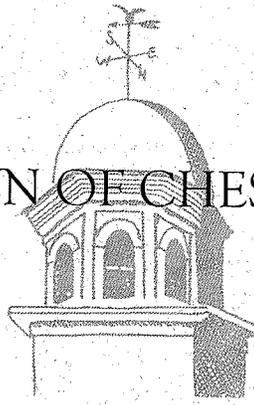


TOWN OF CHESTER



556 Elm Street
P.O. Box 370
Chester, VT 05143

(802) 875-2173
Fax (802) 875 2237

April 12, 2016

Alan May
Agency of Transportation
Municipal Assistance Bureau
1 National Life Drive
Montpelier, Vermont 05633

Re: FY 17 Better Back Roads Grant
Chester, Vermont

Dear Mr. May:

Enclosed please find two completed applications for the Better Back Roads Grant on behalf of Chester, Vermont. One application is for a Category C project which would be Chester's priority project. The second application is for a Category B project.

Please do not hesitate to contact me should there be any questions or concerns. Thank you for your consideration of this grant.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Julie S. Hance', is written over a horizontal line.

Julie S. Hance
Executive Assistant



FY17 Vermont Better Roads Grant Application

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

Town/Organization: Chester Contact Person(s): Julie Hance

Address: 556 Elm Street, Chester, Vermont 05143

Email: jhchester@vermontel.net Phone: (802) 875 - 2173

DUNS #: 73995839 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



1

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 Chester

Project Name: Chester Stormwater Mitigation for Gravel Roads

Road Name: Smokeshire/Murdoch TH #: 914 Structure # (if applicable): _____

Road Type: Unpaved Uncurbed

Class 3

Watershed: Williams River

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

Murdoch Road has a very steep roadway where ditches are easily overwhelmed. Sheets of water go over the road and side of the road straight into the stream thereby causing a water quality issue. Smokeshire Road is being undermined and collapsing into the stream. There is a steep 15-20 ft vertical slope between the road and the river.

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):

Murdoch Road: Reshaping and stone lining approximately 350 feet of ditching. Reinforce the downslope side of the road with riprap. Smokeshire Road: Create a stacked stone wall to stabilize the bank and road. Regrade the road to align with the ditch. On both roads, work will be done ensuring that Best Management Practices are used.

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

Murdoch Road: Reshaping and lining the ditch will alleviate erosion of the roadway and reduce the sediment and phosphorus distributed by the Town of Chester roadways into the Williams River. Smokeshire Road: Stabilizing the slope with a stacked stone wall will prevent the roadway from further collapse into the river which not only prevents sediment and phosphorus into the Williams River, but eliminates a road safety issue as well.





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

Progress to Date:

The site has been reviewed and identified in our Inventory. Matching funds have been set aside.

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

Smokeshire has been identified as a high risk site in our Erosion Inventory due to the collapse of the road into the Williams River. Murdoch is a medium risk site. These roads are located in a remote portion of Chester. Mobilizing all equipment one time would be more cost efficient and time efficient, creating better use of taxpayer money.

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: Town of Chester Road Erosion Inventory 2015

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.):

Regional Planning Commission helped identify these areas through the Erosion Control Inventory performed in 2015. In addition, Jim Ryan from VTrans has visited these sites along with the town's Public Works Director. Todd Menees has visited both sites and has approved the requested work to be done.

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

Yes. The work to be performed on both Murdoch Road and Smokeshire Road are located in the Town of Chester's right of way.

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

Yes. All work will be completed by the Town of Chester Highway Department. All equipment used is owned by the Town of Chester as well.



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

The Grant funds will be used to purchase the required materials. The town will be utilizing its road crew and equipment to perform the work. The road crew will be reimbursed at their rate of pay plus benefits per hour for 4 men for 6 days. The town's equipment will be reimbursed at the appropriate State rate. See Budget form attached.

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

The Town of Chester created a Grant Fund several years ago. The Grant Fund is funded through taxes and is voted on each year at Town Meeting. This project has been approved for expenditure through this Grant Fund for 2016.

