

ENGINEERING & DESIGN PROJECT
TWO BOX CULVERTS FOR THE TOWN OF FAYSTON
866 North Fayston Rd. Fayston, Vermont 05660
ISSUE DATE: 09/02/2025
RESPONSE DATE DEADLINE: 11/07/2025

Interested bidders should register their intent by sending an e-mail to Madison Vasseur so as to be placed on the question distribution list. All questions related to this RFP shall be directed to Madison Vasseur. Other than very routine questions, all questions must be submitted in written form via email and will be answered in writing and distributed to all firms signifying an interest in submitting their proposals.

1. INTRODUCTION

The Town of Fayston, is seeking engineering services to help design and consult the final construction of two culverts that are being upsized due to the Hydraulic studies that were completed by the state of Vermont. Both of these culverts were damaged by the flooding in July 2024.

Sites:

- Fayston TH-4 **Center Fayston Road**, over unnamed tributary to Shepards Brook
Coordinates: 44.235557 -72.858059
- Fayston TH-5 **Sharpshooters Road**, over unnamed tributary to Shepards Brook
Coordinates: 44.250684 -72.857336

The Town is seeking to install permanent replacement recommendations, using FEMA Public Assistance funding. Hydraulic studies have *been completed* for these structures through the Vermont Agency of Transportation and are attached to this RFP. Vermont Fisheries have been contacted and determined Brook Trout are present in both locations, but due to large natural barrier's no AOP is needed.

2. SCOPE OF WORK

For Each Culvert Location:

- Inspection of the sites, review of Town Codes and Standards, ANR Rivers Management requirements and standards, and FEMA's hazard mitigation requirements.
- Review attached HH Study that has been completed by the State of Vermont, each structure has multiple replacement recommendations. Determine the best recommendation and design a plan to complete. *Construction to be completed in 2026.*
- Development of contract plans, technical specifications, final engineer's estimate and bid documents for each structure, and assistance with the bidding process.
- Information that will need to be provided to FEMA for review, including staging areas for equipment and material, access routes for movement of emergency vehicles, equipment and/or facilitation of construction, areas of proposed tree removal, and limits of expected excavation/ground disturbance

- Construction phase services.

The development of Final Plans, Specifications and Estimates will consist of the following Scope of Work.

Phase A- PROJECT DEFINITION

For Each Culvert Location:

Task 1: Right-of-Way and Deed Information, where necessary.

The consultant will develop a base map that shows the approximate limits of the existing Rights-of-Way. The consultant will research and provide available roadway plans, land records, property deeds and tax maps on file for the properties within the project limits. The purpose will be to document the property lines and owners within the project limits for subsequent Right-of-Way use. This right of way and property information will be compiled and presented on the plans.

1.1: Utility Location

The consultant shall identify all existing overhead and underground utilities that may be affected by project construction and depict their location on project plans, if not already done.

Task 2: Permitting and Investigations

The Consultant will determine the need for other environmental permits and will assist the municipality in acquiring all necessary federal, state, and local environmental permits necessary to complete the project to include permits required by Army Corps of Engineers and Vermont Agency of Natural Resources Rivers Management. The municipality is generally responsible for any permit fees.

Phase B- PROJECT DESIGN

For Each Culvert Location:

Task 3: Preliminary Plans

The design will be in accordance with the Town of Fayston Codes and Standards, requirements of the Vermont Agency of Natural Resources Rivers Management, 2025 VTRANS Standard Specifications for Construction, the current editions of the Vermont State Standards, the Public Rights of Way Accessibility Guidance issued by the US Access Board, and the most recent edition of the Manual on Uniform Traffic Control Devices.

In addition to the preliminary plans, the consultant will develop an Engineer's Estimate. A submittal to the Town of Fayston and the ANR Rivers Management Engineer is expected at this stage for review. The plans and estimate will be submitted in a .pdf format. All comments and changes resulting from the review will be addressed by the consultant in the following set of plans.

