

Town of Charleston

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April 12, 2016

Alan May
AOT Municipal Assistance Bureau
1 National Life Drive
Montpelier, VT 05633

Dear Alan:

The Town of Charleston appreciates the ongoing guidance and consultation of the various agencies collaborating in the Better Roads Grants program as we seek solutions to critical road erosion issues here in town. Please find attached the Town of Charleston's FY2017 applications to the Better Roads Grant Program.

For your reference, we are providing this list and brief comments about the relative priority of this year's proposed projects. All three roads have been identified on Charleston's Road Erosion Inventory & Capital Budget Plan, with Hudson Rd at the top of the list.

Hudson Rd Cement Culvert at Bowen Hill Road and Hudson Rd Multiple Culverts Upgrade are critical projects long overdue. Hudson is a key cross-town road with high traffic, and it has been the site of repeated closures due to washouts in recent federal disasters. As Hudson parallels the nearby Clyde River, erosion and culvert failure discharges sediment directly into the river. Both projects are included in a pending FEMA Hazard Mitigation Grant proposal first submitted in 2014, however, no award has been made and Charleston's eligibility is in question because the town does not participate in the NFIP. We have reason to believe that this will be resolved one way or the other before the award of Better Roads Grants, and we will update your office with any news. If Charleston is not awarded the FEMA grant, work must still proceed on Hudson Rd in 2016, and Better Roads funds will be essential.

East Echo Lake Rd Ditching and Crowning will remedy critical erosion issues at the site of the inlet leading from Seymour Lake to Echo Lake that compromise the road and discharge sediment and pollutants into Echo Lake. Working with the Echo Lake Protective Association, VT ANR, and Better Roads staff, this project is deemed high priority for 2016 with project outcomes expected to be highly effective.

Gratton Hill Rd Ditching and Culvert Upgrades Sites 1-3 (3 projects) cover a sizable segment of road that could be addressed one-by-one if needed. Ideally, completing all three projects in one year would enable the town to start at the top of the grade and also address critical ditch failures and bank erosion at the bottom of the road where ditches

feed into a brook leading directly to the Clyde River below. If the projects are not selected, Charleston will make spot repairs and reapply for assistance in FY2018.

Thank you for your time and consideration. Please don't hesitate to contact me or Colleen Kellogg in the Town Office if you have any questions or need additional information.

Sincerely,

A handwritten signature in cursive script that reads "Dean Bennett". The signature is written in black ink and is positioned above the typed name.

Dean Bennett, Chair
Charleston Selectboard



FY17 Vermont Better Roads Grant Application

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

Town/Organization: _____ Contact Person(s): _____

Address: _____

Street Address

Town

Zip

Email: _____ Phone: () _____ - _____

DUNS #: _____ Fiscal Year End Month (MM): _____

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:

- B. Correction of a Road Related Erosion Problem and/or Stormwater Mitigation Retrofit for both gravel and paved roads
- C. Correction of a Stream Bank or Slope Related Problem
- D. Structure/culvert upgrades

Town/Organization: _____

Project Name: _____

Road Name: _____ TH #: _____ Structure # (if applicable): _____

Road Type: Paved or Unpaved (circle one) Curbed or Uncurbed (circle one)

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

Watershed: _____

Please provide a thorough description of the problem (ex. Roadway has steep slope with no ditch which is causing roadway 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):

Expected Effects (+ & -) on water quality (ex. Erosion will be eliminated by placing the stone ditch):



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:

Is there an emergency reason this project must be completed quickly? If yes, please explain:

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: _____

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.):

Is the project located in the town "Right of Way?" Yes, No, Both (if "Both" please explain further).

Will the town road crew complete this work? Yes, No, Some (if "some" please explain further).



