

Richmond Conservation Reserve Fund Application

Applicant: Richmond Trails Committee

Date Submitted: May 7th, 2022

Project Name: Rivershore Trail Bridge Replacement

Project Description: The Warren & Ruth Beeken Rivershore Trail is a 3 mile trail that runs parallel to the Winooski River and Cochran Rd in Richmond. The trail is a packed dirt single track trail used by walkers, runners, bikers, horse riders, swimmers, canoeists, skiers, and snowshoers. The trail includes spring ephemerals, ostrich ferns, and great vistas of the Winooski River. The trail also passes through the longest stretch of riparian forest on the Winooski. The 3 mile stretch also includes eight bridges that cross over seasonal drainages and streams. The Richmond Trails Committee has performed an assessment of the bridges and has identified five bridges requiring rehabilitation or replacement, including three that need full replacement. The existing bridges are rotten, missing boards, and have critical structural support issues. The committee also identified these bridges as requiring specialty services for assistance with design and construction of the new bridges. This project includes the replacement of three existing wooden bridges along the trail. Details regarding the specific bridges can be found below in Table 1, along with an aerial view of the entire trail on the Richmond Trails Map in the link below. The idea is to replace the bridges in-kind and lengthen them as needed based on current and future erosion and user needs.

We'd like to ensure that the future bridges put into place are handicap accessible, with the intention of working toward creating portions of the trail that are also fully handicap accessible in the future.

Table 1. Bridge Replacement Details - Bridges (2,4,8) are priority and will be replaced first (June 2022). We will then focus on remaining bridges over the summer of 2022.

Purpose: River Shore Trail Bridge Assessment

Date of Assessment: August 12th, 2021

Note: Bridges numbered North to South

Rating: 1 (Good) – 3 (Poor)

Bridge No.	Location	Description	Notes	Rating
1		15 feet long Sandwiched 2x8's on 4x4 posts	Starting to twist	2
2	Second bridge from trail entrance just north of Cochrans heading toward town center	25-30 feet long 5 sandwiched 2x8's Deadman anchor for scour support	Twisted and punky board	3

3		15 feet long New bridge in 2020	New	1
4	First bridge from trail entrance just south of Cochrans heading toward Jonesville	20 feet long 3 sandwiched 2x8's	Rotten/punky boards Abutments fair	3
5		15 feet long 3 sandwiched 2x10's	Starting to twist Good one for Trails Committee to do, close to Over-rockers	2
6		12 feet long, metal plate	Needs some pruning	1
7		15 feet long Log stringers and newish decking	HS kids replaced this in 2019 Approach work needed	1
8	First bridge from trail entrance heading south from canoe access	20 feet long Log stringers	One log stringer dislodged (not sitting on abutment), approach work needed (Step up on each side of bridge)	3

<http://www.richmondvt.gov/wp-content/uploads/2014/03/RichmondTrailsMapJan2015.pdf>

Project Significance/Relation to Criteria: This particular trail in Richmond is used by many community members that walk or drive to enjoy the trail. The Trails Committee receives feedback frequently from the users on the joy and accessibility that the trail provides. The trail users have also reached out with questions regarding the plan for improving some of the more critical structures that can be seen as being in critical condition or have developed difficulty with access due to the poor condition (ie. a stepped-up approach or slant to the bridge). This feedback is important to understand the community wishes and needs for this important piece of Richmond recreation.

In accordance with the Richmond Conservation Reserve Fund Policy, we feel this project meets the following specific Purposes in accordance with Section II that all within the allowance for use of such funds:

- *Establish and maintain hiking trails*
- *Provide settings where children can learn directly about the environment and local history*
- *Maintain Richmonds quality of life and beautiful scenery*

We also feel that this project meets the following specific Criteria in Section III, A and B, and Section IV:

II, A. General Criteria:

- Will yield a clear, sustainable benefit to Richmond residents in the form of improving recreation
- Will protect, enhance and provide public access to a natural resource or recreation area

II, B. Natural Resources Protection Criteria:

- Preserves stream quality
- Supports low or no cost outdoor recreational activities, such as hiking, skiing, swimming, canoeing

IV. Other Uses: Recreation trail development and maintenance on conserved lands and Town-owned lands or right-of-ways

Project Schedule: The Trails Committee anticipated work to begin on this project in early summer of 2022 once the trails and surrounding areas have dried out. An anticipated completion date of this project would be given as mid-July. We anticipate no more than one week of work per bridge, for a total of 3-4 weeks for the entire project. We have previously reached out to Hermit Builders & VYCC to get a cost estimate for the design, materials and labor for several of the bridges on the trail. After an assessment of each bridge, we have prioritized three bridges as needing replacement immediately (June 2022), and the committee will rehabilitate as many of the other bridges as possible with the remaining funds. We will be using volunteer labor from Richmond trails committee, RCC, and any other community members that would like to help out.

Attached is the cost estimate from VYCC & Hermit Builders, and notes included to identify which bridges are the three that we would like to replace first this summer. Once funds are attained, we will purchase materials and organize volunteer days to get materials to the site along with Bridge replacement.

Project Partners: While the Trails Committee doesn't have any external matching funds for this project, the match will come in the form of sweat equity of the Trails Committee members and volunteers from the trail user community. Volunteers already put work into the trail yearly by brush clearing/mowing in the summer and tree clearing as needed throughout the year. The committee has done some rehabilitation work on some of these bridges in the past and plan to continue that as long as able. One such bridge was replaced last year on the northern portion of the trail.

Financial Information: The Trails Committee attained two bids from VYCC (table 2) & Hermit Builders (table 3) to replace the three bridges that are in critical condition. The Trails Committee is requesting \$9,500 for the cost of materials only. All of the labor will be provided by volunteers. We recognize that this amount is higher than the estimated materials cost in both bids, but we are hoping that with the extra funding we will be able to repair/replace the rest of the bridges on the rivershore trail with the extra funding. We will prioritize Bridges 2,4,8 to be completed first.

Table 2. Cost Estimate for Bridge Replacements VYCC

Bridge No.	Est. Material Costs¹	Total Estimate
2	\$1,782	\$7,985
4	\$863	\$7,219
8	\$1,782	\$7,985
Total	\$4,427	\$23,189

1. Includes anticipated inflation due to increased material costs

Table 3. Cost Estimate for Bridge Replacements Hermit Builders

Bridge No.	Est. Material Costs¹	Total Estimate	Total Estimate (discounted if materials are moved to bridge site with volunteers)
2	\$2,530	\$9,330	\$7,330
4	\$2,050	\$10,350	\$6,350
8	\$1,950	\$8,150	\$6,150
Total	\$6,530	\$27,830	\$19,830

2. Includes anticipated inflation due to increased material costs

The Committee certifies that within four months of the completion of the project we will submit complete documentation of the costs covered by the Fund.

Long-Term Plans: The Richmond Trails Committee’s mission is to establish paths for non-motorized transportation and recreation in Richmond, to maintain these paths, to link with other towns when feasible, and to promote safe citizen use of these paths. The Committee has been charged by the town to maintain trails and paths such as this and will continue to do so moving forward. Although committee membership changes, the mission and values of the committee does not. The Committee is the steward to multiple trails around town, and works with the community, state, and local specialists to ensure the management of these recreational conduits are taken care of appropriately. One such example of this is coordinating with a local invasive species specialist to provide volunteer services on the Rivershore trail to identify and remove such invasive and potentially dangerous species from the trail. There is always a balance to consider, and an example of the Committee’s work in the future will include working with the Conservation Committee and its resident experts to identify impacts of creating a widened and lower grade trail for handicap accessibility.

Thank you for your consideration in funding the above project. Please let the Committee know if you require more information or would like to see additional quotes prior to considering this project.