Task 5: Final Design

For Each Culvert Location:

The consultant will prepare the final construction design of the project. Final Design will include final plans, an updated construction cost estimate, and draft special provisions. These provisions will supplement the VTrans Standard Specifications for Construction (2026) which will serve as the basis for the construction of the project. All comments and changes resulting from the review will be addressed by the consultant in the following set of plans. The contract plans will include all information necessary to put the project out to bid.

5.1: Special Provisions

The Consultant will develop any project special provisions to cover items not contained in the VTrans 2025 Standard Specifications for Construction or those items that vary from the standard specifications.

5.2 Final Estimate

The consultant will develop a final engineer's estimate.

Task 6: Contract Plans, Construction Bidding and Award

For Each Culvert Location:

The consultant will take all the necessary steps to provide the municipality with a complete package which can be put out to bid. The municipality is responsible for the bid advertising process.

6.1: Contract Plans

The consultant will submit Contract (100%) Plans along with an updated list of items, quantities and an associated cost estimate for municipal review and concurrence. These plans will be signed and stamped by the Consultant's licensed PE.

6.2: Construction Bid Package

Once the Contract Plans are approved, the Consultant will be responsible for assembling the Construction Bid Package. The complete Construction Bid Package will include all of the following items:

- Complete Contract (100%) plans.
- Construction cost estimate.
- Final utility relocations, clearances, and special provisions.
- Right-of-way clearances and special agreements.
- Construction special provisions.
- All necessary permits acquired and conditions noted.
- Construction Contract specifications.
- Bid Documents including instructions to bidders, bid form and all required federal documents

6.3 Bid Process:

The Consultant will be available during the bidding process to answer any technical questions about the project design. Once bids are opened, the consultant will confirm that all required components of the bid have been submitted. The consultant will conduct an analysis of the bids and will provide a recommendation to the municipality on award of the contract after review of the bids.

Task 8: Construction Phase Services

For Each Culvert Location:

The Consultant will provide services during the construction phase, as outlined below:

- Review any required shop drawing submittals.
- Check that the contractor is in compliance with the following: all construction contract requirements; property rights agreements; erosion and sediment control requirements; and stormwater management plan; state permits, regulations and statutes; and federal regulations and statutes. The consultant shall exercise the engineer's authority as provided in the contract documents and report immediately any deviations to the Municipality.
- Receive certificates, computations and reference materials submitted by the Contractor.
- Report immediately any unusual occurrences and all accidents occurring within the project limits to the Municipality.
- Review and submit to the Municipality any suggestions or requests made by the contractor to change or modify any requirements of the Plans or Contract Documents.
- Erosion control monitoring in accordance with applicable permits.
- Check that materials submitted have been approved and meet the contract specifications
- Check that completed work complies with the plans and specifications and is true to line and grade.
- Consultant shall provide certification to the Municipality that this project was constructed as designed, subject to appropriate and necessary revisions during construction, in conformance with all project specifications and that all necessary contract provisions were fully complied with.

3. RESPONSE FORMAT

Responses to this RFP should consist of the following:

- A cover letter expressing the firm's interest in working with the town including identification of the principal individuals that will provide the requested services.
- A description of the general approach to be taken toward completion of the project, an explanation of any variances to the proposed scope of work as outlined in the RFP, and any insights into the project gained as a result of developing the proposal.
- A scope of work that includes detailed steps to be taken, including any products or deliverables resulting from each task.
- A summary of estimated labor hours by task that clearly identifies the project team members and the number of hours performed by each team member by task.
- A proposed schedule that indicates project milestones and overall time for completion.

- A list of individuals that will be committed to this project and their professional qualifications. The names and qualifications of any sub-consultants shall be included in this list.
- Demonstration of success on similar projects, including a brief project description and a contact name and address for reference.
- Demonstration of success on FEMA Public Assistance projects, an understanding of the importance of staying within the Scope of Work and the importance of communicating to FEMA in advance if there need to be any substantive changes to that Scope of Work.

