species Act (ESA) (see GC 9) and the Wild and Scenic Rivers Act (see GC 11). Project proponents are encouraged to contact the Corps with Category 1 eligibility questions.
  - Secondary impacts must be included when determining if a project qualified for Category 1 (see GC 3).
  - Fill area includes all temporary and permanent fill.
  - Projects not meeting the Category 1 eligibility criteria are reviewed under Category 2 or Individual Permit procedures.

Enforcement cases. This GP does not apply to any existing or proposed activity in Corps jurisdiction associated with an on-going Corps or EPA enforcement action until such time as the enforcement action is resolved or the Corps determines that the activity may proceed independently without compromising the enforcement action. The Corps may choose not to accept applications or issue permits to any applicant with outstanding violations.

Category 2 (Corps Verification, Application and Written Approval Required)

Eligibility

Activities in Vermont that are:

- Subject to Corps jurisdiction;
- Meet the definition of Category 2 in Appendix A; and
- Meet the general conditions of this GP (Pages 7-16)

require **written approval from the Corps**. These projects will be reviewed through interagency screening to determine whether such activities may be authorized under this GP. **To be eligible and subsequently authorized, an activity must result in no more than a minimal impact to the aquatic environment as determined by the Corps in coordination with the interagency review team, in addition to meeting the criteria listed above.**

This may require project modifications involving avoidance, minimization or compensatory mitigation[3] for unavoidable impacts to ensure the net effects of a project are minimal.

To ensure compliance with this GP's general conditions, consultation with the Corps, other Federal or State resource agencies, or independent consultants, may be necessary. This includes consultation with the VT State Historic Preservation Officer (VT SHPO) (Page 16) and, when projects are proposed in Addison, Rutland or Bennington counties, the Stockbridge-Munsee Tribal Historic Preservation Officer (THPO) to ensure compliance with GC 7 and the VT ANR to comply with applicable general conditions. Also, note the review thresholds under Category 2 apply to single and complete projects only (see GC 5).

Application Procedures

Applicants must apply directly to the Corps at the Vermont Project Office (VPO), and are encouraged to simultaneously apply to the VT ANR for any related permits. Upon receipt of an application for a Category 2 activity, the Corps will determine if it:

(1) Requires additional information;
(2) Is appropriate for screening with the Federal resource agencies and State agencies (see Screening Procedures);
(3) Is ineligible under the terms and/or conditions of this GP;
(4) Requires project modification, mitigation or other special conditions to minimize impacts and protect the aquatic environment to be eligible for this GP; or
(5) Requires Individual Permit review regardless of whether the terms and conditions of this GP are met, based on concerns for the aquatic environment or any other factor of the public interest (GC 4).

Information Typically Required

In order to consider an application complete and review it with the interagency review team, the applicant must submit complete information. Please see www.nae.usace.army.mil for a more comprehensive checklist. Select "Regulatory", "Permits" "Forms" and then "Application and Plan Guideline Checklist." This information includes, but is not limited to:

- A completed Corps application form (ENG Form 4345[4])
- Plans that illustrate the proposed work in reference to the limits of Corps jurisdiction as applicable. Plans should be on 8.5" x 11" paper and contain all other appropriate information.
- A description of the proposed work, project purpose and location, including a locus map and photographs,

[3] Compensatory mitigation for waterway/wetland impacts may take the form of payment into the Ducks Unlimited In-Lieu Fee Program, wetland restoration, enhancement, creation, and/or preservation. See www.nae.usace.army.mil/regulatory, "Mitigation" and then "Vermont" for more information.

[4] Located at www.nae.usace.army.mil/regulatory under "Forms."

if applicable.

- Data sheets to support wetland delineations. (See GC 2.)
- A narrative description of the habitat(s) including dominant plant community(ies) present, soil type and relevant existing and adjacent land uses.
- A demonstration that there will be no more than minimal direct and indirect impacts to the aquatic resource(s) resulting from the project. Consideration should be given to impacts associated with expected hydrologic changes, effects on riparian habitat, forest fragmentation, impacts to headwater and ephemeral streams (Endnote 17), stormwater discharges and other potential water quality and wetland habitat impacts. (See GC 3.)
- Information on Federal endangered and threatened species and critical habitat, and State endangered and threatened species that occur or may occur in the project area. (See GC 9.)
  VT ANR, Department of Fish & Wildlife, Nongame and Natural Heritage program contact information is provided on Pages 16-17. Refer to Additional References on Pages 18-19 for additional information.
- Identification and description of potential impacts to essential fish habitat. (See GC 10.)
- Identification of potential discharges of pollutants to waters, including potential impacts to impaired waters, in the project area. (See GC 22.) Refer to Additional References on Pages 18-19.
- Identification, quantification, and description of potential impacts to aquatic resources, including delineation of wetlands, special aquatic sites, special wetlands and vernal pools. (See GC 27.)

Federal/State Screening Procedures

The Corps, Federal resource agencies [U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), and National Marine Fisheries Service (NMFS)] and VT ANR will comprise the interagency review team. The Corps will also coordinate with the VT SHPO and, as appropriate, the THPO as to potential impacts of a project on historic properties.

Screening of Category 2 projects will be either through email, fax, mail or at interagency screening meetings at the Corps VPO. Projects are coordinated on a regular basis or as necessary to facilitate prompt decision making. The Corps and the Federal resource agencies, at the branch chief or equivalent level, may agree on certain activities that do not need to be coordinated at these meetings. The Corps, VT ANR, VT SHPO and, as appropriate, the THPO will review/screen complete applications for Category 2 activities with impacts between 3,000 square feet (SF) and 5,000 SF. The Corps will review/screen all complete applications for Category 2 projects with impacts greater than 5,000 SF with the interagency review team, VT SHPO and, as appropriate, the THPO.

The Corps may determine on its own or in consultation with the interagency review team, if applications for Category 2 work:

- Are eligible under the GP as proposed;
- Are ineligible under the terms and/or conditions of this GP;
- Require additional information:
- Will require project modification, mitigation or other special conditions to avoid or minimize adverse environmental impacts and protect the aquatic environment to be eligible for authorization under this GP; or
- Require Individual Permit review irrespective of whether the terms and general conditions of this GP are met, based on concerns for the aquatic environment or any other factor of the public interest (see GC 4).

The Federal resource agencies, the VT ANR, VT SHPO and, as appropriate, the THPO must provide verbal comments to the appropriate Corps project manager in the VPO within 10 business days of receiving the Determination of Eligibility (DOE) from the Corps. These verbal comments may consist of a request for additional information, recommendations for modification, mitigation, or special conditions to avoid or minimize adverse environmental impacts associated with the aquatic environment, and to ensure the terms and

general conditions of the GP are met, or a request for a site visit.

Federal resource agency additional information requests shall be within their area of expertise, commensurate to the level of impact, and agreed upon by the Corps. If additional information is requested, the agencies are allowed an additional 10 business days after receipt of this information to provide recommendations for modifications, mitigation or special conditions. Unless additional information is requested, the verbal notice must be confirmed with a written response to the appropriate Corps project manager at the VPO within an additional 10 working days from the date of the verbal comment.

The Corps may contact the applicant either by phone or in writing if there are concerns. If the applicant is unable to resolve the concerns or modify the project, the Corps may determine that a project is ineligible under this GP, "kickout" the project to the Individual Permit review category, and begin its Individual Permit review procedures. The Corps will send a "Kickout Letter" to the applicant and copy the VT ANR and the commenting Federal resource agency on any written correspondence to the applicant. The Corps may reinstate a project's eligibility under the GP provided concerns are satisfied.

The VT ANR within 10 business days of the date the project information is received from the Corps may require an Individual 401 WQC review for any Category 2 project. This 10-day notice to the Corps of the requirement for an individual 401 WQC review may be verbal and is not required to be fully documented, but must be directed to the appropriate Corps Project Manager at the VPO. The VT ANR must confirm the requirement for an individual 401 WQC review with a written response to the appropriate Corps project manager within an additional 10 working days from the date of the verbal comment. If the VT ANR does not notify the Corps as outlined herein, WQC is conditionally granted for the project. In order for the Corps GP authorization to be valid, the WQC must be obtained or waived prior to the commencement of work.

If the Corps and Federal resource agencies determine that the activity is eligible for the GP, the Corps will send an authorization letter directly to the applicant. The Corps will generally issue an eligibility determination within 60 days from the date of a complete application. If the Corps determines that the activity is not eligible under the GP or that additional information is required, the Corps will notify the applicant in writing and will send a copy of this notification to VT ANR.

Emergency Situation Procedures

Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. If an emergency situation requires action in less than 30 days after the occurrence, it qualifies for the amended notification procedures described below.

Notification Procedures for Emergency Situations: The Federal resource agencies, VT ANR and the VT SHPO will each designate an alternate to be contacted in the event the regular contact is unavailable. The VT ANR, VT Emergency Management (VTEM) or FEMA will notify the Corps within 24 hours of the occurrence of a disaster and advise the Corps of the nature of the occurrence and any known remedial and/or protective measures. The Corps will notify agency representatives that a disaster has occurred within one working day of being notified by the VT ANR, VTEM or FEMA.

When an application for Category 2 work is received that the Corps VPO determines is an "emergency" as defined above, the Corps will e-mail or fax a copy of the plans and DOE to the agency representatives and their alternates. The resource agencies would then have 16 working hours to notify the Corps if they have any comments on authorization of the project under the GP. Objections to the Corps determination of an "emergency" situation will not be accepted. If no response is received at the VPO within 16 working hours, the Corps will proceed with a decision on the application. If the resource agencies have comments on the proposal,

they will have 16 working hours to put their comments in writing. If written comments from the Federal agencies are not received at the VPO within 16 working hours, the Corps will proceed with a decision on the application.

If a Federal agency requests that an Individual Permit be required for a project or requests modifications to the project based on concerns within their area(s) of expertise, the Corps will notify the applicant within 8 working hours of receipt of that request that the project as proposed does not qualify for authorization under the GP and that an Individual Permit will be required. In any event, the Corps will notify the applicant within 48 working hours of commencement of the screening process as to whether the project may proceed under the GP.

IV. INDIVIDUAL PERMIT

Work that is in the Individual Permit category as listed in Appendix A, or that does not meet the terms and conditions of this GP, will require an application for an individual permit from the Corps of Engineers (see 33 CFR 325.1). The applicant should submit the appropriate application materials {including the Corps application form (ENG 4345)] at the earliest possible date to expedite the permit review process. General information and application forms can be obtained at our web site or by calling us (see Page 16). An Individual 401 WQC will be required from the appropriate VT resource agency(ies). Filing an Individual Permit application does not relieve the applicant from their obligation to obtain all necessary State approvals from the appropriate Vermont resource agency(ies) or any applicable local approvals.

V. GENERAL CONDITIONS (and supporting general information):

The following conditions apply to activities authorized under this GP, including all Category 1 (self-verification) and Category 2 (screening) activities:

General Requirements:

1. **Other Permits.** Authorization under this general permit does not obviate (i.e., to make unnecessary) the need to obtain other Federal, state, or local authorizations required by law.

2. **Federal Jurisdictional Boundaries.** Applicability of this GP shall be evaluated with reference to Federal jurisdictional boundaries. Applicants are responsible for ensuring that the boundaries depicted on permit drawings satisfy the Federal criteria defined at 33 CFR 328-329. See www.nae.usace.army.mil/regulatory>> Jurisdictional Limits and Wetlands for more information.

3. **Minimal Effects, Secondary (Indirect) and Cumulative Impacts.** (a) Projects authorized by this GP shall have no more than minimal individual and cumulative environmental impacts as determined by the Corps. Applicants must demonstrate that there will be no more than minimal direct and indirect impacts to the aquatic resource(s) resulting from the project. Mitigation may be required to offset unavoidable impacts. (b) Secondary impacts to waterway and/or wetland areas, (e.g., areas drained, flooded, cleared, excavated or fragmented) shall be added to the total fill area when determining the project review category (Category 1, 2 or Individual Permit review). Secondary and cumulative impacts are defined at Appendix A, Endnote 4.

4. **Discretionary Authority.** Notwithstanding compliance with the terms and general conditions of this GP, the Corps retains discretionary authority to require either a Category 2 or an Individual Permit review based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). This authority is invoked on a case-by-case basis whenever the Corps determines that the potential impacts of the proposal warrant either a Category 2 or an Individual Permit review based on the concerns stated above. This authority may be invoked for projects with cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project that is not already covered by the remaining conditions of the GP and that warrants greater review. Whenever the Corps notifies an applicant that either a Category 2 or Individual Permit review is required, authorization under this GP is void and no work may be conducted until the Corps issues the required authorization or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under this GP.

5. **Single and Complete Projects.** This GP shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single project and/or all planned phases of a multi-phased project shall be treated together as constituting one single and complete project, unless the Corps determines that a component has independent utility. For linear projects, such as power lines or pipelines with multiple crossings, the "single and complete project" (i.e., single and complete crossing) will apply to each crossing of a separate water of the U.S. (i.e., single waterbody) at that location; except that for linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project, and may be reviewed for Category 1 eligibility. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies. If any crossing requires a Category 2 activity, then the entire linear project shall be reviewed as one project under Category 2 provided that the impact thresholds in Appendix A are met. Also, this GP shall not be used for any activity that is part of an overall project for which an Individual Permit is required, unless the Corps determines the activity has independent utility. Note that modifications to State permits do not constitute a separate project. Modifications which involve Corps jurisdiction will be screened at the regular screening in order to ascertain compliance with the GP. Keep in mind that a linear project normally qualifying as a Category 1 project will trigger a Corps review if the impacts exceed this GP's general conditions.

6. Permit On-Site. For Category 2 projects, the permittee shall ensure that a copy of this GP and any accompanying authorization letter with attached plans are at the site of the work authorized by this GP whenever work is being performed and that all construction personnel are aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and sub-contracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this GP. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means this GP and the authorization letter (including its drawings, plans, appendices and other attachments) and also includes permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or sub-contract. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire GP authorization, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps jurisdiction.

General Conditions Related to National Concerns:

7. Historic Properties. Any activity authorized by this GP shall comply with Section 106 of the National Historic Preservation Act. Information on the location and existence of historic resources can be obtained from the VT SHPO (See page 16) and the National Register of Historic Places. Project proponents shall apply to the Corps for all projects that would otherwise qualify for Category 1 if there is the potential for an effect on a historic property within the permit area or any known historic property that may occur outside the permit area. Historic properties include those that are eligible for inclusion, but not necessarily listed on the National Register. If the permittee, during construction of work authorized herein, encounters a previously unidentified archaeological or other cultural resource within the area subject to Corps jurisdiction that might be eligible for listing in the National Register of Historic Places, he/she shall stop work and immediately notify the Corps, the VT SHPO and, when work is proposed in Addison, Rutland or Bennington counties, the Stockbridge-Munsee Native American tribe.

8. National and Corps Lands. Activities authorized by this GP shall not impinge upon the value of any National Wildlife Refuge, National Forest, National Park or any other area administered by the U.S. FWS, U.S. Forest Service, or National Park Service. No Category 1 work is allowed on Corps properties and Corps-controlled easements (see Appendix A, Endnote 9).

9. Federal and State Endangered Species.

a. No activity may be authorized under this GP which:

- May affect a threatened or endangered species, a proposed species, designated critical habitat, or proposed critical habitat as identified under the Federal Endangered Species Act (ESA),
- Would result in a "take" of any Federally listed threatened or endangered species of fish or wildlife, or
- Would result in any other violation of Section 9 of the ESA protecting threatened or endangered species of plants.

b. Proponents for Category 1 and 2 projects shall ensure there are no impacts to Federally-listed threatened or endangered species or critical habitat and should ensure that there are no impacts to State threatened or endangered species.

c. Proponents for Category 1 and 2 projects shall notify the Corps if any of the actions in 9a may occur and if any Federally listed threatened or endangered species or critical habitat, or proposed species or critical habitat, is in the project area or may be impacted by the project. For Category 1 projects, the Corps may then notify the proponent that the project will be reviewed under the Category 2 or Individual Permit procedures and if so the proponents shall not begin work until the Corps issues a written authorization.

d. Applicants should also provide information on state threatened and endangered species. The Information Typically Required section on Page 3 provides guidance. Contact information for the VT ANR, Department of Fish & Wildlife, Nongame and Natural Heritage program is provided on Pages 16-17, and more information is provided at Additional References, Pages 18-19.

10. Essential Fish Habitat (EFH). As part of the GP screening process, the Corps will coordinate with the NMFS in accordance with the 1996 amendments to the Magnuson-Stevens Fishery, Conservation and Management Act (MSFCMA) to protect and conserve the habitat of marine, estuarine and anadromous finfish, mollusks, and crustaceans. This habitat is termed EFH and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Any work in the following streams in the Connecticut River watershed that are stocked with Atlantic salmon shall not be authorized under Category 1 of this GP and must be screened for potential impacts to EFH. For additional EFH information and/or locations, see 50 CFR 600 (www.nmfs.noaa.gov), www.nero.nmfs.gov/RO/DOC/appguide1.html or contact NMFS (see Page 16).

- Black River (from its mouth in Springfield to its headwaters)
- Connecticut River
- Deerfield River
- Nulhegan River
- Ompompanoosuc River
- Ottauquechee River
- Passumpsic River
- Paul Stream
- Saxtons River
- Stevens River
- Wells River
- West River
- White River
- Williams River

11. Wild and Scenic Rivers. Any activity that occurs in the designated main stem of, within 0.25 mile up or downstream of the designated main stem of, or in tributaries within .25 miles of the designated main stem of a National Wild and Scenic River, or in "bordering and contiguous wetlands" (see Appendix A, Endnote 1) that are adjacent to the designated main stem of a National Wild and Scenic River, or that has the potential to alter flows within a river within the National Wild and Scenic River System, is not eligible for Category 1 regardless of size of the impacts. This condition applies to both designated Wild and Scenic Rivers and rivers officially designated by Congress as study rivers for possible inclusion while such rivers are in an official study status. Currently there are no designated National Wild and Scenic Rivers in Vermont. The Missisquoi River, from its' headwaters in Lowell to the Canadian border in Troy (25 miles) and from the Canadian border in East Richford to Enosburg Falls (25 miles) and the Trout River have been officially designated by Congress as study rivers.

12. Federal Navigation Project. Any structure or work that extends closer to the horizontal limits of any Corps navigation project than a distance of three times the project's authorized depth shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys.

13. Navigation. (a) There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein. (b) The permittee understands and agrees that if future operations by the U.S. require the removal, relocation or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

14. Federal Liability. In issuing this GP, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes: (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest; (c) damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by the GP; (d) design or construction deficiencies associated with the permitted work; (e) damage claims associated with any future

modification, suspension or revocation of this permit.

Minimization of Environmental Impacts:

15. Avoidance, Minimization and Mitigation. Discharges of dredged or fill material into waters of the U.S. and any secondary impacts shall be avoided and minimized to the maximum extent practicable. Mitigation of unavoidable direct and indirect impacts may be required on a case-by-case basis.

16. Heavy Equipment in Wetlands. Heavy equipment other than fixed equipment (drill rigs, fixed cranes, etc.) working in wetlands shall not be stored, maintained or repaired in wetlands, unless it is less environmentally damaging otherwise, and as much as possible shall not be operated there. Where construction requires heavy equipment operation in wetlands, the equipment shall either have low ground pressure (typically <3 psi), or shall not be located directly on wetland soils and vegetation; it shall be placed on construction mats or corduroy roads (defined at Appendix A, Endnote 16) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Dragging construction mats into position is prohibited. Construction mats shall be managed in accordance with the Construction Mat Best Management Practices (BMPs) (Appendix A, Endnote 20). Other support structures that are less impacting and are capable of safely supporting equipment may be used with written Corps authorization. Similarly, not using mats during frozen, dry or other conditions may be allowed with written Corps authorization. (See GC 17 below.) An adequate supply of spill containment equipment shall be maintained on site. Corduroy roads and construction mats are considered as fill whether they're installed temporarily or permanently.

17. Temporary Fill. No temporary fill shall be placed in waters of the U.S., including wetlands, unless a) it is specifically authorized in writing by the Corps, or b) the project qualifies for the non-reporting Category 1 (the combined temporary and permanent fill totals less than 3,000 SF, it meets the Appendix A Category 1 definition, and it is in compliance with this GP's terms and general conditions).

- All temporary fill shall be stabilized to prevent its eroding into portions of waters of the U.S. where it is not authorized.
- Waters of the U.S. where temporary fill was discharged shall be restored (see GC 18).
- Unconfined temporary fill authorized for discharge into waters of the U.S. shall consist of material that minimizes impacts to water quality (e.g. sandbags or clean gravel and/or stone).
- Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric laid on the pre-construction wetland grade. Construction mats are excluded from this requirement.
- Temporary fill shall be removed as soon as it is no longer needed, and it shall be disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S.
- Construction mats and corduroy roads (see GC 16) are considered as temporary fill when they are removed immediately upon work completion. The areas must be restored in accordance with GC 18.
- If temporary fill is staged and then returned to its original location, e.g., sewer projects through wetlands, the original location shall be restored.

18. Work Site Restoration.

- Upon completion of construction, all disturbed wetland areas (the disturbance of these areas must be authorized) shall be properly stabilized. Any seed mix shall contain only plant species native to New England and shall not contain any of the plant species listed in Appendix B - "Invasive Species and Other Unacceptable Plant Species" in the "Mitigation Guidance for New England District Mitigation Plan Checklist," provided at http://www.nae.usace.army.mil/Regulatory/Mitigation/CompensatoryMitigationGuidance.pdf and referenced in the Planting Plan section. This list may be updated periodically.

- The introduction of non-native invasive and noxious species in disturbed areas is prohibited and any spread of such invasive plant species shall be controlled. See Additional References on Pages 18-19. The Corps lists these species in the above mentioned checklist in the Invasive and Noxious Species section.
- In areas of authorized temporary disturbance, if trees are cut they shall be cut at ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.
- Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

19. Bank Stabilization. Projects involving construction or reconstruction/maintenance of bank stabilization structures within Corps jurisdiction should be designed to minimize environmental effects, effects to neighboring properties, etc. to the maximum extent practicable. Applicants must use the least intrusive method to stabilize the bank, following this sequential minimization process: avoidance, diversion of overland flow, vegetative stabilization, stone-sloped surfaces, and walls. Vertical walls/bulkheads must only be used in situations where reflected wave energy can be tolerated. This generally eliminates bodies of water where the reflected wave energy may interfere with or impact on harbors, marinas, or other developed shore areas. Refer to Additional References on Pages 18-19.

20. Sedimentation and Erosion Control. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, vegetated filter strips, geotextile silt fences or other devices, shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. Such measures shall be capable of preventing erosion, of collecting sediment, suspended and floating materials, and of filtering fine sediment. The temporary devices shall be removed upon completion of work and the disturbed areas shall be stabilized. The sediment collected by these devices shall be removed and placed at an upland location, in a manner that will prevent its later erosion into a waterway or wetland. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

21. Waterway/Wetland Work and Crossings

(a) All temporary and permanent crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, and to not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.

(b) No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water.

(c) To meet the objective of aquatic organism passage in (a) and (b) above, all temporary and permanent crossings of rivers, streams, brooks, etc. (hereon referred to as "streams") shall meet the following performance standards in order to qualify for Category 1 (refer to Additional References on Pages 18-19):

i. Design the structure to maintain a streambed composition and form throughout the culvert similar to and continuous with the adjacent reaches. To do this:

- o Design and install streambed material and bedforms if not adequately supplied and developed naturally,
- o Design profile and alignment through structure similar to those of adjacent stream reaches,
- o Design culvert elevation to remain embedded for the life of the structure and in consideration of future channel conditions.

ii. Maintain velocities, turbulence and depths within the structure similar to those found in adjacent stream reaches across a range of desired flows.

(d) The requirements to comply with the performance standards in (c) above in order to proceed as a Category 1 project do not apply to the following:

i. Temporary crossings in place for less than 90 days (the requirements in (a) do apply). Temporary culverts must be embedded unless they're installed during low flow (Jul. 15 – Oct. 1) and it's placed on geotextile fabric laid on the stream bed to ensure restoration to the original grade;

ii. Constructed drainage systems designed primarily for the conveyance of storm water or irrigation. Also, non-tidal drainage and irrigation ditches excavated on dry land are not Federally-regulated.

(e) Applicants proposing new crossings, or maintenance or replacement of serviceable crossings should refer to the Guidelines for the Design of Stream/Road Crossings for Passage of Aquatic Organisms in Vermont. Refer to Additional References on Pages 18-19.

(f) Applicants shall use the least intrusive and environmentally damaging method to construct the stream crossing, following this sequential minimization process: bridge spans, open bottom arches or embedded culverts. Refer to Additional References, Pages 18-19.

(g) Culverts at waterbody crossings shall be installed in such a manner as to preserve hydraulic connectivity, at its present level, between the wetlands on either side of the road. The permittee shall take necessary measures to correct wetland damage due to lack of hydraulic connectivity.

(h) Projects using retrofit methods increasing flow velocity or slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe) are not allowed in Category 1, either as new or maintenance activities.

(i) No projects involving open trench excavation in flowing waters, except riprap installation, are allowed under Category 1. Open trench excavation projects may qualify for Category 1 provided (1) the work doesn't occur in flowing waters (requires using management techniques such as temporary flume pipes, culverts, cofferdams, etc.) and (2) normal flows are maintained within the stream boundary's confines (see Appendix A, Endnote 6). Projects utilizing these management techniques must meet the other Category 1 requirements (see Appendix A, Page 1) and all of this GP's terms and general conditions.