Requested Grant Amount (\$20,000 max Category B, \$40,000 max Categories C & D): \$ 25,473.60

Estimated Total Project Cost (including 20% local match): \$ 31,842.00

Estimated Completion Date: 12/31/2016

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: David [Signature] Title: 4.12.16



Cost Estimate Worksheet

Town and Road Name: Town of Chester, Smokeshire and Murdoch Roads

Project Name: stormwater mitigation for gravel

Labor		Rate	# Hours	Total (Rate x Hours)
Murdoch Road				
Four Men x 3 days		42.00	96	4032.00
Smokeshire Road				
Four men x 3 days		42.00	96	4032.00
Labor Total				8064.00
Equipment		Rate	# Hours	Total (Rate x Hours)
Both Roads:				
3 Large Dump Trucks		60.00	144	8640.00
1 Excavator		60.00	48	2880.00
1 Grader		60.00	4	240.00
1 Loader		40.00	48	1920.00
Equipment Total				13680.00
Materials		Rate	Amount	Total (Rate x Amount)
Murdoch Road:				
7 inch stone		15.66	300	4698.00
Smokeshire Road:				
4' stone		20.00	220	4400.00
Gravel		10.00	100	1000.00
Materials Total				10098.00
Miscellaneous		Rate	Amount	Total (Rate x Hours)
Miscellaneous Total				0.00

Grand Total 31842.00

Match 6368.40

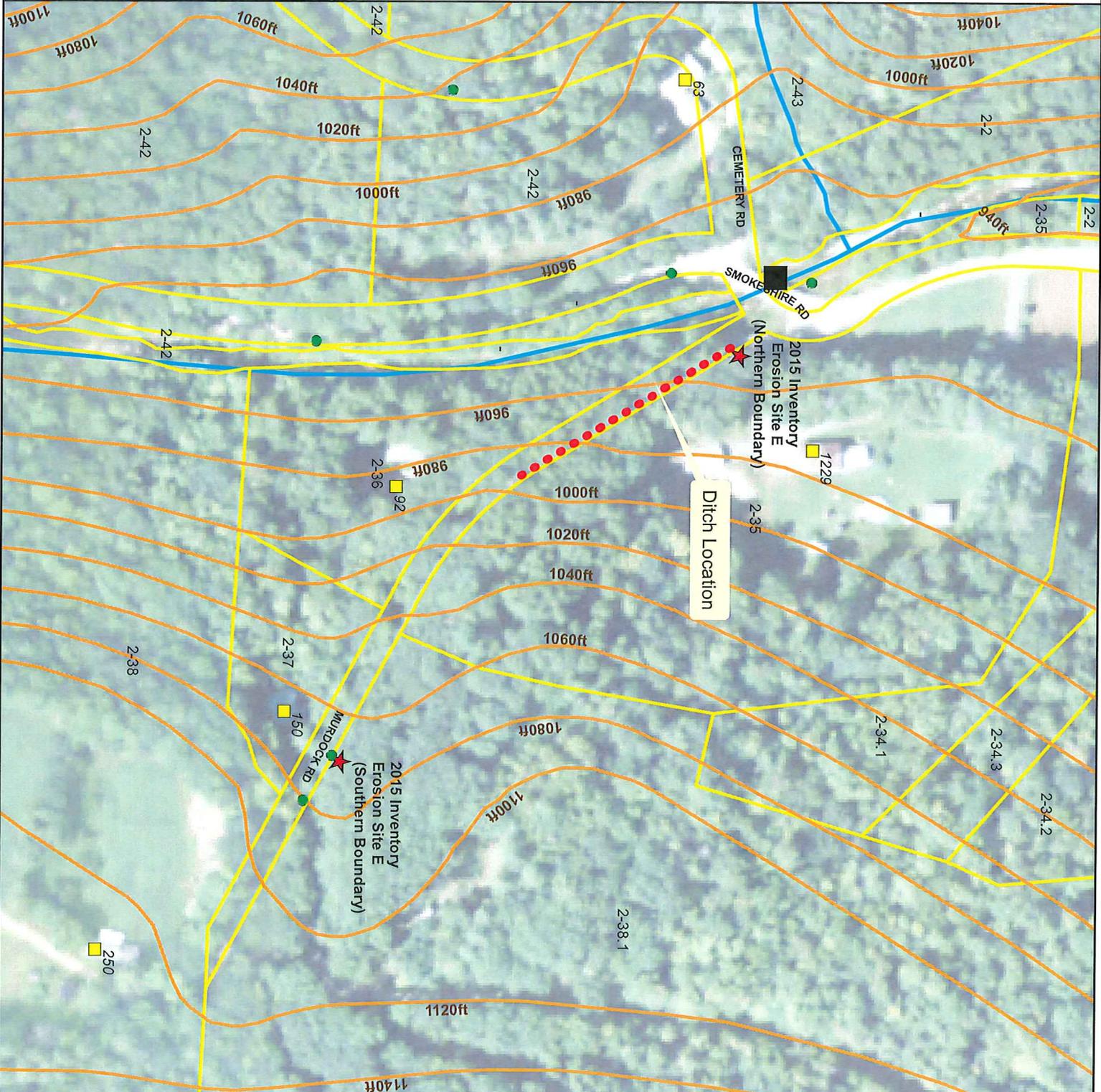
Murdock Site Location Map Better Roads Application 2016