A separate cost proposal consisting of a composite schedule by task of direct labor hours, direct labor cost per class of labor, overhead rate, and fee for the project. If the use of sub-consultants is proposed, a separate schedule must be provided for each.

4. SELECTION

Bids will be opened and read aloud at a Selectboard meeting held on November 12, 2025 starting at 6:00pm. At the Robert Vasseur Town Hall (866 North Fayston RD. Fayston, Vermont 05660). The nature and amount of security furnished with the bid, if required, also will be read aloud. The Selectboard will evaluate the bids, and, once complete, the bidders will be notified by email.

4.1 CRITERIA FOR BID SELECTION:

In evaluating bids, the SB will consider the following criteria:

- Price
- Bidder's ability to perform within the specified time limits.
- Bidder's experience and reputation, including past performance for the Town.
- Quality of the materials and services specified in the bid.
- Bidder's ability to meet other terms and conditions, including insurance and bond requirements.
- Bidder's financial responsibility.
- Nature and size of bidder.
- Any other factors that the SB determines are relevant and appropriate in connection with a given project or service.

If specification changes are made prior to the close of the bid process, the Request for Bids will be amended and notice shall be sent to any bidder who already submitted a bid, and a new bid process will be initiated. Once a bid has been accepted, if changes to the specifications become necessary, the Municipality will prepare a change order specifying the scope of change.

The Municipality reserves the right to seek clarification of any bid submitted and to select the lowest responsible bid. The Municipality reserve the right, at its sole discretion, to reject any and all bids, wholly or in part, to waive any informalities or any irregularities therein, to accept any bid even though it may not be the lowest bid, to call for rebids, to negotiate with any bidder, and to make an award which, in its sole and absolute judgement, will best serve the Municipality's interests. The Municipality reserves the right to investigate the financial responsibility of any bidder to determine their ability to assure service throughout the term of

This Request for Bids in no way obligates the Municipality to award a contract.

5. SUBMISSIONS

Consultants interested in this project should submit one copy of their proposal to:

Madison Vasseur, Town Clerk/ Selectboard Assistant

Phone: 802-496-2454 x 1

Email: faystonsb@madriver.com

Hours: Monday – Friday 9:00 am – 3:00 pm

Address: 866 North Fayston Road, Fayston, VT 05660

Proposals must be submitted in sealed envelopes or packages with the following information clearly printed on the outside

- Name and address of prime consultant
- **Due date and time- November 7,2025 at or before 3:30pm.**
- Project name- Engineering Services- Two Box Culverts for the Town of Fayston
- will be opened/se at the Fayston Selectboard Meeting on November 12,2025.

All proposals must be received by the Town **no later than 11/07/2025 at 3:30 pm**. Proposals and/or modifications received after this time will not be accepted or reviewed.

All proposals upon submission become the property of town. The expense of preparing and submitting a proposal is the sole responsibility of the consultant. The town reserves the right to reject any or all proposals received, to negotiate with any qualified source, or to cancel in part or in its entirety this RFP as in the best interest of town. This solicitation in no way obligates the town to award a contract.

VI. CONTRACTING

The Consultant, prior to being awarded a contract, shall apply for registration with the Vermont Secretary of State's Office to do business in the State of Vermont, if not already so registered. The registration form may be obtained from the Vermont Secretary of State, 128 State Street, Montpelier, VT 05633-1101; Phone: (802) 828-2363, (800) 439-8683; Vermont Relay Service – 711; Web: <https://www.vtsosonline.com/online>. The contract will not be executed until the Consultant is registered with the Secretary of State's Office.

The Consultant's attention is directed to the VTrans' Disadvantaged Business Enterprise (DBE) Policy Requirements. These requirements outline the State's and the consultant's responsibility with regard to the utilization of DBEs for the work covered in the RFP. It is expected that the consultant will make good faith efforts to solicit DBE sub-consultants.