(j) For projects that otherwise meet the terms of Category 1, in-stream (e.g., rivers, streams, brooks, etc.) construction work shall be conducted only during the low flow period of July 15 to October 1 in any year. Projects that are conducted outside that time period are ineligible for Category 1 and shall be reviewed under Category 2, regardless of the waterway and wetland fill and/or impact area.

(k) Work impacting upstream or downstream flood profiles must be reviewed under Category 2.

22. Discharge of Pollutants.

(a) All activities involving a discharge into waters of the U.S. authorized under this GP shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 USC 1251) and applicable State and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this GP, the authorized work shall be modified to conform to these standards within six months of the effective date of such revision or modification, or within a longer period of time deemed reasonable by the Corps in consultation with the EPA.

(b) All projects authorized by this GP shall be designed, constructed and operated to minimize or eliminate the discharge of pollutants. Category 2 projects will be reviewed to determine if a project may result in a discharge of relevant pollutants to an impaired water. See the Additional Information Required section on Page 4.

(c) Unless otherwise notified by the VT ANR, applicants may presume that the Section 401 WQC for this GP constitutes the Section 401 WQC for their Section 404 activity, provided the terms and conditions of this GP are met.

23. Floodplain Work.

(a) In order to qualify for authorization under Category 1 of this GP, projects shall result in no more than a minimal decrease in natural valley storage, and shall not result in an increase in the base flood elevation (where hydraulic information necessary to make this determination is available).

(b) There shall be no Category 1 projects located within a FEMA designated Special Flood Hazard Area as shown on the most current flood insurance studies and maps published by FEMA and adopted by the municipality within which the proposed project is located.

(c) Any project located within a FEMA designated Special Flood Hazard Area shall comply with minimum NFIP regulations, or local Flood Hazard Area regulations if more restrictive.
Note: Refer to Additional References, Pages 18-19.

24. Spawning and Breeding Areas. Discharges of dredged or fill material, and/or suspended sediment producing activities in fish and shellfish spawning or nursery areas, or amphibian and migratory bird breeding areas, during spawning or breeding seasons shall be avoided. Impacts on these areas shall be minimized to the maximum extent practicable during all times of year.

25. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, etc., that are removed from the waterway for a portion of the year shall be stored in an upland location, located above ordinary high water and not in a wetland.

26. Environmental Functions and Values. (a) The permittee shall make every reasonable effort to carry out the construction or operation of the work authorized herein in a manner that minimizes adverse impacts on fish, wildlife and natural environmental values. (b) The introduction of invasive plant species identified by any Federal agency in disturbed areas is prohibited and any spread of such invasive plant species shall be controlled. Refer to GC 18 and Additional References on Pages 18-19.

27. Protection of Special Aquatic Sites and Special Wetlands, including Vernal Pools.
Special Aquatic Sites (SAS): Projects with any temporary or permanent fill in SAS (Endnote 7), or that could adversely affect SAS, whether directly or indirectly, do not qualify for Category 1. This does not apply to "inland wetlands," but does apply to the other SAS types listed at Endnote 7.
Special Wetlands: When jurisdiction is triggered (see Activities Covered, Page 1), projects in or that could adversely affect Special Wetlands (Endnote 8), whether directly or indirectly, do not qualify for Category 1. Special wetlands are vernal pools, bogs, fens, and wetlands which provide habitat for threatened or endangered species as designated by the State of Vermont Natural Heritage Program. See Additional References on Pages 18-19 for additional references.
Vernal Pools (VP): These are a type of special wetland (Endnote 8). Category 1 excludes projects in or within 200' of a VP on the property when jurisdiction is triggered. This does not apply to temporary impacts associated with construction mats in previously disturbed areas of existing utility project right-of-ways (e.g., transmission lines, gas pipelines) or linear transportation projects (e.g., roads, highways, railways, trails, airport runways and taxiways) provided there is a Vegetation Management Plan or equivalent BMPs that avoid, minimize and mitigate impacts to aquatic resources. The applicant must minimize surrounding upland impacts to the greatest extent practicable, with the effort to minimize impacts being commensurate with the value of the pool. Impact minimization should be in accordance with *Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S.*, Calhoun and Klemens, 2002; and *Science and Conservation of Vernal Pools in Northeastern North America*, Calhoun and deMaynadier, 2008, specifically Chapter 12, Conservation Recommendations section, Page 241. (See Additional References, Pages 18-19). For example, site clearing, grading and construction activities should be limited to <25% of the VP terrestrial habitat, and roads and driveways should be excluded from the VP envelope. For Category 2 projects, the applicant shall delineate all VPs on the property (see GC 2). The Corps may waive this requirement on a case-by-case basis.

28. Fluvial Geomorphic Processes. (a) Wherever practicable, projects should be designed to accommodate the natural tendencies of the fluvial system. This should greatly enhance the likelihood of long-term success of the project and minimize the chance of exacerbating an otherwise undesirable physical adjustment process. Recognition of these processes requires assessment of physical parameters and characteristics of the watershed, the water and sediment regimes, the channel and floodplain, the anthropogenic influences and constraints on the reach concerned and to what extent sediment transport continuity in the reach can be attained. (b) Applicants should consult with the VT River Management Program Stream Alteration Engineer for assistance in compliance with this condition.

Note: Refer to Additional References on Pages 18-19 for additional information.

Procedural Conditions:

29. Inspections. The permittee shall allow the Corps to make periodic inspections at any time deemed necessary in order to ensure that the work is being or has been performed in accordance with the terms and conditions of this permit. The Corps may also require post-construction engineering drawings for completed work, and post-dredging survey drawings for any dredging work.

30. Maintenance. (a) The permittee shall maintain the work authorized herein in good condition and in conformance with the terms and general conditions of this permit. Permittees must contact the Corps if maintenance will not take place or if they want to modify the existing project design. (b) The requirement to maintain the authorized work does not include maintenance of dredging projects. Maintenance dredging is subject to the review thresholds in Appendix A and/or any special conditions included in a written Corps authorization. Note: Refer to Additional References on Pages 18-19 for information on maintaining stream restoration projects.

31. Property Rights. This GP does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations.

32. Modification, Suspension, and Revocation. This GP may be either modified, suspended, or revoked in whole or in part pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

33. Restoration. The permittee, upon receipt of a notice of revocation of authorization under this GP, shall restore the wetland or waterway to its former conditions without expense to the U.S., and as directed by the Secretary of the Army or his authorized representative. If the permittee fails to comply with such a directive, the Secretary or his designee may restore the wetland or waterway to its former condition, by contract or otherwise, and recover the cost from the permittee.

34. Special Conditions. The Corps may impose other special conditions on a project authorized pursuant to this GP that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or restoration.

35. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under this GP, and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the permittee, the GP authorization shall not be valid and the U.S. Government may institute legal proceedings.

36. Abandonment. If the permittee decides to abandon the activity authorized under this GP, unless such abandonment is merely the transfer of property to a third party, he/she may be required to restore the area to the satisfaction of the Corps.

37. Transfer of GP Verifications. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps (see Page 16 for address) to validate the transfer. A copy of the GP verification must be attached to the letter and the letter must contain the following statement and signature: "When the structures or work authorized by this GP are still in existence at the time the property is transferred, the terms and conditions of this GP, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this GP

and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

38. Enforcement cases. This GP does not apply to any existing or proposed activity in Corps jurisdiction associated with a Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA as appropriate determines that the activity may proceed independently without compromising the enforcement action.

Duration of Authorization/Grandfathering:

39. Duration of Authorization. Activities authorized under this GP that have commenced (i.e., are under construction) or are under contract to begin construction in reliance upon this authorization, will remain authorized provided the activity is completed within twelve months of the expiration date on this permit, unless:

a) the GP is either modified or revoked; or
b) discretionary authority has been exercised in accordance with 33 CFR 325.2(e) (2).

Activities authorized and completed under Category 1 or 2 of this GP will continue to remain authorized after this GP's expiration date.

40. Previously Authorized Activities.
(a) Projects that received written authorization from the Corps and that were completed under the previous GP's, nationwide permits, regional general permits or letters of permission, shall remain authorized as specified in each authorization letter.
(b) Activities authorized pursuant to 33 CFR 330.3 ("Activities occurring before certain dates") are not affected by this GP.

12-6-2012

Frank J. DelGiudice — DATE
Chief, Permits and Enforcement Branch

VI. CONTACTS FOR VERMONT GENERAL PERMIT:

U.S. Army Corps of Engineers
New England District, Regulatory Division
Vermont Project Office
11 Lincoln Street, Room 210
Essex Junction, Vermont 05452
(802) 872-2893, (802) 879-7638 fax
www.nae.usace.army.mil/missions/regulatory.aspx

U.S. Environmental Protection Agency
New England Region
Wetland Protection Program Unit – OEP/CWP
JFK Federal Building 1 Congress Street, Suite 1100
Boston, MA 02114-2023
(617) 918-1399

Federal Endangered Species:
U.S. Fish and Wildlife Service
Federal Activities/Endangered Species
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
(603) 223-2541
www.fws.gov/northeast/newenglandfieldoffice.htm

Essential Fish Habitat:
National Marine Fisheries Service
Habitat Conservation Division (HCD)
One Blackburn Drive
Gloucester, Massachusetts 01930
(978) 281-9300

National Park Service
National Park Service
North Atlantic Region
15 State Street
Boston, Massachusetts 02109
(617) 223-5191

Historic Resources
State Historic Preservation Officer
Division for Historic Preservation
National Life Building
Drawer 20
Montpelier, Vermont 05620-0501
(802) 828-3211

Tribal Historic Preservation Officer
c/o Stockbridge-Munsee Community
P.O. Box 70
Bowler, Wisconsin 54416
(715) 793-3970
Area of concern: Addison, Rutland and Bennington Counties

Vermont Agency of Natural Resources

Department of Environmental Conservation
Wetlands Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
Alan.quackenbush@state.vt.us

Department of Environmental Conservation
River Management Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
Mike.kline@state.vt.us

Department of Environmental Conservation
Lakes and Ponds Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
Susan.warren@state.vt.us

Department of Environmental Conservation
Dam Safety Program
Facilities Engineering Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
Steve.bushman@state.vt.us

Vermont Department of Fish and Wildlife
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
Rich.kirn@state.vt.us

State endangered species
Vermont Department of Fish and Wildlife
Nongame and Natural Heritage Program
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
www.vtfishandwildlife.com/wildlife_nongame.cfm.

VII. ADDITIONAL REFERENCES:

Page 4: Application. Refer to www.nae.usace.army.mil for a more comprehensive checklist. Select "Regulatory" "Permits" "Forms" and then "Application and Plan Guideline Checklist."

Page 4 & GC 9: Threatened and Endangered Species.
The VT F&W provides information on Federal and State species:
www.vtfishandwildlife.com/wildlife_nongame.cfm.
The VT ANR Environmental Interest Locator provides an interactive web based GIS map with documented locations:
http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp.
The U.S. Fish and Wildlife Service (U.S. FWS) provides information on Federal endangered species:
www.fws.gov/ northeast/newenglandfieldoffice/EndangeredSpec-Consultation_Project_Review.htm.

Page 4 and GC 22: Discharge of Pollutants - Impaired Waters and Stormwater Impaired Waters: The VT ANR lists and shows impaired waters and stormwater impaired waters at:
www.vtwaterquality.org/planning.htm.

GC 2: Federal Jurisdictional Boundaries.
(a) Corps Wetlands Delineation Manual, regional supplements, and Corps Wetland Delineation Data Sheets: www.nae.usace.army.mil/regulatory and then "Wetlands and Jurisdictional Limits.
(b) The National List of Plant Species that Occur in Wetlands (http://wetland_plants.usace.army.mil).
(c) The Natural Resources Conservation Service (NRCS) publishes the current hydric soil definition, criteria and lists: http://soils.usda.gov/use/hydric. For the Field Indicators for Identifying Hydric Soils in N.E., see www.neiwpcc.org/hydricsoils.asp.

GCs 18 and 26: Invasive Species.
(a) Information on what are considered "invasive species" is provided in our "Compensatory Mitigation Guidance" document at www.nae.usace.army.mil/regulatory under "Mitigation." The "Invasive Species" section has a reference to our "Invasive Species Control Plan (ISCP) Guidance" document, located at www.nae.usace.army.mil/regulatory under "Invasive Species," which provides information on preparing an ISCP.
(b) The June 2009 "Corps of Engineers Invasive Species Policy" is at www.nae.usace.army.mil/regulatory under "Invasive Species" and provides policy, goals and objectives.

GC 19: Bank Stabilization.
Corps Coastal Engineering Manual: Select "Products/Services" and then "Publications." Part 5, Chapter 7-8, a(2)c is particularly relevant. http://chl.erdc.usace.army.mil.

GC 21: Waterway/Wetland Work and Crossings
21(c): Performance standards in GC 21 are taken from Section 8 - Alternative Designs, in the document "Guidelines for the Design of Stream/Road Crossings for Passage of Aquatic Organisms in Vermont." These Guidelines are located at www.vtfishandwildlife.com/library.cfm, "Reports and Documents." This document should be referenced when designing and constructing stream crossing projects to help ensure compliance with GC 21 (a) - (c).

GC 23: Flood Hazard Management. www.anr.state.vt.us/dec/waterq/rivers/htm/rv_floodhazard.htm.

GC 27: Special Wetlands.
Refer to the VT ANR Environmental Interest Locator, which provides an interactive web based GIS map with locations of significant (wetland) natural communities. At the Locator select map layers, fish and wildlife, and

then significant natural communities:

http://maps.vermont.gov/imf/sites/ANR_NATRESViewer/jsp/launch.jsp. Some wetlands are more valuable and sensitive to fragmentation, non-point source runoff, and other secondary impacts. Upland buffers are especially essential to protect their functions.
The following documents provide conservation recommendations for vernal pools:
Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S., Calhoun and Klemens, 2002. Chapter III, Management Goals and Recommendations, Pages 15 – 26, is particularly relevant. (Available for purchase at www.maineaudubon.org/resource/index.shtml and on Corps website*.)
Science and Conservation of Vernal Pools in Northeastern North America, Calhoun and deMaynadier, 2008. Chapter 12, Conservation Recommendations section, Page 241, is particularly relevant. (Available for purchase via the internet. Chapter 12 is available on Corps website*.)

* www.nae.usace.army.mil/regulatory under "Vernal Pools."

Cape Cod Curbing: For smaller roads and driveways, the most important design feature to consider is curbing. Granite curbs and some traditional curbing can act as a barrier to amphibian and hatchling turtle movements. Large numbers of salamanders have been intercepted in their migrations by curbs and catch basins. Use of Cape Cod curbs rather than traditional curbing may be one solution. Alternatively, where storm water management systems require more traditional curbing, it may be possible to design in escape ramps on either side of each catch basin.

The Vernal Pool Directional Buffer Guidance document is located at www.nae.usace.army.mil/regulatory under: 1) "State General Permits" and then "Maine," and 2) "Vernal Pools."

GC 28: Fluvial Geomorphic Processes. Consult with the VT River Management Program Stream Alteration Engineer for assistance in compliance with GC 28. Refer to information provided at: www.anr.state.vt.us/dec/waterq/rivers/htm/rv_management.htm.

GC 30: Maintenance. River restoration projects that are designed to accommodate the natural dynamic tendencies of the fluvial system are maintained in accordance with the project's design objectives (Category 1) or the Corps authorization letter (Category 2). These projects are generally designed to support and implement channel assessment and management practices that recognize a stream's natural dynamic tendencies.

APPENDIX A: DEFINITION OF CATEGORIES

I. WATERS OF THE U.S. (INCLUDES WETLANDS) (other than Lake Champlain, Lake Memphremagog, Wallace Pond and adjacent wetlands)	**Waters of the U.S.[1] are comprised of Inland Waters and Wetlands[2] & Navigable Waters of the U.S.[3].** Navigable waters in Vermont are those designated as navigable by Congress (33 CFR 329). This section excludes the following navigable waters: Lake Champlain, Lake Memphremagog, Wallace Pond & wetlands adjacent to these waterbodies (See II. Navigable Waters below).		
	Projects not meeting Category 1 must apply to the Corps as either a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 – 6) and general conditions (GC) (Pages 7 – 16).		
	CATEGORY 1	**CATEGORY 2**	**INDIVIDUAL PERMIT**
(a) NEW FILL/ EXCAVATION DISCHARGES	<3,000 SF of waterway and/or wetland fill and secondary impacts[4], (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill, and certain excavation discharges (except for incidental fallback[5]). Construction mats[16] and corduroy roads are considered as fill (see GC 16). Construction mats of any area necessary to conduct activities that were previously authorized, authorized under Category 1, or not subject to regulation. Authorized construction mats must be in place for no more than 3 months, removed immediately upon work completion, and the wetlands must be restored (see GC 18). Provided: • In-stream (e.g., rivers, streams, brooks, etc.) work limited to Jul 15-Oct 1 (see GC 21). This category excludes: • Fills in Athens, Brookline, Chester, Dummerston, Grafton, Newfane, Putney, Rockingham, Springfield, Townshend, or Westminster, VT. • Fills below OHW in EFH waters (see GC 10). • Activities excluded in GC 21, i.e., dams, dikes, or activities involving water diversions[6] (other than dry hydrants used exclusively for firefighting activities with no stream impoundments); and sliplining. • Work in special aquatic sites (SAS)[7] other than wetlands. • Work in special wetlands[8] including work in vernal pools (VP) or within 200' of the VP's edge when jurisdiction is triggered. (This does not apply to temporary impacts associated with construction mats in previously disturbed areas of existing utility project right-of-ways (e.g.,	3,000 SF to 1 acre waterway and/or wetland fill and secondary impacts[4], (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill & certain excavation discharges (except for incidental fallback[5]). Construction mats and corduroy roads are considered as fill (see GC 16). Construction mats used for new construction activities with impacts of any size ≥3,000 SF (see GCs 16 & 17). Projects sponsored by a Federal or State agency with proactive restoration[10] as a primary purpose and impacts of any size ≥3,000 SF. Net impacts must not be greater than minimal. Restoration and/or enhancement approved for use by a Corps-approved In-Lieu Fee program or Corps-approved mitigation bank, with impacts of any size ≥3,000 SF. Specific activities with impacts ≥3,000 SF required to affect the containment, stabilization, or removal of hazardous or toxic waste materials performed, ordered or sponsored by a government agency with established legal or regulatory authority. Wetlands must be restored in place. Work in special wetlands[8], including work in VPs or within 200' of the VP's edge when jurisdiction is triggered on the property. The applicant shall delineate all special wetlands[8] including VPs on the property using Federal delineation methods (see GC 2). The Corps may waive these	≥1 acre waterway and/or wetland fill & secondary impacts[4] (e.g., area drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill (except construction mats meeting Category 1 or Category 2 requirements) and certain excavation discharges (except for incidental fallback[5]).

	transmission lines, gas pipelines) or linear transportation projects (e.g., roads, highways, railways, trails, airport runways and taxiways) provided there is a Vegetation Management Plan or equivalent BMPs that avoid, minimize and mitigate impacts to aquatic resources.) • Work on Corps properties & Corps-controlled easements[9]. • Structures, fill or work below OHW in the National Wild and Scenic River designated study segments of the Missisquoi River. • Fills below OHW of the Trout River.	delineation requirements on a case-by-case basis. Wetland fill and/or secondary impacts (e.g., site clearing, grading and construction activities) should be limited to <25% of the VP habitat. Where practicable, roads & driveways should be excluded from the VP envelope[8].	
(b) BANK STABILIZATION PROJECTS	Inland bank stabilization <100 linear FT and an average of <1 CY of fill per linear FT below ordinary high water (OHW). • In-stream work limited to Jul 15-Oct 1. • No work in VPs or within 200' of the VP's edge. • No work in SAS[7]. • No work in EFH waters (see GC 10). • No work in Rivers of Concern[11]. • No work on Corps properties and Corps-controlled easements[9]. • No work below OHW in the National Wild and Scenic River designated study segments of the Missisquoi River. • No work below OHW of the Trout River.	Inland bank stabilization ≥100 linear FT, and/or an average of >1 CY of fill per linear foot below OHW.	
(c) RIVER/ STREAM/ BROOK WORK & CROSSINGS *and* WATERWAY/ WETLAND CROSSINGS	• In-stream (e.g., rivers, streams, brooks, etc.) work limited to Jul 15 - Oct 1 (see GC 21). • All stream crossings conform with the performance standards in GC 21. • Bridge spans, open bottom arches or embedded culverts are required. • Culverts at waterbody crossings shall preserve hydraulic connectivity, at its present level, between any wetlands on either side of the road. <u>Work in this category excludes:</u> • Projects using retrofit methods increasing flow velocity or slip lining (only for 1 – 3 above). • Work in SAS[7]. • Open trench excavation in flowing waters except for riprap projects (See GC 21). • Structures, fill or work below OHW in the National Wild and Scenic River designated study segments of the Missisquoi River.	Projects sponsored by a Federal or State agency with proactive restoration[10] as a primary purpose with impacts of any area exceeding Category 1. Net impacts must not be greater than minimal.	

	• Fills below OHW of the Trout River		
(d) REPAIR, REPLACEMENT IN KIND & MAINTENANCE OF AUTHORIZED FILLS	Repair/maintenance/replacement in kind of existing, currently serviceable, authorized fills with no expansion or change in use. • Conditions of the original authorization apply. • Minor deviations in fill design allowed[12], except for stream crossings or dams. • No fills in special wetlands[8]. • No fills in SAS[7] & EFH waters (see GC 10). • No structures, fill or work below OHW in the National Wild and Scenic River designated study segments of the Missisquoi River. • No fills below OHW of the Trout River.	Repair/maintenance/replacement in kind of existing, currently serviceable, authorized fills with expansion or a change in use <1 acre. Replacement of non-serviceable authorized fills, including expansion or a change in use, totaling <1 acre.	Repair/maintenance of existing, currently serviceable, authorized fills with expansion or a change in use >1 acre. Replacement of non-serviceable authorized fills, including expansion or a change in use, totaling ≥ 1 acre.
(e) MISC.	Activities required for the containment and cleanup of oil and hazardous substances. Fish and wildlife harvesting such as duck blinds. Temporary scientific measurement devices and survey activities, e.g., exploratory drilling, surveying, and sampling. Monitoring wells. Recreational gold mining. Does not include oil/gas exploration and fills for roads or construction mats.	Zebra Mussel Control Projects. Fishery habitat enhancement structures. Utility line crossings, water intakes and outfalls, and sea lamprey control projects.	Project where an EIS is required by the Corps.
(f) MISC. (applies only to NAVIGABLE WATERS OF THE U.S.[2] excluding Lake Champlain, Lake Memphremagog, Wallace Pond)	Repair, replacement in kind or maintenance of existing, currently serviceable, authorized structures. <u>Provided:</u> • No expansion or change in use. • Must be rebuilt in same footprint, however minor deviations[12] in structure design allowed. • No structures, fill or work below OHW in the National Wild and Scenic River designated study segments of the Missisquoi River.	New and maintenance dredging[13] up to 5,000 CY with upland disposal or beach nourishment. No impacts to SAS[7]. Aerial transmission lines. Floating or post supported docks or decks. Private, non-commercial, single-boat moorings. Utility lines installed by directional bores.	Maintenance dredging[13] of any amount affecting a SAS[7]. New and maintenance dredging greater than 5,000 CY or in or affecting a SAS. Dredging with open water disposal.