- Town Bridge
- Town Culvert
- Erosion Site
- Building
- 20ft Contours
- Parcel boundary
- VT State Highway
- River or Stream
- Lake or Pond

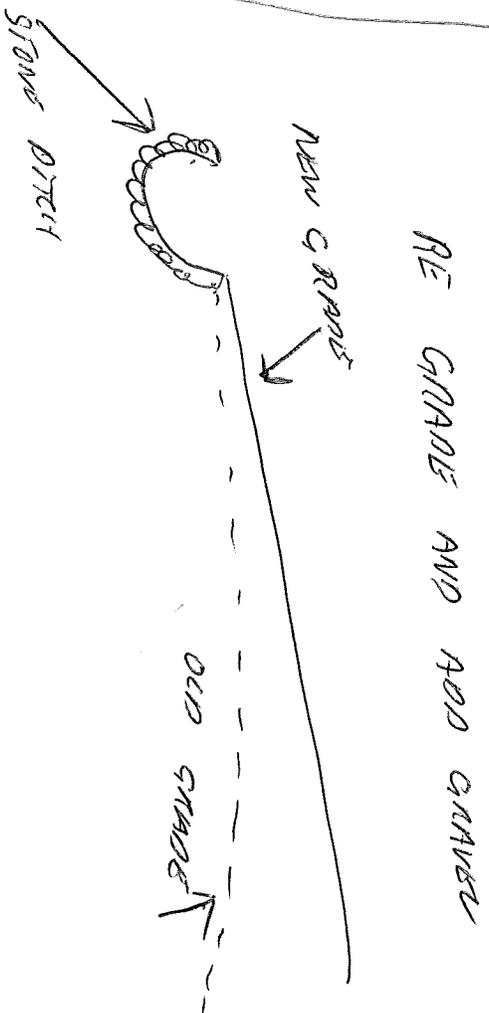
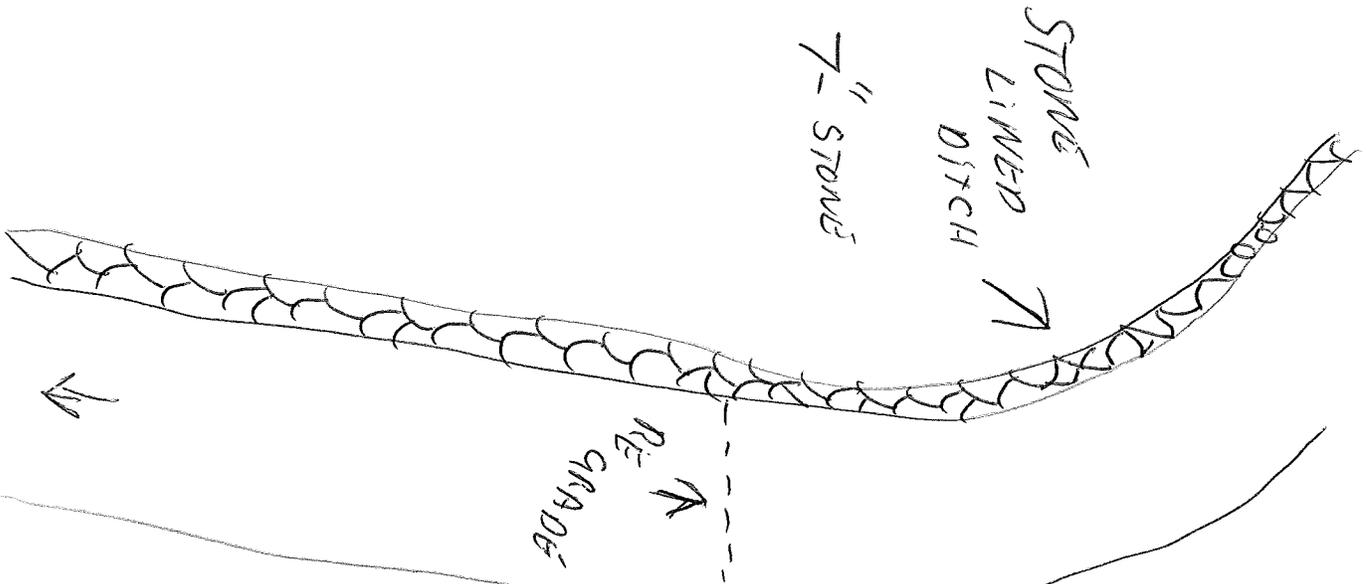


Map drawn April 6, 2016
by Southern Windsor County RPC

Data sources: Roads (VTrans 2015), Streams and Ponds (VHD 2008), Bridges and Culverts (SWCRPC and Town 2015), Erosion Sites (SWCRPC and Town 2015), Parcels (Cartographic Associates 2015), Contours (VCGI/USGS 2012), Aerial (NAIP 2014), Buildings (E911 2015)