Attachments:

1. Richmond Trails Committee August Bridge Assessment (3 pages)
2. Quote from VYCC & Hermit Builders for multiple bridge replacements on Rivershore Trail (3 pages)

Richmond Trails Committee

Purpose: River Shore Trail Bridge Assessment

Date of Assessment: August 12th, 2021

Note: Bridges numbered North to South

Rating: 1 (Good) – 3 (Poor)

Bridge No.	Description	Notes	Rating
1	15 feet long Sandwiched 2x8's on 4x4 posts	Starting to twist	2
2	25-30 feet long 5 sandwiched 2x8's Deadman anchor for scour support	Twisted and punky board	3
3	15 feet long New bridge in 2020	New	1
4	20 feet long 3 sandwiched 2x8's	Rotten/punky boards Abutments fair	3
5	15 feet long 3 sandwiched 2x10's	Starting to twist Good one for Trails Committee to do, close to Over-rockers	2
6	12 feet long, metal plate	Needs some pruning	1
7	15 feet long Log stringers and newish decking	HS kids replaced this in 2019 Approach work needed	1
8	20 feet long Log stringers	One log stringer dislodged (not sitting on abutment), approach work needed (Step up on each side of bridge)	3

Summary Recommendations:

1. Bridges to Replace Utilizing External Resources: Bridge 2, 4, and 8.
2. Bridge to Replace Utilizing Trails Committee & Volunteers (RTC budget): Bridge No. 5
3. Bridge to Rehabilitate, extend service life: Bridge No. 1

(Some Photos Attached for Replacement using RCC Fund)



Bridge 2
Rating 3 (priority Remplacement)



Bridge 2
Rating 3
Needs Replacement



Bridge No. 8 not pictured



River Trail Estimates

All bridges are suggested with 6x6 PT (6.25/ft) timber abutments with 6x6 sills, sistered 2x10 PT (3.38/ft) stringers, 2x6 hemlock (1/ft) decking. Prioritized 1-3. 1 being needs replacement, 3 being it's structurally fine. Structures are assigned waypoints as hyperlinks below.

We only work on a by week basis, but some of these prices have been adjusted for day rates since they would likely be combined to replace multiple structures during one or multiple project weeks. The more we combined the cheaper they could get.

Bridge 1	16'
Materials	Hemlock 2x6 Decking \$128 PT 2x10 Stringers \$216 PT 6x6 for abutments and sills \$225 Hardware \$150 Material Total \$719
Estimated Crew Cost at \$6500/week	\$5,200
Total	\$5,919
Priority	1

Bridge 2	12'
Materials	Hemlock 2x6 Decking \$96 PT 2x10 Stringers \$200 PT 6x6 for abutments and sills \$200 Hardware \$100 Material Total \$596
Estimated Crew Cost at \$6500/week	\$5,200
Total	\$5,796
Priority	1

Bridge 3	10'
Materials	Hemlock 2x6 Decking \$80 PT 2x10 Stringers \$135 PT 6x6 for abutments and sills \$175 Hardware \$75 Material Total \$465
Estimated Crew Cost at \$6500/week	\$3,900
Total	\$4,365
Priority	2



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Bridge 4	14'
Materials	Hemlock 2x6 Decking \$112 PT 2x10 Stringers \$189 PT 6x6 for abutments and sills \$225 Hardware \$125 Material Total \$651
Estimated Crew Cost at \$6500/week	\$5,200
Total	\$5,851
Priority	3? This thing is strong and stable for now. More of aesthetic replacement

Bridge 5	16'
Materials	Hemlock 2x6 Decking \$128 PT 2x10 Stringers \$216 PT 6x6 for abutments and sills \$225 Hardware \$150 Material Total \$719
Estimated Crew Cost at \$6500/week	\$6,500
Total	\$7,219
Priority	1

Bridge 6	25'
Materials: x3 Triple laminated 2x10 stringers	Hemlock 2x6 Decking \$200 PT 2x10 Stringers \$760 PT 6x6 for abutments and sills \$300 Hardware \$225 Material Total \$1,485
Estimated Crew Cost at \$6500/week	\$10,400
Total	\$11,885
Priority	1



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Bridge 7	27'
Materials: x3 Triple laminated 2x10 stringers	Hemlock 2x6 Decking \$216 PT 2x10 Stringers \$821 PT 6x6 for abutments and sills \$300 Hardware \$225 Material Total \$1,562
Estimated Crew Cost at \$6500/week	\$10,400
Total	\$11,962
Priority	1

These numbers reflect an estimate, not a quotation. Prices are variable based on crew cost, material expense, partner support, etc, and will be reflected in a contract created prior to work being completed.

