### #14 Washburn Co Hay Creek Bridge Replacement

State of Wisconsin Department of Natural Resources dnr.wi.gov

Due Date: April 15

**Motorized Recreation Grant Application** 

**For:** (choose all that apply)

Form 8700-159 (R 02/2024)

Page 1 of 5

X	ATV/UTV Trail Aid
	Snowmobile Trail Aid

**Notice:** Completion of this form is required under Wisconsin Statutes 23.09(26) and 23.33. Failure to complete this form will result in denial of financial assistance. Personally identifiable information found on this form is not intended to be used for any other purpose. The Department of Natural Resources (DNR) may provide this information to requesters as required by Wisconsin's Public Records law (ss. 19.31 – 19.39. Wis. Stats.)

Natural Resources (DNR) may provide	this inform	nation to	request	ers as rec	quired by V	isconsin	's Public Records la	aw (ss. 1	9.31 – 1	9.39, Wis. Stats.}.
Instructions: Applications may co					ONR Us	e Only	o et seus de prove vers : La angle C. Ville a de La			
be submitted for consideration of tr Stewardship funding. Submit one concessary attachments. Send appl	chments.	See Page	e 2 for	Category			Number			
Section 1: Applicant Informatio	n									
Applicant / Organization Name							ndividual other tha	n autho	rized ind	dividual to act
Washburn County Forestry				ľ	on behalf o	of the ap	<sup>plicant.</sup> ⊠ S	elect if th	ne sam	e as applicant.
Individual Authorized to Act on Beh	alf of App	licant p	er Reso	lution	Check Re	cipient	Name (Name to A	oppear o	n Chec	ck)
Brandon Shutt				]	Brandon	Shutt				
Title					Title					
Assistant Recreation Administr	ator				Assistant Recreation Administrator					
Address				,	Address					
1760 Roundhouse Road					1760 Roundhouse Road					
City		State	ZIP Cod	e (	City				State	ZIP Code
Spooner		WI	548	01	Spooner				WI	54801
Telephone Number	E	Email A	ddress							
(715) 635-4490				ıshburn.	wi.us					
Section 2: Project Information I	Required	for all	Project	S			生活 医神经节炎			
Project Title						Current	t Funded Miles	New M	iles (if a	applicable)
Hay Creek Bridge Replacement	t				_					
County	Township	Range	e OE	Section	1/4 1/4	1/4	GPS Coordinate Lat. 45.977			
Washburn	40 N	11	<b>⊙</b> W	1	NW	SE	Long91.668	37		
Project Description Summary		m !! 6								

This bridge is part of ATV/Snowmobile Trail 39 (year round ATV). It is 150' long, 12' wide rated 12,000. The bridge (installed in 2002) has a unique design with 3" white oak subdeck attached to steel girders, covered with 2" rough sawn pine. The sub deck is deteriorated and we applied for a grant in 2019 to replace. Costs increases and difficulty securing materials, especially through Covid, resulted in re-analysis of our project. Since the white oak performed miserably, we contracted with an engineer who determined that the decks were integral to the rating of the bridge. They recommended 4" x 10" treated, rough sawn pine. They also recommended replacement of the decking with the original configuration of over 1000 3/4" bolts through the girders on 8" intervals. Given the increased materials and increased costs, we are proposing to replace the bridge as a long-term cost saving measure. Engineers approved using existing abutments and pilings (2) and placing three 50' bridge segments on the existing support structures. The wood deck would likely require replacement again in 10 years so a modern bridge is recommended. The costs itemized below reflect monies requested in addition to funds currently awarded under ATV, Snow and RTP grants (\$61,268). Costs 50/50 with Snowmobile.

X I certify that all maintenance land use agreements are on file.

st and the state of the								
Acquisition	Insurance	Development	Bridge Rehab.	Trail Rehab.	Total Estimated Cost			
			\$77,866.00		\$77,866.00			
	militari ya sala sala sala sala sala sala sala s	Leave Blank - DNR	Use Only					
				English September	real colored the bands of the			
tification	<b>这分程序数据数据的</b> 证据	<b>,他们不过是"成功的"的</b>	<b>我们就是这些人的。</b>					
f Authorized Offic	ial	Of	Official's Title					
				*****				
	Acquisition	Acquisition Insurance	Acquisition Insurance Development  Leave Blank – DNR  iffication	Acquisition Insurance Development Bridge Rehab. \$77,866.00  Leave Blank – DNR Use Only  iffication	Acquisition Insurance Development Bridge Rehab. \$77,866.00  Leave Blank – DNR Use Only  iffication			

As the applicant's authorized official, certify that, to the best of my knowledge, the information in this application is true and correct.