II. NAVIGABLE WATERS OF THE U.S.[3] – LAKE CHAMPLAIN, LAKE MEMPHREMAGOG, WALLACE POND and ADJACENT WETLANDS	Navigable Waters of the U.S.[3]: These waters were designated as navigable by Congress (33 CFR 329).		
	Projects not meeting Category 1 must apply/report to the Corps as either a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 – 6) and general conditions (Pages 7 – 16).		
	CATEGORY 1	**CATEGORY 2**	**INDIVIDUAL PERMIT (IP)**
(a) FILL	No provisions for new or previously unauthorized fills in Category 1.	<5,000 SF waterway/wetland fill and secondary impacts[4] (e.g. areas drained, flooded, fragmented, mechanically cleared or excavated). Includes boat ramps & bridge fills. Projects sponsored by a Federal or State agency with proactive restoration[10] as a primary purpose and impacts of any size. Net impacts must not be greater than minimal.	≥5,000 SF waterway/wetland fill and secondary impacts[4] (e.g. areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent waterway fills. EIS required by the Corps.
(b) REPAIR, REPLACEMENT IN KIND AND MAINTENANCE WORK	Repair, replacement in kind or maintenance of existing, currently serviceable, authorized structures and fills. Provided: • No expansion or change in use. • Must be rebuilt in same footprint, however minor deviations[12] in structure design allowed.	Repair/replacement in kind/maintenance of currently serviceable authorized fills with expansion or a change in use <5000 SF. Replacement of non-serviceable authorized fills, including expansion or a change in use, totaling <5000 SF. Construction mats of any area necessary to conduct activities that were previously authorized, authorized under Category 1, or not subject to regulation. Authorized construction mats must be in place for no more than 3 months, removed immediately upon work completion, and the wetlands must be restored (see GC 18).	Repair/maintenance/replacement in kind of currently serviceable authorized fills with expansion or a change in use >5000 SF.
(c) DREDGING	No provisions for dredging in Category 1.	New and maintenance dredging[13] up to 5,000 CY with upland disposal or beach nourishment. Provided: • No impacts to SAS[7] • Specific activities with impacts of any area or cubic yardage required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority may be reviewed as a Category 2 project. Wetlands	New or maintenance dredging[13] ≥5,000 CY. Dredging affecting an SAS[7]. All dredging with open water disposal.

		must be restored in place.	
(d) MOORINGS	Private, non-commercial, non-rental, single-boat moorings. Provided: • Chains or other connections may not rest on the bottom in SAS[7] (eco-friendly mooring technology is required). • Not associated with a boating facility[14]. • No interference with navigation. • Moorings in a Federal Navigation Project (FNP)[15] not associated with a boating facility. • Not located within the buffer zone of the horizontal limits of a FNP.	Moorings that do not meet the terms of Category 1. Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits of a FNP[15].	Moorings and/or their moored vessels within the horizontal limits of a FNP[15].
(e) PILE-SUPPORTED STRUCTURES AND FLOATS	• Reconfiguration of existing authorized docks with no additional slips and no expansion. Seasonal private, residential pile-supported structures for navigational access extending no further waterward than 50 FT MHW, not >4 FT wide, & a dock deck area <500 SF. • Private, bottom-anchored floats and seasonal swim floats ≤400 SF. • Private boat & float lifts to authorized residential docks. Provided for 1 - 4 above: • No structure extends across >25% of the waterway width at MLW. • Not located over SAS[7]. • Not located within the buffer zone of the horizontal limits of an FNP[15].	Private structures and floats for navigational access to the waterway that do not meet the terms of Category 1. Piers, docks, decks, floats, and similar structures that provide public recreational uses such as fishing, swimming, access, etc. Non-fill structures to provide recreational access to the waterbody (e.g. stairways, etc.). Minor modifications to existing, permitted boating facilities. Structures or floats and/or vessels docked or moored at them within the buffer zone of the horizontal limits of a FNP[15].	Structures or floats and/or vessels docked or moored at them within the horizontal limits of a FNP[15]. Structures or floats associated with a new or previously unauthorized boating facility.[14]
(f) BANK STABILIZATION PROJECTS		Bank stabilization <500 linear feet and an average of 1 CY per linear ft. of fill below OHW or less provided no wetland fill.	Bank stabilization ≥500 linear ft. and/or involving more than an average of 1 CY per linear FT of fill below OHW.
(g) MISCELLANEOUS	Temporary buoys, markers, floats, etc. for recreational use during specific events, provided they are in place for no more than 30 days and are removed within 15 days after use is discontinued. The placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the U.S. Coast Guard. (See 33 CFR 66, Chapter I, subchapter C).	Structures/work in or affecting navigable waters and/or adjacent wetlands that are not defined under any previous headings. Includes but is not limited to utility lines, aerial transmission lines, pipelines, outfalls, intakes, and horizontal directional drilling. Zebra Mussel control projects. Fishery habitat enhancement structures.	Projects where an EIS is required by the Corps. Activities or activities with docked or moored vessels extending within the horizontal limits of a Corps FNP[15] (does not include utility lines, aerial lines and subsurface crossings in Cat

	Activities required for the containment and cleanup of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) provided that the work is done in accordance with the Spill Control and Countermeasure Plan required by 40 CFR 112.3 and any existing state contingency plan and provided that the Regional Response Team (if one exists in the area) concurs with the proposed containment and cleanup action. SAS[7] must typically be restored in place at the same elevation. Scientific measurement devices & survey activities such as exploratory drilling, surveying and sampling, provided that such structures do not restrict movement of aquatic organisms. Does not include oil and gas exploration or seismic testing, or fills for roads or construction mats. Fish and wildlife harvesting devices and activities such as pound nets, duck blinds, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.). Provided: no hazard to navigation and activity is not in wetlands (except Sea Lamprey control projects). Debris removal.	Sea Lamprey control projects. Nuisance aquatic plant control projects. Utility lines installed by directional bore.	2).

End Notes/Definitions

[1] **Waters of the United States (U.S.):**

a. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

b. All interstate waters including interstate wetlands;

c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

i. Which are or could be used by interstate or foreign travelers for recreational or other purposes: or

ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

iii. Which are used or could be used for industrial purpose by industries in interstate commerce;

d. All impoundments of waters otherwise defined as waters of the U.S. under the definition;

e. Tributaries of waters identified in paragraphs (a)-(d) above:

f. The territorial seas;

g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (a)-(f) above. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet this definition's criteria) are not waters of the U.S.

h. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA.

[2]**Inland Waters and Wetlands:** These are a subset of waters of the U.S., are regulated under Section 404 of the CWA, and include rivers, streams, lakes, ponds and wetlands, excluding Section 10 Navigable Waters of the U.S. The jurisdictional limits [33 CFR 328.4)(c)] are the ordinary high water (OHW) mark in the absence of adjacent wetlands, beyond the OHW mark to the limit of adjacent wetlands when adjacent wetlands are present, and the wetland limit when only wetlands are present.

[3] **Navigable Waters of the U.S.:** These are a subset of waters of the U.S., and are defined at 33 CFR 329. The jurisdictional limits [33 CFR 329.11] extend laterally to the entire water surface and bed of a navigable waterbody, which includes all the land and waters below the ordinary high water mark. Jurisdiction thus extends to the edge (as determined above) of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation or other barriers. Marshlands and similar areas are thus considered navigable in law, but only so far as the area is subject to inundation by the ordinary high waters. In Vermont these waters are: the Connecticut River, Lake Champlain, Lake Memphremagog, Wallace Pond, Ompompanoosuc River (to mile 3.8), Waits River (to mile 0.9), the Black River (mouth to mile 25 in Craftsbury), the Battenkill River (to mile 50 in Manchester), the Lamoille River (mouth to mile 79 in Greensboro), the Missisquoi River (including the North Branch, from the mouth to mile 88.5 in Lowell), Otter Creek (mouth to mile 63.8 in Procter), Winooski River (mouth to Marshfield), Moose River (from Passumpsic River to the Victory Town Line), Nulhegan River (mouth to its source including the East Branch, the Black Branch and the Yellow Branch), Paul Stream (mouth to the source), East Branch of the Passumpsic River (from the confluence with the Passumpsic River to East Haven), Passumpsic River (mouth to confluence with the East Branch), White River (mouth to its source), Wells River (mouth to Groton Pond).

[4] **Direct, Secondary (Indirect), and Cumulative Impacts:**

Direct Impacts: The immediate loss of aquatic ecosystem within the footprint of the fill.

Secondary (Indirect) Impacts: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. (40 CFR 230.11 (h)). Secondary impacts are those impacts outside the footprint of the fill (e.g., beyond the bounds of the disposal site) that arise from and are associated with the direct discharge of dredged or fill material. Some examples are: I) Habitat Fragmentation. This occurs when a relatively undisturbed habitat block is interrupted or broken apart by roads, ditches, disturbance of vegetation, or development of structures. II) Interruption of Travel Corridors. Travel corridors are routes that many species travel on to find food, mates, shelter, and cover. Many aquatic species follow stream channels and wetlands, and follow established routes season after season. III) Vernal Pools. These are critically important breeding habitats for amphibians. Many amphibians disperse several hundred feet from their breeding ponds into the adjacent upland habitat after the breeding season has ended. IV) Hydrology, hydrological functions and non-point source impacts: A) Interference with the migration or movement of fish and shellfish from one area to another, such as placement of a dam eliminating access to spawning grounds for anadromous fish. B) Greater amounts of sediment, nutrients, and other pollutants such as lead, oil, gas, and salt that could impact wetlands and streams. Sediment causes turbidity, which reduces aquatic life and usually transports pesticides, heavy metals and other toxins into streams. This is especially a concern in watersheds where the streams are already listed as impaired by the VT ANR. C) Submerged aquatic vegetation is very dependent on light transmission and small changes in ambient turbidity can preclude it from growing in certain areas. D) Trout spawning areas are selected in areas that are well flushed and aerated, and new amounts of deposition may result in a spawning area being eliminated due to siltation of fish eggs. E) Physical effects such as erosion, accretion, entrenchment, sedimentation, embedment, channel or shoreline migration and failure to pass bedload material, organic matter and large woody debris.

Cumulative Impacts: The extent of past, present, and foreseeable developments in the area may be an important consideration in evaluating the significance of a particular project's impacts. Although the impacts associated with a particular discharge may be minor, the cumulative effect of numerous similar discharges can result in a large impact. Cumulative impacts should be estimated only to the extent that they are reasonable and practical.

[5] **Incidental Fallback:** The term "discharge of dredged or fill material" also includes certain discharges resulting from excavation.

[6] **Water Diversions:** Water diversions are activities such as bypass pumping or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions. See GC 21.

[7] **Special Aquatic Sites:** Include inland wetlands, mudflats, vegetated shallows (permanently inundated areas that support rooted aquatic vegetation), and riffle and pool complexes. (40 CFR 230)

[8] **Special Wetlands:** Jurisdictional vernal pools, bogs, fens, and wetlands which provide habitat for threatened or endangered species or species as designated by the State of VT Natural Heritage Program. See GC 27 for website. The following definitions for bogs, fens and vernal pools apply for the purposes of this GP:

Bog - A peat accumulating wetland with hydric, organic soils, a complete, or nearly complete, Sphagnum cover and a pH value ranging from 3.5 to 5.6 that receives water primarily from precipitation. Typical species include Sphagnum, leatherleaf and pitcher plant.

Fen - A peat accumulating wetland with hydric organic soils and a pH value ranging from 4.0 to 8.0. Sphagnum moss may be present, however, not as a complete cover. It generally receives water and minerals from runoff flowing through it. Typical species include low sedges, Sphagnum, other mosses and heath shrubs.

Vernal Pools and Habitat: A vernal pool, also referred to as a seasonal forest pool, is a temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), Jefferson salamander (*Ambystoma jeffersonianum*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition. For the purposes of this GP, the presence of any of the following species in any life stage in any abundance level/quantity would designate the waterbody as a vernal pool: fairy shrimp, blue spotted salamanders, spotted salamanders or wood frogs. The Corps may determine during a Category 2 review that a waterbody should not be regulated as a VP based on available evidence. For the purposes of this GP, the VP Management Areas are the: Vernal Pool Depression (includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression), Vernal Pool Envelope (area within 100 FT of the VP Depression's edge) and Critical Terrestrial Habitat (area within 100-750 FT of the Vernal Pool Depression's edge). [*Note: Critical Terrestrial Habitat is defined as 100 - 750 FT on page 243 of the document "Science and Conservation of Vernal Pools in Northeastern North America," Calhoun and deMaynadier, 2008, which is referenced in Appendix E, page 3, Paragraph 10(b).

[9] **Corps Properties & Easements:** Contact the Corps, Real Estate Division (978) 318-8580 to initiate reviews about both Corps holdings and permit requirements.

[10] **Proactive Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former wetland or other aquatic resource (called re-establishment) or a degraded wetland or other aquatic resource (called rehabilitation). Restoration means the result of actions which, in the opinion of the Federal and state resource agencies, reinstates, or will reinstate, insofar as possible, the functions and values of a wetland or aquatic resource which has been altered. Restoration is the re-creation or rehabilitation of wetland or other aquatic resource ecosystems whose natural functions have been destroyed or impaired. The Corps will decide if a project qualifies as proactive restoration and must determine along with Federal & state agencies that the net effects would be no more than minimal.

[11] **Rivers of Concern:** The following are rivers of concern due to either endangered species or cumulative impacts. There are no non-reporting bank stabilization activities in these rivers: Batten Kill River (to the headwaters), Black River (from its mouth in Springfield to its headwaters), Connecticut River, Lamoille River (from Hardwick to the confluence with Lake Champlain), Lewis Creek (from the Rte 116 crossing to the confluence with Lake Champlain), Missisquoi River (from the International Boundary in Richford, VT to the confluence with Lake Champlain), Ompompanoosuc River (to the headwaters), Otter Creek (from Rutland to the confluence with Lake Champlain), North Branch of Ball Mountain Brook (from Pikes Falls to the headwaters), Poultney River (to the headwaters), West River (from Jamaica to the confluence with the Connecticut River), White River (to the headwaters), Winooski River (from Montpelier to Lake Champlain).

[12] **Minor deviations.** Changes to the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environmental effects resulting from such repair, rehabilitation, or replacement are minimal. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

[13] **Maintenance Dredging.** Includes areas and depths previously authorized by the Corps and dredged. **New Dredging:** Includes dredging proposed in previously un-dredged areas and/or in areas exceeding previously authorized dimensions (deeper or wider than previously authorized) excluding normal overdredge.

[14] **Boating Facilities:** Facilities that provide, rent or sell mooring space, e.g., marinas, yacht clubs, boat yards, dockominiums.

[15] **Federal Navigation Projects (FNPs):** FNPs are comprised of Federal channels and Federal anchorages. Contact the Corps for their location and information. **Horizontal Limits:** The outer edge of an FNP. **Buffer zone:** Equal to three times the authorized depth of that channel.

[16] Construction Mats: Construction, swamp and timber mats (herein referred to as "construction mats") are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.

[17] **Headwater and Ephemeral Streams:** Forested upland and wetland clearing can lead to additional direct and indirect impacts to the headwater streams and ephemeral streams on individual sites. Headwater streams and wetlands provide a rich resource base that contributes to the productivity of both local food webs and those farther downstream. Land use changes in the vicinity of small streams and wetlands can impair the natural functions of headwater systems. These systems are vitally important to maintaining the quality and quantity of water and aquatic health of streams lower in the watershed.

[18] **Maintenance: a)** In accordance with 33 CFR 323.4(a)(2), any discharge of dredged or fill material that may result from any of the following activities is not prohibited by or otherwise subject to regulation under Section 404 of the CWA: "Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design." Otherwise, the following work is regulated and subject to the Category 1 or 2 thresholds in Appendix A above: The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 – "Activities occurring before certain dates," provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. **b)** Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make repair, rehabilitation, or replacement are authorized. **c)** Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction. **d)** No seaward expansion for bulkheads or any other fill activity is considered Category 1 maintenance. **e)** Only structures or fills that were previously authorized and are in compliance with the terms and condition of the original authorization can be maintained as a non-regulated activity under 33 CFR 323.4(a)(2), or in accordance with the Category 1 or 2 thresholds in Appendix A. **f)** The state's maintenance provisions may differ from the Corps and may require reporting and written authorization from the state. **g)** Contact the Corps to determine whether stream crossing replacements require a written application to the Corps for at least a Category 2 review.

[19] **Wild and Scenic River Designated Study Rivers:** The Missisquoi River, from its' headwaters in Lowell to the Canadian border in Troy (25 miles) and from the Canadian border in East Richford to Enosburg Falls (25 miles) and the Trout River have been officially designated by Congress as a study river.

[20] **Best Management Practices for Utility Construction Mats:**

Installation

- Mats should be in good condition to ensure proper installation, use and removal.
- Where feasible, mats should be carried and not dragged unless they are being used as a grading implement.
- Where feasible, place mats in a location that would minimize the amount needed for the wetlands crossing.
- Minimize impacts to wetland areas during installation, use, and removal.
- Install adequate erosion & sediment controls at approaches to mats to promote a smooth transition to, and minimize sediment tracking onto, swamp mats.
- In most cases, construction mats should be placed along the travel area so that the individual boards are resting perpendicular to the direction of traffic. No gaps should exist between mats. Place mats far enough on either side of the resource area to rest on firm ground.
- Provide standard construction mat BMP details to work crews.

Wetland/Stream Channel Crossing

- At "dry" crossings where no flow is present or anticipated during project construction, the mats may be placed directly onto the ground in order to prevent excessive rutting, provided stream banks & bottoms are not adversely altered.
- Construction mats may be used as a temporary bridge over a stream to allow vehicles access to the work site. Small sections of mat are placed within and along the stream parallel to the flow of water. Mats may then be placed perpendicular to the stream, resting on top of the initial construction mat supports. It may be necessary to place additional reinforcement for extra stability & to minimize the amount of sediment that could fall between the spaces of each timber.
- Mats should not be placed so that they restrict the natural flow of the stream.
- Minimize number of stream/wetland crossings. Where feasible, locate crossing site where stream channel is narrow for the shortest possible clear span & where stream banks are stable & well defined. For large wetland complexes, consider accessing structures from opposite sides where possible to avoid crossing the entire wetland.
- More than one layer of mats may be necessary in areas which are inundated or have deep organic wetland soils.

Maintenance

- Matted wetland crossings should be monitored to assure correct functioning of the mats. Inspect mats after use. Look for any defects or structural problems. Mats which become covered with soils or construction debris should be cleaned and the materials removed & disposed of in an upland location. The material should not be scraped & shoveled into the resource area. Mats which become imbedded must be reset or layered to prevent mud from covering them or water passing over them.

Removal

- Matting should be removed by "backing" out of the site, removing mats one at a time. Any rutting or significant indentations identified during mat removal should be regraded immediately, taking care not to compact soils.
- Mats should be cleaned before transport to another wetland location to remove soil & any invasive plant species, seed stock or plant material.
- Cleaning methods may include but are not limited to shaking or dropping mats in a controlled manner with a piece of machinery to knock off attached soil & debris, spraying with water or air, & sweeping.
- Crossings should be inspected following mat removal to determine the level of restoration required.

Restoration

- Special precautions should be taken to promptly stabilize areas of disturbed soil located near wetlands & streams. Matted areas within wetlands will be allowed to naturally revegetate from existing root & seed stock of native plant species . If conditions warrant, wetland seed mix may be broadcasted over the matted area to supplement the existing seed & rootstock. The use of mulch in wetlands shall consist of weed-free mulch to mitigate the risk of the spread of invasive plant species.

US Army Corps of Engineers®
New England District

Appendix B: Category 1 Self-Verification Form

Submit this form **a minimum of two weeks before** work commences to the following address. Call (802) 872-2893 with any questions.

U.S. Army Corps of Engineers
New England District, Regulatory Division
Vermont Project Office
11 Lincoln Street, Room 210
Essex Junction, Vermont 05452
Fax: 802 879-7638
Katrina.l.sedney@usace.army.mil

Permittee: _____

Permittee Address: _____

City, State & Zip Code: _____

Phone(s) and Email: _____

Work Locations/Address: _____

City, State & Zip Code: _____

Latitude/Longitude coordinates: _____

Waterway name: _____

Description of Work: _____

Work will be done under the following Appendix A categories (circle all that apply):

I. Inland Waters and wetlands:	a	b	c	d	e	f	
II. Navigable Waters:	a	b	c	d	e	f	g

Area of wetland impact: _____ square feet (SF)
Area of waterway impact: _____SF
Length of stream impact: _____ linear feet (LF)

Will American Recovery and Reinvestment Act (ARRA) funds be used for any of this project? _____

Contractor: _____

Contractor Address: _____

City, State & Zip Code: _____

Phone(s) and Email: _____

Proposed Work Dates: Start: _____ Finish: _____

Your signature below, as permittee, indicates that you accept and agree to comply with the terms, eligibility criteria, and conditions of Category 1 of this Vermont General Permit.

Permittee Signature: _____ Date: _____

REVIEWED
By Bob Melillo, FEMA PS at 6:05 pm, May 27, 2015

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

May 14, 2014

Regulatory Division
CENAE-R-PEC-62
Permit Number: NAE-2014-0549

Mr. Richard Pion
Town of Lowell
2170 VT Route 100
Lowell, Vermont 05847

Dear Mr. Pion:

We have reviewed your application to place fill in about 1300 square feet (0.03 acre) of Burgess Branch in conjunction with the replacement of a deficient culvert with a new 14' x 6' precast concrete box culvert, on existing alignment, on Mines Road in Lowell, Vermont. The work is shown on the attached plans, on three sheets, entitled "BURGESS BRANCH CULVERT REPLACEMENT", dated "09/23/13", last revised "03/27/14".

Based on the information you have provided, we have determined that the proposed activity, which includes a discharge of dredged or fill material into waters or wetlands, will have only minimal individual or cumulative environmental impacts on waters of the United States, including wetlands. Therefore, this work is authorized as a Category 2 activity under the attached Federal permit known as the Vermont General Permit (GP). This work must be performed in accordance with the terms and conditions of the GP.

You are responsible for complying with all of the GP's requirements. Please review the attached GP carefully, in particular the GP conditions beginning on Page 7, to familiarize yourself with its contents. You should ensure that whoever does the work fully understands the requirements and that a copy of the permit document AND THIS AUTHORIZATION LETTER ARE at the project site throughout the time the work is underway.

This authorization expires on December 6, 2017, unless the GP is modified, suspended, or revoked. You must commence or have under contract to commence the work authorized herein by December 6, 2017 and complete the work by December 6, 2018. If you do not, you must contact this office to determine the need for further authorization before beginning or continuing the activity.

If you change the plans or construction methods for work in our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

This authorization requires you to complete and return the enclosed Work Start Notification Form to this office before the anticipated starting date. You must also complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

This authorization presumes that the work as described above and as shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, please submit a request for an approved jurisdictional determination in writing to this office.

This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law, as listed on Page 2 of the GP. Performing work not specifically authorized by this determination or failing to comply with any special condition(s) provided above or all the terms and conditions of the GP may subject you to the enforcement provisions of our regulations.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Please contact Michael S. Adams of my staff at (802) 872-2893 if you have any questions.

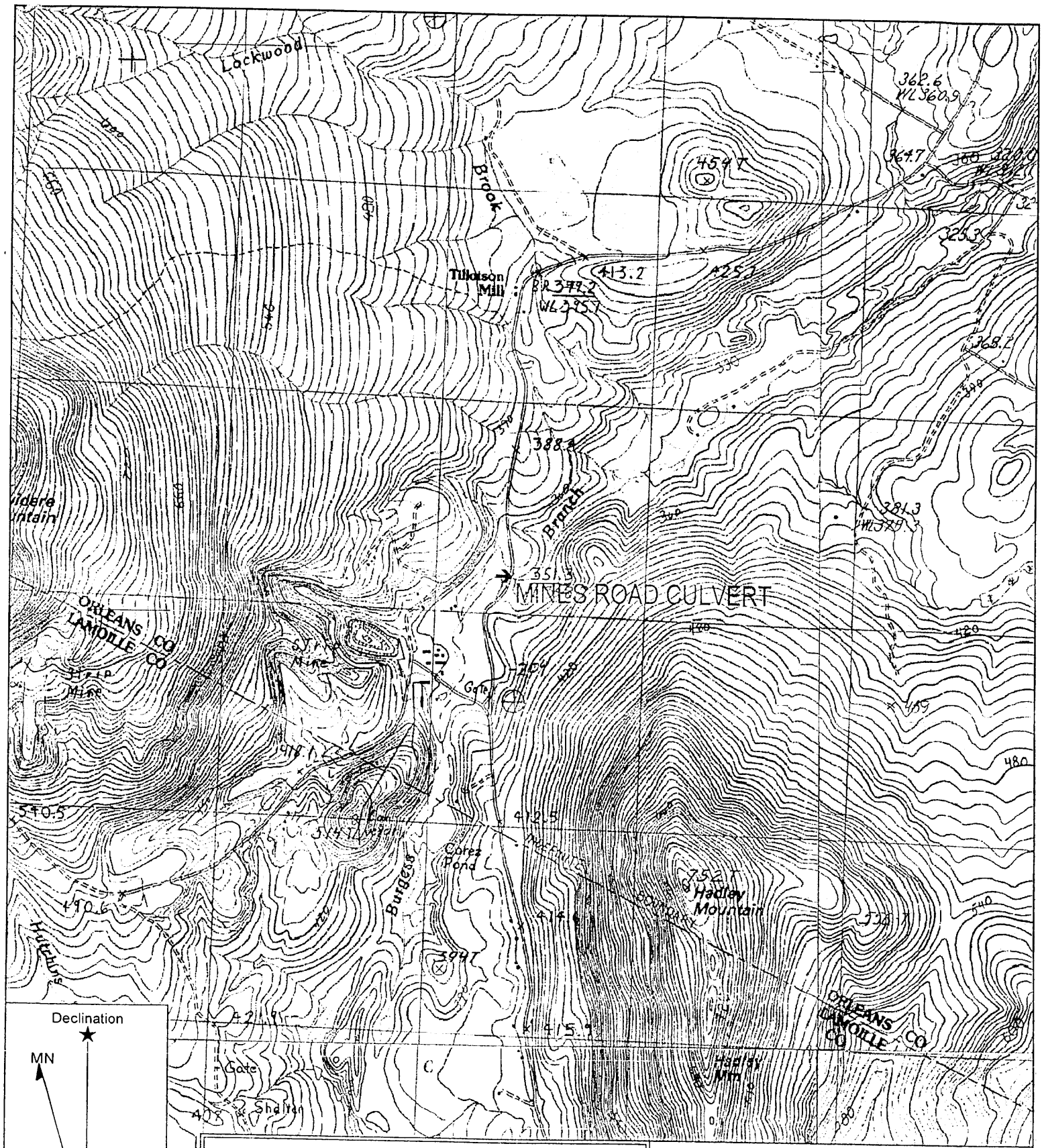
Sincerely,

Frank J. DelGiudice
Chief, Permits & Enforcement Branch
Regulatory Division

Attachments

Copies furnished:
Mr. Christopher G. Brunelle
VT Department of Environmental Conservation
Chris.Brunelle@state.vt.us

Mr. Sam Ruggiano
Ruggiano Engineering, Inc.
sam@shrugg.com



TOWN OF LOWELL
BURGESS BRANCH CULVERT REPLACEMENT
MINES ROAD, LOWELL, VERMONT

SCALE 1:24000

0 — 1 MILE
0 — 1000 YARDS
0 — 1 KILOMETER

Name: HAZENS NOTCH
Date:09/23/13 revised: 03/27/14
Scale: 1 inch = 2,000 ft.