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

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

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

Estimated Total Project Cost (including 20% local match): _____

Estimated Completion Date: _____

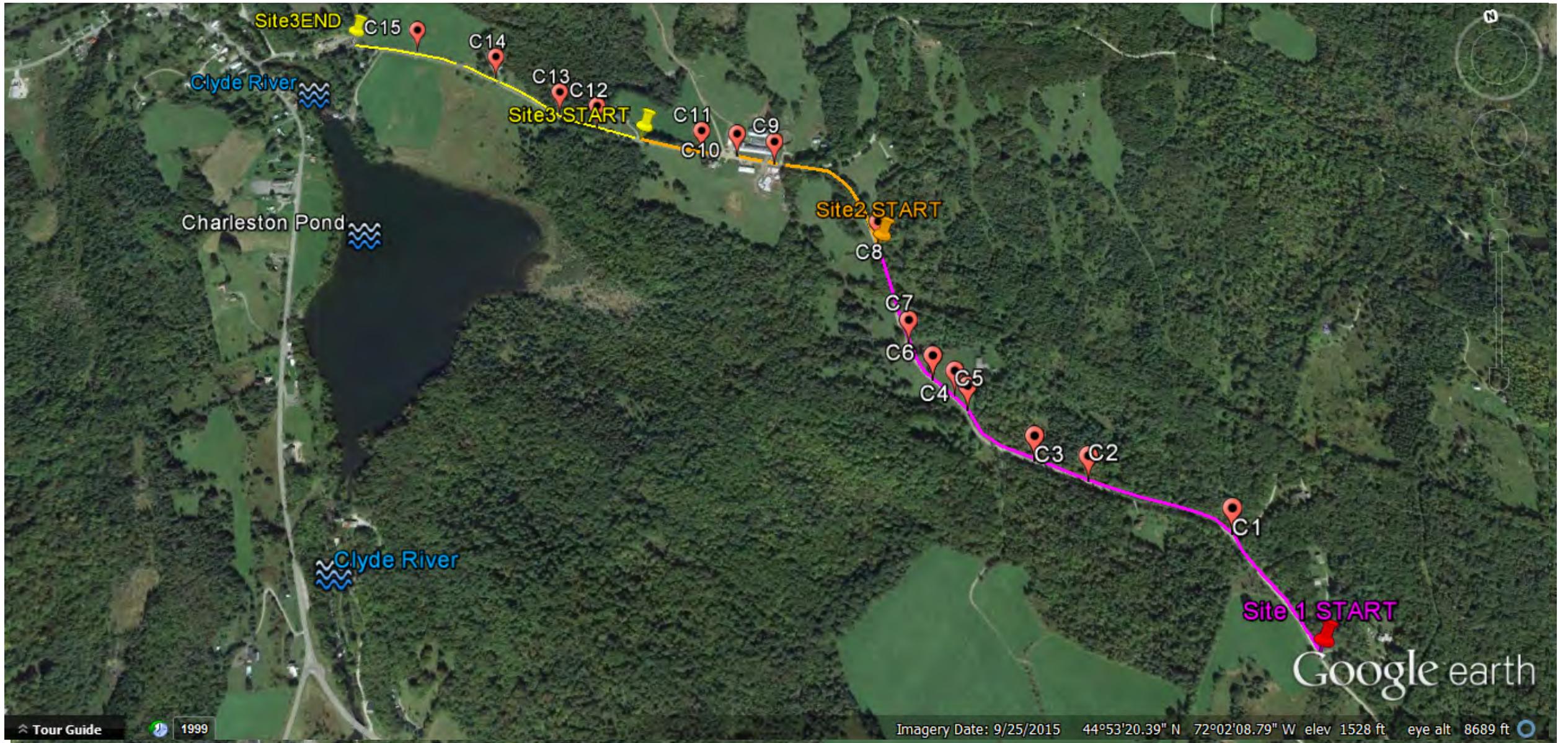
REQUIRED ATTACHMENTS:

- Itemized Cost 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: _____ Dean Bennett _____ Title: _____ Selectboard Chair _____



Google earth

miles
km



Site 1 START 44°53'2.56"N 72° 2'10.83"W (Ditching - Pink)

Site 2 START 44°53'25.28"N 72° 2'31.44"W(Ditching - Orange)

Site 3 START 44°53'36.19"N 72° 2'50.03"W END 44°53'48.68"N 72° 3'15.37"W (Ditching - Yellow)

Culverts 1-15 Shown above (C1 = 1st Culvert)

**Gratton Hill Rd Stone Ditches w/ Culvert Upgrades Sites 1-3
(FY 2017 Better Roads Grant Applications)**

List of undersized culverts to be replaced

See accompanying map/aerial for locations.