Signature of Authorized Official

Date Prepared

### **Motorized Recreation Grant Application**

Form 8700-159 (R 02/2024)

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Appendix A – Required for	Bridge Reha	ıb/Repla	ace, N	ew, or l	Reroute	e with New B	ridge		
⊠ Bridge Rehab/Replace	☐ New Bri	dge	R	eroute w	ith new	bridge			
County	Township Rang	e OE	Section	1/4 1/4	1/4	GPS Coordinate			
Washburn	40 N 11	_	1	NW	SE	Lat. 45.977 Long91.668			
Water Body Name			Brid	ge Name	)		County	Invento	ory Number
Hay Creek			Ha	y Creek	Bridge		N/A		
Funded Trail Name or Number (SN	IARS if applicable	<u>e)</u>	Has	this brid		ver received deve		rehabilit	tation funds
Trail 39			in tr	ne past?	Yes	s No Y	ear: 2002	\$	88,500.00
Bridge is located on:	property		Old	Bridge/C	ulvert Siz	ze 150' x 12'			
	oroperty					ize 150' x 12'			
Landowner Where Bridge is Locate	ed		Tele	ephone N	umber	Length of T	rail Use Agr	eement	
Washburn County			,	5) 635-4		perpetual			minimum)
	2,000 lbs.	Age of E	Bridge	Bridge	e Materia	al			
	,000 lbs.	23		Steel frame wood support and wood deck					
Sponsoring Club Name			Club C	Contact			Telephone I	Number	
Rolling Hills		-		Randy King (612) 801				,	
Do you have your trail bridges post				What is the maximum load of the other bridges on the system if groomed with this bridge?					
		No     No	25,00		iis bridge	; f			
What is the weight of your puller &	drag/grading equ	ipment?	23,00	O					
What other recreational trail uses a	re planned for th	is hridae?							
ATV/Snowmobile	ro plannou for th	io bridgo:							
If there are other Recreational uses	planned, how m	uch of the	e bridae	cost will	he naid f	or by non-snowm	obile or non	-ΔT\/ 11	sers?
						or by horr driewir		711 V U	3013 :
	ted your local <u>Dl</u>	NR Water	Manag	ement Sp	ecialist (	WMS) regarding	a permit?		
Yes  No Is a permit needed? (Please provide any written correspondence from WMS.)									
Yes   No Have you contacted your County Zoning Dept. regarding a floodplain determination?									
○ Yes   No Will an H & H (h	ydrologic and hy	draulic) st	tudy be	required?	)				

#### **Bridge Project Detailed Description**

This is an existing bridge constructed in 2002. The design is a steel I-beam frame with steel cross support members. There is a 3" thick rough-sawn white oak "sub-deck running perpendicular to I-beam direction with 3/4" bolts connecting the oak, through the "lip" of the I-beam at 8" intervals. This sub-deck is deteriorating and it is apparent that this was a poor design choice for the bridge surface. The white oak is covered with 2" rough sawn treated pine. Washburn County initially secured grants to replace all wooden components but we contracted with an engineer to determine if there were more feasible ways to attach the deck. They determined that the wood is integral to the design and needed to be bolted in the same manner. They also determined that a 4" x 10" treated pine deck was more suitable as a replacement, as well as 2" x 8" rough sawn (not dimensional) needed to be added as a surface course.

Materials were either impossible to acquire or they were prohibitively expensive. We also feel that rehabilitating this bridge as it was designed will lead to continual rehab costs as the wood deteriorates. The issue is that water gets trapped between the 2 surfaces causing rot. We are proposing to remove the bridge and place three 50' sections of prefabricated bridge sections onto the existing abutments and pilings (2). Our engineer has determined that the sub-structure is suitable for re-use.

