



VTrans Fall 2022 Transportation Alternatives (TA) Grant Application

Thoroughly read the ***Vermont Transportation Alternatives Fall 2022 Application Guide*** before you begin your application. It includes important program information and step-by-step instructions. Pay particular attention to the application process requirements. **Applications are due in hand or by e-mail by December 14, 2022.** Please e-mail the completed application to: Scott.robertson@vermont.gov

Athens Bull Creek Stormwater Mitigation Scoping Study
(Project Name/Title)

802-869-3370
(Phone)

Hannah Regier
(Municipality contact person responsible for the management of this project)

townoffice@athensvt.gov
(e-mail address)

Athens
(Town)

\$ 40,000
Amount of **Federal Funds requested** (no more than 80% of the project cost estimate).

05143
(Zip Code)

\$ 10,000
Amount of Local Match. Example:
Federal Award = \$300,000 (80% of total)
Local Match = \$75,000 (20% of total)
Total Project Cost = \$375,000 (100% of the total)

25 Brookline Road, Athens VT 05143
(Mailing Address)

County: Windham

Town/Village/City: Athens

Specific location, street, or road: Ober Hill Road

Regional Planning Commission: Windham Regional Commission

If a linear project, what is the length in feet? 140 feet

Is the project on or intersecting to a State maintained highway? Yes No

- *Note: If yes, be sure to include documentation that you have notified the VTrans District Transportation Administrator of the intent to apply for TA funding and have provided them with a brief (one paragraph) description of the proposed project.*

Project type being applied for: **Scoping** **Design/Construction**

The municipality understands that a typical construction project utilizing Transportation Alternatives Program funds will take roughly three years (min.) in the Design and ROW phases prior to going to construction (as pointed out in the TA Program Application Guide)? Yes No

Does this project have a previously completed scoping or feasibility study? Yes No

Note:

Attach a map(s) of the project area and clearly show the limits of the project as well as surrounding benefits from the proposed improvement. If the project is within or adjacent to a designated downtown, village or growth center, clearly indicate the relationship of the proposed project to the boundary of the designated area. Color photos of the area are also recommended.

Fiscal Information:

Accounting System Automated Manual Combination

SAM Unique Identifier # G2KUW8E69CL5

Fiscal Year End Month December

Property Ownership:

If the proposed project is on private property that will need to be acquired by the Municipality through purchase, easement, or eminent domain (includes temporary construction rights) in accordance with the “Uniform Act”, then the municipality is committed to exercising its right of **eminent domain** to acquire the rights to construct the project if necessary. Yes No

Funding:

Does this project already have existing funding? If so, please describe. Yes No

[Click here to enter text.](#)

Will you accept an award less than you applied for? Yes No

- If yes, please indicate whether local funds will be used to make up the shortfall, or if the project scope will be reduced. If the project scope is to be reduced, describe what part of the project (please be specific) you would accept partial funding for.

[Click here to enter text.](#)

A support letter from the governing body of the applicant municipality or organization and an acknowledgement and source of the local match and commitment to future maintenance responsibility for construction projects is required (must be dated within 1 year of the application). Is a letter of support attached?

Yes No

Regional Planning Commission Letter of Support:

In order to apply, the project must have a letter of support from the regional planning commission. Is a letter of support attached?

Yes No

Application Scoring Criteria:

- 1. Please give a brief description of the project (be sure to indicate the primary facility type being applied for and be concise). (10 points max.)**

This project is for a scoping study to determine the most feasible option to address persistent flooding and sedimentation issues on Bull Creek where it crosses Ober Hill Road behind the town office building. There are persistent flooding and large-scale erosion problems during highwater events due to the existing small bridge and adjacent stream bank armoring being undersized and poorly aligned with the stream channel. Furthermore, the unnamed tributary of Bull Creek, which crosses under the driveway of the town office building and enters the stream within the project area, is misaligned with its natural channel. The culvert that carries the tributary under the town office driveway is undersized and fails during stormwater events. During events when the culvert fails the tributary returns to its natural course and causes substantial erosion on Ober Hill Road. In addition to erosion, this combination of the poor stream alignment and undersized structures on both Bull Creek and the unnamed tributary causes significant flooding issues that threaten the Town Office, the Athens Community Church/Community Center and adjacent homes. This scoping study will address these stormwater and sedimentation issues by determining the best option to restore both Bull Creek and its unnamed tributary to their natural course as well realign and upsize the small bridge and culvert within the project area.

