



Received

APR 14 2018

VTrans
PDD-LTF



FY17 Vermont Better Roads Grant Application

Please complete this page ONCE and return with your Grant Category Application(s)

Town/Organization: Concord Contact Person(s): Susan LaMadeleine

Address: PO Box 317 Concord, Vermont, 05824

Email: adminasst@conclerk.com

1-802-695-1094, ex: 21

DUNS #: 804446219

Fiscal Year End Month (MM):(June 30th- July 1st)

Accounting System: Automated Manual Combination

Please use the suggested documentation checklist below to ensure that all of the relevant items regarding your application have been included.

- Grant application cover sheet (Only submit one)
- Grant application form (One per category/project)
- Itemized Cost estimate for labor, equipment, and materials (see enclosed Cost Estimate Worksheet). If applicable, please break down funding by source (i.e. different grant sources)
- Project Location Map (please show location of affected water)
- Sketch of proposed erosion control measures or other management practices, including distances in feet
 - Also show approximate location of town/other right-of-way and/or property lines
- Photo(s) of the project area
- Letters of Support (RPC, VTrans District Technical Staff, ANR Rivers and Streams Engineers, etc.)
- If Category C River/Road Conflict or Category D River/Stream Structure or Culvert, you must attach ANR/ACOE consultation



Vermont Better Roads Grant Program Application

Please complete one application per category and/or project you are applying for. You may make copies of the application for multiple applications per category and/or multiple categories.

Please check the Category you are applying for:

- X B. Correction of a Road Related Erosion Problem and/or Stormwater Mitigation Retrofit for both gravel and paved roads

Town/Organization: Town of Concord with assistance from Essex NRCD

ProjectName: Culvert and Headwall Projects

RoadName: Shadow Lake Road and Kirby Mtn Road TH#: 5,28 Structure#(if applicable): _____

RoadType: Paved or **Unpaved** (circle one) Curbed or **Uncurbed** (circle one)

Class 1 **Class 2** **Class 3** Class 4 (circle one)

Watershed: Moose River and Stevens River-Connt. River Watersheds

Please provide a thorough description of the problem (ex. Roadway has steep slope with no ditch which is causing roadway erosion): Shadow Lake Road ditch is eroding into road. Road culvert associated with ditch has eroding headwall. Kirby Mountain Road has three culverts that continually fail causing road surface and erosion.

Description of Project and how you plan to complete the work (ex. Stone line 500' of ditch by reshaping ditch and stone lining, working from the top of the project down to the bottom): Shadow Lake Road ditch is to be excavated to an average road size road ditch then filter fabric will be installed, then stone, then reshaping top of road edge to catch water correctly. On Kirby Mtn Road, install 3 longer culverts and install proper headers with stone.

Expected Effects (+&-) on water quality (ex. Erosion will be eliminated by placing the stone ditch): On Shadow Lake road, erosion will be eliminated by stoning ditch and sediment will be decreased which eventually flows to the lake. This section of this road is in poor condition. The road and ditch erosion directly deposits to unnamed brook and drains to Shadow lake. This project will significantly reduce sediment runoff to the stream and the lake by slowing the water with stone line ditching and creating a headwall to hold road sediment in place which will reduce direct runoff flow to the stream. On Kirby Mtn Road safety around the three culverts will be improved and road and ditch erosion will be non-existent.



Distance from end of project to nearest water (stream, lake, or stormwater system that outlets directly to water). Please circle one: 0-50' 50-250' 250'

Progress to Date: BBR category A completed and field measurement complete

Is there an emergency reason this project must be completed quickly? If yes, please explain: These two roads are a priority for the town because of the need to keep addressing the on-going maintenance of the culverts on Kirby Mtn Road and the culvert headwall on Shadow Lake Road.

Has this project been identified through a municipal road inventory, capital budget plan, tactical basin plan, culvert inventory, or other management plan? If yes, please list which.

Yes: Municipal Road Inventory

No

Please list any professionals you may have contacted for assistance with this project (ANR River Management Engineer, Army Corps of Engineers, VTrans District Technical staff, Basin Planner etc.):

Three horizontal lines for listing professionals.

Is the project located in the town "Right of Way?" Yes, No, Both (if "Both" please explain further Both projects are located in town R.O.W.