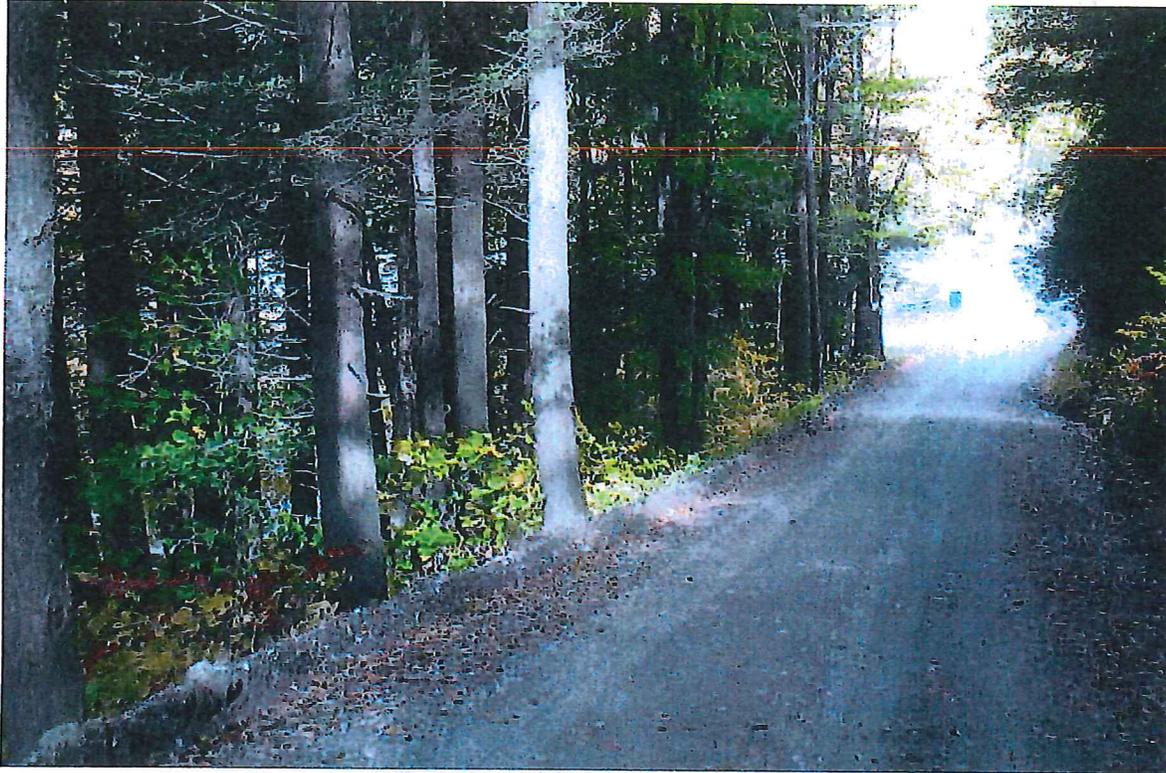


MURDOCH RD



Murdoch Road

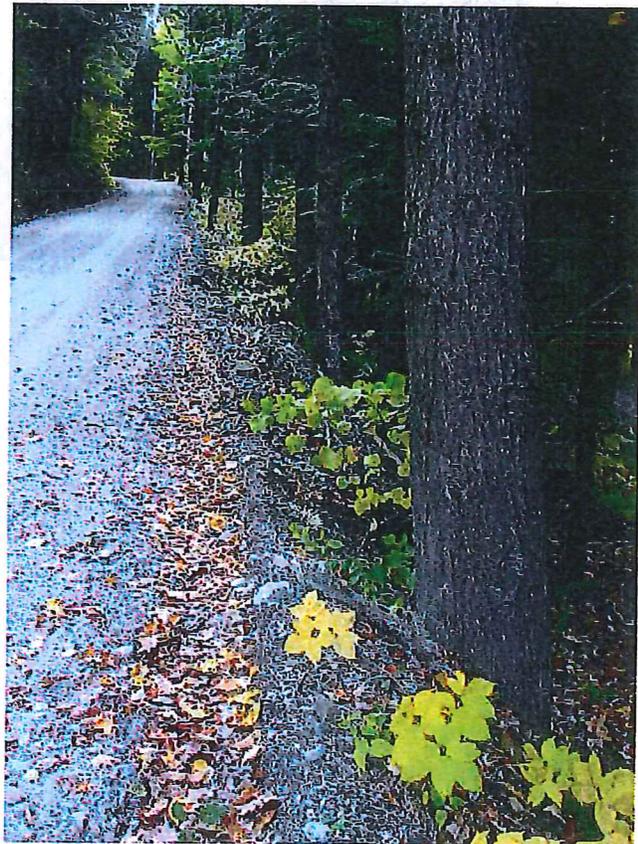
Site Photos



Top: Looking down Murdoch Road

Bottom Left: Looking up along the upslope side of the road.

