



# FY17 Vermont Better Roads Grant Application

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

Town/Organization: Town of Westmore Contact Person(s): Steve Davenport

Address: 54 Hinton Hill Rd Orleans, VT 05860

Email: westmorehighway@gmail.com Phone: (802) 525 - 4708

DUNS #: 35529718 Fiscal Year End Month (MM): 12

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: Town of Westmore

Project Name: Old Cottage Lane Phase 1

Road Name: Old Cottage Lane TH #: 30 Structure # (if applicable): \_\_\_\_\_

Road Type: Unpaved Uncurbed  
Class 3

Watershed: .25 sq mi

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

The road becomes very soft in the spring causing surface erosion to flow into the lake. Ditching and culverts are difficult to properly locate for optimum drainage because the road is very narrow and several places have ledge sections that flow into the ditch line and in some locations, under the road. In addition to ledge compromising the placement of culverts, the many residents have concerns about any newly installed culverts sending water into their property.

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):

We will be excavating 700' of our class three section. We will begin by excavating the existing road base down 2'. We will replace it with 1' of 3"-6" drainage stone, a layer of road fabric, 6" of 1 1/2" dense grade gravel and top it with 6" of 3/4" crusher run gravel. At the end of phase 1 we will be installing a concrete catch basin and 18" culvert as described in our road inventory report. All disturbed areas on the ditch line will be seeded and mulched upon completion.

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

Water quality will significantly benefit from this project by reducing surface erosion. At its closest point this project is 144' from Willoughby Lake. Every year we have culverts plugged with surface material and sediment flow into residents property's and in to the lake. By controlling the flow of water we can ultimately control the sediment flowing into Willoughby lake.



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

Progress to Date:

Approximately 300 cu. yd. of 3" stone has been added during mud season to allow travel.

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

Yes, When this road is in its worse condition, Town vehicles, emergency vehicles, service vehicles and residents are unable to traverse the roadway.

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.):

Dave Antone / Municipal Public Works Consulting  
VTrans District 9 AOT  
Alan May / Better Roads

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

Yes

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

Some. We will hire a local excavator with a bigger excavator than the town owns, this will also allow three of the towns trucks to haul aggregates. The town road crew will provide all materials, trucks and oversee this project. This project will take more time to complete than normal. We will close the road during the day but will have to open it every night for the residents. This has added to the overall cost.



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

See Attached

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

In kind services and funds budgeted for grant match.

Requested Grant Amount (\$20,000 max Category B, \$40,000 max Categories C & D): \$40,000.00