Hermit Woods Trailbuilders, LLC

Richmond Riverside Trail Bridges Proposal

04/08/2022

Project Overview

Proposed Install

- It is proposed to replace (3) failing bridges along Richmond's Riverside Trail adjacent to the Winooski River.
- New bridge designs will be upgraded to comply with existing standards. Specifically:
 - New bridges will have a usable width of 4'.
 - Sills, stringers and railings will all be constructed from pressure-treated timbers. Decking will be constructed from rough-cut cedar to provide traction while maintaining sustainability and rot-resistance.
 - New bridges will have a third stringer. Each of the three stringers will be comprised of three individual 2"x10" pressure-treated timbers. Stringers will be blocked out every linear 4'.
 - New bridges will have railings. Railings will be 44" tall and will consist of an angled top rail above three vertical rails. See below for example of proposed railing plans.
 - New bridges will each be lengthened by several feet more than the old bridge they are replacing.
- Volunteers can be incorporated into the project to help offset costs. Several scenarios are presented below in the 'Costs' section for this situation.
- Anchors securing existing bridges are in good condition and will be re-used.
- Costs associated with any local or state permits are not included in this proposal.
- All work will be completed to trade-wide standards.



Image of one of the bridges to be replaced



Image of a similar bridge to what is being proposed built by Hermit Woods Trailbuilders

Costs

Option A: Hermit Woods Performs All Labor Including Materials Staging and Removal of Old Bridge from Site

	<u>Hermit Woods Alone</u>		
	<u>Bridge 1 (24' Long)</u>	<u>Bridge 2 (20' Long)</u>	<u>Bridge 3 (18' Long)</u>
<u>Materials</u>	\$2,530	\$2,050	\$1,950
<u>Labor</u>	\$6,800	\$8,300	\$6,200
<u>Total</u>	<u>\$9,330</u>	<u>\$10,350</u>	<u>\$8,150</u>

Total Cost of All Three Bridge by Hermit Woods Alone:	\$27,830
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Option B: Richmond Volunteers Stage Lumber and Remove and Dispose of Old Bridge, Hermit Woods Performs Bridge Installation ONLY

	<u>Richmond/Hermit Woods Team Effort</u>		
	<u>Bridge 1 (24' Long)</u>	<u>Bridge 2 (20' Long)</u>	<u>Bridge 3 (18' Long)</u>
<u>Materials</u>	\$2,530	\$2,050	\$1,950
<u>Labor</u>	\$4,800	\$4,300	\$4,200
<u>Total</u>	<u>\$7,330</u>	<u>\$6,350</u>	<u>\$6,150</u>

Total Cost of All Three Bridges by Richmond/Hermit Woods Together:	\$19,830
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Questions/Comments Can be Directed to: Sam Brakeley at 802-727-0163 or sam@hermitwoodstrailbuilders.com



Josh Arneson <jarneson@richmondvt.gov>

actual motion for rivershore bridge repair and final minutes

1 message

Rosovsky, Judy <Judy.Rosovsky@vermont.gov>
To: "Arneson, Joshua" <jarneson@richmondvt.gov>

Wed, May 11, 2022 at 10:36 AM

The Richmond Conservation Commission recommends that the Selectboard approve the use of up to \$9,500 dollars from the Conservation Reserve Fund (CRF) to repair bridges along the Rivershore trails. This application is consistent with CRF criteria especially those in Section II, Section III A and B and Section IV. These funds must be used within 3 years of the date of Selectboard approval, May 16, 2025.

Judy Rosovsky

State Entomologist

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she/her pronouns

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