Site 1

(MapID: VOBCIT Identifier, size, material, condition)

C1: 19th on Gratton, 12", steel, critical

C2: 18th on Gratton, 12", steel, critical

C3: 17th on Gratton, 15", steel, fair

C4: 16th on Gratton, 15", steel, good

C5: 15th on Gratton, 15", steel, good

C6: 14th on Gratton, 12", steel, fair

C7: 13th on Gratton, 15", steel, fair

Site 2

C8: 11th on Gratton, 15", steel, good

C9: 8th on Gratton, 15", steel, good

C10: 7th on Gratton, 12", steel, critical

C11: 6th on Gratton, 12", steel, critical

Site 3

C12: 5th on Gratton, 15", steel, Fair

C13: 4th on Gratton, 15", steel, good

C14: 3rd on Gratton, 12", steel, good condition

C15: 2nd on Gratton, 12", steel, critical condition

Town of Charleston
Better Roads Application FY2017
Project: Gratton Hill Rd Stone Ditches w/ Culvert Upgrade - Sites 1-3 (Category B)
Construction Costs Estimate

Project

6000 LF of stone lined ditch
 Replace 15 undersized culverts w/ 18" HDPE
 Cost based on 15 days (3 weeks) at 10 hrs/day (5 days per site)

Labor

		Site #3	Site #2	Site #1
1 Worker @ \$20.42/hr including fringe benefits x 120 hrs	\$2,450.40	816.80	816.80	816.80
1 Worker @ \$23.09/hr including fringe benefits x 120 hrs	\$2,770.80	923.60	923.60	923.60
1 Worker @ \$27.78/hr including fringe benefits x 120 hrs	\$3,333.60	1111.20	1111.20	1111.20
Total Reg Hours Cost	\$8,554.80	2851.60	2851.60	2851.60
1 Worker @ \$28.76/hr including fringe benefits x 30 hrs	\$862.80	287.60	287.60	287.60
1 Worker @ \$32.54/hr including fringe benefits x 30 hrs	\$976.20	325.40	325.40	325.40
1 Worker @ \$39.14/hr including fringe benefits x 30 hrs	\$1,174.20	391.40	391.40	391.40
Total OT Cost	\$3,013.20	1004.40	1004.40	1004.40
Total Labor	\$11,568.00	3856.00	3856.00	3856.00

Equipment

2 18yd Trucks @ \$80/hr x 150hrs	\$24,000.00	8000.00	8000.00	8000.00
Excavator @ \$50/hr x 150 hrs	\$7,500.00	2500.00	2500.00	2500.00
Total Equipment Cost	\$31,500.00	10500.00	10500.00	10500.00

Materials

6"-8" Erosion Stone @ \$11.25/ton 6000' x 7' x 0.67'(8")/27 x1.4 tons/CY = 1500 ton 1500 ton x \$11.25/ton =	\$16,875.00	5625.00	5625.00	5625.00
600 LF of 18" HDPE (Gray HP) @ \$14.10/LF =	\$8,460.00	2256.00	2256.00	3948.00
240 yds 3/4" crushed gravel (16yds/culvert) at \$9.50/yd	\$2,280.00	760.00	760.00	760.00
Seed Mix	\$250.00	83.33	83.33	83.33
Mulch Hay	\$200.00	66.67	66.67	66.67
Total Materials Cost	\$28,065.00	\$8,791.00	\$8,791.00	\$10,483.00

Total Project Estimate	\$71,133.00	\$23,147.00	\$23,147.00	\$24,839.00
Requested Grant Amount	\$56,906.40	18517.60	18517.60	19871.20
Local Match	\$14,226.60	4629.40	4629.40	4967.80

Price based on actual town labor rates including fringe benefits, and standard town equipment use rates (based on FEMA equipment rates and cost codes)

**Gratton Hill Rd Stone Ditches w/ Culvert Upgrades – Site 1
Charleston FY2017 Better Roads Application**



Upslope driveways contribute to erosion. Full ditches (photos below, left side) will be excavated and lined with erosion stone.