Estimated Total Project Cost (including 20% local match): \$40,588.75

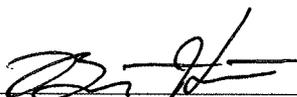
Estimated Completion Date: 10/01/2016

**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.

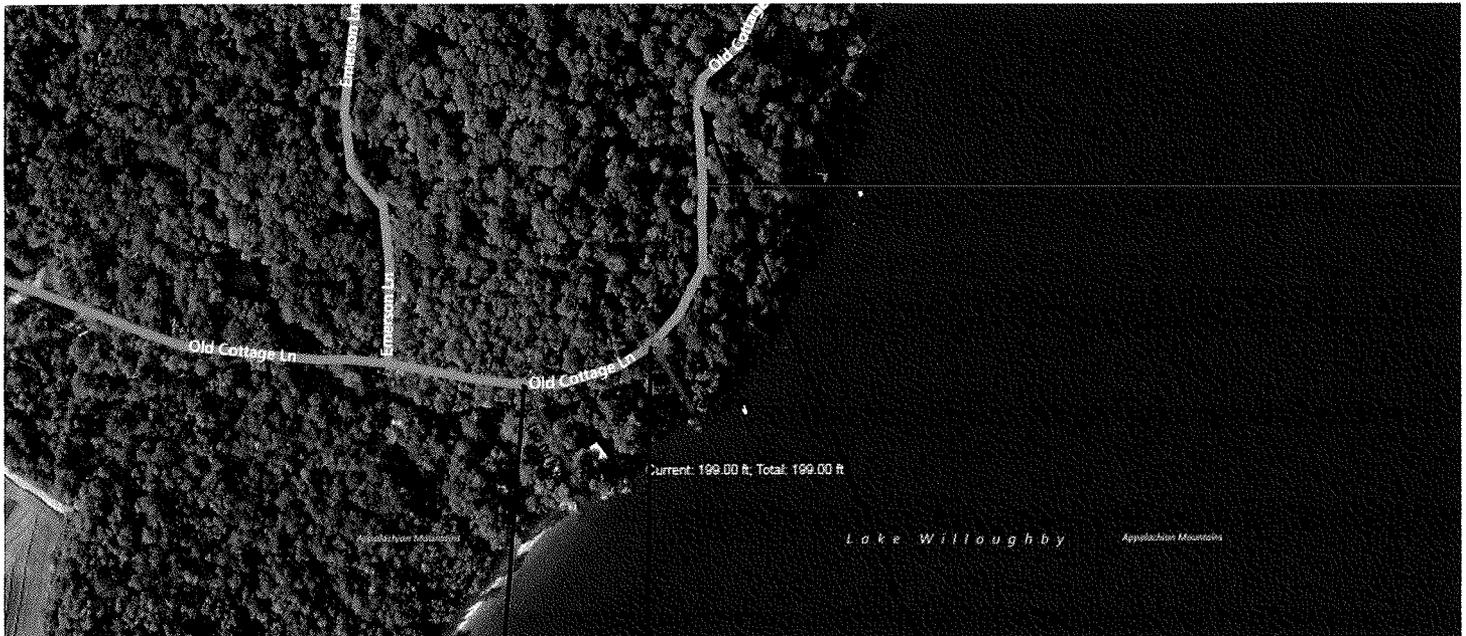
**SIGNATURE OF APPLICANT: (Must be Town Administrator/Manager or Select Board Chair)**

Name: 