Bottom Right: Looking up the downslope side of the road which includes a small berm.



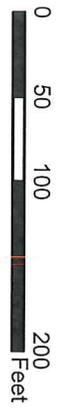


Steep cross-slope of roadway.
Roadway cuts through the hillside
around where the red arrow is



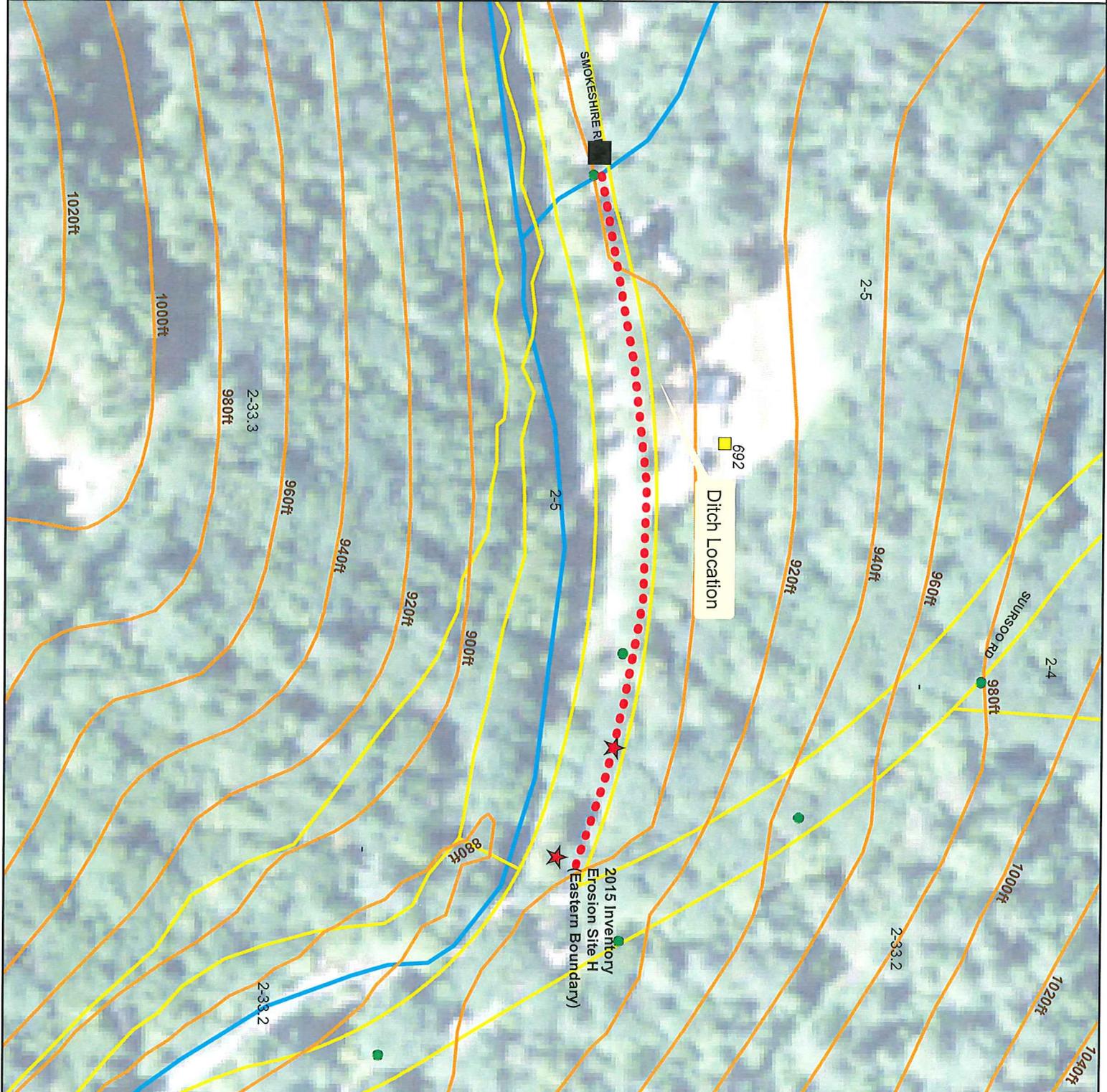
Smokeshire Near Suursoo Site Location Map Better Roads Application 2016

- Town Bridge
- Town Culvert
- Erosion Site
- Building
- 20ft Contours
- Parcel boundary
- VT State Highway
- River or Stream
- Lake or Pond