Prior to beginning any work, the Consultant shall obtain Insurance Coverage in accordance with the attached sample contract. The certificate of insurance coverage shall be documented on forms acceptable to the Town.

Because the work is being funded through a FEMA Public Assistance grant, the consultant will need to agree and comply with all FEMA guidelines.

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

Agency of Transportation

[phone] 802-371-7326
[ttd] 800-253-0191

TO: Michelle Redmond, District 6 Project Manager
CC: Rachel Seigel, ANR River Management Engineer
Jeff DeGraff, Hydraulics Engineer
FROM: Myles Sornborger, Hydraulics Technician
DATE: May 6, 2025
SUBJECT: Fayston TH-4, Center Fayston Road, over unnamed tributary to Shepard Brook
Site location: Culvert 0.1 Miles E of TH-27
Coordinates: 44.235557, -72.858059

We have completed our hydraulic study for the above referenced site and offer the following for your use.

Hydrology

The following physical characteristics are descriptive of this drainage basin:

Drainage Area	0.31 square miles
Land Cover	Forested

Using the Rational hydrologic method, the following design flow rates were selected:

Annual Exceedance Probability (AEP)	Flow Rate in Cubic Feet per Second (cfs)	
50 % (Q2)	58	
10 % (Q10)	83	
4 % (Q25)	99	Design Flow -- Local Road
2 % (Q50)	110	
1 % (Q100)	120	Check Flow

Channel Morphology

The channel for this perennial stream is sinuous with an estimated local channel slope of 10.2%. Field measurement of bankfull width (BFW) was 9 feet upstream of the structure. The existing culvert is perched 9-ft at the outlet and the slope of the stream is steep enough that AOP may not be feasible at this location.

Existing Conditions

The existing structure is a corrugated metal pipe with a diameter of 3 feet, providing a waterway opening of 7.1 square feet. This crossing was damaged during the flood of July 2024.

Our calculations, field observations and measurements indicate the existing structure does not meet current standards of the VTrans Hydraulic Manual (*see HEI 24-004 on the Engineering Instruction webpage for updated allowable headwater to depth ratios*). Nor does it meet the state stream equilibrium standards for bankfull width (span length). The existing structure constricts the channel width, resulting in an increased potential for debris

blockage. This complication is known to cause ponding at the inlet, increase stream velocity and scour at the outlet, and may also lead to erosion and failure of channel banks.

The existing structure results in water overtopping the roadway before the 10% AEP.

Replacement Recommendations

In sizing a new structure, we attempt to select structures that meet both the current VTrans hydraulic standards, state environmental standards with regard to span length and opening height, and consider roadway grade and other site constraints.

AOP may not be practical at this site due to the steep stream channel slope. For this reason, the structures recommended below were modeled without invert embedment.

The low height from the streambed to the existing roadway surface limits the replacement options for this site. Pipe suppliers can provide specific recommendations regarding minimum and maximum fill heights and required pipe thickness.

Based on the above considerations and the information available, we recommend any of the following structures as a replacement at this site:

- A metal box with an inside opening span of 10'-1" and minimum height of 3'-4" providing 28.4 square feet of waterway area. This structure results in a headwater depth of 2.5 feet at 4% AEP and 2.9 feet at 1% AEP.
- A corrugated metal pipe arch with a clear span of 77 inches and a minimum height of 52 inches providing 21.9 square feet of waterway area. This structure results in a headwater depth of 3.6 feet at 4% AEP and 4.1 feet at 1% AEP.
- Any similar structure that fits the site conditions could be considered.

The structures recommended above have been modeled with a culvert slope of 5% while maintaining a perch. **The local stream slope should be verified prior to installation of the new culvert.**

Stone Fill, Type II should be used to protect any disturbed channel banks or roadway slopes at the structure's inlet, up to a height of at least one-foot above the top of the opening. Stone Fill, Type III should be used to construct a splash pad at the outlet to reduce the perch of the proposed structure and prevent future erosion in the channel and downstream banks. The stone fill should not constrict the channel or structure opening.