- 2. What is the feasibility of this project? Feasibility (or Scoping) study applications will not be scored on this criterion. Also, please describe the extent of project development completed to date. (10 points max.)**

[Click here to enter text.](#)

- 3. Does this project address a need identified in a local or regional planning document? If so, please describe. (5 points max.)**

The application is supported by the Windham Regional Plan, readopted June 2021 including the following provisions:

1. Regional Goals: To maintain and improve the quality of air, water, wildlife and land resources in the region. (pg. 6)
2. To provide for thoughtful and efficient use of the region's natural resources, including the prevention of surface water and groundwater pollution, the protection of fragile natural habitats and endangered or threatened species, the avoidance of agricultural and other land use practices that lead to soil erosion, the management of woodlands on a sustainable basis, and the sensitive treatment of scenic resources. (pg. 26)
3. To plan for, finance, and provide an efficient system of public facilities and services (such as schools, water and wastewater facilities, highways and bridges) to meet future local, regional, and state needs. (pg. 6)
4. Natural Resources Policy: Maintain water flows in streams at levels that support a full range of in-stream uses and values. (pg. 32)
5. Maintain and restore the chemical, biological, and physical quality of the region's surface water per the objective in State water regulations. (pg. 32)
6. Maintain watercourses, lakes, ponds, wetlands, and vernal pools consistent with State regulations and the highest precedent established by the District Environmental Commission and

State Environmental Court in order to protect shorelines, to minimize effects of erosion, sedimentation and other sources of pollution, and to maintain scenic, recreational, and habitat values. (pg. 32)

4. Does this project benefit a State Designated Center per the link below (i.e., downtowns, villages, or neighborhood growth centers recognized by the Vermont Department of Economic, Housing and Community Development)? (10 Points Max.)

<http://maps.vermont.gov/ACCD/PlanningAtlas/index.html?viewer=PlanningAtlas>

Click here to enter text.

5. Provide a project cost estimate below (project costs below include both federal dollars and local dollars). Projects will be scored based on whether the cost appears realistic for the size and scope of the project. For scoping studies, use PE and Local Project Management lines only.

Note: If you are applying for additional funds for an existing project, show the amount being requested for this grant in the PE, ROW, Construction, Construction Engineering, and Municipal Project Management rows below. Also, be clear regarding total project cost and other funding amounts and sources in the additional funding comments box below. (10 points max.)

Preliminary Engineering (PE) <i>(Engineering, Surveying, Permitting)</i>	\$ 45,000
Right-of-way / Acquisition (ROW) <i>(appraisals, land acquisition and legal fees)</i>	\$ Click here to enter value
Construction <i>(construction costs with reasonable contingency)</i>	\$ Click here to enter value
Construction Engineering <i>(cost to provide inspection during construction)</i>	\$ Click here to enter value
Municipal Project Management Costs <i>(minimum of 10% of total PE, ROW and Construction Phases).</i>	\$ 5,000
Total Project Cost	\$ 50,000

Addition Funding Comments: (ex. Total and additional funding for existing projects)

Click here to enter text.

6. Select the eligibility category below (A, B, C or D) that best fits your project and answer the corresponding questions for that category (choose only one category). 10 bonus points will be awarded to projects that are primarily Bicycle or Pedestrian facilities.

C. Environmental Mitigation Activity Related to Stormwater and Highways

- i. Please describe how this application provides environmental mitigation relating to stormwater and highways. **(10 points max.)**

There are documented problems with stormwater and sedimentation on Bull Creek where it crosses the Ober Hill Road bridge behind the town office building. The existing bridge is undersized and poorly aligned with the stream channel. Armoring added to the east side of the bank after Irene is also poorly aligned with the stream channel and constricts the stream during stormwater events causing flooding and the wash out of Ober Hill Road which transports large amounts of sediment and road materials into Bull Creek, and subsequently the Saxtons and Connecticut Rivers. The flooding also threatens the Athens Town Office, the Athens Community Church and Community Center, as well as adjacent homes.