**Gratton Hill Rd Stone Ditches w/ Culvert Upgrades – Site 1
Charleston FY2017 Better Roads Application**

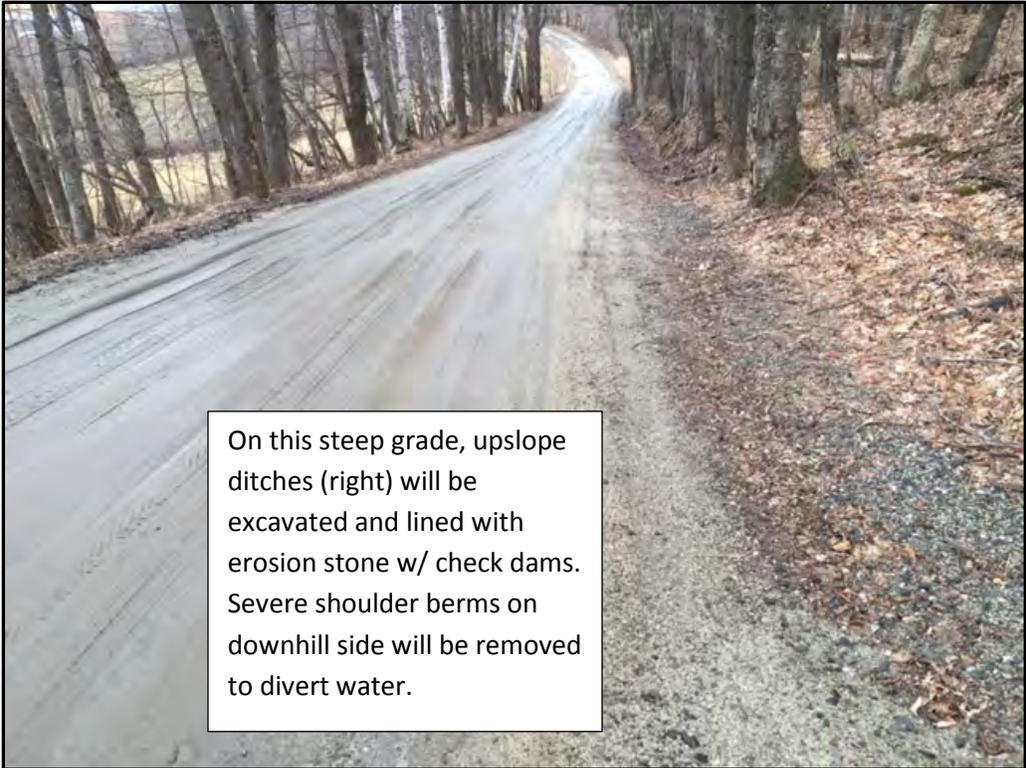


Fencing in ditches currently prevents proper maintenance, and livestock on pasture compromise vegetation around ditches, and contribute to erosion. Town officials are asking landowners to move fencing out of the ROW to allow ditching work and ongoing maintenance.

In some areas, fencing on road shoulders has prevented ditching altogether in key upslope areas, trapping water on road.



**Gratton Hill Rd Stone Ditches w/ Culvert Upgrades – Site 1
Charleston FY2017 Better Roads Application**



Undersized culverts will be replaced and splash pools installed at culvert outlets, like this one - leading directly to Charleston Pond below - to mitigate erosion.