Title: Selectboard Chair



# Work area distance from Willoughby Lake

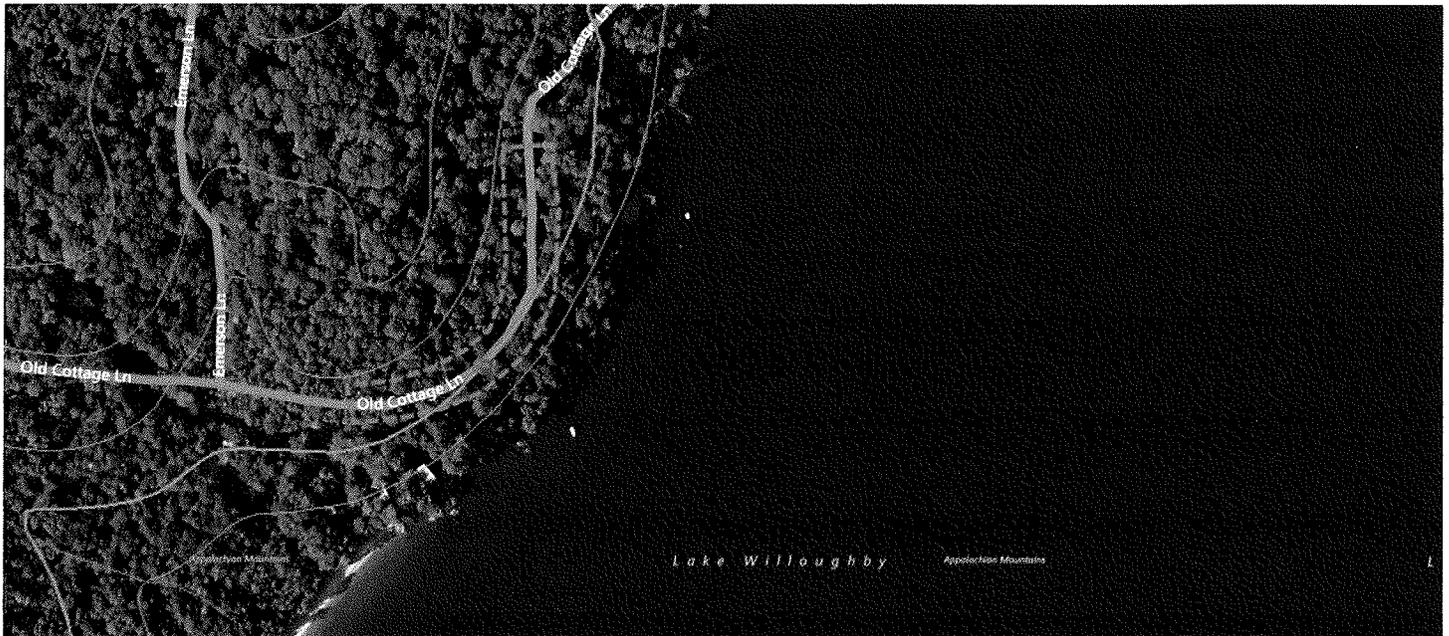


199'

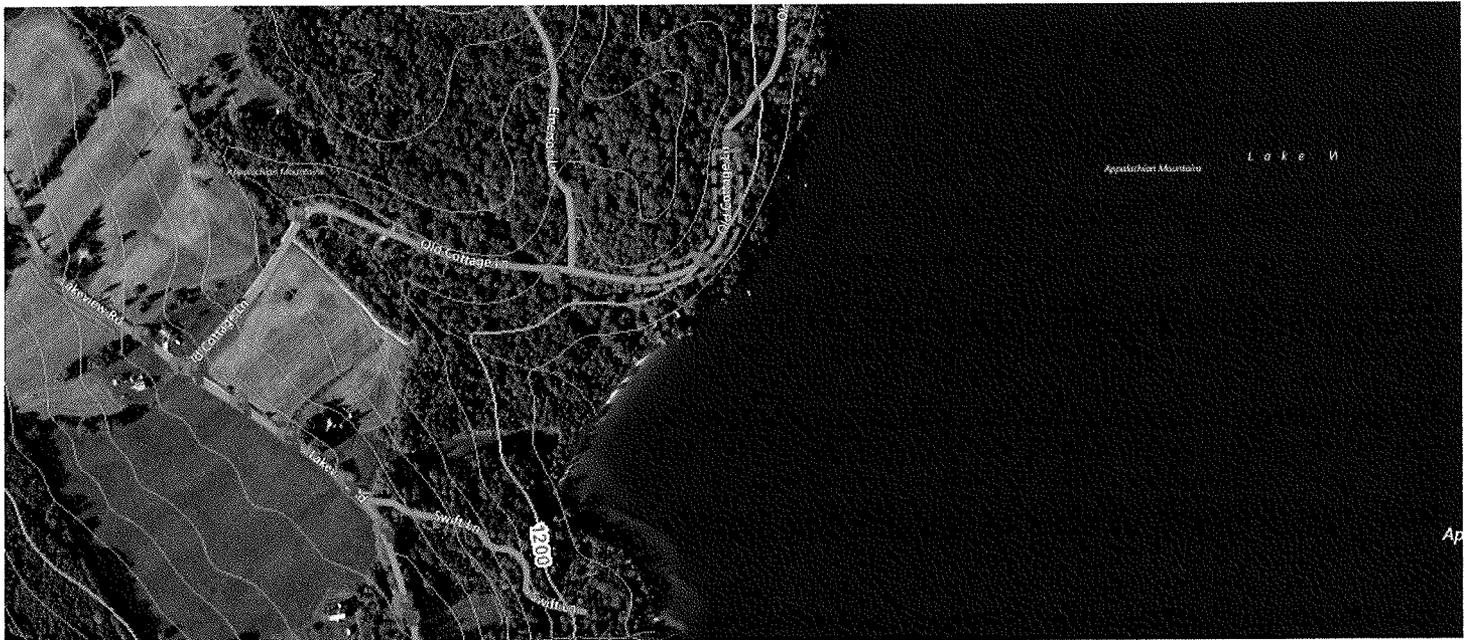
124'

239'