Location: 044.7672513° N 072.5177335° W

US Army Corps of Engineers®
New England District

(Minimum Notice: Permittee must sign and return notification within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

USACE Project Number: NAE-2014-0549

Name of Permittee: Town of Lowell

Permit Issuance Date: May 14, 2014

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

****
* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Vermont Project Office *
* 11 Lincoln Street, Room 210 *
* Essex Junction, Vermont 05452 * mailed 8/7/14 *
****

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Richard Pion
Signature of Permittee

August 5, 2014.
Date

Richard Pion
Printed Name

July 11, 2014
Date of Work Completion

(802) 744-6559
Telephone Number

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Richard Middle - Last - Pion	First - Tyler Middle - Last - Mumley
Company - Town of Lowell Selectboard	Company - Ruggiano Engineering, Inc.
E-mail Address - nbonneau@lowelltown.org	E-mail Address - tyler@shrugg.com
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address- 2170 VT Rout 100	Address- 5 Lake Street
City - Lowell State - VT Zip - 05847 Country - USA	City - St. Albans State - VT Zip - 05478 Country - USA
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business (802) 744-6559 c. Fax (802) 744-8252	a. Residence b. Business (802) 524-9300 c. Fax (802) 524-9700

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Ruggiano Engineering, Inc. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

Richard Pion — SIGNATURE OF APPLICANT 2/10/14 — DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Burgess Branch Culvert Replacement

13 NAME OF WATERBODY, IF KNOWN (if applicable)	14 PROJECT STREET ADDRESS (if applicable)
Burgess Branch	Address Mines Road
15. LOCATION OF PROJECT Latitude: °N 44.77018 Longitude: °W -72.51829	City - Lowell State- VT Zip- 05847

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section - Township - Range -

17. DIRECTIONS TO THE SITE

Mines Road, Lowell, VT: Approximately 4 miles south from VT Rte 58 (Hazens Notch Road) in Lowell. Approximately 2500 feet north of VAG Road along Mines Road in Lowell. Approximately 4 miles north of Eden, Vermont, from VT Rte 100 along North Road onto Mines Road.

18. Nature of Activity (Description of project, include all features)

Construction of a new precast concrete box culvert with associated fill and roadway replacement.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Replacement of a culvert due to the existing culvert's poor condition and hydraulic inadequacy.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- VAG, c/o H.A. Manosh, 120 Northgate Plaza

City - Morrisville State - VT Zip - 05661

b. Address- Nava Lee Corp, P.O. Box 883

City - Newport State - VT Zip - 05855

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
State ANR	Stream Alteration	pending			

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

US Army Corps of Engineers®
New England District

WORK START NOTIFICATION FORM

****

* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Vermont Project Office *
* 11 Lincoln Street, Room 210 *
* Essex Junction, Vermont 05452 *

****

Corps of Engineers Permit No. NAE-2014-0549 was issued to Town of Lowell. The permit authorized the permittee to place fill in about 1300 square feet (0.03 acre) of Burgess Branch in conjunction with the replacement of a deficient culvert with a new 14' x 6' precast concrete box culvert, on existing alignment, on Mines Road in Lowell, Vermont.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: G.W. Tatro Construction, Inc.

Business Address: P.O. Box 339
Jeffersonville, VT 05464

Telephone Numbers: (802) 644-8875 (802) 644-5020 (fax)

Proposed Work Dates: **Start** 6/2/2014 **Finish** 9/15/14

Permittee's Signature: Karen Clinger **Date:** May 23, 2014

Printed Name: Karen Clinger **Title:** Town Clerk

****

FOR USE BY THE CORPS OF ENGINEERS

PM: Michael Adams **Submittals Required:** No

Inspection Recommendation: _____

REVIEWED
By Bob Melillo, FEMA PS at 6:06 pm, May 27, 2015

VT AGENCY OF TRANSPORTATION **PROGRAM DEVELOPMENT DIVISION**

HYDRAULICS UNIT

TO: Dustin Rhodes, District 9 Technician

FROM: David Willey, Hydraulics Project Supervisor

DATE: July 16, 2012

SUBJECT: Lowell TH 3(Mines Road) Bridge 26 – Site 2300' north of TH 5 (Vag Road)
GPS coordinates: N 44.770167° W -72.5185°

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 to mountainous drainage basin. It is a mixture of forested and open land cover. The total contributing drainage area is about 2.2 sq. mi. There is an overall length of 11,550 feet from the divide to the site, with a 1300-foot drop in elevation, giving an average overall channel slope of 11.3%. The stream slope at the site was estimated to be about 3%. Using several hydrologic methods, we selected the following design flow rates:

Recurrence Interval in Years	Flow Rate in Cubic Feet per Second (CFS)
Q2.33	110
Q10	240
Q25	320 - Town Highway Design Flow
Q50	400
Q100	480 - Check flow

Existing Conditions

The existing structure is a 6.0' diameter corrugated metal pipe, providing 28.3 sq. ft. of waterway area. Water overtopped the roadway in this spring's flood. There is a lot of debris at the inlet of the pipe that should be removed. There is a 0.5' drop into a large scour pool at the outlet.

Our calculations show the existing structure is not adequate hydraulically. Headwater to depth ratios exceed the allowable values and water overtops the roadway below the design Q25.

Recommendations

In sizing a new structure we attempt to select structures that meet the hydraulic standards, fit the natural channel width, the roadway grade and other site conditions. We measured an upstream channel width of 8' – 12' and downstream channel width of approximately 15' – 20' during our site visit. The channel may be wider now after the flood. The Agency of Natural Resources 'VT Regional Hydraulic Geometry Curves' give a bank full width of 18' for this size drainage area. Those curves are only based on drainage area and do not consider other factors, such as storage, stream slope or other site specific conditions. They may not be valid for this size drainage area. The low height from the stream bed to the road limits the replacement options to a box structure, as there would not be adequate cover for a properly sized pipe. Based on our calculations and the information available, we recommend any of the following structures as a replacement at this site:

1. A concrete box with a 14' wide by 6' high inside opening, with 6" high bed retention sills (baffles) in the bottom. The box invert should be buried 12", so the top of the sills will be buried 6" and not be visible. That will result in a 14' wide by 5' high waterway opening above streambed, providing 70 sq. ft. of waterway area. Sills should be spaced no more than 8'-0" apart throughout the structure with one sill placed at the inlet and one at the outlet. Sills should be cast in a V shape with a 10:1 lateral slope, to create a low flow channel in the center if the bed material in the structure is washed out. The spaces between sills should be filled with stone graded to match the natural stream bed material. This structure will result in a headwater depth at Q25 = 4.3' and at Q100 = 5.7', with no roadway overtopping up to Q100.

2. Any similar structure with a minimum clear span of 14' and at least 70-sq. ft. of waterway area, that fits the site conditions, could be considered. Any structure should have bed retention sills and a buried invert as described above.

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.

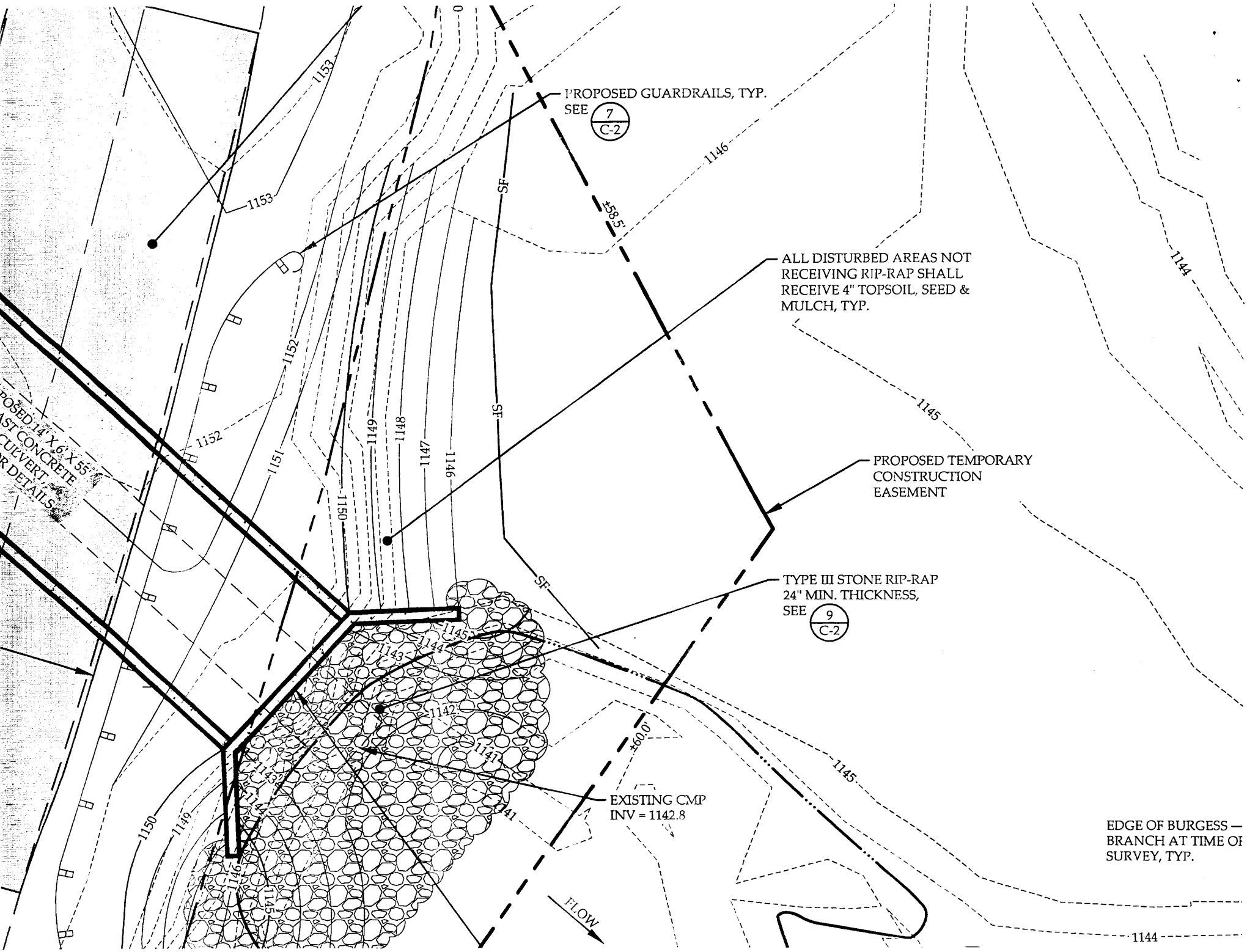
The Agency of Natural Resources (ANR), Corps of Engineers, or other permitting agency may **have additional concerns regarding replacement of this structure, or any channel work. The River Management Engineer should be contacted with respect to those concerns, before a replacement structure is ordered. If ANR requires the invert of the structure to be buried to more than 1', the size of the structure will have to be larger to provide the required waterway area. ANR may want a wider structure, based on calculated bank full width.**

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

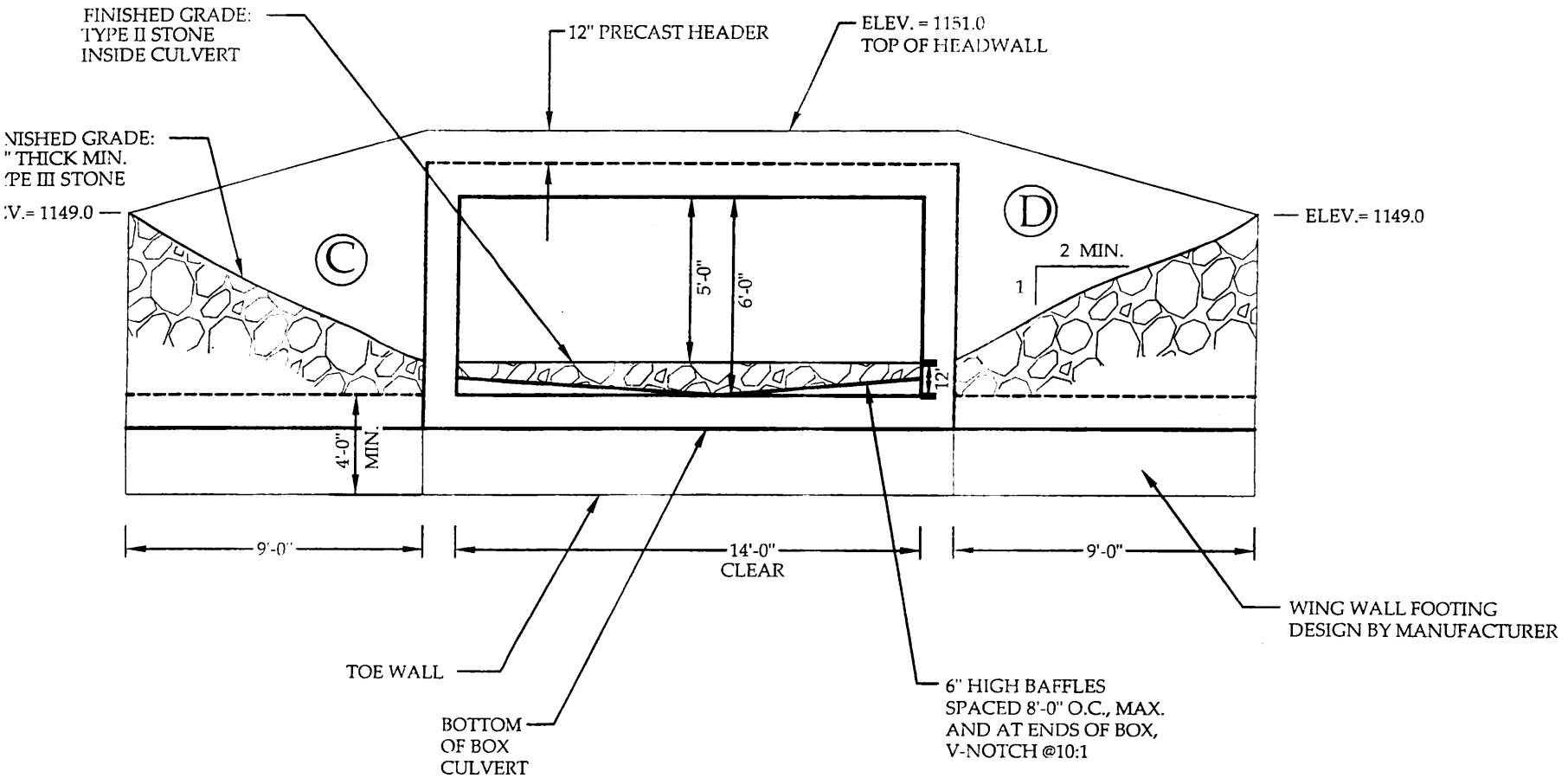
cc: Chris Brunelle, A.N.R. River Management Engineer
Hydraulics Project File via NJW
Hydraulics Chrono File


PROPOSED GUARDRAILS, TYP.
SEE 7 C-2
ALL DISTURBED AREAS NOT RECEIVING RIP-RAP SHALL RECEIVE 4" TOPSOIL, SEED & MULCH, TYP.
PROPOSED TEMPORARY CONSTRUCTION EASEMENT
TYPE III STONE RIP-RAP 24" MIN. THICKNESS, SEE 9 C-2
EXISTING CMP INV = 1142.8
EDGE OF BURGESS — BRANCH AT TIME OF SURVEY, TYP.
FLOW
±58.5'
±60.0'
SF
1153
1152
1151
1150
1149
1148
1147
1146
1145
1144
1143
1142
1141

2
C-2

TYPICAL BOX CULVERT SECTION

SCALE: 1" = 5'



5
C-2

WEST END ELEVATIONS

SCALE: 1" = 5'

REVIEWED
By Bob Melillo, FEMA PS at 6:07 pm, May 27, 2015

Attachment 2: Minimum Town Road and Bridge Standards that include Water Quality Best Management Practices

January 4, 2011

TOWN ROAD AND BRIDGE STANDARDS
TOWN OF LOWELL, VERMONT

The Town of LOWELL hereby adopts the following Town Road and Bridge Standards which shall apply to the construction, maintenance and repair of all town roads and bridges.

The standards listed here are considered minimum and are presented for purposes of guiding construction and maintenance personnel. The standards listed here include three types of management practices and are designed to: ensure the safety of the traveling public, minimize damage to road infrastructure during flood events, and enhance water quality protections by minimizing sediment delivery to surface waters and/or wetlands. The select board reserves the right to modify the standards for a particular project, where, because of unique physical circumstances or conditions, there is no possibility that the project can be completed in strict conformance with these provisions. Any modifications to the standards must be done in a manner that protects the underlying intent of the management practice, be it public safety, flood hazard avoidance, or water quality protection. Fiscal reasons are not a basis for modification of the standards. Questions about modifications to the standards should be directed to the VTrans District Office.

Any new road, whether or not that road is proposed to be conveyed to the town, shall be constructed according to the minimums of these standards. If any federal and/or state funding is involved in a project, the VTrans district office will be notified prior to any field changes taking place that would alter the original scope of work.

Roadways

- All new or substantially reconstructed roads will have at least a 15-inch thick processed gravel subbase, with gravel roads having the top 3 inches (minimum) as crushed gravel.
- All roadways will be graded so water does not remain on the road surface. For roadways that are not superelevated, this generally means a 2-4% ($^1/_4$" - $^1/_2$" per ft) crown for gravel roads and a 1-2% ($^1/_8$" - $^1/_4$" per ft) crown for paved roads to promote sheeting of water.
- Proper grading techniques for gravel roadways will be used to avoid creating a ridge or berm between the crown and the ditch.
- Any berm along the roadway shoulder that prevents the proper sheeting of water will be removed.

Ditches and Slopes

Soil exposed during ditch and slope construction or maintenance will be treated immediately following the operation. Priority should be given to areas vulnerable to erosion immediately adjacent to or discharging to surface waters and/or roadway drainage facilities. The following are minimum erosion control measures:

- Seed and mulch ditches with grades less than 2%. Use biodegradable, non-welded matting and seed on ditches with grades between 2% and 5%. Stone line all ditches with grades greater than 5%; alternatively, install stone check dams. Dams should be comprised of a well graded stone matrix 2 to 9 inches in size. Dams should not exceed 2 feet in height and check dam crest should be at least 6" below the top of the ditch.

- Create parabolic (wide "U" shaped) ditches when constructing new or substantially reconstructing ditches, rather than narrow "V" shaped ditches. Ditches with gradual side slopes (maximum 2H: 1V ratio) and a wide bottom (at least 2 feet) are preferred.
- Use biodegradable, non-welded matting to stabilize side-slopes where slopes are greater than 1:1; apply seed and mulch to any raw or exposed side-slope if slopes are less than or equal to 1:1.
- Ditches should be turned out to avoid direct outlet into surface waters. There must be adequate outlet protection at the end of the turnout, either a structural (rock) or vegetative filtering area.

Culverts and Bridges

- All new driveway culverts will have a minimum diameter of 15 inches.
- All new roadway culverts will have a minimum diameter of 18 inches.
- Any culvert with a drainage area greater than 0.25 sq mi will require a hydraulic engineering study. Culverts will be designed to convey the Q25 design storm with minimal surcharge.
- All bridges (structures with spans greater than 6 feet) and open bottom structures will require a hydraulic engineering study. Structures will be designed to convey the Q25 design storm and allow for passage of ice and debris.
- When installing or replacing culverts, use appropriate techniques such as headwalls and wingwalls, where there is erosion or undermining or where it may occur.
- Install a splash pad or plunge pool at the outlet of drainage culverts where there is erosion or where erosion may occur. Splash pads and plunge pools are not appropriate for use in streams supporting aquatic life.

Guardrail

When roadway, culvert, bridge, or retaining wall construction or reconstruction projects result in hazards such as foreslopes, drop offs, or fixed obstacles within the designated clear-zone, a roadside barrier such as guardrail shall be installed. The most current version of the AASHTO Roadside Design Guide will govern the analysis of the hazard and the subsequent treatment of that hazard.

Access Management

The town will have a process in place, formal or informal, to review all new drive accesses and development roads where they intersect Town roads, as authorized under 19 V.S.A. Section 1111. Towns may reference VTrans A-76 Standards for Town & Development Roads and B-71 Standards for Residential and Commercial Drives.

Training

Town highway maintenance crews will collectively attend a minimum total of 6 hours of training per year on best road management practices. The town will keep documentation of their attendance.

Passed and adopted by the Selectboard of the Town of Lowell**, State of Vermont on** 03-29**, 20**11.

Select Board: Richard Cain, Alden Warner, Dwight Richardson

Certifcation of Compliance
For
Town Road and Bridge Standards

We, the Legislative Body of the Municipality of **LOWELL** certify that we have reviewed, understand and comply with the town Road and Bridge Standards passed and adopted by the Selectboard on **March 29th , 2011 .**

We further certify that our adopted Town Road and Bridge Standards (X) do ( ) do not meet or exceed the minimum requirements included in the January 4, 2011 Vtrans template.

Richard Pion

Date: July 17-2012

Richard Pion

Alden Warner

Dwight Richardson

Dwight Richardson

REVIEWED
By Bob Melillo, FEMA PS at 6:08 pm, May 27, 2015

TOWN OF LOWELL
2170 VT RTE 100
LOWELL, VT 05847

Telephone 802-744-6559
Fax 802-744-2357

October 20, 2014

To whom it may concern:

The Town of Lowell follows the procurement policy in accordance with State and Federal regulations.

FEDERAL EMERGENCY MANAGEMENT AGENCY

9901-DIRECT ADMINISTRATIVE COSTS (SUBGRANTEE)

APPLICANT	PW REF NO.	CATEGORY	DISASTER	WORK STATUS
Lowell (Town of)	27	C	EMA 4066-DR-V	<Select Status>

LABOR SUMMARY

NAME	TITLE	HOURS	RATE w/ FRINGE	COST
Pam Tetreault	Treasurer	10	$ 19.57	$ 195.70
Karen Clinger	Town Clerk	10	$ 19.57	$ 195.70
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
			LABOR SUBTOTAL	$ 391.40

REVIEWED

By Bob Melillo, FEMA PS at 6:11 pm, May 27, 2015

EQUIPMENT SUMMARY

COST CODE	DESCRIPTION	HOURS OR MILES	RATE	COST
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
				$ -
			EQUIPMENT SUBTOTAL	$ -

MATERIAL SUMMARY

OFFICE SUPPLIES DESCRIPTION	QUANTITY	UNIT PRICE	COST
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -

OTHER MATERIAL DESCRIPTION	QUANTITY	UNIT PRICE	COST
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
		MATERIAL SUBTOTAL	$ -

DIRECT ADMINISTRATIVE COSTS TOTAL	$ 391.40

Direct Administrative Costs
PW 27 FEMA 4066 (Mines Rd)

Karen Clinger	*Date*	*Hours Worked*
Town Clerk & Clerk to the Select Board	8/8/2013	1
	8/20/2013	0.25
	8/21/2013	0.25
	8/29/2013	0.25
	9/9/2013	0.25
	10/8/2013	0.25
	11/19/2013	0.25
	12/2/2013	0.25
	12/3/2013	0.25
	2/26/2014	0.5
	3/5/2014	0.5
	4/1/2014	0.5
	4/11/2014	0.5
	10/13/2014	1
	10/20/2014	3
	Misc.	1
	Total	**10**

*** This time includes email correspondences with Engineer, Tyler Mumley at Ruggiano Engineering. Also, as Clerk to the Select Board, time spent presenting S.B. with information pertaining to the project and doing follow up work as per S.B. requests. Also correspondence work with Christine Emmons and completing appropriate paperwork required.**

*

Treasurer's Administrative time		Hours
Project:	Mines Rd - Culvert Replacement	
Dates:	2013-2014	
Preperation of invoices, general ledger documention, organization, correspondance and meeting with Christine Emmons		
Pam Tetreault	10/20/2014	10

Pentkowski, Ron

From: karen Clinger <kclinger@lowelltown.org>
Sent: Thursday, April 30, 2015 2:21 PM
To: Pentkowski, Ron
Subject: RE: DR4066 - Town of Lowell; PW #00024(0) - Cheney Road

note on page 2 of 2 for DAZ re: PW #00027(1)

Please see note below.

Karen Clinger
Town Clerk
Town of Lowell
2170 VT RTE 100
Lowell, VT 05847

Phone: 802-744-6559
Fax: 802-744-2357
kclinger@lowelltown.org

Please note that this email message, along with any response or reply, is considered a public record, and thus, subject to disclosure under the Vermont Public Records Law (1 V.S.A. §§ 315-320).
Thank You.

From: Pentkowski, Ron [mailto:Ron.Pentkowski@state.vt.us]
Sent: Wednesday, April 29, 2015 3:20 PM
To: karen Clinger
Subject: DR4066 - Town of Lowell; PW #00024(0) - Cheney Road

Hi Karen,

I'm trying to reconcile the last sections of the PW #00024(0) – Cheney Road and need more back up for the following:

Rented Equipment:

- I am having trouble reconciling the attached sheets (Rented Equipment Record and check stubs) for Rented Equipment. Can you help me with the cross-referencing?

- I need copies of the following checks:
  Reginald Pion is the vendor (dates 7/9/13 to 8/30/2013)
  12566
  12642
  12683
  Reginald Pion is the vendor (dates 5/29/13 to 6/30/2013)
  11592
  11629
  11669

Force Account Labor:

- I am having trouble reconciling the attached timesheets against the summary sheets (Force Account Labor Records – pages 1-3). The three summary sheets seem mathematically correct.