Gratton Hill Rd Stone Ditches w/ Culvert Upgrades – Site 1
Charleston FY2017 Better Roads Application



Undersized and plugged culverts, full ditches trap water on road and contribute to road erosion.



Photo at left: sinkhole developing above outlet of undersized culvert. Upsized culverts and stoned ditches will prevent erosion from overland drainage sources (like this driveway)

State of Vermont
Highway Division
Maintenance & Operations Bureau
District 9
4611 US Route 5
Newport, VT 05855
vtrans.vermont.gov

Agency of Transportation

[phone] 802-334-7934
[fax] 802-334-3337
[ttd] 800-253-0191

April 11, 2016

Letter of Recommendation

To Whom It May Concern,

The Town of Charleston has expressed concern over the condition of Gratton Hill Rd. The Town has been in close contact with the District 9 office and we have performed site visits to investigate and concur with their concern. In order to eliminate erosion resulting in sediment entering Charleston Pond and the Clyde River, the town is proposing to do approximately 6000' of stone-lined ditching and install check dams where appropriate. To additionally support healthy water flow and drainage on Gratton Hill Rd, they also intend to replace 15 Culverts that are undersized and/or underperforming, installing splash pools at outlets when needed.

It is of our opinion, being the District Project Manager and Tech Team, that this project is a good fit for a Better Roads Grant. We have assisted the town to determine best practices and will continue to provide support and assistance throughout the project.

Thank You.

Sincerely,



Eric Pope

District 9 Technician



October 7th 2015

Scott Robertson
TAP Coordinator
VT Agency of Transportation
Municipal Assistance Bureau
1 National Life Drive
Montpelier, VT 05633

RE: Charleston Transportation Alternatives Grant Application

Dear Scott,

The Town of Charleston is applying for a Transportation Alternatives Program Grant. The project will involve 6000 ft of ditching and replacement of 15 undersized culverts to improve stormwater management, reducing erosion and preventing water pollution due to highway runoff in the Clyde River watershed. This proposal is supported by the regional plan transportation policies and goals in a number of areas, among them:

- Identify a Variety of Funding Mechanisms to Assist Towns in Maintaining Local Road Infrastructure
- Slow the deterioration of individual modes, and assist in reducing/averting costly repairs.

NVDA strongly supports the selection of this project for funding through the Transportation Alternatives Grant Program.

Sincerely,

--

Douglas C. Morton
Senior Transportation Planner
Northeastern Vermont Development Association
P.O. Box 630
36 Eastern Ave
St. Johnsbury VT 05819
Ph (802) 748-5181
Fx (802) 748-1223
dmorton@nvda.net

Charleston Road Erosion Site Inventory May 2014 (Update)

Site: Gratton Hill Rd from 1487 to Durgin Rd

Date of Update: 5/14/15	Name/Signature: notes taken by Colleen Kellogg
Priority/Project Year	2016
Road Name	Gratton Hill Rd
TH#	16
Location	from 1487 driveway down to Durgin Rd intersection
Nearest Body of Water	Clyde River/Charleston Pond
Distance to Water Body	at closest point (Durgin Intersection) ~300ft
Current Condition	At 4/23/15 Selectboard Meeting: board agreed to apply for a Better Backroads grant to ditch Gratton Hill Rd. At 5/14/15 Selectboard meeting: Foreman reports that a culvert at Durgin and Gratton Rd (1st Culvert on Gratton Hill Rd) is not working properly—water runs under, and structure around is falling. It has been stabilized with rip-rap.
Proposed Solution	All undersized culverts on Gratton should be replaced in and stone-lined ditches installed along this 6000 feet of road.

Estimate Costs to Improve/Repair

Culvert, Ditch & Bank Stabilization		
Materials:		Cost:
Total Culvert, Ditch & Bank Stabilization		
Crowning and Re-grading		
Materials		Cost:
Materials		Cost:
Equipment		Cost:
Equipment		Cost:
Equipment		Cost:
Labor		Cost:
Total Crowning and Regrading		
Total Estimate for this project		