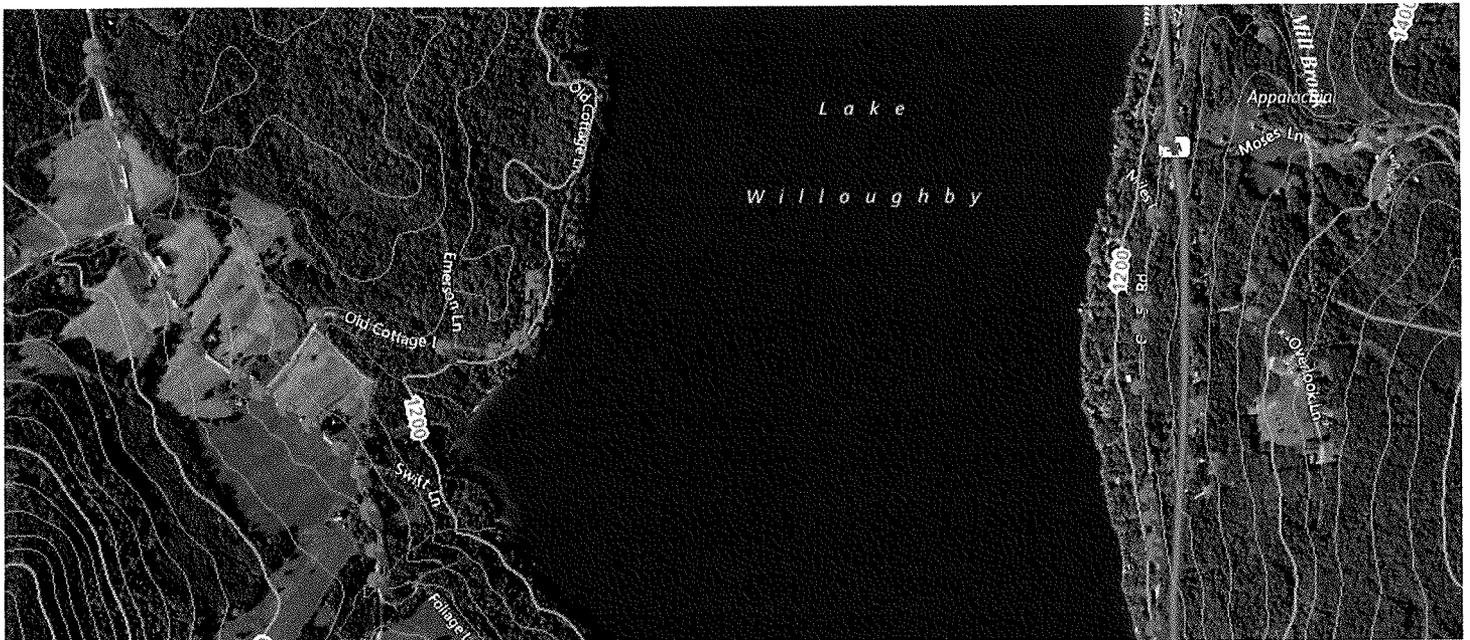
Red dotted line indicates project work area