Prior to any action toward the implementation of any recommendations received from VTrans, structure size must be confirmed by the VT ANR River Management Engineer to ensure compliance with state environmental standards for stream crossing structures.

General Comments

It is recommended that a full height headwall and flared wingwalls be constructed at the inlet, matched into the channel banks to smoothly transition flow and protect the structure and roadway approaches from erosion.

Any closed bottom structure should also be equipped with cutoff walls, extending to a depth equal to the culvert rise, up to 4 feet, or to ledge, to serve as undermining prevention.

Please note that while a site visit was made, these recommendations were made without the benefit of a survey and are based on limited information. The final decision regarding replacement of this structure must

comply with state regulatory standards, and should take into consideration matching natural channel conditions, roadway grade, environmental concerns, safety, and other requirements.

Please contact us if you have any questions or if we may be of further assistance.

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Agency of Transportation

[phone] 802-371-7326
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TO: Michelle Redmond, District 6 Project Manager
CC: Jaron Borg, ANR River Management Engineer
Jeff DeGraff, VTrans Hydraulics Engineer
FROM: Myles Sornborger, Hydraulics Technician
Keith Friedland, Hydraulics Technician
DATE: April 29, 2025
SUBJECT: Fayston TH-5, Sharpshooters Road, over unnamed tributary to Shepard Brook
Site location: Culvert 0.6 Miles from TH-3, Big Basin Road
Coordinates: 44.250684, -72.857336

We have completed our hydraulic study for the above referenced site and offer the following for your use. When a survey of the site becomes available, a more detailed model should be developed for this structure.

Hydrology

The following physical characteristics are descriptive of this drainage basin:

Drainage Area	0.88 square miles
Land Cover	Forested with roads and residential parcels
Water Bodies and Wetlands (NLCD 2006)	0 %
Mean Annual Precipitation	54.4 inches

Using the USGS (adjusted) hydrologic method, the following design flow rates were selected:

Annual Exceedance Probability (AEP)	Flow Rate in Cubic Feet per Second (cfs)	
50 % (Q2)	80	
10 % (Q10)	180	
4 % (Q25)	250	Design Flow – Local Road
2 % (Q50)	320	
1 % (Q100)	400	Check Flow

Channel Morphology

The channel for this perennial stream is straight with an estimated local channel slope of 10%. Field measurements of bankfull width (BFW) varied from 14 to 16 feet upstream and downstream of the structure. The channel crosses TH-5 upstream and runs parallel to the road prior to reaching the culvert. Some bedrock was observed in the channel upstream of the existing structure inlet.

Existing Conditions

The existing structure is a corrugated metal pipe with a diameter of 8 feet providing a waterway opening of 50 square feet. During the field assessment there was a 2-ft perch observed at the existing outlet of the structure.

Our calculations, field observations and measurements indicate the existing structure does not meet current standards of the VTrans Hydraulic Manual (*see HEI 24-004 on the Engineering Instruction webpage for updated allowable headwater to depth ratios*) nor does the existing structure meet state stream equilibrium standards for bankfull width (span length). The existing structure constricts the channel width, resulting in an increased potential for debris blockage. This complication is known to cause ponding at the inlet, increase stream velocity and scour at the outlet, and may lead to erosion and failure of channel banks.

The existing structure results in a headwater depth of approximately 6.1 feet at 4% AEP and 8.5 feet at 1% AEP.

Replacement Recommendations

In sizing a new structure, we attempt to select structures that meet both the current VTrans hydraulic standards, state environmental standards with regard to span length and opening height, and consider roadway grade and other site constraints.