Map drawn April 6, 2016
by Southern Windsor County RPC

Data sources: Roads (VTrans 2015), Streams and Ponds (VHD 2008), Bridges and Culverts (SWCRPC and Town 2015), Erosion Sites (SWCRPC and Town 2015), Parcels (Cartographic Associates 2015), Contours (VCGI/USGS 2012), Aerial (NAIP 2014), Buildings (E911 2015)



NEARBY TO DITCH

SMOILSHANE RD

SMOILSHANE RD BY SCURSOD RD



4'-
SPONS
RIVER

RIVER BOTTOM IS LEGGS

15'

WOOD

WASH

66'

4' - FLAT STONES



Smokesheue Road

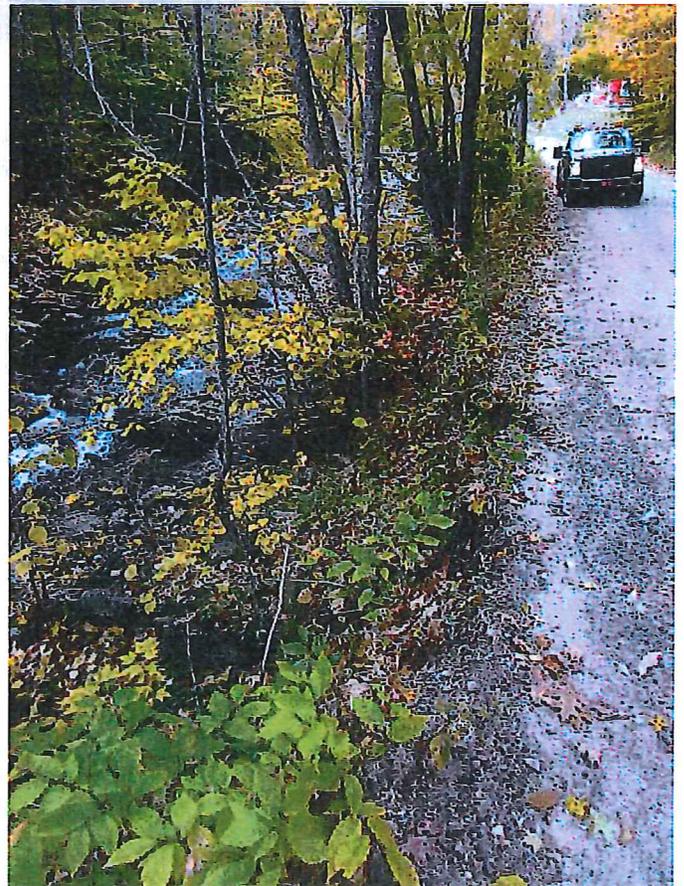
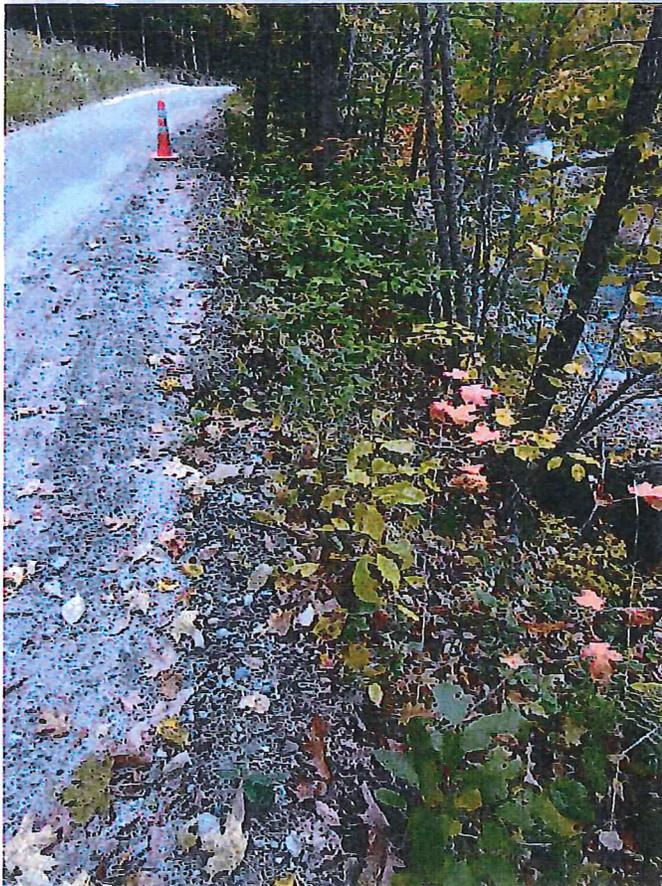
Site Photos



Top: Road edge starting to collapse into river.