- Can you review have someone (perhaps Reginald Pion who signed them all) review these (attached summary sheets and timesheets) and write the dates on each time sheet; and verify all that was written in as Cheney Road or referenced to FEMA capture the Cheney road work by each individual – then e-mail them back to me? All I see are hand-written references to Payroll #12, 13, 15, 17 & 18 and some time sheets are listed as week 1 or week 2.

- Also, I see where Pamela Tetreault is listed on these time sheet. If there is a way to capture the dates she put in for DAC and pride those copies of time sheets that would be a bonus.

Force Account Materials Summary:

- I need a copy of the check for invoice C79284 – Johnson Hardware.

Direct Administrative Costs (DAC):

- As with PW #00027(1), I reviewed the DAC sheets you provided and noted that you did not include the town's fringe benefit rate with your hourly rates. You are allowed this additional amount. Would you like to revise that DAC sheet to include the rate with fringe? I have attached the DAC sheets and your fringe benefits calculation worksheet for your reference.

I don't want to make any changes to this. I don't know enough about how it was originally figured, or how to even make
changes based on the information you gave me. The hours being submitted are pretty minimal (and we don't even have good supporting documentation) so I can't imagine it would make a very big difference.

(Same DAC comment applies to PW #00027(1))

Cost Summary Record:

There were changes to the original Cost Summary Record which are still dependent upon whether or not you want to include the fringe rate for DAC. I've attached the marked-up Cost Summary Record for your review. Once the figures are correct, I'll make the changes and re-submit the form for your signature/date.

I do appreciate the challenges locating all this information after Pam left and I certainly appreciate your time spent locating it all. I believe this should be my last request for information for PW #00024.

Thanks very much!

VERMONT

Ron Pentkowski
Public Assistance Coordinator
Vermont Department of Public Safety
Division of Emergency Management and Homeland Security
103 South Main St.
Waterbury, VT 05671-2101
ron.pentkowski@state.vt.us
direct: (802) 241-5366
cell: (802) 585-0142

REVIEWED
By Bob Melillo, FEMA PS at 6:10 pm, May 27, 2015

FEDERAL EMERGENCY MANAGEMENT AGENCY

APPLICANT'S BENEFITS CALCULATION WORKSHEET

APPLICANT	PW REF NO.	CATEGORY	DISASTER
Lowell (Town of)	PW00024 27 A	C	FEMA 4066 DR - VT

ENTER TOTAL ANNUAL PAYROLL

$66,497.00

		REGULAR TIME %	OVERTIME %
Holidays			
Vacation Leave			
Sick Leave			
* Social Security		6.20%	
* Medicare		1.45%	
* Unemployment	$ 5,366.00	8.07%	
* Worker's Comp	$ 280.00	0.42%	
** Retirement	$ 2,660.00	4.00%	
Health Benefits	$ 14,320.08	21.53%	
Life Insurance Benefits			
Other (Describe here) _____			
	Total (in % of annual salary)	41.68%	

If the benefit is applied to the overtime fringe rate, select the proper box

(FIGURES IN BLUE AUTOMATICALLY "GO" TO THE FORCE ACCOUNT LABOR SHEETS)

COMMENTS:

I CERTIFY THAT THE INFORMATION ABOVE WAS TRANSCRIBED FROM PAYROLL RECORDS OR OTHER DOCUMENTS WHICH ARE AVAILABLE FOR AUDIT.

CERTIFIED: _____

DATE: _____

* Only categories for overtime fringe benefits.

** Only an overtime fringe benefit when supported by employee contract

Pentkowski, Ron

From: karen Clinger <kclinger@lowelltown.org>
Sent: Monday, April 27, 2015 10:31 AM
To: Pentkowski, Ron
Subject: RE: DR4066 - Town of Lowell; Closeout Review for Project Worksheets- #27 (Mines Road Culvert) and #24 (Cheney Road)

Ron,

We are being meticulous going forward about keeping track of information for future DAC sheets. I appreciate your help in handling this difficult situation.

Karen Clinger
Town Clerk
Town of Lowell
2170 VT RTE 100
Lowell, VT 05847

Phone: 802-744-6559
Fax: 802-744-2357
kclinger@lowelltown.org

Please note that this email message, along with any response or reply, is considered a public record, and thus, subject to disclosure under the Vermont Public Records Law (1 V.S.A. §§ 315-320).
Thank You.

From: Pentkowski, Ron [mailto:Ron.Pentkowski@state.vt.us]
Sent: Thursday, April 23, 2015 2:37 PM
To: karen Clinger
Subject: RE: DR4066 - Town of Lowell; Closeout Review for Project Worksheets- #27 (Mines Road Culvert) and #24 (Cheney Road)

Karen,

Regarding the DAC sheets – I'll submit to FEMA what you have presented. Ideally though, they like copies of the hourly rates with fringe break-out by personnel, and a detailed account of work performed by date and personnel with time sheet back up. If all that is not available I'll submit what you have. I'll include the e-mail you sent with the DAC information to help explain it to them.

Ron

From: karen Clinger [mailto:kclinger@lowelltown.org]
Sent: Thursday, April 23, 2015 2:15 PM
To: Pentkowski, Ron
Subject: RE: DR4066 - Town of Lowell; Closeout Review for Project Worksheets- #27 (Mines Road Culvert) and #24 (Cheney Road)

Ron,

Please see my comments below, regarding the attachment.

Karen Clinger
Town Clerk
Town of Lowell
2170 VT RTE 100
Lowell, VT 05847

Phone: 802-744-6559
Fax: 802-744-2357
kclinger@lowelltown.org

Please note that this email message, along with any response or reply, is considered a public record, and thus, subject to disclosure under the Vermont Public Records Law (1 V.S.A. §§ 315-320).
Thank You.

From: Pentkowski, Ron [mailto:Ron.Pentkowski@state.vt.us]
Sent: Monday, April 20, 2015 12:23 PM
To: karen Clinger
Cc: Emmons, Christine
Subject: DR4066 - Town of Lowell; Closeout Review for Project Worksheets- #27 (Mines Road Culvert) and #24 (Cheney Road)

Hi Karen,

I wanted to follow up to your last e-mail in which you provided me additional information I needed to submit the closeout packages for the PW #24 (Cheney Road) and PW #27 (Mines Road Culvert). Thank you for that information. However, I still need additional information in electronic format is needed to satisfy FEMA.

I am available to meet with you and Christine Emmons from VTrans at your office to review these Project Worksheets if that would be helpful. I think we are almost at a point where we have two complete packages. If you would like to meet, I am currently available to meet April 27th, 28th or and 29th (Mon-Wed). And a 10:00 AM meeting would allow me time to travel there. I will note that my schedule has been filling up quickly.

PW #24 (Cheney Road):

- Photos of completed work (just a few good clear shots of the completed site work)
- A copy of the signed contract / agreement (if you don't have one on file, please reach out to the contractor(s) involved). They need this to support the claim of Contract Work performed. If this type of work was performed by firms in town, they would likely be able to provide this for the town.
- If here was any engineering work performed there, then a copy of the designs, plans, signed agreement/contract as applicable are needed.
- Direct Administrative Costs (DAC) – (I have the DAC sheet/summary of work performed) I need copies of times sheets for the town employee(s) to support that claim.

PW # 27 (Mines Road Culvert):

- Photos of completed work (just a few good clear shots of the completed site work). I just found out that the pictures I sent you had some photos from Cheney Road and some from Mines Road ☹ If you want, I can have the Road Commissioner come in and tell me what pictures are what! Sorry about that!
- Direct Administrative Costs (DAC) – I have the DAC sheet/summary of work performed) I need copies of times sheets for the town employee(s) to support that claim.

Pam is no longer employed with the Town and I cannot obtain any further information from her. I am attaching a new DAC sheet for myself; however, it is very similar to the first one I submitted. Can you tell me if this is acceptable?

The following information may assist you in your analysis process of eligible DAC costs as well as during project development. Provide documentation of actual DAC costs for each project worksheet (PW) in a line item breakdown by:

- Name – name of the person who performed the administrative task
- Title – title/designation of the person who performed the administrative task
- Date – date the administrative task was performed
- Administrative Task – specific description of task performed (i.e. site identification, kick-off meeting, immediate needs, preliminary cost estimate, data collection & dissemination, travel expenses, etc.- project phases are too broad and are not acceptable) and clearly chargeable to an actual project.
- PW number – the PW number for which the administrative task was performed
- Time – number of hours required to complete the administrative task

*(attached is the spreadsheet titled" 9525.9PA Indirect/Direct Administrative Activity List (1), for more detail)

Please feel to contact me to discuss this at your convenience.

REVIEWED

By Bob Melillo, FEMA PS at 6:15 pm, May 27, 2015

Thank you very much,

VERMONT

Ron Pentkowski
Public Assistance Coordinator
Vermont Department of Public Safety
Division of Emergency Management and Homeland Security
103 South Main St.
Waterbury, VT 05671-2101
ron.pentkowski@state.vt.us
direct: (802) 241-5366
cell: (802) 585-0142

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2015.0.5863 / Virus Database: 4334/9605 - Release Date: 04/23/15

Large Project

PA-01-VT-4066-PW-00027(1) P	
Applicant Name:	Application Title: invoices-actual cost
LOWELL (TOWN OF)	JCLOC10 Mines Rd Culvert 26
Period of Performance Start:	Period of Performance End:
06-22-2012	06-22-2016

Bundle Reference # (Amendment #)	Date Awarded
PA-01-VT-4066-State-0011(10)	06-30-2014

Subgrant Application - FEMA Form 90-91

Note: The Effective Cost Share for this application is 75%

FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET

DISASTER	PROJECT NO.	PA ID NO.	DATE	CATEGORY
FEMA 4066 - DR -VT	JCLOC10	019-40525-00	08-06-2012	C

APPLICANT: LOWELL (TOWN OF)	WORK COMPLETE AS OF: 08-15-2011 : 17 %

Site 1 of 1

DAMAGED FACILITY: Mines Rd Culvert 26 (Town of Lowell)	COUNTY: Orleans

LOCATION:	LATITUDE: 44.77016	LONGITUDE: -72.51835

PA-01-VT-4066-PW-00027(0):

Cheney Rd. A class III rural local asphalt road is located .421 miles from the intersection with VAG Rd. in the town of Lowel, VT.

PA-01-VT-4066-PW-00027(1):

30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT - No change to location.

DAMAGE DESCRIPTION AND DIMENSIONS:

PA-01-VT-4066-PW-00027(0):

During the incident period of May 29, 2012, a severe storm tranversed northern Vermont resulting in flooding, high winds and a possible tornado. This resulted in Addison, Lamoille and Orleans counties being designated as eligible to receive reimbursement for recovery efforts that included both emergency and permanent work. This project worksheet (PW) covers the permanent repairs to be completed on the stream crossing where Burgess Branch crosses Mines Road (TH-2), a class 2 road (GPS Coordinates 44.77016, -72.51835
The Stream crossing consists of a 72 inch x 65 foot corrugated metal pipe (CMP) culvert. Heavy rain water flow caused the stream to run under the culvert damaging more that 50 per cent of the culvert.

PA-01-VT-4066-PW-00027(1):

30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT - No change to damage description and dimensions.

SCOPE OF WORK:

PA-01-VT-4066-PW-00027(0):

Scope of Work
The repairs at this site will require the removal and disposal of the existing 72in x 65ft CMP and replacement with a new culvert. The Vermont Agency of Transportation (VAOT) completed a preliminary hydraulic study for this site which determined the Q25 for this site and recommended replacement structures as well; however, eligible reimbursement costs under FEMA's Public Assistance (PA) Program are limited to an "in-kind" replacement structure that is upgraded in accordance with eligible codes and standards. Consistent with the Road and Bridge Standards adopted by the Town of Lowell (29 March 2011), FEMA performed a Culvert Sizing Evaluation (attached) to determine the size of an hydraulically adequate in-kind replacement structure._____
While the Culvert Sizing Evaluation determined that a 78 in x 65ft diameter was adequate for this location FEMA considers Corrugated Metal Multi-plate Arch Culvert measuring 69in x 98in x 65ft to be a cost-effective replacement to limit the need to change road grades to assure sufficient depth of cover material over the culvert.____
This approach will require excavation of material over an area 65ft x 24ft x 8ft (approx. 462 cubic yards (CY)). The new culvert will be re-covered with gravel and soil and a new roadway approach consisting of sub-base gravel will be installed over the excavation ((24ft x 65ft x 8in)/27 = 38 CY). The road surface will be finished with a 3 in-thick layer of bituminous concrete pavement 24' x 65' x.25 = 28.71T and 4" yellow line will be applied.____
Additional costs associated with non-permanent items during construction were accounted for in the attached Cost Estimate Format (CEF) and include: a sandbag check dam, a 130 gpm water pump to serve as a by-pass for stream flow across the installation site, and highway barricades to close the road during culvert work. The attached CEF itemizes the estimated costs associated with the completion of this scope of work.____

In addition to the eligible scope of work described above, Hazard Mitigation opportunities were identified for this project and include the construction of concrete Class B, steel reinforced head wall and wing-walls at both the entrance and outlet of the culvert. The estimated cost of the HMP is $12,193.00____
The total estimated cost for the eligible scope of work, including the HMP and potential construction contingencies is $82,930.00The Applicant has elected to not request any direct administrative costs directly chargeable to this specific project. ____
The costs associated with the eligible scope of work for this project have been estimated. Large project funding (>$63,900) is based on documented actual costs for the eligible scope of work. This will require an amendment to the original project worksheet to be written, after the work is complete, to capture the over-run/under-run.____
If the applicant decides to make improvements to the facility beyond that described in the eligible scope of work (e.g. changes in size, footprint, structure type), the applicant must request approval for an improved project from the State of Vermont prior to the start of construction. If approved, reimbursement through the PA program will be capped at the cost of the eligible scope of work. Failure to obtain approval for an improved project can place funding at risk.___
Federal funding is contingent upon the Applicant acquiring all necessary federal, state and local permits. Non compliance with this requirement may jeopardize the receipt of federal funds.____

The Applicant has indicated that this work will be completed using a contractor. The Applicant must comply with its Local, State and/or Federal procurement laws, regulations and procedures when seeking proposals and letting contracts for eligible work.____

The Project Specialist has reviewed all documentation required for this Project Worksheet (PW). These documents are attached to the PW and are on file at the Applicant's offices. The project specialist has advised the Applicant to retain these records for a period of three years from the date of closeout. ____

PA-01-VT-4066-PW-00027(1):

30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT
Culvert sizing reevaluated at request of VT State representatives that original PW culvert evaluation neglected to take into account the Q100 conditions for headwater depths established by VAOT. Upon conducting this further evaluation it was concluded to increase the size of the PW replacement structure from a 98" x 69" CMPA to a 112" x 75" CMPA and corresponding road height changes to provide adequate cover over the larger size pipe.

In summary, the resulting updated SOW is described as follows:

* VAOT CC 204.25 Structure Excavation 15.3' wide x 8' deep = 122.4 SF less area of existing CMP (28.274 SF) = 94.126 SF x 65' long = 6118.19 CF /27 = 227 CY
* 334216153360 257 lbs/LF x 65' long = 16,705 Lbs
* VAOT CC 204.30 Granular Backfill For Structures 15.3' wide x 8' deep = 122.4 SF less area of new CMPA (50.3 SF) =72.1 SF x 65' long = 4686.5CF /27 = 174 CY
* VAOT CC 301.15 Subbase Of Gravel 15.3' wide x 24' long x 1.25' deep = 459 SF/27 = 17 CY
* VAOT CC 203.28 Excavation Of Surfaces And Pavements 125' long x 22' wide x 0.25' thick x 2 (approach & departure) = 1375 CF/27 = 51 CY
* VAOT CC 203.15 Common Excavation (for taper area) 125' long x 24' wide x 1.25' deep x ½ x 2 (approach & departure) = 3750 CF/27 = 139 CY
* VAOT CC 301.15 Subbase Of Gravel (for taper area) 125' long x 24' wide x 1.25' deep x 2 (approach & departure) = 7500 CF/27 = 278 CY
* VAOT CC 406.25 Bituminous Concrete Pavement 3" thick 125' long x 24' wide x 2 (approach & departure) + 15.3' long x 24' wide CMPA cover area = 55 Tons x 2 + 6.7 Tons = 117 Tons
* VAOT CC 646.412 Durable 4 Inch Yellow Line, Thermoplastic as double line 125' long x 2 (approach & departure) + 15.3' long CMPA cover area = 531'
* VAOT CC 621.20 Steel Beam Guardrail, Galvanized per codes and standards 50 LF
* VAOT CC 621.21 HD Steel Beam Guardrail, Galvanized per codes and standards 174 LF
* VAOT CC 501.34 Concrete, High Performance Class B for head and wing walls, per codes and standards, upstream and downstream with footings 19 CY
* VAOT CC 507.15 Reinforcing Steel (Rebar) for head and wing walls 320 LBS

The Applicant, working with the firm of Ruggiano Engineering, requested a scope change to install a 14' x 6' box culvert based on the hydrology report recommendations.

Reference the attached correspondence documenting the scope change request:
- Ruggiano Engineering Estimate letter dated 09/25/13
- Town of Lowell Scope Change Request letter dated 11/14/13
- VEM&HS Scope Change Request letter dated 11/20/13

In summary the 14' x 6' box culvert SOW, based on Ruggiano Engineering plans and estimated unit quantities, is to:
* Excavate to remove existing structure and prepare for box culvert 800 CY
* Crushed Stone under culvert (12") 35 CY
* Precast concrete box 14' x 6' x 55' including headwalls, wing walls & cut-off walls
* Granular Backfill over box culvert 400 CY
* Roadway Sand Cushion (6") 35 CY
* Roadway Gravel Subbase (18") 100 CY
* Roadway Pavement (3") 30 TONS
* Guardrail 150 LF
* Type II Rip-Rap 30 CY
* Type III Rip-Rap 100 CY

FEMA has recently addressed the eligibility of culvert enlargements in Vermont as part of a second appeal by an Applicant under PW #1803. FEMA determined that the cost of the upgrade for PW #1803 was an eligible Section 406 hazard mitigation project under 44 C.F.R. § 206.226 (e) and RP No. 9526.1 because the upgrade did not exceed 100 percent of the project cost and will reduce the likelihood of future similar damage. Recovery Policy (RP) 9526.1, Hazard Mitigation Funding under Section 406 (Stafford Act) dated March 30, 2010, provides guidance on the application and eligibility of hazard mitigation measures. Appendix A of the policy states that the replacement of a destroyed drainage structure with a larger structure is among the eligible hazard mitigation measures that are pre-determined to be cost effective when they do not exceed 100 percent of the project cost

The total cost of the 14' x6' box culvert installation is estimated as $195,022 of which $120,090.90 are the base construction costs. (Reference Box Culvert CEF Part A attachment.) The PW costs to install a 112" x 75" CMPA to replace the 72" diameter destroyed CMP culvert was estimated at $141,488 of which $84,044.68 are the base construction costs. (Reference CMPA Mines Rd CEF Part A attachment.) The net additional cost of $36,046.22 ($120,090.90 - $84,044.68) represents 42 percent of the base eligible repair cost and as such is eligible for Section 406 hazard mitigation funding.

From referenced CEF's, the difference in replacement costs of $53,534 ($189,040 - $135,506) will be assigned to 406 HM thus bringing Total HMP to $59,516 ($53,534 + $5,982).
END OF AMENDMENT

Does the Scope of Work change the pre-disaster conditions at the site? Yes No	Special Considerations included? ✔ Yes No
Hazard Mitigation proposal included? ✔ Yes	Is there insurance coverage on this facility? Yes ✔ No

No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	0000	Work to be Completed	0/LS	$ 0.00	$ 0.00
2	9000	CEF COST ESTIMATE	1/LS	$ 70,737.00	$ 70,737.00
		*** Version 1 ***			
		Work To Be Completed			
3	0000	30 January 2014 Robert Melillo, PS Scope Change/406 HM Amendment	0/LS	$ 0.00	$ 0.00
4	9999	De-obligate prior Estimated Project Cost	1/LS	$ -70,737.00	$ -70,737.00
5	9000	CEF COST ESTIMATE	1/LS	$ 135,506.00	$ 135,506.00
6	0909	Hazard Mitigation Proposal	1/LS	$ 59,516.00	$ 59,516.00
				TOTAL COST	$ 195,022.00

PREPARED BY JOSEPH COMBES	TITLE Project Specialist	SIGNATURE
APPLICANT REP. Alden Warner	TITLE Select Board	SIGNATURE

View Application

PA-01-VT-4066-PW-00027(1) P	
Applicant Name:	Application Title:
LOWELL (TOWN OF)	JCLOC10 Mines Rd Culvert 26
Period of Performance Start:	Period of Performance End:
06-22-2012	06-22-2016

Subgrant Application - Mitigation - Category C, D, E, F, and G Projects

For Category C, D, E, F, and G Projects only

Is effective mitigation feasible on this project? Yes

If you answered **Yes** to the above question, the next question is required

Will mitigation be performed on any sites in this project? Yes

If you answered **Yes** to the above question, the next question is required

Do you wish to attach a Hazard Mitigation Proposal? Yes

If you answered **Yes** to the above question, the next two questions are required

Please provide the Scope of Work for the estimate: Concrete Class B Head wall and Wing wall upstream and down Stream Reinforcing Steel (Rebar) Cost of Head wall and wing walls $21,362.40. Cost of project $86,108.00 Mitigation cost is 24.8% of the project. Measurments on Head walls and Wing walls are in the CEF.

Would you like to add the Hazard Mitigation Proposal as a cost line item to the project cost? Yes

Hazard Mitigation Proposal - 0909

#	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Type	Cost Estimate	Action
1	9999	Concrete Class B Head & Wing Wall upstream & downstream VT # 501.34	18	CY	$ 600.85	CONSTRUCTION		$ 10,815.30	
2	9999	Reinforcing Steel (Rebar)	320	OTH	$ 1.16	CONSTRUCTION		$ 371.20	
3	9999	Project Management and Design Costs	1	LS	$ 1,007.00	CONSTRUCTION		$ 1,007.00	
*** Version 1 ***									
4	0000	30 January 2014 Robert Melillo, PS Scope Change/406 HM Amendment							
5	9999	De-obligate prior Estimated HMP Cost	1	LS	$ -12,193.50	CONSTRUCTION		$ -12,193.50	
6	9000	CEF COST ESTIMATE	1	LS	$ 59,516.00	CONSTRUCTION		$ 59,516.00	
								Total Cost: $ 59,516.00	

Comments
Version 1 Cost of Project $70,737 Cost of Mitigation $12,193 or 17%.
Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
ANTHONY SAWNEY	08-08-2012	Calculation Sheet	JCABC2 - Calculations		JCABC2 - Calculations.pdf(14.55 kb)	View
ANTHONY SAWNEY	08-08-2012	Mitigation Document	JCABC2 - Culvert Waterway Area		JCABC2 - Culvert Waterway Area.pdf(207.67 kb)	View
ROBERT MELILLO	01-27-2014	Calculation Sheet	JCABC2 - Calculations_Updated 01.06.14		JCABC2_-_Calculations[1]_Updated 01.06.14.docx(13.77 kb)	View
ROBERT MELILLO	01-29-2014	Mitigation Proposal	HMP Mine Road Culvert		HMP Mine Road Culvert.xlsx(20.03 kb)	View

PA-01-VT-4066-PW-00027(0) P	
Applicant Name:	Application Title:
LOWELL (TOWN OF)	JCLOC10 Mines Rd Culvert 26
Period of Performance Start:	Period of Performance End:
06-22-2012	12-22-2013

Bundle Reference # (Amendment #)	Date Awarded

Subgrant Application - FEMA Form 90-91

Note: The Effective Cost Share for this application is 75%

FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET

DISASTER	PROJECT NO.	PA ID NO.	DATE	CATEGORY
FEMA 4066 - DR -VT	JCLOC10	019-40525-00	08-06-2012	C

APPLICANT: LOWELL (TOWN OF)	WORK COMPLETE AS OF: 08-15-2011 : 17 %

Site 1 of 1

DAMAGED FACILITY: Mines Rd Culvert 26 (Town of Lowell)	COUNTY: Orleans

LOCATION:	LATITUDE:	LONGITUDE:
Current Version: Cheney Rd. A class III rural local asphalt road is located .421 miles from the intersection with VAG Rd. in the town of Lowel, VT.	44.77016	-72.51835

DAMAGE DESCRIPTION AND DIMENSIONS:

Current Version:

During the incident period of May 29, 2012, a severe storm tranversed northern Vermont resulting in flooding, high winds and a possible tornado. This resulted in Addison, Lamoille and Orleans counties being designated as eligible to receive reimbursement for recovery efforts that included both emergency and permanent work. This project worksheet (PW) covers the permanent repairs to be completed on the stream crossing where Burgess Branch crosses Mines Road (TH-2), a class 2 road (GPS Coordinates 44.77016, -72.51835 The Stream crossing consists of a 72 inch x 65 foot corrugated metal pipe (CMP) culvert. Heavy rain water flow caused the stream to run under the culvert damaging more that 50 per cent of the culvert.