Red dotted line indicates project work area

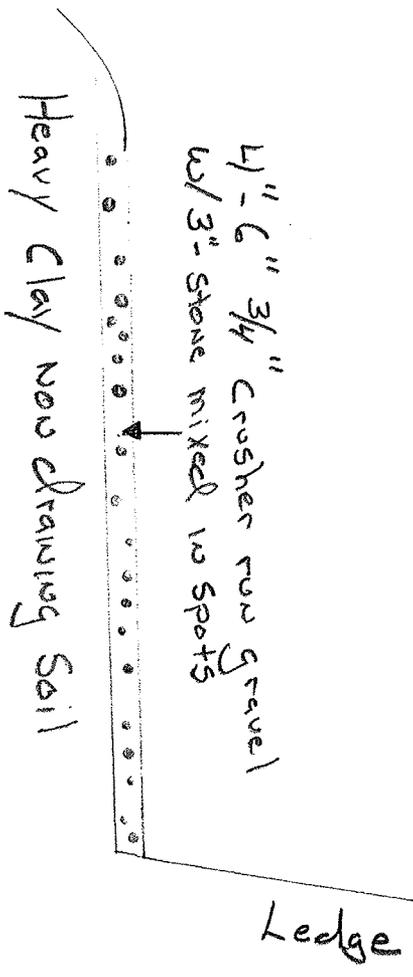


Red dotted line indicates project work area

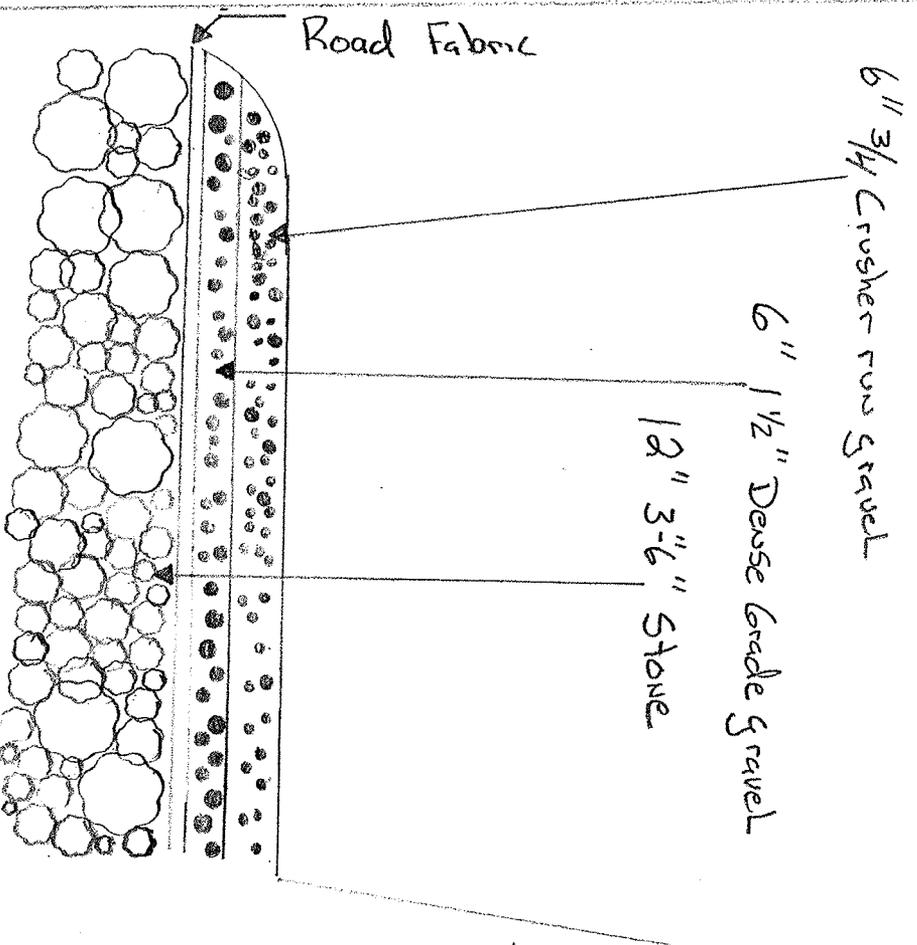


Existing Road base

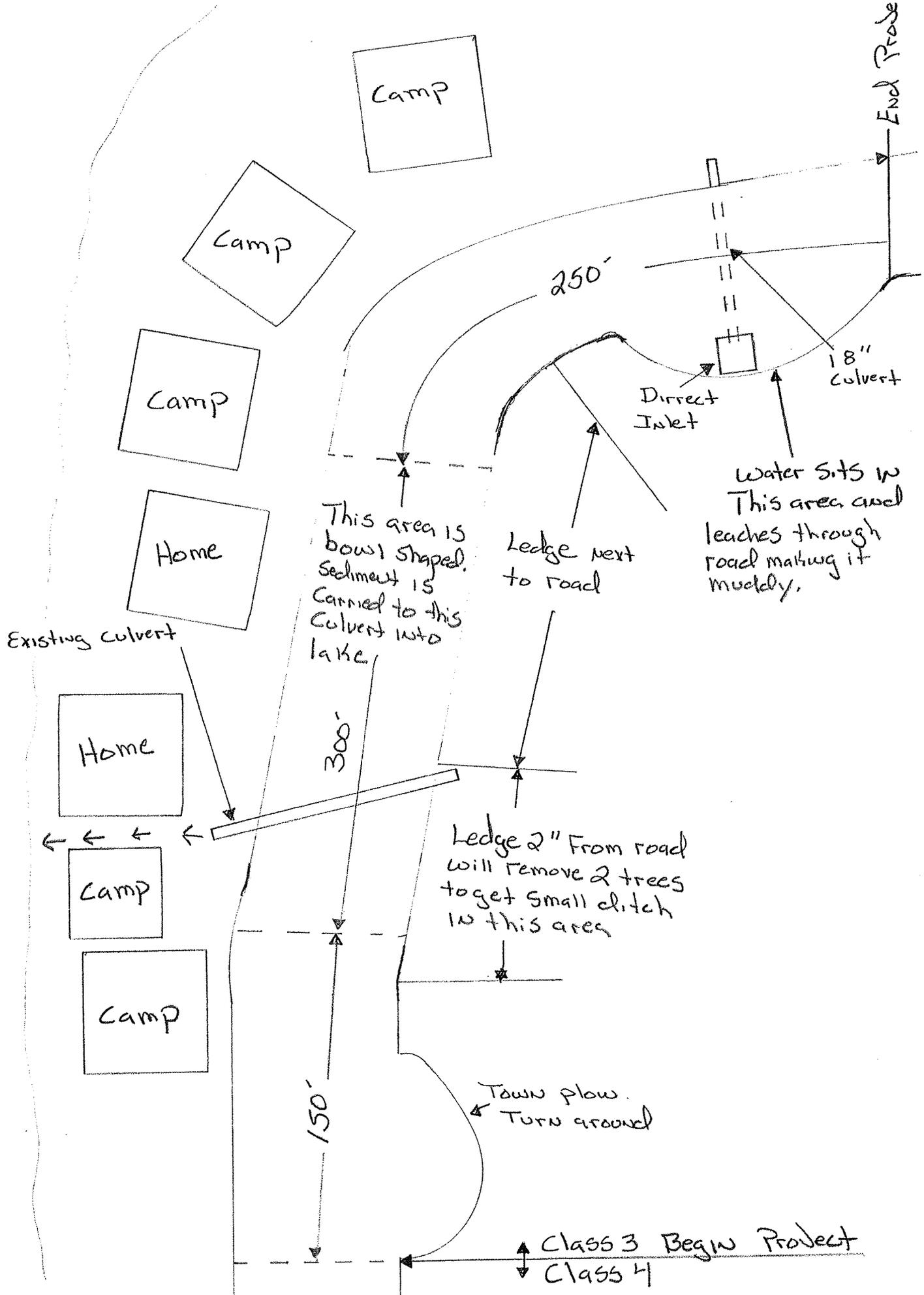
900 cubic yards (Est) will be removed from the roadway.



Proposed Road base



Willoughby Lake



Camp

Camp

Camp

Home

Home

Camp

Camp

End Probe

250'

18" Culvert

Direct Inlet

Water sits in this area and leaches through road making it muddy.

Ledge next to road

This area is bowl shaped. Sediment is carried to this culvert into lake.

Existing culvert

300'

Ledge 2" from road will remove 2 trees to get small ditch in this area

Town plow. Turn around

150'

Class 3 Begin Project  
Class 4

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 Westmore has expressed concern over the condition of Old Cottage Lane, the roadway softens up in the spring causing surface erosion to flow into Willoughby Lake. The Town has been in close contact with the District 9 office and we have performed a site visit and agree with Westmore's concerns. In order to mitigate the continued erosion and lake contamination, the town is proposing to excavate the road surface and replace it with more appropriate applications and materials.

It is of our opinions, 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 for this site, and will continue to provide support and assistance throughout the project.

Thank You.

Sincerely,



Eric Pope

District 9 Technician

David Antone  
[Roadtech005@gmail.com](mailto:Roadtech005@gmail.com)

45 Pleasant St., Essex Jct., VT 05452

Memo

To: Better Roads Grant Committee

I am sending this letter at the request of Westmore Road Foreman, Steve Davenport. I believe that, in most cases, there is clear distinction between drainage projects and road rebuilding. In this case, at this location, the distinction is less clear. Many portions of Old Cottage Lane can be served well using traditional ditch and culvert drainage but the location of this project presents many obstacles that make traditional methods impractical and unwise. The obstacles such as ledge under the road, unstable embankments descending to the road, and very limited spill areas for culvert outflows, will all lead to an unsatisfactory project result if traditional methods are employed. The best option at this location is to build a better draining and more resilient road. The road itself, being built with a drainage layer first and additional dense grade in the base layer, is a better option than trying to rely on ditches that will fail quickly. I have not seen the town's final design of the project but I do recommend avoiding ditches, at this location, as they will create more sediment flow to the lake. Some cross under-drains may be necessary at the low point of this project. I have not assisted the town with the final design.