Bottom left: Looking downstream (east) from existing collapse site.

Bottom right: Looking upstream (west) from existing collapse site.



Julie Hance Chester Admin

From: Menees, Todd <Todd.Menees@vermont.gov>
Sent: Thursday, April 14, 2016 5:50 PM
To: Julie Hance Chester Admin; Graham
Cc: Ryan, Jim; Katharine Otto; Caduto, Marie
Subject: Smokeshire Rd: Better Back Roads Grant Application
Attachments: Placed Rip-Rap Wall Typ Detail.pdf

Julie and Graham –

Graham and I first looked at this site on a sunny summer day in 2015, and I mistakenly presumed that the road and stream bank failure was caused by stream-flow-induced toe erosion at the bottom of the road embankment slope. Our discussion was far greater in extent of scope and resultant cost than is really needed. This location is immediately west of the intersection of Smokeshire Rd and Suurso Rd in the headwaters of the Williams River, and we discussed possibly relocating Smokeshire Rd and concluded that bedrock ledge conditions and the proximal road intersection configuration precluded that as a viable option.

Graham and I next looked at this site with Jim Ryan of the Municipal Stormwater Roads Program on a rainy winter day in early 2016 with Katherine Otto of SWCRPC and Marie Caduto of MAPP. Jim pointed out, and I then realized my mistake, that the rain-on-snow event causing road runoff down the road was trapped inside the snowbanks and causes the failure at the top gravel surface eroding the snowbank and earthen roadside.

This bank failure mechanism is road stormwater runoff NOT stream flow induced toe erosion at the bottom of the road embankment slope. I am pleased to report my mistake, and our 2nd repair discussion is far lesser in extent of scope and resultant cost that is the appropriate repair needed for future reduced maintenance, reduced erosion and water quality improvements.

I have attached a Placed Rip-Rap Wall Typical Detail as discussed in both meetings as the design concept to be used in an SAP application in the future. I look forward to processing a Stream Alteration Permit as the lineal extent of repair, associated cost and stream impacts are an order of magnitude less than what I had originally surmised on my first summer site visit. The result will be a better road for residents, less cost for taxpayers and improved water quality.

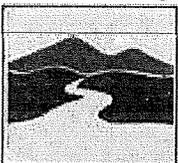
Thanks for contacting the Rivers Program -

Please note that my e:mail address has changed below:

Todd Menees, P.E., P.H., River Management Engineer
Watershed Management Division, Rivers Program
Vermont Department of Environmental Conservation
100 Mineral Street, State Office Suite 303
Springfield, VT 05156

802-345-3510 / todd.menees@vermont.gov

On the Web @ www.watershedmanagement.vermont.gov/rivers.htm



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
**WATERSHED
MANAGEMENT DIVISION**