In addition to the problems with the Ober Hill Road bridge, there is an unnamed tributary that enters Bull Creek immediately south of the bridge within the project area. The tributary flows alongside Ober Hill Road to the south, and also passes under the unpaved driveway for the Athens Town Office parking lot. The tributary is misaligned with its natural stream channel, the natural course of the stream cutting across Ober Hill Road and entering Bull Creek to the north. The culvert which carries the stream underneath the town office driveway is undersized. During stormwater events this culvert fails and the stream has the natural tendency to return to its original course, leading to the wash out of both Ober Hill Road and the town office driveway and washing large amounts of sediment out into Bull Creek. There is also significant erosion at both the inlet and the outlet of the culvert, and sediment build up in the course of the river at its outlet.

The stormwater infiltration issues at this site threaten the health of Bull Creek and the Saxtons River watershed. This is a large, complex site with multiple factors contributing to stormwater and sedimentation issues that will require multiple measures to restore the alignment of both Bull Creek and the unnamed tributary as well as upsize and realign the existing structures. This scoping study will determine the best course of option to address these issues.

- ii. What information or data is provided to substantiate the current stormwater problem and associated environmental impacts? **(10 points max.)**

Please see the attached photos of past damages and letters of support from the Agency of Natural Resources Watershed Management and Watershed Investment Divisions. A 2020 VTrans Hydraulics report determined that the existing Ober Hill Road bridge does not meet standards for bankfull width. The existing bridge structure and armoring of the abutments constrict the stream channel and there is visible erosion both above and below the structure. Ober Hill Road consistently washes out

during stormwater events and brings large amounts of sediment into the watershed, most recently during the July 2021 storms in Southern Vermont.

The culvert on the unnamed tributary immediately downstream does not meet State standards for bankfull width and there is significant sediment deposition at its outlet exacerbating water quality issues at this site. Both the Agency of Natural Resources Atlas and historic maps of the area show the unnamed tributary running its original, natural course to the north of Ober Hill Road demonstrating that its current course is misaligned with the natural channel.

The Department of Environmental Conservation monitoring station downstream from the Ober Hill Road site noted “Substrate surface covered with a fine layer of silt, which is evident on both depositional and erosional areas”. The site in its current form has multiple erosion problems that threaten water quality in Bull Creek and the Saxtons River. This scoping study will determine the best course of action to rectify these issues and improve water quality and resiliency on Bull Creek.

- iii. What substantiating data or information is provided to show that the proposed application is an effective and maintainable solution to the problem? **(10 points max.)**

This scoping study will determine the best course of action to address the complex, multilayered stormwater infiltration and sedimentation issues at the Ober Hill Road site. This is a large site and these issues will not be properly addressed unless the problems across the entirety of the area are considered. This scoping study will create a clear, shovel ready plan that will allow Athens to move forward with construction on a project that will improve stormwater infiltration and reduce further sedimentation to protect water quality on Bull Creek

D. Environmental Mitigation Activity Related to Wildlife

- i. Please describe how this application will reduce vehicle-caused wildlife mortality or will restore and maintain connectivity among terrestrial or aquatic habitats. **(10 points max.)**

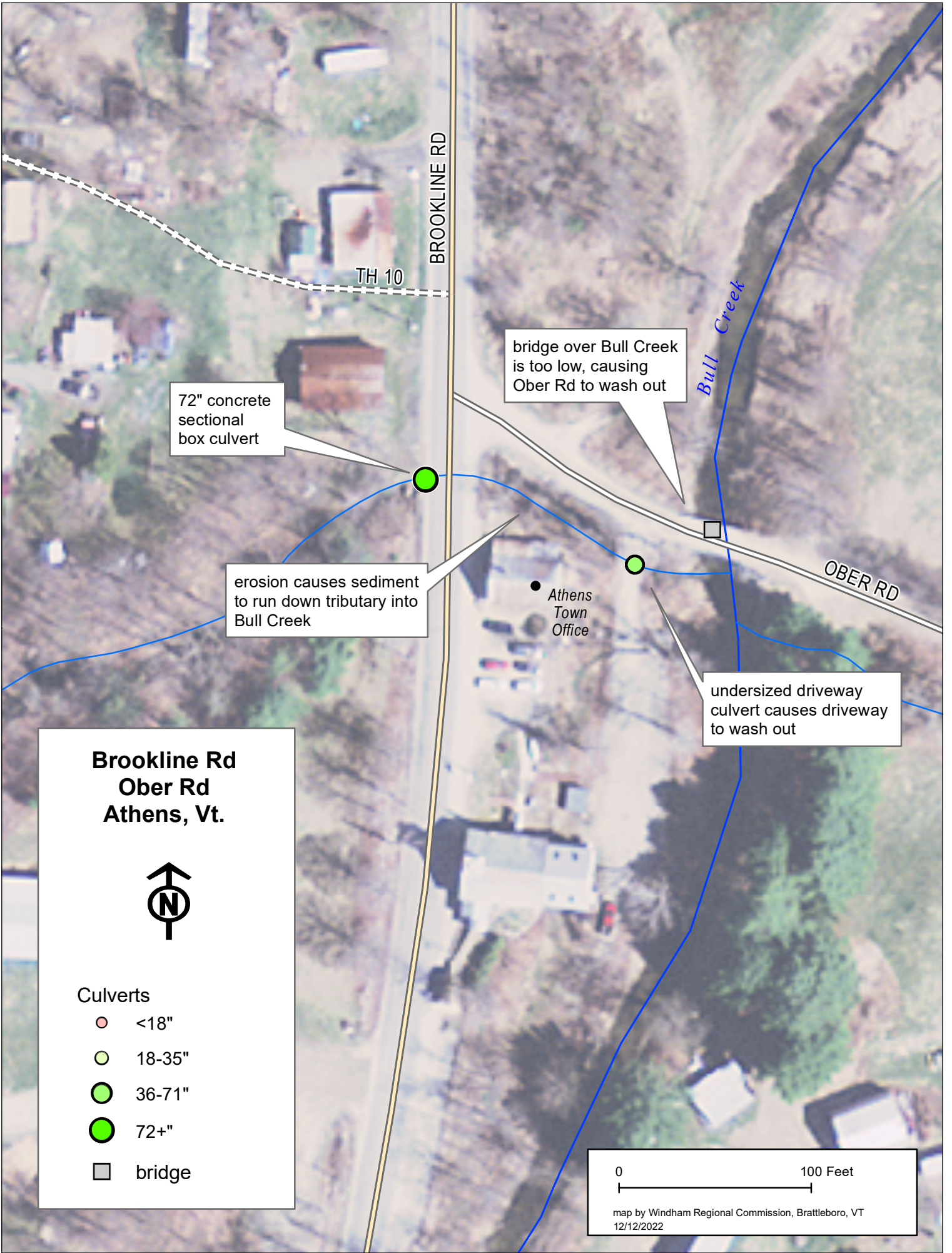
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- i. What information or data is provided to substantiate the current problem and associated environmental impacts? **(10 points max.)**

[Click here to enter text.](#)

- ii. What substantiating data or information is provided to show that the proposed application is an effective and manageable solution to the problem? **(10 points max.)**

[Click here to enter text.](#)




72" concrete sectional box culvert

bridge over Bull Creek is too low, causing Ober Rd to wash out






erosion causes sediment to run down tributary into Bull Creek

undersized driveway culvert causes driveway to wash out


**Brookline Rd
Ober Rd
Athens, Vt.**



Culverts

-  <18"
-  18-35"
-  36-71"
-  72+"
-  bridge

0 100 Feet



map by Windham Regional Commission, Brattleboro, VT
12/12/2022



State of Vermont

Department of Environmental Conservation

Springfield Regional Office
100 Mineral Street, Suite 303
Springfield, VT 05156-3168

Marie Levesque Caduto
Watershed Coordinator

www.dec.vermont.gov/water-investment

Agency of Natural Resources

[cell] 802-490-6142
[Email] Marie.Caduto@vermont.gov

Colin Bratton
Transportation Planner
Windham Regional Commission
139 Main Street, Suite 505
Brattleboro, VT 05301

December 8, 2022

Dear Colin,

This is to follow-up on our visit of 11/15/22 to the Ober Rd. bridge in Athens to review the need for replacement.

There is clear evidence that the structure is undersized, poorly aligned and causing erosion and sedimentation into Bull Creek.

The alignment of the bridge and the post-Irene hard armoring of the abutments, constrict the channel and erosion can be seen above and below. The culvert entering along the downstream side of the bridge is also undersized (65% BFW) and is depositing significant amounts of sediment adding to the deposition in Bull Creek. Additionally, sediment and gravel deposits can be seen on the ground where high flows have breached the channel and flowed around the east side of the bridge.

DEC has a monitoring station just above the bridge and while the sites ranks as Excellent for macroinvertebrates and fish, it is also noted that "Substrate surface covered with a fine layer of silt, which is evident on both depositional and erosional areas." Mitigating further sediment by replacing the bridge will improve water quality and help keep the brook in good condition.

For the water quality, geomorphic and flood mitigation benefits I fully support a grant application to replace the bridge.

Regards,

A handwritten signature in blue ink that reads "Marie Levesque Caduto".

Marie Levesque Caduto, *Watershed Planner*
ANR / Dept. of Environmental Conservation
Water Investment Division
100 Mineral Street, Suite 303
Springfield, VT 05156-3168
Office: (802) 289-0633 / Cell: (802) 490-6142
Marie.Caduto@vermont.gov
www.dec.vermont.gov/water-investment

WATERSHED MANAGEMENT DIVISION

RIVER MANAGEMENT PROGRAM

December 6, 2022

Colin Bratton
Transportation Planning Program Coordinator
Windham Regional Commission
139 Main Street
Brattleboro, VT 05301

Subject: ANR River Management Support for funding Ober Hill Bridge replacement, Athens.

Dear Mr. Bratton,

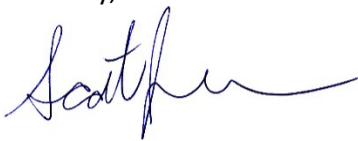
The Vermont Agency of Natural Resource (ANR) is providing comments for potential funding under the Transportation Alternatives Grant for the proposed bridge replacement project on Ober Hill over Bull Creek in the town of Athens.

The proposed project will provide a bank full width structure, improve the alignment of the bridge with the stream and will improve connectivity to the floodplains. This will improve the flood resiliency of the crossing which will result in lower road maintenance costs and improved public safety. The adjacent improved properties will also benefit from the flood resilience and improved floodplain access. The proposed project will also result in increased equilibrium and connectivity of the stream which is a desirable outcome.

The River Management Program strongly supports this project.

Please feel free to contact me with any questions at scott.jensen@vermont.gov or at (802) 490-6962.

Sincerely,



Scott Jensen, P.E.
River Management Engineer
VT River Management Program

State of Vermont
Structures and Hydraulics Section
Barre City Place
219 North Main Street, Barre, VT 05641
vtrans.vermont.gov

[phone] 802-371-7326
[fax] 802-828-3566
[ttd] 800-253-0191

Agency of Transportation

TO: Marc Pickering, District 2 Project Manager
Meghan Brunk, District 2 Technician

CC: Scott Jenson, ANR River Management Engineer

FROM: Christian Boisvert, Hydraulics Project Engineer

DATE: November 19, 2020

SUBJECT: Athens TH-9, Ober Hill Road over Bulls Creek, tributary to Saxton River
Site location: 150 feet east of TH-2
Coordinates: [43.129913, -72.567131](#)

Thank you for your request for a hydraulic study in Athens on TH-9. VTrans provides preliminary recommendations for towns at no charge in response to flooding events and for hazard mitigation. This program has been level funded for many years while demand has gone up. To best serve the towns of Vermont we have limited this service to smaller structures (culverts) that can be accurately modeled without survey.

A drainage area of this size warrants a more detailed hydraulic study that will need to be designed to meet both hydraulics and regulatory standards (i.e., bankfull width). To do this with confidence a detailed hydraulics model using site survey will be needed. Example software programs that can be used are HEC-RAS and SRH-SMS 2D. We recommend hiring a consultant to do this work along with the site and structural design.

The following physical characteristics are descriptive of this drainage basin:

Drainage Area	9.4 square miles
Water Bodies and Wetlands (NLCD 2006)	1.5 %

Using the USGS hydrologic method provides the following design flow rates:

Annual Exceedance Probability (AEP)	Flow Rate in Cubic Feet per Second (cfs)	
43 %	430	
10 %	780	
4 %	1,000	Design Flow – Local Road
2 %	1,300	
1 %	1,500	Check Flow

Based on a desktop review we estimate a bridge on the scale of 35 feet wide (span) will be required. The new structure should be properly aligned with the channel, spanning the natural channel width, and constructed on a grade that matches the channel. The design consultant in coordination with ANR and other regulators should determine the final size. Other regulatory authorities such the US Army Corps of Engineers may have additional concerns or requirements regarding this structure.

Please see the following sites for more information:

VT ANR Stream Alteration Permit

<https://dec.vermont.gov/watershed/rivers/river-management>

VTrans Hydraulics Manual

<https://vtrans.vermont.gov/sites/aot/files/highway/documents/structures/VTrans%20Hydraulics%20Manual.pdf>



December 12th, 2022

Mr. Scott Robertson
Transportation Alternatives Program Manager
VT Agency of Transportation
Highway Division
Municipal Assistance Bureau
219 North Main Street
Barre, VT 05641

Dear Scott:

On behalf of the Windham Regional Commission I am writing in support of the application by the Town of Athens for a scoping study to address flooding and sedimentation issues on Bull Creek where it crosses Ober Hill Road through the VTrans Transportation Alternatives Program. The purpose of the grant is to determine the best options to replace existing undersized structures and restore natural stream course in the project area. This project will improve storm water infiltration, better accommodate high-water events and improve aquatic animal passage. Neither the bridge over Ober Hill Road nor the culvert on the upstream tributary meet VTrans Hydraulic Manual or State stream equilibrium standards for bankfull width. Both the Ober Hill Road bridge and the existing culvert within the project area restrict the channel width leading to an increased potential for debris blockage and the structures overtopping. There have been consistent flooding and sedimentation problems at this site due to the limitations of the existing structures and the poor alignment of both Bull Creek and its unnamed upstream tributary with their natural stream course.

The application is supported by the Windham Regional Plan, readopted June 2021 including the following provisions:

1. Regional Goals: To maintain and improve the quality of air, water, wildlife and land resources in the region. (pg. 6)
2. To provide for thoughtful and efficient use of the region's natural resources, including the prevention of surface water and groundwater pollution, the protection of fragile natural habitats and endangered or threatened species, the avoidance of agricultural and other

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land use practices that lead to soil erosion, the management of woodlands on a sustainable basis, and the sensitive treatment of scenic resources. (pg. 26)

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6. Maintain watercourses, lakes, ponds, wetlands, and vernal pools consistent with State regulations and the highest precedent established by the District Environmental Commission and State Environmental Court in order to protect shorelines, to minimize effects of erosion, sedimentation and other sources of pollution, and to maintain scenic, recreational, and habitat values. (pg. 32)

Bull Creek is an important tributary in the Saxtons River watershed, which travels southeast from Athens through Rockingham ultimately entering the Connecticut River directly south of Downtown Bellows Falls, the Windham Region's 2nd largest urban center. Disturbances in the upper course of the watershed could pose water quality and storm water infiltration challenges for communities downstream and compromise the health of the Saxtons River and its place in the ecology of the Region. Ensuring that upper reach tributaries such as Bull creek can flow as naturally as possible is essential. We encourage the agency to fund this application.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Bratton', written over a horizontal line.

Colin Bratton,
Transportation Planning Program Coordinator
Windham Regional Commission

Town of Athens, VT
Select Board

25 Brookline Rd
Athens, VT 05143

November 17, 2022

Scott Robertson

VTrans Municipal Assistance Bureau

2178 Airport Rd.

Berlin, VT 05641

Dear Mr. Robertson,

Thank you for considering the Town of Athens for the VTrans Transportation Alternatives program. The funding is to explore the options to address flooding and sedimentation issues on Bull Creek where it crosses Ober Hill Road behind the Athens town office. This scoping study will generate shovel ready construction plans.

The Select Board acknowledges that there is a 20% match if awarded the grant.

The bridge in question has met its life expectancy and gone beyond it. The bridge is located in a flood zone and it has become apparent in recent years due to creek bank erosion that its current location and alignment is causing significant issues with flooding and erosion. Its relatively low weight limit of 5 Tons also could preclude larger emergency vehicles from driving over it.

The Town will continue to maintain the bridge in accordance with the town's Road and Bridge Standards as set forth by the state.

Sincerely,

David Bemis



Chair Athens Select Board