If shallow bedrock is encountered, a buried structure may be difficult to install, and an open bottom structure with footings pinned to bedrock may be desirable for constructability. It is recommended that a subsurface investigation is performed to determine if an open bottom structure will be required for this crossing. Based on the above considerations and the information available, we recommend any of the following structures as a replacement at this site:

- A concrete box with an inside opening span of 14 feet and minimum height of 7 feet. The box invert should be buried 2 feet. This will result in a clear height of 5 feet above streambed, providing 70 square feet of waterway area. Bed retention sills should be added in the bottom of the structure. Sills should be 12 inches high at the edges of the box and 6 inches high in the center, creating a V-shape across the full width of the box. Sills should be spaced no more than 8 feet apart throughout the structure with one sill placed at both the inlet and the outlet. The structure should be filled level to the streambed with E-Stone, Type II, allowing flow to be kept above the surface, providing the conditions necessary for aquatic organism passage. This structure results in a headwater depth of 3.5 feet at 4% AEP and 4.8 feet at 1% AEP.
- A metal box with an inside opening span of 14'-6" and minimum height of 7'-8". The box invert should be buried 2 feet. This will result in a clear height of 5'-8" above streambed, providing 65.5 square feet of waterway area. Bed retention sills should be added in the bottom of the structure. Sills should be 12 inches high at the edges of the box and 6 inches high in the center, creating a V-shape across the full width of the box. Bed retention sills need to be added and filled as described for the box above. This structure results in a headwater depth of 3.6 feet at 4% AEP and 5.3 feet at 1% AEP.
- An open bottom arch with a minimum clear span of 15'-0" and clear height of 5'-8", providing a waterway area of 62 square feet. E-Stone, Type II, might need to be used to build the channel through this structure. This structure results in a headwater depth of 3.8 feet at 4% AEP and 5.6 feet at 1% AEP.
- Any similar structure that fits the site conditions could be considered. *Any structure with a closed bottom should have bed retention sills and a buried invert as described above. If an open bottom structure is installed, the VTrans Hydraulics Manual requires a minimum of 1-foot of freeboard at the design AEP.*

The structures recommended above have been modeled with a culvert slope of 6%, but may need to be adjusted depending on the ledge profile. With this slope, the channel at the outlet will need to be built up to connect E-Stone through the culvert to the upstream end. When complete, there should be no drop at the outlet. The local stream slope should be verified prior to installation of the new culvert. It is critical that any new structure is set at the average streambed profile.

Stone Fill, Type III should be used to protect any disturbed channel banks or roadway slopes at the structure's

inlet and outlet, up to a height of at least one-foot above the top of the opening. The stone fill should not constrict the channel or structure opening.

Prior to any action toward the implementation of any recommendations received from VTrans, structure size must be confirmed, by the VT ANR River Management Engineer to ensure compliance with state environmental standards for stream crossing structures.

General Comments

It is recommended that a full height headwall and flared wingwalls be constructed at the inlet, matched into the channel banks to smoothly transition flow and protect the structure and roadway approaches from erosion.

Any closed bottom structure should also be equipped with cutoff walls, extending to a depth equal to the culvert rise, up to 4 feet, or to ledge, to serve as undermining prevention. E-Stone thickness plus the bottom of structure thickness should be included when determining the total cutoff wall depth.

A bridge scour evaluation is necessary to adequately design the foundation for any open bottom 3-sided structure. The bottom of abutment footings (spread footing on soil) shall be the minimum of the calculated scour elevation or 6 feet below the channel thalweg, or to ledge, to prevent undermining. Abutments on piles should be designed to be free standing during the calculated scour elevation. A minimum of 1-foot of freeboard is required at the design AEP for open bottom structures.

Please note that while a site visit was made, these recommendations were made without the benefit of a survey and are based on limited information. The final decision regarding replacement of this structure must comply with state regulatory standards, and should take into consideration matching natural channel conditions, roadway grade, environmental concerns, safety, and other requirements.

Please contact us if you have any questions or if we may be of further assistance.