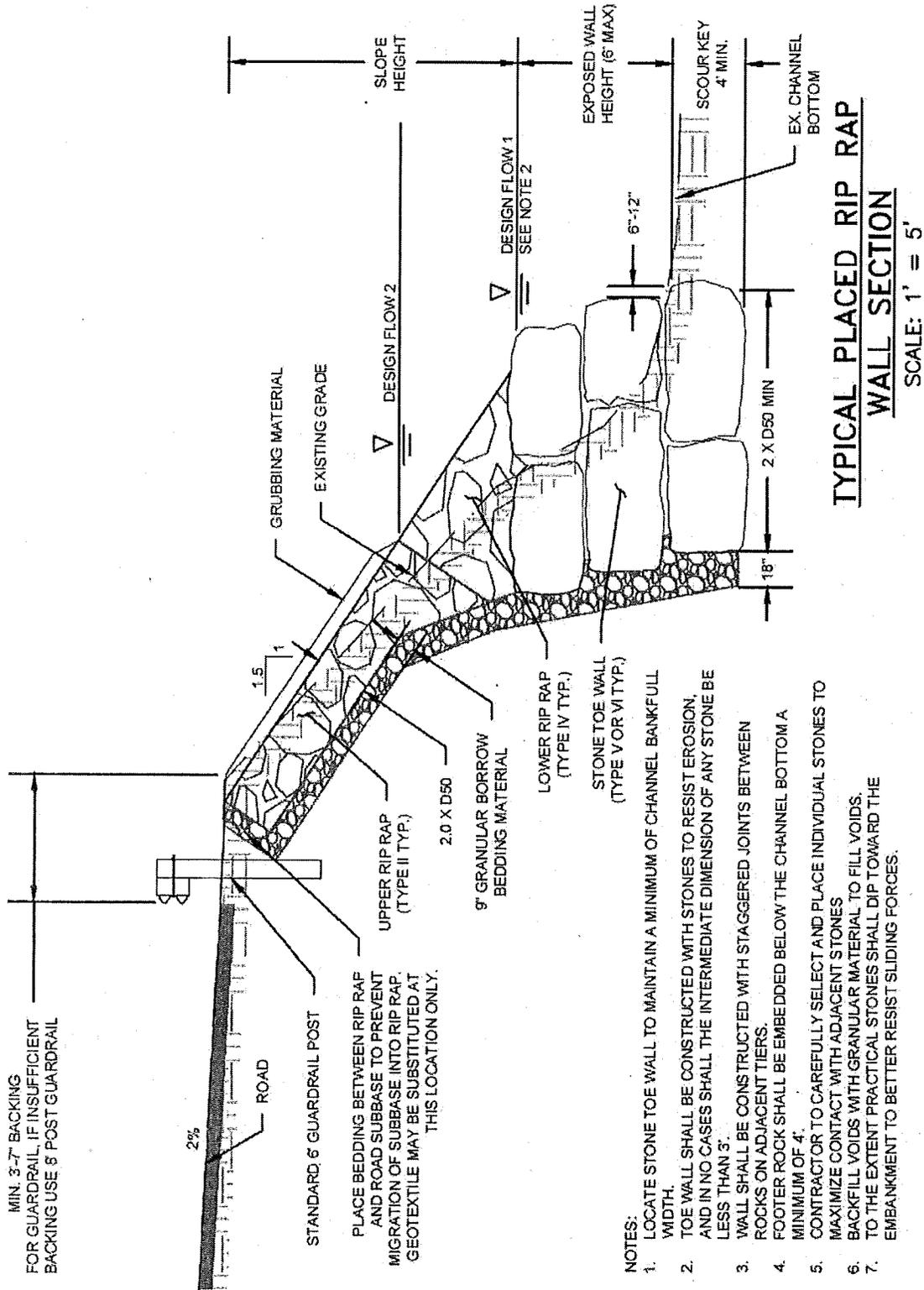


Figure 5.2-3: Placed riprap wall typical detail. (Source: Dubois & King and Milone & MacBroom, Inc., 5/1/2014)



**SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION**

Ascutney Professional Building, Route 5
Post Office Box 320, Ascutney, VT 05030
802 674-9201 www.swcrpc.org

April 11, 2016

Alan May
Vermont Agency of Transportation Municipal Assistance Bureau
1 National Life Drive
Montpelier, VT 05633

Subject: Smokeshire Road in Chester- 2016 Better Roads Application

Dear Alan,

We are writing in support of Chester's application for the Smokeshire Road project. Katharine Otto from our office visited the site in February 2016 with Jim Ryan (ANR), Marie Caduto (ANR), Todd Menees (ANR) and town representatives. The proposed work should significantly reduce the erosion issues along this stretch of Smokeshire Road directly next to the stream. This site was identified as a high priority site in the Town's 2015 Road Erosion Inventory which was completed by SWCRPC and the Town.

This project also supports the following goals and policies of the 2014 Southern Windsor County Regional Transportation Plan:

- Goal 6 - Strive to provide transportation infrastructures that are resilient to changing weather patterns and that efficiently and safely handle traffic during natural hazard events and other emergency situations.
- Policy 11 - Maintenance of the existing transportation system shall minimize water pollution, in accordance with the current Vermont Town Highway Codes and Standards, State stormwater rules and other best management practices.

Thank you for your consideration of this important project.

Sincerely,

Thomas Kennedy
Executive Director



**SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION**

Ascutney Professional Building, Route 5
Post Office Box 320, Ascutney, VT 05030
802 674-9201 www.swcrpc.org

April 11, 2016

Alan May
Vermont Agency of Transportation Municipal Assistance Bureau
1 National Life Drive
Montpelier, VT 05633

Subject: Murdock Road in Chester- 2016 Better Roads Application

Dear Alan,

We are writing in support of Chester's application for the Murdoch Road project. Katharine Otto from our office visited the site in February 2016 with Jim Ryan (ANR), Marie Caduto (ANR), Todd Menees (ANR) and town representatives. The proposed work should significantly reduce the erosion issues along this stretch of Murdoch Road. This site was identified as a medium priority site in the Town's 2015 Road Erosion Inventory which was completed by SWCRPC and the Town.

This project also supports the following goals and policies of the 2014 Southern Windsor County Regional Transportation Plan:

- Goal 6 - Strive to provide transportation infrastructures that are resilient to changing weather patterns and that efficiently and safely handle traffic during natural hazard events and other emergency situations.
- Policy 11 - Maintenance of the existing transportation system shall minimize water pollution, in accordance with the current Vermont Town Highway Codes and Standards, State stormwater rules and other best management practices.

Thank you for your consideration of this important project.

Sincerely,

Thomas Kennedy
Executive Director