Under-draining the road and building a coarse base is the best option in this location. Traditional drainage will create more sediment problems than it solves. This is drainage project as well as a road rebuild.

Respectfully,  
David Antone  
Municipal Public Works Consulting

**OLD COTTAGE LANE PROJECT**-This project area involves a residential access road that leaves Lakeview Road and descends down to Lake Willoughby. The access from Lakeview Road to the lakeshore is a 600 ft. downhill section of road that levels out at a branch stream crossing, at the bottom of the hill, and then turns to follow the Lakeshore access road.



The stream crossing, at the foot of the hill, collects sediment from the short downhill access from Lakeview road. The stream then flows directly into the lake. Once the road turns to follow the lakeshore, the lake becomes visible very quickly. The road needs drainage reconstruction from beginning to end.

The road becomes very soft in the spring causing surface erosion to flow to the lake and hindering plow trucks. Installing drainage on this narrow road is a difficult proposition for many reasons. The road is very narrow throughout with little room for adequate ditching to be constructed. On the wooded side of the road there are several ledge sections that flow into the ditch-line and, in some locations, under the road. Ditching and culverts are difficult to properly locate for optimum drainage. In addition to ledge compromising the placement of culverts, the many residents have concerns about any newly installed culverts sending water into their property.

The residents would also object to raising the road profile because many have downhill drives that already are difficult to exit when entering the road. Residents would prefer that the profile remain as is or to have any change improve difficult drive accesses. For all of the reasons mentioned, there is currently very poor drainage on this road. Past attempts to put in culverts have not been successful and, in most places of need, culverts would need to be very small in diameter and some outflows would be set in poor locations.

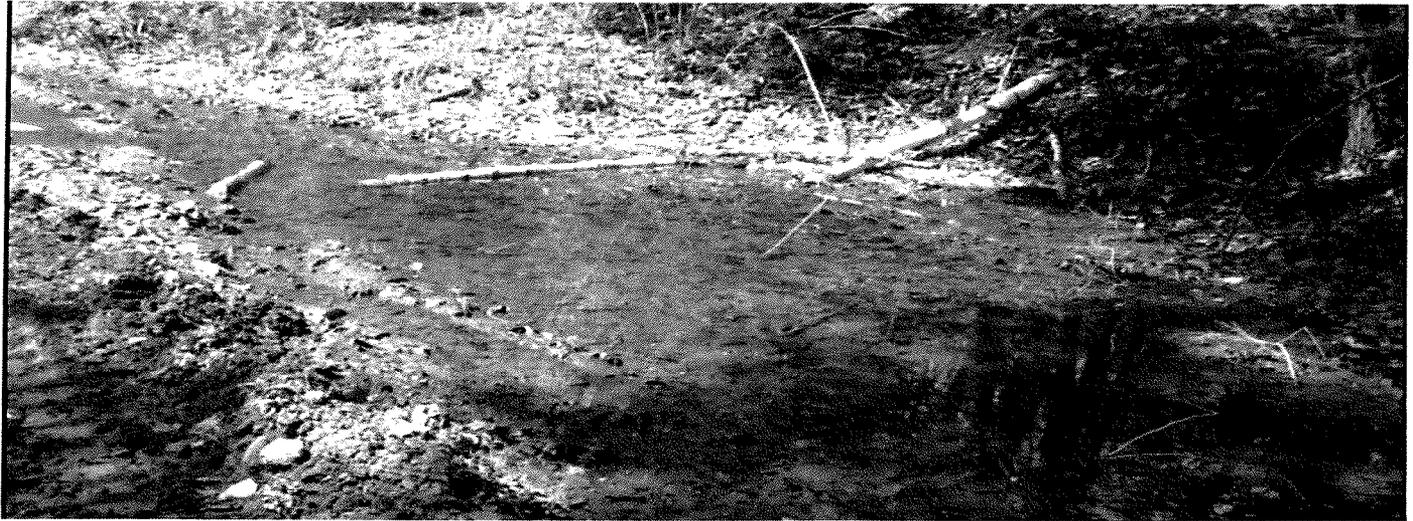


This culvert is installed 25 feet uphill from the low point in the road because of ledge and the fact that the outflow is going to the only available open space on the outflow side.