Will the town road crew complete this work? Yes, No, Some (if "some" please explain further). Yes, The town road crew will complete this work as these two roads are priorities. The town also has another priority which will be in another grant application. The town would like to complete all three projects because they would like to use their budget which was allocated to be completed last year.



Describe how the grant funds will be spent and/or attach a project budget:

Please see attached budget for both roads.

How do you plan to meet the required 20% match on this grant?:

The match on both amounts will be met with in-kind and cash.

Requested Grant Amount (\$20,000 max Category B, \$40,000 max Categories C & D): \$19,597.50

Estimated Total Project Cost (including 20% local match): \$3,939.00

Estimated Completion Date: Fall 2016

REQUIRED ATTACHMENTS

Estimate (labor, equipment, materials)
(For assistance, call Better Backroads at 802-828-4585)

- Project Location Map
(Please show location of affected water; 1:12,000 USGS map, if possible)
- Sketch of proposed erosion control measures, including:
 - Distances (ft.)
 - Estimate of waste & borrow quantities
 - Approx. location of town/other right-of-way and/or property lines
- Photo(s) of the project area.
- Agreement for Entry and/or Deed of Easement (if project is outside Town ROW).
- If project involves stream or river/road conflict, include documentation of consultation with a River Management Engineer.
- Other appropriate supporting documents.

By signing this application I certify that all the information provided is accurate to the best of my knowledge. We will comply with all the requirements of the grant including making our books available for audit if required.

SIGNATURE OF APPLICANT: (Must be Town Administrator/Manager or Select Board Chair)

Name: *Rory McQuinn*

Title: *Select Board Chairman*

Site Description

Shadow Lake Road project area has native soils are Cabot-Colonel complex of poorly to somewhat poorly drained loamy stony dense till. The road is 3.07 mile ~8-12% slope class 2 road. The ditch, which in some areas has bedrock in it, is eroding into the road. This erosion goes the end of the ditch to an unnamed small mountain stream into a road culvert that flows ~500' directly to Shadow Lake. The road culvert has an eroded headwall.

Recommended Treatment

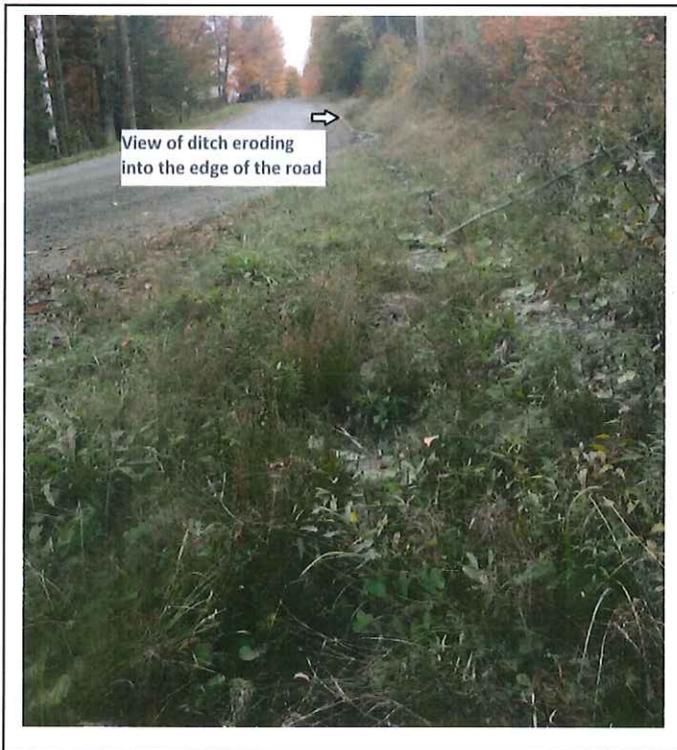
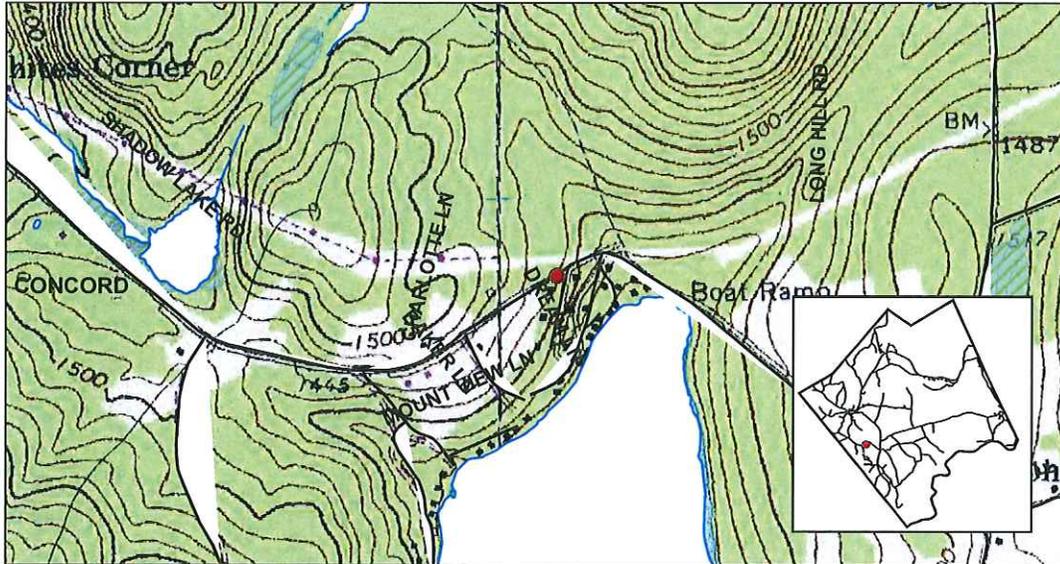
Armor the ditch bank; excavate an area the normal size of average road edge erosion at the edge of road close to the ditch. Lay filter fabric in the excavated area tying it to the road, lay large stone over the fabric add more stone on that, and then reshape top of road edge and surface. Install headwall on stream culvert.