SCOPE OF WORK:

Current Version:

Scope of Work The repairs at this site will require the removal and disposal of the existing 72in x 65ft CMP and replacement with a new culvert. The Vermont Agency of Transportation (VAOT) completed a preliminary hydraulic study for this site which determined the Q25 for this site and recommended replacement structures as well; however, eligible reimbursement costs under FEMA's Public Assistance (PA) Program are limited to an "in-kind" replacement structure that is upgraded in accordance with eligible codes and standards. Consistent with the Road and Bridge Standards adopted by the Town of Lowell (29 March 2011), FEMA performed a Culvert Sizing Evaluation (attached) to determine the size of an hydraulically adequate in-kind replacement structure._____ While the Culvert Sizing Evaluation determined that a 78 in x 65ft diameter was adequate for this location FEMA considers Corrugated Metal Multi-plate Arch Culvert measuring 69in x 98in x 65ft to be a cost-effective replacement to limit the need to change road grades to assure sufficient depth of cover material over the culvert.____ This approach will require excavation of material over an area 65ft x 24ft x 8ft (approx. 462 cubic yards (CY)). The new culvert will be re-covered with gravel and soil and a new roadway approach consisting of sub-base gravel will be installed over the excavation ((24ft x 65ft x 8in)/27 = 38 CY). The road surface will be finished with a 3 in-thick layer of bituminous concrete pavement 24' x 65' x.25 = 28.71T and 4" yellow line will be applied.____ Additional costs associated with non-permanent items during construction were accounted for in the attached Cost Estimate Format (CEF) and include: a sandbag check dam, a 130 gpm water pump to serve as a by-pass for stream flow across the installation site, and highway barricades to close the road during culvert work. The attached CEF itemizes the estimated costs associated with the completion of this scope of work.____ In addition to the eligible scope of work described above, Hazard Mitigation

opportunities were identified for this project and include the construction of concrete Class B, steel reinforced head wall and wing-walls at both the entrance and outlet of the culvert. The estimated cost of the HMP is $12,193.00____ The total estimated cost for the eligible scope of work, including the HMP and potential construction contingencies is $82,930.00The Applicant has elected to not request any direct administrative costs directly chargeable to this specific project. ____ The costs associated with the eligible scope of work for this project have been estimated. Large project funding (>$63,900) is based on documented actual costs for the eligible scope of work. This will require an amendment to the original project worksheet to be written, after the work is complete, to capture the over-run/under-run.____ If the applicant decides to make improvements to the facility beyond that described in the eligible scope of work (e.g. changes in size, footprint, structure type), the applicant must request approval for an improved project from the State of Vermont prior to the start of construction. If approved, reimbursement through the PA program will be capped at the cost of the eligible scope of work. Failure to obtain approval for an improved project can place funding at risk.___ Federal funding is contingent upon the Applicant acquiring all necessary federal, state and local permits. Non compliance with this requirement may jeopardize the receipt of federal funds.____ The Applicant has indicated that this work will be completed using a contractor. The Applicant must comply with its Local, State and/or Federal procurement laws, regulations and procedures when seeking proposals and letting contracts for eligible work.____ The Project Specialist has reviewed all documentation required for this Project Worksheet (PW). These documents are attached to the PW and are on file at the Applicant's offices. The project specialist has advised the Applicant to retain these records for a period of three years from the date of closeout. ____

Does the Scope of Work change the pre-disaster conditions at the site? ☐ Yes ☑ No	Special Considerations included? ☑ Yes ☐ No
Hazard Mitigation proposal included? ☑ Yes ☐ No	Is there insurance coverage on this facility? ☐ Yes ☑ No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	0000	Work to be Completed	0/LS	$ 0.00	$ 0.00
2	9000	CEF COST ESTIMATE	1/LS	$ 70,737.00	$ 70,737.00
3	0909	Hazard Mitigation Proposal	1/LS	$ 12,193.50	$ 12,193.50
				TOTAL COST	$ 82,930.50

PREPARED BY JOSEPH COMBES	TITLE Project Specialist	SIGNATURE
APPLICANT REP. Alden Warner	TITLE Select Board	SIGNATURE

PA-01-VT-4066-PW-00027(1) P	
Applicant Name:	Application Title:
LOWELL (TOWN OF)	JCLOC10 Mines Rd Culvert 26
Period of Performance Start:	Period of Performance End:
06-22-2012	06-22-2016

Subgrant Application - Entire Application

Application Title: JCLOC10 Mines Rd Culvert 26
Application Number: PA-01-VT-4066-PW-00027(1)
Application Type: Subgrant Application (PW)

Preparer Information	
Prefix	
First Name	JOSEPH
Middle Initial	
Last Name	COMBES
Title	Project Specialist
Agency/Organization Name	FEMA
Address 1	30 Allen Martin Drive
Address 2	
City	Essex Junction
State	VT
Zip	05452
Email	kim.canarecci@state.vt.us
Is the application preparer the Point of Contact?	No

Point of Contact Information	
Prefix	
First Name	Alden
Middle Initial	
Last Name	Warner
Title	Select Board
Agency/Organization	Town of Lowell
Address 1	2170 Route 100
Address 2	
City	Lowell
State	VT
ZIP	05847

Phone	802-744-6127
Fax	
Email	alden@brrecords.com

Alternate Point of Contact Information	
Prefix	
First Name	Reg
Middle Initial	
Last Name	Pion
Title	Road Commissioner
Agency/Organization	Town of Lowell
Address 1	2170 Route 100
Address 2	
City	Lowell
State	VT
ZIP	05847
Phone	802-744-6129
Fax	
Email	

Project Description	
Disaster Number:	4066
Pre-Application Number:	PA-01-VT-4066-RPA-0010
Applicant ID:	019-40525-00
Applicant Name:	LOWELL (TOWN OF)
Subdivision:	
Project Number:	JCLOC10
Standard Project Number/Title:	399 - Road System Damage
Please Indicate the Project Type:	Neither Alternate nor Improved
Application Title:	JCLOC10 Mines Rd Culvert 26
Category:	C.ROADS & BRIDGES
Percentage Work Completed?	17.7 %
As of Date:	08-15-2011

Comments

*** 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT 14’ x 6’ box culvert deemed eligible for 406 HM funding, as larger box culvert cost is less than two times the estimated base construction costs for PW size identified 112” x 75” CMPA culvert. The box culvert structure will include full height headwalls at the inlet and outlet, extending approximately 5 ft below the stream bed, cut-off walls and stone armor for erosion protection. ***

Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
JOSEPH COMBES	08-07-2012	Map	Location map		Mine Road Location Plan.pdf(4.40 Mb)	View

Damage Facilities (Part 1 of 2)								
Facility Number	Facility Name	Address	County	City	State	ZIP	Site Previously Damaged?	Action
1	Mines Rd Culvert 26 (Town of Lowell)		Orleans	Lowell	VT		No	

Comments

Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
JOSEPH COMBES	08-06-2012	Photos	Damage Photo		Inlet site 3.JPG(3.52 Mb)	View
JOSEPH COMBES	08-06-2012	Photos	Damage Photo		Site 3 outlet Mines Rd.JPG(5.90 Mb)	View
JOSEPH COMBES	08-06-2012	Additional Information	Hydraulic Study		State of Vermont Hydraulics Study Site 3 Mines Rd..pdf(168.93 kb)	View
GREGORY MORLEY	08-07-2012	Additional Information	Culvert Sizing Evaluation		Mine Road Bridge Evaluation-Lowell .pdf(1.90 Mb)	View
KENNETH PINKHAM	12-04-2013	Additional Information	Adopted codes and standards		Codes_&_Standards[1].pdf(101.96 kb)	View
ROBERT MELILLO	01-27-2014	Calculation Sheet	Culvert Sizing Eval_updated 12.06.13		Culvert Sizing Eval_updated 12.06.13.pdf(209.71 kb)	View
ROBERT MELILLO	01-27-2014	Drawings/Sketches	Eng Plans_13062 C-1 SITE PLAN		Eng Plans_13062 C-1 SITE PLAN (2).pdf(1.11 Mb)	View
ROBERT MELILLO	01-27-2014	Drawings/Sketches	Eng Plans_13062 C-2 DETAILS		Eng Plans_13062 C-2 DETAILS.pdf(194.50 kb)	View

Facility Name:	Mines Rd Culvert 26 (Town of Lowell)
Address 1:	
Address 2:	
County:	Orleans
City:	Lowell
State:	VT
ZIP:	
Was this site previously damaged?	No
Percentage Work Completed?	0.00 %

Location:	PA-01-VT-4066-PW-00027(0): Cheney Rd. A class III rural local asphalt road is located .421 miles from the intersection with VAG Rd. in the town of Lowel, VT. PA-01-VT-4066-PW-00027(1): 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT - No change to location.
Damage Description and Dimensions:	PA-01-VT-4066-PW-00027(0): During the incident period of May 29, 2012, a severe storm tranversed northern Vermont resulting in flooding, high winds and a possible tornado. This resulted in Addison, Lamoille and Orleans counties being designated as eligible to receive reimbursement for recovery efforts that included both emergency and permanent work. This project worksheet (PW) covers the permanent repairs to be completed on the stream crossing where Burgess Branch crosses Mines Road (TH-2), a class 2 road (GPS Coordinates 44.77016, -72.51835 The Stream crossing consists of a 72 inch x 65 foot corrugated metal pipe (CMP) culvert. Heavy rain water flow caused the stream to run under the culvert damaging more that 50 per cent of the culvert. PA-01-VT-4066-PW-00027(1): 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT - No change to damage description and dimensions.
	PA-01-VT-4066-PW-00027(0): Scope of Work The repairs at this site will require the removal and disposal of the existing 72in x 65ft CMP and replacement with a new culvert. The Vermont Agency of Transportation (VAOT) completed a preliminary hydraulic study for this site which determined the Q25 for this site and recommended replacement structures as well; however, eligible reimbursement costs under FEMA's Public Assistance (PA) Program are limited to an "in-kind" replacement structure that is upgraded in accordance with eligible codes and standards. Consistent with the Road and Bridge Standards adopted by the Town of Lowell (29 March 2011), FEMA performed a Culvert Sizing Evaluation (attached) to determine the size of an hydraulically adequate in-kind replacement structure._____ While the Culvert Sizing Evaluation determined that a 78 in x 65ft diameter was adequate for this location FEMA considers Corrugated Metal Multi-plate Arch Culvert measuring 69in x 98in x 65ft to be a cost-effective replacement to limit the need to change road grades to assure sufficient depth of cover material over the culvert.____ This approach will require excavation of material over an area 65ft x 24ft x 8ft (approx. 462 cubic yards (CY)). The new culvert will be re-covered with gravel and soil and a new roadway approach consisting of sub-base gravel will be installed over the excavation ((24ft x 65ft x 8in)/27 = 38 CY). The road surface will be finished with a 3 in-thick layer of bituminous concrete pavement 24' x 65' x.25 = 28.71T and 4" yellow line will be applied.____ Additional costs associated with non-permanent items during construction were accounted for in the attached Cost Estimate Format (CEF) and include: a sandbag check dam, a 130 gpm water pump to serve as a by-pass for stream flow across the installation site, and highway barricades to close the road during culvert work. The attached CEF itemizes the estimated costs associated with the completion of this scope of work.____ In addition to the eligible scope of work described above, Hazard Mitigation opportunities were identified for this project and include the construction of

Scope of Work:	concrete Class B, steel reinforced head wall and wing-walls at both the entrance and outlet of the culvert. The estimated cost of the HMP is $12,193.00____ The total estimated cost for the eligible scope of work, including the HMP and potential construction contingencies is $82,930.00The Applicant has elected to not request any direct administrative costs directly chargeable to this specific project. ____ The costs associated with the eligible scope of work for this project have been estimated. Large project funding (>$63,900) is based on documented actual costs for the eligible scope of work. This will require an amendment to the original project worksheet to be written, after the work is complete, to capture the over-run/under-run.____ If the applicant decides to make improvements to the facility beyond that described in the eligible scope of work (e.g. changes in size, footprint, structure type), the applicant must request approval for an improved project from the State of Vermont prior to the start of construction. If approved, reimbursement through the PA program will be capped at the cost of the eligible scope of work. Failure to obtain approval for an improved project can place funding at risk.___ Federal funding is contingent upon the Applicant acquiring all necessary federal, state and local permits. Non compliance with this requirement may jeopardize the receipt of federal funds.____ The Applicant has indicated that this work will be completed using a contractor. The Applicant must comply with its Local, State and/or Federal procurement laws, regulations and procedures when seeking proposals and letting contracts for eligible work.____ The Project Specialist has reviewed all documentation required for this Project Worksheet (PW). These documents are attached to the PW and are on file at the Applicant's offices. The project specialist has advised the Applicant to retain these records for a period of three years from the date of closeout. ____ PA-01-VT-4066-PW-00027(1): 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT Culvert sizing reevaluated at request of VT State representatives that original PW culvert evaluation neglected to take into account the Q100 conditions for headwater depths established by VAOT. Upon conducting this further evaluation it was concluded to increase the size of the PW replacement structure from a 98" x 69" CMPA to a 112" x 75" CMPA and corresponding road height changes to provide adequate cover over the larger size pipe. In summary, the resulting updated SOW is described as follows: * VAOT CC 204.25 Structure Excavation 15.3' wide x 8' deep = 122.4 SF less area of existing CMP (28.274 SF) = 94.126 SF x 65' long = 6118.19 CF /27 = 227 CY * 334216153360 257 lbs/LF x 65' long = 16,705 Lbs * VAOT CC 204.30 Granular Backfill For Structures 15.3' wide x 8' deep = 122.4 SF less area of new CMPA (50.3 SF) =72.1 SF x 65' long = 4686.5CF /27 = 174 CY * VAOT CC 301.15 Subbase Of Gravel 15.3' wide x 24' long x 1.25' deep = 459 SF/27 = 17 CY * VAOT CC 203.28 Excavation Of Surfaces And Pavements 125' long x 22' wide x 0.25' thick x 2 (approach & departure) = 1375 CF/27 = 51 CY * VAOT CC 203.15 Common Excavation (for taper area) 125' long x 24' wide x 1.25' deep x ½ x 2 (approach & departure) = 3750 CF/27 = 139 CY * VAOT CC 301.15 Subbase Of Gravel (for taper area) 125' long x 24' wide x 1.25' deep x 2 (approach & departure) = 7500 CF/27 = 278 CY * VAOT CC 406.25 Bituminous Concrete Pavement 3'' thick 125' long x

24’ wide x 2 (approach & departure) + 15.3’ long x 24’ wide CMPA cover area = 55 Tons x 2 + 6.7 Tons = 117 Tons
* VAOT CC 646.412 Durable 4 Inch Yellow Line, Thermoplastic as double line 125’ long x 2 (approach & departure) + 15.3’ long CMPA cover area = 531’
* VAOT CC 621.20 Steel Beam Guardrail, Galvanized per codes and standards 50 LF
* VAOT CC 621.21 HD Steel Beam Guardrail, Galvanized per codes and standards 174 LF
* VAOT CC 501.34 Concrete, High Performance Class B for head and wing walls, per codes and standards, upstream and downstream with footings 19 CY
* VAOT CC 507.15 Reinforcing Steel (Rebar) for head and wing walls 320 LBS

The Applicant, working with the firm of Ruggiano Engineering, requested a scope change to install a 14’ x 6’ box culvert based on the hydrology report recommendations.

Reference the attached correspondence documenting the scope change request:
- Ruggiano Engineering Estimate letter dated 09/25/13
- Town of Lowell Scope Change Request letter dated 11/14/13
- VEM&HS Scope Change Request letter dated 11/20/13

In summary the 14’ x 6’ box culvert SOW, based on Ruggiano Engineering plans and estimated unit quantities, is to:
* Excavate to remove existing structure and prepare for box culvert 800 CY
* Crushed Stone under culvert (12") 35 CY
* Precast concrete box 14' x 6' x 55' including headwalls, wing walls & cut-off walls
* Granular Backfill over box culvert 400 CY
* Roadway Sand Cushion (6") 35 CY
* Roadway Gravel Subbase (18") 100 CY
* Roadway Pavement (3") 30 TONS
* Guardrail 150 LF
* Type II Rip-Rap 30 CY
* Type III Rip-Rap 100 CY

FEMA has recently addressed the eligibility of culvert enlargements in Vermont as part of a second appeal by an Applicant under PW #1803. FEMA determined that the cost of the upgrade for PW #1803 was an eligible Section 406 hazard mitigation project under 44 C.F.R. § 206.226 (e) and RP No. 9526.1 because the upgrade did not exceed 100 percent of the project cost and will reduce the likelihood of future similar damage. Recovery Policy (RP) 9526.1, Hazard Mitigation Funding under Section 406 (Stafford Act) dated March 30, 2010, provides guidance on the application and eligibility of hazard mitigation measures. Appendix A of the policy states that the replacement of a destroyed drainage structure with a larger structure is among the eligible hazard mitigation measures that are pre-determined to be cost effective when they do not exceed 100 percent of the project cost

The total cost of the 14’ x6’ box culvert installation is estimated as $195,022 of which $120,090.90 are the base construction costs. (Reference Box Culvert CEF Part A attachment.) The PW costs to install a 112” x 75” CMPA to replace the 72” diameter destroyed CMP culvert was estimated at $141,488 of which $84,044.68 are the base construction costs. (Reference CMPA Mines Rd CEF Part A attachment.) The net additional cost of $36,046.22 ($120,090.90 - $84,044.68) represents 42 percent of the base eligible repair cost and as such is eligible for Section 406 hazard mitigation

	funding. From referenced CEF's, the difference in replacement costs of $53,534 ($189,040 - $135,506) will be assigned to 406 HM thus bringing Total HMP to $59,516 ($53,534 + $5,982). END OF AMENDMENT

Hazard Mitigation Proposal	
* Is effective mitigation feasible on this site?	Yes
If you answered Yes to the above question, the next question is required	
Will mitigation be performed on this site?	Yes
If you answered Yes to the above question, the next question is required	
Do you wish to attach a Hazard Mitigation Proposal?	Yes
If you answered Yes to the above question, the next two questions are required	
Please provide the Scope of Work for the estimate: (maximum 4000 characters)	*** 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT Per the Townsend Decision, FEMA can reimburse for a destroyed culvert with a larger structure as a hazard mitigation measure if the cost do not exceed 100% of the project cost. The original damages were estimated at $82,930.50 for a 98" x 69" arch, which was later determined to be hydraulically inadequate. Codes & Standards required a 112" x 75" arch with a base cost of $84,044.68. The Applicant chose a box culvert replacement, 14' x 6' with a base cost of $120,090.90. The net additional cost of $36,046.22 ($120,090.90 - $84,044.68) represents 42 percent of the base eligible repair cost and as such is eligible for Section 406 hazard mitigation funding. The difference in replacement costs of $53,534 ($189,040 - $135,506) is assigned to 406 HM thus bringing Total HMP to $59,516 ($53,534 + $5,982). Box Culvert Hazard Mitigation includes rip rap ($5,982: * VAOT CC 613.11 Stone Fill Type II, 30cy slope side rip rap. * VAOT CC 613.12 Stone Fill Type III, 100cy ***
Would you like to add the Hazard Mitigation Proposal as a cost line item to the project cost?	Yes

GIS Coordinates		
Project Location	Latitude	Longitude
Mines Rd.	44.77016	-72.51835

Special Considerations	
1. Does the damaged facility or item of work have insurance coverage and/or is it an insurable risk (e.g., buildings, equipment, vehicles, etc)?	No
2. Is the damaged facility located within a floodplain or coastal high hazard area and/or does it have an impact on a floodplain or wetland?	Yes
If you would like to make any comments, please enter them below.	
(maximum 4000 characters) Refer to FIRM 500254B, Town Of Lowell, Orleans County, VT	

3. Is the damaged facility or item of work located within or adjacent to a Coastal Barrier Resource System Unit or an Otherwise Protected Area?	No
4. Will the proposed facility repairs/reconstruction change the pre-disaster conditions (e.g., footprint, material, location, capacity, use of function)?	Yes
If you would like to make any comments, please enter them below.	
(maximum 4000 characters) Impacted culvert is intended to be up-sized.	
5. Does the applicant have a hazard mitigation proposal or would the applicant like technical assistance for a hazard mitigation proposal?	Yes
If you would like to make any comments, please enter them below.	
(maximum 4000 characters) *** 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT Per the Townsend Decision ,FEMA can reimburse for a destroyed culvert with a larger structure as a hazard mitigation measure if the cost do not exceed 100% of the project cost. The original damages were estimated at $82,930.50 for a 98" x 69" arch, which was later determined to be hydraulically inadequate. Codes & Standards required a 112" x 75" arch with a base cost of $84,044.68. The Applicant chose a box culvert replacement, 14' x 6' with a base cost of $120,090.90. The net additional cost of $36,046.22 ($120,090.90 - $84,044.68) represents 42 percent of the base eligible repair cost and as such is eligible for Section 406 hazard mitigation funding. The difference in replacement costs of $53,534 ($189,040 - $135,506) is assigned to 406 HM thus bringing Total HMP to $59,516 ($53,534 + $5,982). ***	
6. Is the damaged facility on the National Register of Historic Places or the state historic listing? Is it older than 50 years? Are there more, similar buildings near the site?	No
7. Are there any pristine or undisturbed areas on, or near, the project site? Are there large tracts of forestland?	No
8. Are there any hazardous materials at or adjacent to the damaged facility and/or item of work?	No
9. Are there any other environmental or controversial issues associated with the damaged facility and/or item of work?	No

Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
JOSEPH COMBES	08-06-2012	Floodplain	Firmette		Firmette FM500254B[2].pdf(60.29 kb)	View
NANCY ORTH	08-20-2012	Environmental/Historic Document	Environmental Comments and Conditions		EnvironmentalConditionsMemo_PA-01-VT-4066-PW-00027(0)_4066-VT.docx(82.40 kb)	View

For Category C, D, E, F, and G Projects only	
Is effective mitigation feasible on this project?	Yes
If you answered Yes to the above question, the next question is required	
Will mitigation be performed on any sites in this project?	Yes
If you answered Yes to the above question, the next question is required	
Do you wish to attach a Hazard Mitigation Proposal?	Yes
If you answered Yes to the above question, the next two questions are required	
Please provide the Scope of Work for the estimate:	Concrete Class B Head wall and Wing wall upstream and down Stream Reinforcing Steel (Rebar) Cost of Head wall and wing walls $21,362.40. Cost of project $86,108.00 Mitigation cost is

	24.8% of the project. Measurments on Head walls and Wing walls are in the CEF.
Would you like to add the Hazard Mitigation Proposal as a cost line item to the project cost?	Yes

Hazard Mitigation Proposal - 0909

#	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Type	Cost Estimate	Action
1	9999	Concrete Class B Head & Wing Wall upstream & downstream VT # 501.34	18	CY	$ 600.85	CONSTRUCTION		$ 10,815.30	
2	9999	Reinforcing Steel (Rebar)	320	OTH	$ 1.16	CONSTRUCTION		$ 371.20	
3	9999	Project Management and Design Costs	1	LS	$ 1,007.00	CONSTRUCTION		$ 1,007.00	
*** Version 1 ***									
4	0000	30 January 2014 Robert Melillo, PS Scope Change/406 HM Amendment							
5	9999	De-obligate prior Estimated HMP Cost	1	LS	$ -12,193.50	CONSTRUCTION		$ -12,193.50	
6	9000	CEF COST ESTIMATE	1	LS	$ 59,516.00	CONSTRUCTION		$ 59,516.00	
Total Cost: $ 59,516.00									

Comments

Version 1 Cost of Project $70,737 Cost of Mitigation $12,193 or 17%.

Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
ANTHONY SAWNEY	08-08-2012	Calculation Sheet	JCABC2 - Calculations		JCABC2 - Calculations.pdf(14.55 kb)	View
ANTHONY SAWNEY	08-08-2012	Mitigation Document	JCABC2 - Culvert Waterway Area		JCABC2 - Culvert Waterway Area.pdf(207.67 kb)	View
ROBERT MELILLO	01-27-2014	Calculation Sheet	JCABC2 - Calculations_Updated 01.06.14		JCABC2_-_Calculations[1]_Updated 01.06.14.docx(13.77 kb)	View
ROBERT MELILLO	01-29-2014	Mitigation Proposal	HMP Mine Road Culvert		HMP Mine Road Culvert.xlsx(20.03 kb)	View

Cost Estimate

Is this Project Worksheet for	Cost Estimate Format

(Preferred) Repair

Sequence	Code	Material and/or	Unit	Unit of	Unit Price	Subgrant	Type	Cost	Action

		Description	Quantity	Measure		Budget Class		Estimate	
1	0000	Work to be Completed						$ 0.00	
2	9000	CEF COST ESTIMATE	1	LS	$ 70,737.00	CONSTRUCTION		$ 70,737.00	
*** Version 1 ***									
Work To Be Completed									
3	0000	30 January 2014 Robert Melillo, PS Scope Change/406 HM Amendment					Work To Be Completed	$ 0.00	
4	9999	De-obligate prior Estimated Project Cost	1	LS	$ -70,737.00	CONSTRUCTION	Work To Be Completed	$ -70,737.00	
5	9000	CEF COST ESTIMATE	1	LS	$ 135,506.00	CONSTRUCTION	Work To Be Completed	$ 135,506.00	
							Total Cost :	$ 135,506.00	

Insurance Adjustments (Deductibles, Proceeds and Settlements) - 5900/5901									
Sequence	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Type	Cost Estimate	Action
							Total Cost :	$ 0.00	

Hazard Mitigation Proposal - 0909									
Sequence	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Type	Cost Estimate	Action
1	9999	Concrete Class B Head & Wing Wall upstream & downstream VT # 501.34	18	CY	$ 600.85	CONSTRUCTION		$ 10,815.30	
2	9999	Reinforcing Steel (Rebar)	320	OTH	$ 1.16	CONSTRUCTION		$ 371.20	
3	9999	Project Management and Design Costs	1	LS	$ 1,007.00	CONSTRUCTION		$ 1,007.00	
*** Version 1 ***									
4	0000	30 January 2014 Robert Melillo, PS Scope Change/406 HM Amendment						$ 0.00	
5	9999	De-obligate prior Estimated HMP Cost	1	LS	$ -12,193.50	CONSTRUCTION		$ -12,193.50	
6	9000	CEF COST ESTIMATE	1	LS	$ 59,516.00	CONSTRUCTION		$ 59,516.00	
							Total Cost :	$ 59,516.00	

Total Cost Estimate: (Preferred Estimate Type + Insurance Adjustments + Hazard Mitigation Proposal)	$ 195,022.00

Comments
30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT a. CEF estimate established using VAOT 5 Year Average Price List July 2008 – May 2013, FEMA Cost Codes, and box culvert manufacturer quote. b. CMPA CEF unit quantities based on Dan Peterson email of Dec 23, 2013 with attached conceptional sketch and estimate. c. Box Culvert CEF unit quantities based on Ruggiano Engineering Engineer's Construction Cost Estimate. d. Ruggiano Engineering Engineer's Construction Cost Estimate for the box culvert Total $216,040. e. Town of Lowell and VEM&HS Scope Change Request letters shows project Total of $227,400 ($216,400 replacement structure) + $8400 Engineering and design + $2600 (Construction Engineering) ***

Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
ANTHONY SAWNEY	08-08-2012	Force Account	JCABC2 - CEF		JCABC2_-_CEF.pdf(253.37 kb)	View
ROBERT MELILLO	01-27-2014	Calculation Sheet	Dan Peterson email concept sketch & estimate		Dan Peterson email Lowell PW 0027 DR4066_concept sketch & estimate.pdf(1001.22 kb)	View
ROBERT MELILLO	01-27-2014	Calculation Sheet	CMPA CEF		CMPA CEF_Mines Rd_Lowell DR4066 PW 00027 .xlsm(345.50 kb)	View
ROBERT MELILLO	01-27-2014	Calculation Sheet	Box Culvert CEF		Box Culvert CEF_Mines Rd_Lowell DR4066 PW 00027 .xlsm(345.30 kb)	View
ROBERT MELILLO	01-27-2014	Miscellaneous	CAMP 14' wide x 6' high box culvert quote		CAMP 14' wide x 6' high box culvert quote.pdf(623.59 kb)	View
ROBERT MELILLO	05-30-2014	Calculation Sheet	Box Culvert CEF_Mines Rd_Lowell DR4066 PW 00027		Box Culvert CEF_Mines Rd_Lowell DR4066 PW 00027 .pdf(97.65 kb)	View
ROBERT MELILLO	05-30-2014	Calculation Sheet	CMPA CEF_Mines Rd_Lowell DR4066 PW 00027		CMPA CEF_Mines Rd_Lowell DR4066 PW 00027 .pdf(98.31 kb)	View

Existing Insurance Information						
Insurance Type	Policy No.	Bldg/Property Amount	Content Amount	Insurance Amount	Deductible Amount	Years Required

Comments
Attachments

Comments and Attachments		
Name of Section	Comment	Attachment
Preparer Information		Signed 90-91.pdf
Contact Information		Environmental Letter Signed.pdf
	*** 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT 14' x 6'	

Project Description	box culvert deemed eligible for 406 HM funding, as larger box culvert cost is less than two times the estimated base construction costs for PW size identified 112" x 75" CMPA culvert. The box culvert structure will include full height headwalls at the inlet and outlet, extending approximately 5 ft below the stream bed, cut-off walls and stone armor for erosion protection. ***	Mine Road Location Plan.pdf
Damage Facilities		Inlet site 3.JPG Site 3 outlet Mines Rd.JPG State of Vermont Hydraulics Study Site 3 Mines Rd..pdf Mine Road Bridge Evaluation-Lowell .pdf Codes_&_Standards[1].pdf Culvert Sizing Eval_updated 12.06.13.pdf Eng Plans_13062 C-1 SITE PLAN (2).pdf Eng Plans_13062 C-2 DETAILS.pdf
Special Considerations		Firmette FM500254B[2].pdf EnvironmentalConditionsMemo_PA-01-VT-4066-PW-00027(0)_4066-VT.docx
Mitigation	Version 1 Cost of Project $70,737 Cost of Mitigation $12,193 or 17%.	JCABC2 - Calculations.pdf JCABC2 - Culvert Waterway Area.pdf JCABC2_-_Calculations[1]_Updated 01.06.14.docx HMP Mine Road Culvert.xlsx
Cost Estimate	30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT a. CEF estimate established using VAOT 5 Year Average Price List July 2008 – May 2013, FEMA Cost Codes, and box culvert manufacturer quote. b. CMPA CEF unit quantities based on Dan Peterson email of Dec 23, 2013 with attached conceptional sketch and estimate. c. Box Culvert CEF unit quantities based on Ruggiano Engineering Engineer's Construction Cost Estimate. d. Ruggiano Engineering Engineer's Construction Cost Estimate for the box culvert Total $216,040. e. Town of Lowell and VEM&HS Scope Change Request letters shows project Total of $227,400 ($216,400 replacement structure) + $8400 Engineering and design + $2600 (Construction Engineering) ***	JCABC2_-_CEF.pdf Dan Peterson email Lowell PW 0027 DR4066_concept sketch & estimate.pdf CMPA CEF_Mines Rd_Lowell DR4066 PW 00027 .xlsm Box Culvert CEF_Mines Rd_Lowell DR4066 PW 00027 .xlsm CAMP 14' wide x 6' high box culvert quote.pdf Box Culvert CEF_Mines Rd_Lowell DR4066 PW 00027 .pdf CMPA CEF_Mines Rd_Lowell DR4066 PW 00027 .pdf
Form 90-91		Lowell 27 TE.pdf DRAFT_Lowell Mines Road Scope Change Request PW-PA-01-VT-4066-PW-00027 reply__FEMA_lh_02.18.14.docx
Application Level		DR4066 PW 00027 Scope Change Request.pdf town of lowell scope change request.pdf VT State Scope Change Request Letter.pdf Ruggiano Engineering Estimate

		memo 092513.pdf

Bundle Reference # (Amendment #)	Date Awarded
PA-01-VT-4066-State-0011(10)	06-30-2014

Subgrant Application - FEMA Form 90-91

Note: The Effective Cost Share for this application is 75%

FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET

DISASTER					PROJECT NO.	PA ID NO.	DATE	CATEGORY
FEMA	4066	-	DR	-VT	JCLOC10	019-40525-00	08-06-2012	C

APPLICANT: LOWELL (TOWN OF)	WORK COMPLETE AS OF: 08-15-2011 : 17 %

Site 1 of 1

DAMAGED FACILITY: Mines Rd Culvert 26 (Town of Lowell)	COUNTY: Orleans

LOCATION: PA-01-VT-4066-PW-00027(0): Cheney Rd. A class III rural local asphalt road is located .421 miles from the intersection with VAG Rd. in the town of Lowel, VT. PA-01-VT-4066-PW-00027(1): 30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT - No change to location. Current Version:	LATITUDE: 44.77016	LONGITUDE: -72.51835

DAMAGE DESCRIPTION AND DIMENSIONS:

PA-01-VT-4066-PW-00027(0):
During the incident period of May 29, 2012, a severe storm tranversed northern Vermont resulting in flooding, high winds and a possible tornado. This resulted in Addison, Lamoille and Orleans counties being designated as eligible to receive reimbursement for recovery efforts that included both emergency and permanent work. This project worksheet (PW) covers the permanent repairs to be completed on the stream crossing where Burgess Branch crosses Mines Road (TH-2), a class 2 road (GPS Coordinates 44.77016, -72.51835
The Stream crossing consists of a 72 inch x 65 foot corrugated metal pipe (CMP) culvert. Heavy rain water flow caused the stream to run under the culvert damaging more that 50 per cent of the culvert.
PA-01-VT-4066-PW-00027(1):
30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT - No change to damage description and dimensions.

Current Version:

SCOPE OF WORK:

PA-01-VT-4066-PW-00027(0):
Scope of Work
The repairs at this site will require the removal and disposal of the existing 72in x 65ft CMP and replacement with a new culvert. The Vermont Agency of Transportation (VAOT) completed a preliminary hydraulic study for this site which determined the Q25 for this site and recommended replacement structures as well; however, eligible reimbursement costs under FEMA's Public Assistance (PA) Program are limited to an "in-kind" replacement structure that is upgraded in accordance with eligible codes and standards. Consistent with the Road and Bridge Standards adopted by the Town of Lowell (29 March 2011), FEMA performed a Culvert Sizing Evaluation (attached) to determine the size of an hydraulically adequate in-kind replacement structure._____
While the Culvert Sizing Evaluation determined that a 78 in x 65ft diameter was adequate for this location FEMA considers Corrugated Metal Multi-plate Arch Culvert measuring 69in x 98in x 65ft to be a cost-effective replacement to limit the need to change road grades to assure sufficient depth of cover material over the culvert.____
This approach will require excavation of material over an area 65ft x 24ft x 8ft (approx. 462 cubic yards (CY)). The new culvert will be re-covered with gravel and soil and a new roadway approach consisting of sub-base gravel will be installed over the excavation ((24ft x 65ft x 8in)/27 = 38 CY). The road surface will be finished with a 3 in-thick layer of bituminous concrete pavement 24' x 65' x.25 = 28.71T and 4" yellow line will be applied.____
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In addition to the eligible scope of work described above, Hazard Mitigation opportunities were identified for this project and include the

construction of concrete Class B, steel reinforced head wall and wing-walls at both the entrance and outlet of the culvert. The estimated cost of the HMP is $12,193.00____
The total estimated cost for the eligible scope of work, including the HMP and potential construction contingencies is $82,930.00The Applicant has elected to not request any direct administrative costs directly chargeable to this specific project. ____
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Federal funding is contingent upon the Applicant acquiring all necessary federal, state and local permits. Non compliance with this requirement may jeopardize the receipt of federal funds.____

The Applicant has indicated that this work will be completed using a contractor. The Applicant must comply with its Local, State and/or Federal procurement laws, regulations and procedures when seeking proposals and letting contracts for eligible work.____

The Project Specialist has reviewed all documentation required for this Project Worksheet (PW). These documents are attached to the PW and are on file at the Applicant's offices. The project specialist has advised the Applicant to retain these records for a period of three years from the date of closeout. ____
PA-01-VT-4066-PW-00027(1):
30 JANUARY 2014 ROBERT MELILLO, PS SCOPE CHANGE / 406 HM AMENDMENT
Culvert sizing reevaluated at request of VT State representatives that original PW culvert evaluation neglected to take into account the Q100 conditions for headwater depths established by VAOT. Upon conducting this further evaluation it was concluded to increase the size of the PW replacement structure from a 98" x 69" CMPA to a 112" x 75" CMPA and corresponding road height changes to provide adequate cover over the larger size pipe.

In summary, the resulting updated SOW is described as follows:
* VAOT CC 204.25 Structure Excavation 15.3' wide x 8' deep = 122.4 SF less area of existing CMP (28.274 SF) = 94.126 SF x 65' long = 6118.19 CF /27 = 227 CY
* 334216153360 257 lbs/LF x 65' long = 16,705 Lbs
* VAOT CC 204.30 Granular Backfill For Structures 15.3' wide x 8' deep = 122.4 SF less area of new CMPA (50.3 SF) =72.1 SF x 65' long = 4686.5CF /27 = 174 CY
* VAOT CC 301.15 Subbase Of Gravel 15.3' wide x 24' long x 1.25' deep = 459 SF/27 = 17 CY
* VAOT CC 203.28 Excavation Of Surfaces And Pavements 125' long x 22' wide x 0.25' thick x 2 (approach & departure) = 1375 CF/27 = 51 CY
* VAOT CC 203.15 Common Excavation (for taper area) 125' long x 24' wide x 1.25' deep x ½ x 2 (approach & departure) = 3750 CF/27 = 139 CY
* VAOT CC 301.15 Subbase Of Gravel (for taper area) 125' long x 24' wide x 1.25' deep x 2 (approach & departure) = 7500 CF/27 = 278 CY
* VAOT CC 406.25 Bituminous Concrete Pavement 3" thick 125' long x 24' wide x 2 (approach & departure) + 15.3' long x 24' wide CMPA cover area = 55 Tons x 2 + 6.7 Tons = 117 Tons
* VAOT CC 646.412 Durable 4 Inch Yellow Line, Thermoplastic as double line 125' long x 2 (approach & departure) + 15.3' long CMPA cover area = 531'
* VAOT CC 621.20 Steel Beam Guardrail, Galvanized per codes and standards 50 LF
* VAOT CC 621.21 HD Steel Beam Guardrail, Galvanized per codes and standards 174 LF
* VAOT CC 501.34 Concrete, High Performance Class B for head and wing walls, per codes and standards, upstream and downstream with footings 19 CY
* VAOT CC 507.15 Reinforcing Steel (Rebar) for head and wing walls 320 LBS

The Applicant, working with the firm of Ruggiano Engineering, requested a scope change to install a 14' x 6' box culvert based on the hydrology report recommendations.

Reference the attached correspondence documenting the scope change request:
- Ruggiano Engineering Estimate letter dated 09/25/13
- Town of Lowell Scope Change Request letter dated 11/14/13
- VEM&HS Scope Change Request letter dated 11/20/13

In summary the 14' x 6' box culvert SOW, based on Ruggiano Engineering plans and estimated unit quantities, is to:
* Excavate to remove existing structure and prepare for box culvert 800 CY
* Crushed Stone under culvert (12") 35 CY
* Precast concrete box 14' x 6' x 55' including headwalls, wing walls & cut-off walls
* Granular Backfill over box culvert 400 CY
* Roadway Sand Cushion (6") 35 CY
* Roadway Gravel Subbase (18") 100 CY
* Roadway Pavement (3") 30 TONS
* Guardrail 150 LF
* Type II Rip-Rap 30 CY
* Type III Rip-Rap 100 CY

FEMA has recently addressed the eligibility of culvert enlargements in Vermont as part of a second appeal by an Applicant under PW #1803. FEMA determined that the cost of the upgrade for PW #1803 was an eligible Section 406 hazard mitigation project under 44 C.F.R. § 206.226 (e) and RP No. 9526.1 because the upgrade did not exceed 100 percent of the project cost and will reduce the likelihood of future similar damage. Recovery Policy (RP) 9526.1, Hazard Mitigation Funding under Section 406 (Stafford Act) dated March 30, 2010, provides guidance on the application and eligibility of hazard mitigation measures. Appendix A of the policy states that the replacement of a destroyed drainage structure with a larger structure is among the eligible hazard mitigation measures that are pre-determined to be cost effective when they do not exceed 100 percent of the project cost

The total cost of the 14' x6' box culvert installation is estimated as $195,022 of which $120,090.90 are the base construction costs. (Reference Box Culvert CEF Part A attachment.) The PW costs to install a 112" x 75" CMPA to replace the 72" diameter destroyed CMP culvert was estimated at $141,488 of which $84,044.68 are the base construction costs. (Reference CMPA Mines Rd CEF Part A attachment.) The net additional cost of $36,046.22 ($120,090.90 - $84,044.68) represents 42 percent of the base eligible repair cost and as such is eligible for Section 406 hazard mitigation funding.

From referenced CEF's, the difference in replacement costs of $53,534 ($189,040 - $135,506) will be assigned to 406 HM thus bringing Total HMP to $59,516 ($53,534 + $5,982).
END OF AMENDMENT

Current Version:

Does the Scope of Work change the pre-disaster conditions at the site? ☑ Yes ☐ No	Special Considerations included? ☑ Yes ☐ No
Hazard Mitigation proposal included? ☑ Yes ☐ No	Is there insurance coverage on this facility? ☐ Yes ☑ No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	0000	Work to be Completed	0/LS	$ 0.00	$ 0.00
2	9000	CEF COST ESTIMATE	1/LS	$ 70,737.00	$ 70,737.00
		*** Version 1 ***			
		Work To Be Completed			
3	0000	30 January 2014 Robert Melillo, PS Scope Change/406 HM Amendment	0/LS	$ 0.00	$ 0.00
4	9999	De-obligate prior Estimated Project Cost	1/LS	$ -70,737.00	$ -70,737.00
5	9000	CEF COST ESTIMATE	1/LS	$ 135,506.00	$ 135,506.00
6	0909	Hazard Mitigation Proposal	1/LS	$ 59,516.00	$ 59,516.00
				TOTAL COST	$ 195,022.00

PREPARED BY JOSEPH COMBES	TITLE Project Specialist	SIGNATURE
APPLICANT REP. Alden Warner	TITLE Select Board	SIGNATURE

LOWELL (TOWN OF) : PA-01-VT-4066-PW-00027

Conditions Information

Review Name	Condition Type	Condition Name	Description	Monitored	Status
			The Applicant shall handle, manage, and dispose of potentially hazardous waste, universal waste, and hazardous materials in accordance with the requirements of local, state, and federal regulations. These materials include, but are not limited to asbestos. The applicant shall obtain all necessary permits and consult with all appropriate agencies, including but not limited		

Final Review	Other (EHP)	Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA)	to the following: • The Water Quality Division of the Vermont Agency of Natural Resource. The contact person is Chris Brunelle, River Management Engineer, 802-879-5631, chris.brunelle@state.vt.us . • The Solid Waste Program of the Vermont Department of Environmental Conservation. The contact person is Carey Hengstenberg, 802-241-2653, carey.hengstenberg@state.vt.us . • The Vermont Department of Health (VDH) Asbestos Program. The contact person is Chris Kinnick, 802-863-7236, Christopher.Kinnick@state.vt.us. • Vermont Department of Labor (VDOL): The contact person is J. Stephen Monahan, 802-828-2138, stephen.monahan@state.vt.us	No	Approved
Final Review	Other (EHP)	Standard Condition #2	This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.	No	Approved
Final Review	Other (EHP)	Standard Condition #1	Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.	No	Approved
Final Review	Other (EHP)	Executive Order 11988 - Floodplains	Applicant must obtain floodplain permit or approval from the local floodplain administrator before work begins. Applicant is required to publish final notice of decision to perform work within the floodway per Executive Order 11988: Floodplain Management 8-step process. The public notice should include location, brief description of work, and the decision making process for the project. The notice should run at least 15 days prior to start of work. See attached 8-Step Process.	No	Approved
			The Applicant shall handle, manage, and dispose of potentially hazardous waste, universal waste, and hazardous materials in accordance with the requirements of local, state, and federal regulations. These materials include, but are not limited to		

Final Review	Other (EHP)	Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA)	asbestos. The applicant shall obtain all necessary permits and consult with all appropriate agencies, including but not limited to the following: • The Water Quality Division of the Vermont Agency of Natural Resource. The contact person is Chris Brunelle, River Management Engineer, 802-879-5631, chris.brunelle@state.vt.us . • The Solid Waste Program of the Vermont Department of Environmental Conservation. The contact person is Carey Hengstenberg, 802-241-2653, carey.hengstenberg@state.vt.us . • The Vermont Department of Health (VDH) Asbestos Program. The contact person is Chris Kinnick, 802-863-7236, Christopher.Kinnick@state.vt.us. • Vermont Department of Labor (VDOL): The contact person is J. Stephen Monahan, 802-828-2138, stephen.monahan@state.vt.us	No	Approved
Final Review	Other (EHP)	Clean Water Act (CWA)	10 VSA Chapter 41 and Act 110 require the Applicant to obtain a Stream Alteration Permit from the Rivers Management Program, Department of Environmental Conservation (DEC), for any stream crossing or work in a permanent stream. The Applicant is advised to contact the River Management Engineer, Chris Brunelle, (802 879-563) to discuss any permit requirements. Any permit conditions become a condition of this FEMA grant.	No	Approved
Final Review	Other (EHP)	Clean Water Act (CWA)	The applicant shall contact Michael Adams or Martha Abair, Vermont Field Office, USACE (802-872-2893) to determine if the undertaking qualifies under the Corps' Programmatic General Permit for Vermont (effective 12/05/2007-12/05/2012).	No	Approved
Final Review	Other (EHP)	Executive Order 11990 - Wetlands	Applicant is required to publish final notice of decision to perform work which affects wetlands per Executive Order 11990 Wetlands Protection 8 Step Process. The public notice should include location, brief description of work and the decision making process for the project. The notice should run at least 15 days prior to start of work. See attached 8-Step	No	Approved

			Process.		
Final Review	Other (EHP)	Executive Order 11990 - Wetlands	Applicant is required to publish final notice of decision to perform work which affects wetlands per Executive Order 11990 Wetlands Protection 8 Step Process. The public notice should include location, brief description of work and the decision making process for the project. The notice should run at least 15 days prior to start of work. See attached 8-Step Process.	No	Approved
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Final Review	Other (EHP)	Clean Water Act (CWA)	10 VSA Chapter 41 and Act 110 require the Applicant to obtain a Stream Alteration Permit from the Rivers Management Program, Department of Environmental Conservation (DEC), for any stream crossing or work in a permanent stream. The Applicant is advised to contact the River Management Engineer, Chris Brunelle, (802 879-563) to discuss any permit requirements. Any permit conditions become a condition of this FEMA grant.	No	Approved
Final Review	Other (EHP)	Standard Condition #3	If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.	No	Approved
Final Review	Other (EHP)	Executive Order 11988 - Floodplains	Applicant must obtain floodplain permit or approval from the local floodplain administrator before work begins. Applicant is required to publish final notice of decision to perform work within the floodway per Executive Order 11988: Floodplain Management 8-step process. The public notice should include location, brief description of work, and the decision making process for the project. The notice should run at least 15 days prior to start of work. See attached 8-Step Process.	No	Approved

Final Review	Other (EHP)	Standard Condition #1	Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.	No	Approved
Final Review	Other (EHP)	Standard Condition #2	This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.	No	Approved
Final Review	Other (EHP)	Standard Condition #3	If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.	No	Approved
EHP Review	Other (EHP)	Standard Condition #3	If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.	No	Recommended
EHP Review	Other (EHP)	Standard Condition #2	This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.	No	Recommended
EHP Review	Other (EHP)	Standard Condition #1	Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.	No	Recommended
EHP Review	Other (EHP)	Executive Order 11988 - Floodplains	Applicant must obtain floodplain permit or approval from the local floodplain administrator before work begins. Applicant is required to publish final notice of decision to perform work within the floodway per Executive Order 11988: Floodplain Management 8-step process. The public notice should include location, brief description of work, and the decision making process for the project. The notice should run at least 15 days prior to start of work. See attached 8-Step	No	Recommended

			Process.		
EHP Review	Other (EHP)	Resource Conservation and Recovery Act, aka Solid Waste Disposal Act (RCRA)	The Applicant shall handle, manage, and dispose of potentially hazardous waste, universal waste, and hazardous materials in accordance with the requirements of local, state, and federal regulations. These materials include, but are not limited to asbestos. The applicant shall obtain all necessary permits and consult with all appropriate agencies, including but not limited to the following: • The Water Quality Division of the Vermont Agency of Natural Resource. The contact person is Chris Brunelle, River Management Engineer, 802-879-5631, chris.brunelle@state.vt.us . • The Solid Waste Program of the Vermont Department of Environmental Conservation. The contact person is Carey Hengstenberg, 802-241-2653, carey.hengstenberg@state.vt.us . • The Vermont Department of Health (VDH) Asbestos Program. The contact person is Chris Kinnick, 802-863-7236, Christopher.Kinnick@state.vt.us. • Vermont Department of Labor (VDOL): The contact person is J. Stephen Monahan, 802-828-2138, stephen.monahan@state.vt.us	No	Recommended
EHP Review	Other (EHP)	Clean Water Act (CWA)	10 VSA Chapter 41 and Act 110 require the Applicant to obtain a Stream Alteration Permit from the Rivers Management Program, Department of Environmental Conservation (DEC), for any stream crossing or work in a permanent stream. The Applicant is advised to contact the River Management Engineer, Chris Brunelle, (802 879-563) to discuss any permit requirements. Any permit conditions become a condition of this FEMA grant.	No	Recommended
EHP Review	Other (EHP)	Clean Water Act (CWA)	The applicant shall contact Michael Adams or Martha Abair, Vermont Field Office, USACE (802-872-2893) to determine if the undertaking qualifies under the Corps' Programmatic General Permit for Vermont (effective 12/05/2007-12/05/2012).	No	Recommended
			Applicant is required to publish		

EHP Review	Other (EHP)	Executive Order 11990 - Wetlands	final notice of decision to perform work which affects wetlands per Executive Order 11990 Wetlands Protection 8 Step Process. The public notice should include location, brief description of work and the decision making process for the project. The notice should run at least 15 days prior to start of work. See attached 8-Step Process.	No	Recommended

Internal Comments				
No.	Queue	User	Date/Time	Reviewer Comments
18	Award Review	SYSTEM	06-30-2014 04:44 PM GMT	ACCEPTED
17	Final Review	SHERWOOD BRUCE	03-21-2014 02:22 PM GMT	Final Review. This Scope of Work change as outlined in Amendment #1 is being approved as it appears to be accurate and complete. Culvert sizing reevaluated at request of VT State representatives that original PW culvert evaluation neglected to take into account the Q100 conditions for headwater depths established by VAOT. Project includes Mitigation. B Sherwood 3/21/14.
16	Grantee Review	ROSE BENNETT	03-19-2014 06:47 PM GMT	The most recent version of this PW appears to accurately reflect the proposed scope of work (i.e. 14' x 6' box culvert). -- Ben Rose
15	Grantee Review	ROSE BENNETT	03-18-2014 01:30 PM GMT	Good to see mitigation included. Please ensure that applicant and AOT District Tech have opportunity to review final PW. Ben Rose 08/21/12
				SCOPE OF WORK: Mine's Road, Lowell, Orleans County, N44.77016 W-72.51835. This project worksheet covers the permanent repairs on a stream crossing for Burgess Branch and Mines Road (TH-2). The crossing consisted of a corrugated metal pipe (CMP) culvert (72-in dia. x 65-ft) damaged beyond repair. The scope of work includes removing and disposing of the existing culvert then replacing it with a corrugated metal multi-plate arch culvert (69-in x 98-in x 65-ft). Excavation will be required (24-ft x 65-ft x 8-ft, approx. 462 cubic yards). The new culvert will be re-covered with gravel and soil. A new roadway approach consisting of sub-base gravel will be installed over the excavation (24-ft x 65-ft x 8-in, 38-cy). The road surface will be finished with bituminous concrete pavement (24-ft x 65-ft) and a 4-in yellow line will be applied. As mitigation, concrete Class B steel reinforced head walls and wing-walls will be constructed at both the inlet and outlet of the culvert. Temporary construction measures include: assembling a sandbag check dam, installation of a 130-gpm water pump to serve as a by-pass for stream flow across the site, and highway barricades to close the road during culvert work. 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)(xvi). Particular attention should be given to the project conditions before and during project implementation. Failure to comply with these conditions may jeopardize federal