The road is currently only able to accommodate crude grader ditches in most locations. Installing ditches would require extensive tree removal and excavation into the hillside slope, much of which has ledge in multiple locations.

In areas where ditching and culverts can be accommodated, these traditional methods will be employed but in order to overcome the many obstacles mentioned, much of the road would be more practically addressed by an underdrain system. Using underdrainage in multiple locations would more aptly address environmental and citizen concerns. Smaller piping will accommodate the need to keep road profiles acceptable and distribute outflow water in more a subdued fashion while reducing sediment in those flows. In some locations, such as illustrated below, pullout areas will be made more usable by installing small catch basins:



In addition to work needed along the residential shoreline area, there is a need to improve the ditch on the downhill access from Lakeview Road:



The ditch coming down from Lakeview Road should be stone lined and a turnout is recommend 150 feet before the stream.



The project details and estimate that follow will take into account the whole road from Lakeview Road to the plow turnaround on Old Cottage Lane.

#### **OLD COTTAGE LANE PROJECT DETAILS:**

- 600 feet of stone lined ditch from Lakeview to stream. Add turnout before stream
  - 100 feet minus of stone ditch beyond stream crossing on hillside of road
  - Stop open ditch and install 200 feet of underdrain to driveway- address 195
  - Replace the driveway culvert
  - Install underdrain in road near utility pole # 10-6.....Approximately 200 feet
- 5
- @ .3 mi. from Lakeview Rd., replace 15 inch metal culvert with 18 inch plastic
  - @ .4 mi. from Lakeview Rd., install small catch basin in turn-out and underdrainage to opposite side of the road. Also, add some drain piping from catch basin to roadbed.
  - Additional underdrainage will be needed in two road segments. The approximate total lineal road footage for those segments is 580 feet
  - Provide drainage stone bed under the whole road where underdrain will be used
  - Encase all drainage in permeable drainage fabric outside of the road and cover drainage bed in the road
  - Place processed road base and surface gravel over drainage stone (not included on estimate sheet)

**Project Estimate:**

Description	Units	Unit Cost	Cost
6 to 8 inch minus stone	120 yards	12.00 per yd.	\$ 1,440.00
6 inch perforated pipe	2000 feet	2.50 per ft.	5,000.00
4 inch perforated pipe	600 feet	1.00 per ft.	600.00
6 inch solid pipe	300 feet	2.50 per ft.	750.00
18" Hi-P plastic culvert	40 feet	14.10 per ft.	564.00
2 inch minus stone	500 yards	13.00 per yd.	6,500.00
Road Fabric 15' wide	800 feet	1.25 per ft.	1,000.00
Drainage Fabric 12' wide	1600 feet	0.95 per ft.	1,520.00
Catch Basins	2	550 each	1,100.00
Seed/Mulch/Fabric/Misc.			600.00
Excavation	140 hours	90.00 per hr.	12,600.00
Trucking	110 hours	80.00 per hr.	8,800.00
Grading	20 hours	90.00 per hr.	1,800.00
Labor	180 hours	16,00 per hr.	2,880.00
<b>Project Estimate Total</b>			<b>\$ 45,154.00</b>

**Note:** The above estimate includes grant eligible drainage work only and does not account for new gravel that will need to be added to the road. Project grant requests will have add gravel cost.

The Old Cottage Lane Project will likely completed in multiple phases over an extended period of time.

**LONG POND ROAD PROJECT**-Long Pond Road begins an uphill ascent from Lake Willoughby directly across the road from where it intersects with Route 5A. Most of the road is paralleled by a large stream that deposits directly into Lake Willoughby:

