



**VTTrans Fall 2023 Transportation Alternatives (TAP)
and
Municipal Highway and Stormwater Mitigation Program Grant (MHSMP)
Combined Application**

Thoroughly read the TAP and MHSMP application guidebooks 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 by e-mail by December 8, 2023.** Please e-mail the completed application to: Ross.gouin@vermont.gov and Scott.robertson@vermont.gov.

<u>Brookline Road Box Culvert</u> (Project Name/Title)	<u>802 869 3370</u> (Phone)
<u>Hannah Regier</u> (Municipality contact person responsible for the management of this project)	<u>townoffice@athensvt.gov</u> (e-mail address)
<u>Athens</u> (Town)	<u>\$ \$200,000</u> Amount of Federal Funds requested (no more than 80% of the project cost estimate).
<u>05143</u> (Zip Code)	<u>\$40,000</u> Amount of Local Match. Example: Federal Award = \$600,000 (80% of total) Local Match = \$150,000 (20% of total) Total Project Cost = \$750,000 (100% of the total)
<u>25 Brookline Road</u> (Mailing Address)	

County: Windham

Town/Village/City: Athens

Specific location, street, or road: Culvert #56, Brookline Road, Athens, Vermont 05143

Regional Planning Commission: Windham Regional Commission

If a linear project, what is the length in feet? 40'

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 VTTrans 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 TAP or MHSMP Program funds will take roughly three years (min.) in the Design and ROW phases prior to going to construction (as pointed out in the TAP and MHSMP Application Guides)? 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.](#)

Please note that existing projects will not be considered for additional funding without a current NEPA clearance and ROW clearance. Please provide date of clearances below:

[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.
Local funds will be used to make up the shortfall.

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

PLEASE NOTE: If this application is for salt or sand shed funding, the applicant must read and understand the ***Municipal Assistance Section Salt Shed Application Guide***. All of the following scoring questions below must thoroughly convey an understanding of the salt and sand guidance provided.

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.)**

The project is to construct an 8' wide by 6' high box culvert on the Grassy Brook where it meets Brookline Road in Athens. This structure will be embedded 2' feet and filled with type E2 stone to simulate a natural bottom. The new structure will have 8' by 4' clear opening and be properly aligned with the stream channel. This structure will replace an existing undersized 48" inch diameter steel culvert. A preliminary analysis by an Agency of Natural Resources River Management Engineer determined that the existing culvert is undersized and does not meet Vermont standards for bankfull width. The existing culvert is also poorly aligned with the natural course of the stream channel and there is significant ponding at the inlet. The Grassy Brook is an upper course tributary of the West River, one of the largest watersheds in Southeastern Vermont. This culvert is located less than a quarter mile from the source of Grassy Brook which then runs south for approximately 8 miles before reaching the West River. The existing culvert is undersized and has a history of failure during stormwater events, water overtopping the structure and washing out Brookline Road. This puts a large amount of sediment into the Grassy Brook, lowering water quality. This structure is of particular importance due to its location so close to the source of the stream. The 8' by 6' box culvert will meet VTrans Hydraulic Manual, reducing sedimentation and improving water quality in the Grassy Brook and the larger West River watershed.

- 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 to date. (10 points max.)**

A site visit was completed with an Agency of Natural Resources River Management Engineer and the Regional Planning Commission. The size of the new structure is based on the recommendations of the River Engineer to ensure it will meet state standards for bankfull width and stream equilibrium to sufficiently address erosion issues at the site. A letter of support from the Agency of Natural Resources is attached. The town of Athens has installed several similarly sized or larger box culverts in the past utilizing a variety of funding sources and will also work with the Windham Regional Commission for Municipal Project Management.

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

This project is consistent with the policies of the 2021 Windham Regional Plan, including:

- “Maintain and improve the quality of air, water, wildlife and land resources in the region. (pg. 6)”
- “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)”
- “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)”
- “Maintain water flows in streams at levels that support a full range of in-stream uses and values. (pg. 32)”
- “Maintain and restore the chemical, biological, and physical quality of the region’s surface water per the objective in State water regulations. (pg. 32)”
- “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)”

3. Does this project:

- A. 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?**

***Not applicable for Environmental Mitigation Categories* (5 points max.)**

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

Click here to enter text.

- B. Benefit mobility for disadvantaged populations to include elderly, disabled, minorities, and low-income residents. Please describe this impact (if applicable) in detail. Supporting documentation, including recent data must be included.**

***Not applicable for Environmental Mitigation Categories* (10 points max.)**

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- 4. 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.)

Right-of-way / Acquisition (ROW) <i>(appraisals, land acquisition and legal fees)</i>	\$ <u>0</u>
Construction <i>(construction costs with reasonable contingency)</i>	\$ <u>\$196,000</u>
Construction Engineering <i>(cost to provide inspection during construction)</i>	\$ <u>20,000</u>
Municipal Project Management Costs <i>(minimum of 10% of total PE, ROW and Construction Phases).</i>	\$ <u>24,000</u>
Total Project Cost	\$ <u>\$240,000</u>

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

[Click here to enter text.](#)

5. 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.

A. Bicycle and Pedestrian Facilities (includes Safe Routes for Non-Drivers and Conversion of abandoned railroad corridors.

(i) Will the project contribute to a system of pedestrian and/or bicycle facilities?

(10 points max.)

[Click here to enter text.](#)

(ii) Will the project provide access to likely generators of pedestrian and/or bicyclist activity? **(10 points max.)**

[Click here to enter text.](#)

(iii) Will the project address a known, documented safety concern? **(10 points max.)**

[Click here to enter text.](#)

B. Community Improvement Activities:

- i. Explain how the project improves the economic wellbeing of the community and/or provide a benefit to state tourism? **(10 points max.)**

[Click here to enter text.](#)

- ii. Describe the anticipated impact to the public; degree of visibility, public exposure and/or public use. **(10 points max.)**

[Click here to enter text.](#)

- iii. Answer only one of the following based on the type of project:

- a) Construction of turnouts, overlooks, and viewing areas as related to scenic or historic sites. *To what extent will the project provide a view of a highly unique and scenic area?*

- b) **(10 points max.)**

[Click here to enter text.](#)

- c) Preservation or rehabilitation of historic transportation facilities. *Describe the historic significance of the historic transportation facility and the importance of the facility to the state.* **(10 points max.)**

[Click here to enter text.](#)

- d) Archeological planning and research related to impacts from a transportation project. *Describe the associated transportation project and benefit of the proposed activities.* **(10 points max.)**

[Click here to enter text.](#)

- e) Vegetation management in transportation rights of way to improve roadway safety, prevent invasive species, and provide erosion control. *Describe the extent of the current problem and the impact on the site and surrounding area.* **(10 points max.)**

[Click here to enter text.](#)

**C. Environmental Mitigation Activity Related to Stormwater and Highways
(Including Salt and Sand Sheds)**

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

This project will install a new 8' by 6' concrete box culvert on the Grassy Brook where it meets Brookline Road. A site visit by a VTrans River Management Engineer determined the existing 48" steel culvert #56 does not meet state standards for bankfull width and stream equilibrium. The existing culvert restricts the stream channel and is prone to failure during major stormwater events, washing out Brookline Road and putting large amounts of sediment into the Grassy Brook. This is exacerbated by the poor alignment of the culvert with the natural stream channel forcing the Grassy Brook to make an unnaturally sharp turn at the inlet. There is significant ponding at the inlet under normal conditions and during high water events the stream forcefully reverts to its natural course, jumping the culvert and washing out Grassy Brook Road. A letter of support from the Agency of Natural Resources is attached. The new box culvert will meet state standards and be capable of accommodating stormwater without interrupting the natural flow of the Grassy Brook. Preventing future failures at the location of culvert #56 will reduce erosion and sedimentation and improve water quality in the Grassy Brook and the larger West River watershed.

This culvert is of particular importance due to its location very close to the headwaters of the Grassy Brook, a significant tributary within the larger West River watershed. Culvert #56 is located approximately a quarter mile from where the Grassy Brook begins on the slopes of Windmill Mountain according to Vermont Natural Resources Atlas maps. Erosion and sedimentation in the upper reaches of the stream have substantial negative downstream impacts on water quality. The West River is one of the largest watersheds in Southeastern Vermont and there are a large number of important natural, cultural and recreational resources located downstream from the confluence with Grassy Brook. Most notably, the Agency of Natural Resources Tactical Basin Plan for Basin #11 identifies the lower reaches of the West River are the only known habitat in the State of Vermont for the Brook Floater Mussel, one of the most endangered species in the Northeast. Continued erosion and sedimentation in the West River watershed represent a grave threat to the survival of this critically endangered aquatic species. This project will address persistent erosion and sedimentation issues caused by undersized culvert #56, limiting downstream water quality impacts and improving the overall health and resiliency of the West River watershed.

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

A site visit by an Agency of Natural Resources River Management Engineer has determined that the existing culvert #56 is undersized and does not meet state standards for bankfull width and stream equilibrium. There have been persistent erosion issues at this location and the culvert has failed repeatedly during major stormwater events in the past decade. There is

significant evidence of erosion at the inlet, and the Town Highway Department has substantial annual expenditure repairing damages from erosion that occur regularly under non-emergency conditions. Furthermore, the existing culvert is poorly aligned with the natural course of the stream, forcing the Grassy Brook to make a near 90 degree turn as it passes through the inlet. The failure of culvert #56 washes out Brookline Road leading to sedimentation in the Grassy Brook. The town of Athens is situated almost entirely within a narrow valley between the Windmill Mountain Ridge and the Athens Dome and there are only three roadways that connect Athens to neighboring communities. Brookline Road is the sole access in or out of Athens south into Brookline and provides a critical connection for residents and emergency vehicles. When Brookline Road washes out in this location it causes an upwards of 23-mile detour through three neighboring towns. This project will prevent future wash outs, both improving water quality and strengthening the overall resiliency of the transportation system in town.

- 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.)**





The proposed 8' by 6' foot box culvert is based on the recommendation of an Agency of Natural Resources River Management Engineer resulting from a site visit with the Road Foreman and the Windham Regional Commission. This structure will meet state standards for bankfull width and stream equilibrium and be properly aligned with the stream channel. A properly aligned box culvert of sufficient size according to Vermont Hydraulic Standards will prevent future wash outs during major stormwater events as well as reduce regular erosion and sedimentation that occurs at this location during non-emergency conditions. This project will address erosion issues near the headwaters of the Grassy Brook, improving water quality downstream in the West River watershed.

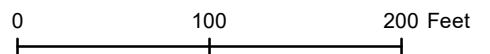
D. Environmental Mitigation Activity Related to Wildlife

- 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.)**
[Click here to enter text.](#)
- ii. What information or data is provided to substantiate the current problem and associated environmental impacts? **(10 points max.)**
[Click here to enter text.](#)
- iii. 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.](#)

**Brookline Rd - Culvert 56
Athens, Vt.**

Culverts, with id

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



map by Windham Regional Commission, Brattleboro, VT
12/5/2023

Town of Athens, VT
Select Board

25 Brookline Rd
Athens, VT 05143

December 4th, 2023

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 construct an 8' by 6' foot box culvert on the Grassy Brook where it crosses Brookline Road to address flooding and erosion caused by undersized culvert #56.

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

The existing 48" culvert does not meet State standards for size and it has become apparent in recent years due to creek bank erosion and road washouts that its current location and alignment is causing significant issues with flooding and erosion. The new box culvert will meet State standards for streams and address the erosion issues at the location.

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

Sincerely,

David Bemis



Chair Athens Select Board

WATERSHED MANAGEMENT DIVISION

RIVER MANAGEMENT PROGRAM

December 7, 2023

Colin Bratton
Transportation Planning Program Coordinator
Windham Regional Commission

Subject: ANR River Management Support for Brookline Rd culvert in the town of Athens.

Dear Mr. Bratton,

The Vermont Agency of Natural Resource (ANR) is providing comments for the proposed culvert replacement on Brookline Rd in the town of Athens.

The proposed project will provide a bank fullwidth structure and eliminate the perch at the outlet of the structure. This will result in greatly improved fish passage and fish habitat. Properly sized structures will improve the flood resiliency of the crossings which will result in lower road maintenance costs and improved public safety. The proposed project will also result in increased stream equilibrium and connectivity, which is a desirable outcome and one of the main goals of the River Management Program. These are all desirable outcomes and in line with the objectives of ANR.

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 Rivers Program



December 4th, 2023

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 the construction of an 8' by 6' foot box culvert on the Grassy Brook to replace undersized culvert #56 that carries the stream under Brookline Road. The existing 48" culvert is undersized and is prone to failure and overtopping during high water events, leading to wash outs and sedimentation on the Grassy. This project will improve storm water infiltration, reduce erosion and improve aquatic animal passage. The existing culvert does not meet the VTrans Hydraulic Manual standards nor State stream equilibrium standards for bank full width. Furthermore, the culvert is poorly aligned with the stream channel. There have been consistent flooding and sedimentation problems at this site due to the limitations of the existing structure.

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)

[Type here]

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)

Culvert #56 is located approximately a quarter mile from the headwaters of the Grassy Brook on the Windmill Mountain Ridge. The culvert has been prone to failure during past high-water events and there is significant regular erosion during non-emergency conditions as well as ponding at the inlet. Replacing this culvert with a box culvert that meets VTrans standards will improve resiliency and limit future damages during increasingly frequent high-water events in the Windham Region. Grassy Brook is a tributary of the West River in the larger Connecticut River watershed, the brook running south from the location of this culvert for approximately 8 miles before its confluence with the West River. 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 watershed and its place in the ecology of the Region. There are significant cultural, natural and recreation resources in the lower reaches of the West River, including but not limited to a very popular summer recreation area at the confluence with the Rock River in Newfane, as well the Retreat Meadows, a regionally important natural and recreation area adjacent to Downtown Brattleboro, the Windham Region's largest population center. This project will address downstream impacts on water quality caused by erosion and sedimentation in the upper reaches of the watershed. We encourage the agency to fund this application.

Sincerely,



Colin Bratton,
Transportation Planning Program Coordinator
Windham Regional Commission



Outlet (Above and Below)





Outlet and bank erosion (Above and Below)





Photos of Inlet (Above and Below)