14	EHP Review	TATE MARCUS	02-24-2014 05:06 PM GMT	assistance including funding. - north - 08/20/2012 13:10:10 GMT ++++++++++Version 1 is for a scope of work change. Culvert sizing reevaluated at request of VT State representatives that original PW culvert evaluation neglected to take into account the Q100 conditions for headwater depths established by VAOT. Upon conducting this further evaluation it was concluded to increase the size of the PW replacement structure from a 98” x 69” CMPA to a 112” x 75” CMPA and corresponding road height changes to provide adequate cover over the larger size pipe. Based on this, the applicamnt has decided to install a 14' x 6' concrete box culvert. In order to accomodate this design the following will be performed; Excavate to remove existing structure and prepare for box culvert 800 CY, place Crushed Stone under culvert (12") 35 CY, install Precast concrete box 14' x 6' x 55' including headwalls, wing walls & cut-off walls, place Granular Backfill over box culvert 400 CY, install Roadway Sand Cushion (6") 35 CY, install Roadway Gravel Subbase (18") 100 CY, install Roadway Pavement (3") 30 TONS, install Guardrail 150 LF, install Type II Rip-Rap 30 CY, install Type III Rip-Rap 100 CY. Desptie this change in scope of work to a larger structure, the review performed on 8/20/12 remains valid and all comments and conditions still apply. - mtate1 - 02/24/2014 17:01:54 GMT CWA: Project involves culvert replacement and upgrade, and requires coordination with the U. S. Army Corps of Engineers (USACE) and the Vermont Agency of Natural Resources (ANR). See Conditions. - north - 08/20/2012 13:13:26 GMT EO11990: The 8 step process is required. See condition. - north - 08/20/2012 13:25:04 GMT ESA: No Listed Species or Habitat based on a review using VT Agency of Natural Resources' Natural Resource Atlas, accessed 8/20/2012. - north - 08/20/2012 13:11:59 GMT The culvert is located just to the northeast of the Vermont Asbestos Group (VAG) mine site and is within an area of concern for asbestos contamination, determined by Vermont’s Agency of Natural Resources (ANR), Department of Environmental Conservation (DEC), Waste Management Division. In consideration that mine tailings containing asbestos may be in the sediment of the Burgess Branch at the location of the damaged culvert and that asbestos dusts and fibers can be found on surface waters, FEMA – EHP has sought guidance from the ANR-DEC on the
13	Mitigation Review	DOWNER RICHARD	02-12-2014 08:29 PM GMT	8/7/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. M. C. HARRIS, HPA HAZARD MITIGATION SPECIALIST 8/14/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. . J.LANGEN 2/12/14 Per the Townsend Decision ,FEMA can reimburse for a destroyed culvert with a larger structure as a hazard mitigation measure ,if the cost do not exceed 100% of the project cost. Final Hazard mitigation equals $59,516.00 / $ 141,488 = 42%. Project is cost effective per the "Townsend Decision". Richard N. Downer
	Mitigation	DOWNER	02-12-2014	8/7/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. M. C. HARRIS,

12	Mitigation Review	DOWNER RICHARD	08:16 PM GMT	HPA HAZARD MITIGATION SPECIALIST 8/14/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. . J.LANGEN
11	Initial Review	PINKHAM KENNETH	02-11-2014 07:47 PM GMT	02/11/2014 - Initial review has been conducted on 30 January 2014 Robert Melillo, PS Scope Change/HM Amendment and the same has been forwarded to the Mitigation and Environmental Queues for further action in the amount of $195,022.00, $112,091.50 more than previous awards. Ken Pinkham, PATFL
10	Amendment Review	REICH DAWN	10-11-2013 01:33 PM GMT	Change request created for time extension to 6/22/16 granted by VEM
9	Award Review	SYSTEM	10-16-2012 07:01 PM GMT	ACCEPTED
8	Final Review	DEVINE MICHAEL	08-29-2012 01:51 PM GMT	8/29/12-This PW appears to be complete, and eligible within the FEMA PA Program of the Stafford Act. Michael DeVine, PAC
7	Grantee Review	ROSE BENNETT	08-21-2012 12:57 PM GMT	Good to see mitigation included. Please ensure that applicant and AOT District Tech have opportunity to review final PW. Ben Rose 08/21/12
6	EHP Review	THOMAS PETER	08-20-2012 04:13 PM GMT	SCOPE OF WORK: Mine's Road, Lowell, Orleans County, N44.77016 W-72.51835. This project worksheet covers the permanent repairs on a stream crossing for Burgess Branch and Mines Road (TH-2). The crossing consisted of a corrugated metal pipe (CMP) culvert (72-in dia. x 65-ft) damaged beyond repair. The scope of work includes removing and disposing of the existing culvert then replacing it with a corrugated metal multi-plate arch culvert (69-in x 98-in x 65-ft). Excavation will be required (24-ft x 65-ft x 8-ft, approx. 462 cubic yards). The new culvert will be re-covered with gravel and soil. A new roadway approach consisting of sub-base gravel will be installed over the excavation (24-ft x 65-ft x 8-in, 38-cy). The road surface will be finished with bituminous concrete pavement (24-ft x 65-ft) and a 4-in yellow line will be applied. As mitigation, concrete Class B steel reinforced head walls and wing-walls will be constructed at both the inlet and outlet of the culvert. Temporary construction measures include: assembling a sandbag check dam, installation of a 130-gpm water pump to serve as a by-pass for stream flow across the site, and highway barricades to close the road during culvert work. 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)(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. - north - 08/20/2012 13:10:10 GMT CWA: Project involves culvert replacement and upgrade, and requires coordination with the U. S. Army Corps of Engineers (USACE) and the Vermont Agency of Natural Resources (ANR). See Conditions. - north - 08/20/2012 13:13:26 GMT EO11990: The 8 step process is required. See condition. - north - 08/20/2012 13:25:04 GMT ESA: No Listed Species or Habitat based on a review using VT Agency of Natural Resources' Natural Resource Atlas

				Agency of Natural Resources' Natural Resource Atlas, accessed 8/20/2012. - north - 08/20/2012 13:11:59 GMT RCRA: The culvert is located just to the northeast of the Vermont Asbestos Group (VAG) mine site and is within an area of concern for asbestos contamination, determined by Vermont's Agency of Natural Resources (ANR), Department of Environmental Conservation (DEC), Waste Management Division. In consideration that mine tailings containing asbestos may be in the sediment of the Burgess Branch at the location of the damaged culvert and that asbestos dusts and fibers can be found on surface waters, FEMA – EHP has sought guidance from the ANR-DEC on the culvert replacement and work within the water. See conditions: - north - 08/20/2012 13:16:55 GMT EO11988: The 8-step process is required. See condition. - north - 08/20/2012 13:19:20 GMT NHPA: A determination of No Historic Properties Affected is made under the terms of the Vermont Programmatic Agreement (2011) Appendix C, Section III. A. B. C. & E. road, culvert and slope repair. No consultation with SHPO is required. - north - 08/20/2012 13:11:11 GMT
5	Mitigation Review	LANGEN JOHN	08-14-2012 05:14 PM GMT	8/7/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. M. C. HARRIS, HPA HAZARD MITIGATION SPECIALIST 8/14/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. . J.LANGEN
4	Mitigation Review	SHOFFNER MARTIN	08-14-2012 01:51 PM GMT	8/7/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. M. C. HARRIS, HPA HAZARD MITIGATION SPECIALIST
3	Mitigation Review	SHOFFNER MARTIN	08-08-2012 06:45 PM GMT	8/7/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. M. C. HARRIS, HPA HAZARD MITIGATION SPECIALIST
2	Initial Review (EHP Rework)	HARWOOD JULIAN	08-08-2012 06:38 PM GMT	REwork Complete
1	Mitigation Review	HARRIS MICHAEL	08-07-2012 09:57 PM GMT	8/7/2012 THE PROPOSED MITIGATION IS CONSIDERED COST EFFECTIVE UNDER PRE-APPROVED LIST, RR POLICY 9526.1/APPENDIX A/100% RULE. M. C. HARRIS, HPA HAZARD MITIGATION SPECIALIST

Go Back

U.S. Department of Homeland Security
FEMA/Joint Field Office/
DR-4140-VT
135 Allen Brook Lane
Williston, VT 05495

FEMA

December 2, 2013

Kimberly Canarecci
Public Assistance Officer
Emergency Management and Homeland Security
State of Vermont Department of Public Safety
103 South Main Street
Waterbury, Vermont 05671-2101

Subject: Town of Lowell Scope Change Request for PW-PA-01-VT-4066-PW-00027; Mines Road

Reference: your letter on same subject to Mr. Sterling Bridges dated November 20, 2013

Dear Ms. Canarecci:

We have reviewed the Scope Change Request expressed in your referenced letter, the accompanying Town letter, supporting information in the letters, VAOT Hydrology Report, Ruggiano Engineering Memo, Plans and Cost Estimate, and the subject Project Worksheet (PW) and determined the following findings and conclusions:

1. PW 00027 was written to address the removal and disposal of the existing 72in x 65ft CMP and replacement with 69in x 98in x 65ft Corrugated Metal Multiplate Arch Culvert as an "in-kind" cost effective replacement structure upgraded in accordance with eligible codes and standards. Included was the Hazard Mitigation Proposal for construction of concrete Class B, steel reinforced head wall and wing-walls at the culvert entrance and outlet.
2. The referred to VAOT Hydrology Report in the Ruggiano Engineering memo is the same Hydrology Report that was in the original PW. That Hydrology Report noted the existing structure is not adequate hydraulically where the headwater to depth ratios exceed the allowable values and water overtops the roadway below the design Q25. Recommended was a concrete box with a 14' wide by 6' high inside opening or similar structure with a minimum clear span of 14' and at least 70-sq. ft. of waterway area. The Report further noted that the sizing of a new structure took into account meeting the hydraulic standards, fitting the natural channel width, the roadway grade and other site conditions. Site measurements taken and noted in the report were an upstream channel width of 8' – 12' and downstream channel width of approximately 15' – 20'

3. The Ruggiano Engineering memo included an Engineer's Construction Cost Estimate for the Precast Concrete Box Culvert and Headwalls of $216,040. Your memo states the project worksheet should be revised to $216,400 (replacement structure), $8,400 (engineering and design), and $2,600 (construction engineering) for an additional approximately $144,469 to complete the design, permitting and construction phases of the proposed project.
4. PW 00027 included a Culvert Sizing Evaluation which in part states *FEMA's reimbursement for replacement culverts and bridges is limited to an in-kind replacement structure that meets* (and) *that is sized appropriately to meet the VAOT hydraulic design standards. While changes to design for the purposes constructability may be considered eligible, as of the date of this analysis. FEMA does not recognize upgrades to structures in Vermont that include the burial of the culvert inverts, resizing to accommodate the bank full width of the stream or upgrading to open-bottomed culverts as being an eligible standards for the purposes of reimbursement.* The evaluation further went on to conclude *that the following in-kind replacement structures are appropriately sized to accept the Q25 and meet VAOT limits for headwater depths: * A 78-inch diameter CMP installed with the invert at the stream bed surface; * An elliptical CMP installed with the invert at the stream bed surface and an equivalent open area of at least 37 SF; and, * A CMP Arch Culvert with a span of 98 inches and a rise of 69-inches or with similar dimensions and an equivalent cross-sectional area.*
5. Categorically nothing new has been presented in the subject scope change request that substantiates the installation of 14ft wide by 6ft high concrete box culvert structure.
6. FEMA's Public Assistance Program is limited to repairing or replacing a damaged facility to its pre-disaster condition, with upgrades that may be required by the applicable codes and standards.

Based on the findings discussed above, the discretionary scope change to a 14ft. wide by 6 ft high concrete box culvert structure has been determined to be an Improved Project.

We await your direction as to whether we should move ahead with an Improved Project Amendment to the subject project worksheet.

It should be noted in accordance with FEMA Public Assistance Guide 322, pages 11 0 - 111, an Improved Project will be capped at the project worksheet estimate which in this case is $82,930.50

Sincerely,

Robert Melillo
FEMA Public Assistance
Project Specialist

Email copy: Sterling Bridges, Brian Minns, Fred Costello, Ken Pinkham, Brett Pierce and Ben Rose

Emergency Management and Homeland Security
Department of Public Safety
103 South Main Street
Waterbury, VT 05671-2101
http://vem.vermont.gov • http://hsu.vermont.gov

Toll free 800-347-0488
phone 802-244-8721
fax 802-241-5556

November 20, 2013

Mr. Sterling Bridges
Infrastructure Branch Director
FEMA-JFO
135 Allen Brook Lane
Williston, VT. 05495

Re: Scope Change Request – DR-4066 PW #00027 (0) – Town of Lowell, VT – Mines Road

Dear Sterling,

The State has received the attached Scope Change Request and back up documentation for the PW referenced above.

A 72 inch by 65 foot corrugated metal pipe culvert was damaged more than 50 percent. In accordance with the Town of Lowell's codes and standards, the Vermont Agency of Transportation (VTrans) conducted a hydraulic report, which shows the 72 inch pipe not to be hydraulically adequate. In the original project worksheet, FEMA considered a corrugated metal multi-arch culvert measuring 69 inches x 98 inches tall to be a cost effective replacement; however, the arch option does not comply with the findings of the VTrans hydraulic report.

After reviewing the data, we believe that the original PW cost should be reviewed and reconsidered due to additional required cost associated with this large project. Following town codes and standards and State hydraulic reports, the stream alterations permit requires that the applicant construct a new 14 foot wide by 6 foot tall concrete box. The estimate for replacing the structures as a concrete box is $216,400.

In addition, the Project Worksheet does not include the costs of engineering and design. The town accepted Ruggiano Engineering's bid for $8,400 to provide survey, engineering, design, permitting, cost estimation and construction bidding, and an additional $2,600 for construction oversight. The project worksheet should be revised to $216,400 (replacement structure), $8,400 (engineering and design), and $2,600 (construction engineering). The Town is requesting approximately $144,469.50 in additional funds to complete the design, permitting and construction phases of the proposed project.

As soon as judgment is made, please notify us in writing with your decision, so we can discuss with the Applicant how to proceed.

Thank you for your consideration and support.

Sincerely,

Kimberly Canarecci
Public Assistance Officer

TOWN OF LOWELL
2170 VT RTE 100
LOWELL, VT 05847

Telephone 802-744-6559
Fax 802-744-2357

November 14, 2013

Ben Rose
Recovery and Mitigation Section Chief
Division of Emergency Management and Homeland Security
103 South Main Street
Waterbury, VT 05671-4719

PA-01-VT-4066-PW-00027(0), Town of Lowell, Mines Road

Dear Ben,

This letter is to formally request a scope of work change for the Town of Lowell's Mines Road project. The structure that FEMA determined should be installed and cost estimated in the PW does not meet the Town's Codes and Standards as it does not meet the requirements of the hydraulics report or ANR's permit requirements.

The stream crossing at the intersection of Burgess and Mines road consists of a 72 inch x 65 foot corrugated metal pipe (CMP) culvert. Heavy rain water flow caused the stream to run under the culvert damaging more than 50% of the culvert.

In accordance with the codes and standards of the Town of Lowell, hydraulic reports were run by the state for the 72" CGMP, and it was found to not be of hydraulic adequacy.

In the project worksheet, FEMA considered a corrugated metal multi-plate arch culvert measuring 69in wide x 98in tall to be a cost-effective replacement. In contradiction to this, a hydraulics report run by the state does not comply with the arch option. A meeting took place with a stream alterations representative, and the stream alterations permit requires the concrete box option from the hydro report. The proposed change is for a new 14' wide by 6' tall concrete box. A scope change is requested to alter the replacement structure type and cost to meet the hydraulic and stream alterations standards.

If this scope of work change is not accepted under these conditions then we would like to submit this as an improved project request.

The original amount of the project worksheet was $82,930.50. The estimate for replacing the structures described above is $216,400. The town put out to bid and accepted Ruggiano Engineering's bid for $8,400 to provide survey, engineering, design, permitting, cost estimation, and construction bidding. This firm has also proposed an additional $2,600 for construction oversight. We believe that the PW cost total should be revised to include these costs. We believe the PW cost should be revised to $216,400 (replacement structure) + $8400 (engineering and design) + $2600 (construction engineering) for a total of $227,400.

Sincerely,

Richard Pion

Richard Pion, Select Board Chairman

Emergency Management and Homeland Security
Department of Public Safety
103 South Main Street
Waterbury, VT 05671-2101
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fax 802-241-5556

October 4, 2013

Alden Warner
Town of Lowell
2170 Route 100
Lowell, VT 05847

Re: Time Extension Request – DR 4066 – PW# 00027 – Lowell, VT – Mines Road Culvert 26

Dear Alden,

The State of Vermont supports the Town of Lowell's request for an additional 30 month extension from the current December 22, 2013 deadline for PW# 00027, until June 22, 2016.

We understand that the Town has only recently received a stream alteration permit for the Mine's road project. Due to the lateness of the construction season, the Town will require more time to adequately complete the scope of work.

Since there will be no additional costs associated with this time extension, we are granting an additional 30 months for this Category C PW and request that FEMA amend the PW in EMMIE accordingly.

Sincerely,

Ben Rose
Public Assistance Officer

Attachments: Town of Lowell PW# 00027 - Time Extension Request

Cc (electronic only): Sterling Bridges, FEMA Infrastructure Branch Director
Coleen Krauss, VTrans Contracts & Grants Unit

VERMONT

REVIEWED
By Bob Melillo, FEMA PS at 6:17 pm, May 27, 2015

September 5, 2013

Alec Portalupi
State Public Assistance Officer
VAOT Operations Division
1 National Life Drive
Montpelier, VT 05633

Received
OCT 0 2 2013
Contract & Grants Unit

Vermont Agency of Transportation
SEP 2 0 2013
Operations Division

Dear Mr. Portalupi:

We are writing to request an additional time extension for PA-01-VT-4066-PW-00027(0). This PW was originally granted on 6/22/2012. The original grant period is for June 22, 2012 to December 22, 2013.

All work for this PW will be completed on 6/22/2016. There will be no additional costs associated with this time extension request. The reason this extension is needed is because the Mines Road project stream alterations permit recently came through. Since it is so close to the end of the construction season, the project won't be able to be complete until next year.

If you have any questions, please contact the town of Lowell at 802-744-6559. Thank you.

Sincerely,

Richard Bean

Dwight Richardson

Town of Lowell

Alden Weaver

VTrans

TIME EXTENSION REQUEST CHECKLIST

Under 44 CFR 206.204(d), a FEMA Public Assistance applicant may request additional time to complete a FEMA funded project due to unanticipated circumstances. The State may grant a Time Extension on a PW, as long as there is no change in the scope of work or increase in cost, and all supporting information and documentation has been provided in a timely manner. The following checklist covers all required information needed on your detailed Time Extension Request Letter (on Town Letterhead). It is intended as clear guidance and should be completed in addition and returned to me. Failure to provide any of the required information is likely to result in the request being returned and/or rejected by FEMA.

- ☐ **Date:** September 5, 2013
- ☐ **Disaster:** 4066
- ☐ **Applicant Name:** Vermont Agency of Transportation
- ☐ **EMMIE – PW#:** PA-01-VT-4066-PW-00027(0)
- ☐ **Percentage of work complete to date:** 17%
- ☐ **Description of damaged facility:** The Stream crossing consists of a 72 inch x 65 foot corrugated metal pipe (CMP) culvert. Heavy rain water flow caused the stream to run under the culvert damaging more that 50 per cent of the culvert.
- ☐ **Date of original Project approval/funding:** 6/22/2012
- ☐ **Date Project is currently approved through:** 12/22/2013
- ☐ **Number of previous extensions:** 0
- ☐ Revised estimated completion date (leave yourself enough time!): 6/22/2016
- ☐ Detailed Timeline of reason(s) for the delays and justification of why time extension is need ("extenuating circumstances"):

The Mines Road project stream alterations permit recently came through. Since it is so close to the end of the construction season, the project won't be able to be complete until next year.

For temporary work (Category A & B), extension requests must be received within the 6 months allowed to complete the work. The State may grant up to an additional 6 months (for a total of 12 months) for the completion of the Scope of Work.

For permanent work (Category C-G), extension requests must be received within the 18 months allowed to complete the work. The State may grant up to an additional 30 months (for a total of 48 months) for the completion of the Scope of Work:

Please mail the Extension Request Letter, completed Time Extension checklist and all Supporting Documentation to:

Alec Portalupi
State Public Assistance Officer
VAOT Operations Division
1 National Life Drive
Montpelier, VT 05633
Alec.Portalupi@state.vt.us

Vermont Agency of Transportation
SEP 20 2013

VERMONT

FEMA Project Formulation/ Documentation Checklist

Project Title: Burgess Branch Culvert Replacement DR-4066-VT/ PW-00027(1) Comp. %.: 100

Applicant: Lowell, Town of

Form Completed by: Karen Clinger Agency: _____ Date: 10/23/14

Project Type: Large ✓ Small ___ Improved___ Alternate___ Sandy Recovery Improvement Act ___

1 **Project Worksheet Documentation**

- ☑ Updated Summary of Final Project Cost
- ☑ PW-Related correspondence/approvals for scope changes or other amendments

2 **Partial Payment Documentation**

- ☑ Summary of partial payments received
- ☑ Copies of all partial payments requests

3 **Applicant Policies**

- ☐ Procurement Policy
- ☐ Overtime Policy
- ☐ Union contracts addressing wages, OT, and fringe benefit calculations
- ☑ Codes and Standards

4 **Force Account Documentation** NA

- ☐ Force Account Labor Summary
  - ☐ Fringe Benefits Calculations
  - ☐ Timesheets
  - ☐ Applicable union contracts, ordinances, policies, or past history that supports wages / services
- ☐ Force Account Equipment Summaries
- ☐ Summary of Materials Used
  - ☐ Purchase Receipts for material taken from stock (Actual price paid, *not replacement cost*)
  - ☐ Invoices for materials not in stock
  - ☐ Proof of Payment for materials not in stock

5 **Rental Equipment**

- ☐ Summary of Rented Equipment Used NA
  - ☐ Contracts
  - ☐ Cancelled Checks or Check Summary with numbers, dates and values
  - ☐ Fuel invoices

6 **Direct Administration Costs**

- ☑ DAC Summary
  - ☑ Documentation of work completed by date and personnel
- ☐ Time sheets

☑ Fringe benefits Calculations

FEMA Project Formulation/ Documentation Checklist

Project Title: Burgess Branch Culvert Replacement DR-4066-VT / PW- 000227(1) Comp. %.: 100

Applicant: Lowell, Town of

Form Completed by:_____ Agency:_____ Date: 10/23/14

Project Type: Large ✓ Small ___ Improved___ Alternate___ Sandy Recovery Improvement Act ___

Applicant completed checklist
RSM 5/27

7 **Contract Documentation**

- ☑ Municipal Procurement Policy
- ☑ Procurement Documentation (Procurement must be in accordance with State and Federal (CFR 44 13.36) Regulations for projects over $150,000)
  - ☑ Newspaper and other bid notifications
  - ☑ Bid Tabulation and documentation of award process
  - ☑ Documentation of telephone bid solicitations in lieu of formal bids
  - ☑ Contract(s) signed and dated by all parties
  - ☐ Non-competitive proposal cost analysis
- ☑ Contract Plans and Specifications (pdf format)
- ☐ Certified Payrolls (as appropriate)
- ☑ Cancelled Checks or Check Summary with numbers, dates and values
- ☐ Change Order Summary
  - ☐ Copies of Executed Change Orders
  - ☐ Revised Plans

8 **Insurance Documentation for Insurable Losses**

NA

- ☐ Policy *(if available)*
- ☐ Declaration Pages *(if policy is not available)*
  - ☐ Description of Coverage
  - ☐ Exclusions
  - ☐ Deductibles
  - ☐ Limits of Coverage
  - ☐ Statement of Loss *(Explanation and enumeration of damages)*
  - ☐ Proof of Loss *(Affidavit of Proof of Insurance Payment)*

9 **Environmental, Historic Preservation Documentation**

- ☑ USACE Permits/ CBRA Permits
- ☑ Stream Alteration Permits
- ☐ Documentation of Debris Disposal Location.
- ☐ SHPO letters of concurrence

10 **Debris Removal**

NA

- ☐ Stump Removal Validation Log
- ☐ Hazard Limbs (hangers) Removal Log(s)
- ☐ Hazardous Tree Removal Log (s)
- ☐ Truck Trip Tickets signed by driver and applicant
- ☐ Truck Certification Lists