Construction Notes:

- Construction Specification guidelines for ditches and culvert headwalls - See the *Vermont Better Back Roads Manual*, 2009 & the *Vermont Standards and Specifications for Erosion Prevention and Sediment Control* 2006
- Meet adopted *codes and standards*
- Buried Cable/Utilities- Buried cable/utilities may be on site. Call dig safe 1-888-DIG-SAFE to locate buried utilizes prior to construction.
- Stabilize all disturbed areas with seed and mulch.

Cost Estimate for Treatment

Item	Quantity	Cost per unit	Total
Move Equipment Time	2hrs	\$100	\$200
Excavation time	20hr	\$135	\$2,700
Excavation Time/hammer	6hrs	\$220	\$1,320
Truck Time	52hr	\$80	\$4,160
Ledge	205T	\$12	\$2,460
Total			\$10,840



Site Description

Kirby Mountain Road area has native soils are Buckland moderately well drained course-loamy till. The road is 1.12 mile ~8-10% slope class 3 road. Road and ditch work was completed in 2013. The road and ditches are generally in good condition with cross culvert and stone line ditches. There are three culverts in poor to fair condition on this road. The first ~200 from the junction of Bullard Rd continually fails and causes road surface failure and erosion. The other two ~850' from the junction of Bullard Rd are without headers causing road and bank erosion around the culverts outlets.

Recommended Treatment

Install 3 new longer (40'x18") culverts with great than 2:1 slope or proper headers with dry lay stone.

Construction Notes:

- Construction Specification guidelines for culverts & headers- See the *Vermont Better Back Roads Manual*, 2009 & the *Vermont Hydraulics Manual, ch. 6* 1998 (see conceptual drawing below)
- Meet adopted codes and standards
- Buried Cable/Utilities- Buried cable/utilities may be on site. Call dig safe 1-888-DIG-SAFE to locate buried utilizes prior to construction.
- Stabilize all disturbed areas with seed and mulch.

Cost Estimate for Treatment

Item	Quantity	Cost per unit	Total
Move Equipment time	2hs	\$100	\$200
Excavation Time	30hrs	\$135	\$4,050
Truck Time	12hrs	\$80	\$960
Labor	50hrs	\$25	\$1,250
Ledge	45T	\$12	\$540
Seed	10lbs	\$2.50	\$25
Hay	15bales	\$3.50	\$52.50
3/4" Gravel	60T	\$8	\$480
18" Culvert	120	\$10	\$1,200
Total			\$8,757.5

Conceptual Drawings for example culvert install