We are proposing a scope change on 3 grants totaling \$61,268 (ATV, Snowmobile, RTP) and applying for grants split evenly between ATV and Snowmobile for the balance

2. Labor

## Motorized Recreation Grant Application Form 8700-159 (R 02/2024) Page 4 of 5

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Appendix A (continued)		
Summarize Costs in Appropriate Categ		
	Bridge Structure	
	Quote 1	Quote 2
B. I. B.	Steel	
Bridge Dimensions:  Bridge Manufacturer:  Anderson	150' x 12'	150' x 12'
<u></u>		Northwoods Bridge
Design Weight Load	25,000 lbs.	<u>25,000</u> lbs.
Cost of Structure: 1. Engineering	\$ 10,000	\$
2. Structure	\$170,000	\$ 473,398
Subtota	I \$ <u>180,000</u>	\$ <u>473,398</u>
	Quote 1	Quote 2
-	Contractor or C Sponsor	○ Contractor or ○ Sponsor
Installation Costs:	Estimate	Estimate
1. Engineering	\$	\$
2. Site Preparation	\$ 5,000	\$
3. Abutments	\$	\$
4. Pilings/Piers	\$	\$
5. Approaches	\$	\$
6. Riprap	\$ 2,000	\$
7. Labor	\$ 20,000	\$
8. Equipment Rental	\$	\$
9. Culverts	\$	\$
10. H & H Study	\$	\$
11. Wetland Delineation	\$	\$
12. Other Demolition/disposal	\$ 10,000	\$
Subtot	al \$37,000	\$
Total Co	st \$ 217,000	\$ <del>473,398</del>
For the application grant, yo	ou must take the lowe	
Entire Deck and Railing Projects	<ul><li>Contract</li></ul>	or O Sponsor O Club
Bridge Dimensions:		
Design Weight Load	lbs.	
1. Materials	\$	

Total \$\_\_\_\_\_

State of Wisconsin Department of Natural Resources PO Box 7921, Madison WI 53707-7921 dnr.wi.gov

### **Recreation Grant Project Cost Estimate Worksheet**

Form 8700-014 (R 02/23)

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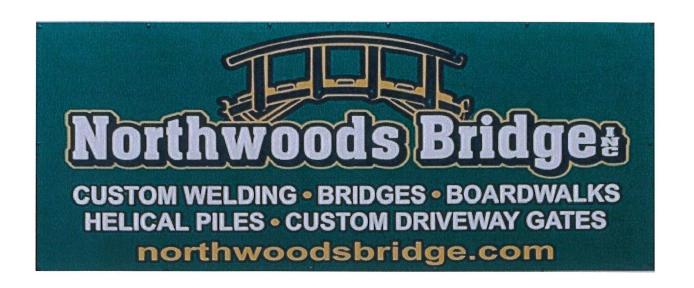
For use with Recreation Grant Application Forms

Project Name:		Prepared By:	Date
Hay Creek Bridge Rep	placement	Brandon Shutt	03/22/2024
County	Project Applicant:	Landowner Name	Public
Washburn	Washburn County Forestry	Washburn County Forestry	O Private

	DEVELOPMENT PROJECT ITEMS  List by individual item or break down by Use Areas  (See Item List On Back Of This Form)	Quantity	Unit of Measure	Component Costs	Estimated Total Item Cost
7	Demolition/Disposal	1	24 Carlo 25 Carlo 28	\$10,000.00	10,000.00
7	Rip Rap	1		\$2,000.00	2,000.00
7	Site Prep	1		\$5,000.00	5,000.00
7	Engineering	1		\$10,000.00	10,000.00
7	Bridge Structure	3		\$56,667.00	170,001.00
7	Labor	1		\$20,000.00	20,000.00

### NOTE:

- For development projects, contingency and indirect costs are not eligible expenses.
- For acquisition projects, complete the Acquisition Project Cost Estimate Section of this form.



# 715-205-1269 A Division Of Extreme Landscape, LLC

January 18, 2024

**Brandon Shutt** 

Washburn County Assistant Recreation Administrator bshutt@co.washburn.wi.us

Work: 715-635-4497 Cell: 715-520-0948

I have enclosed the following documentation for the Washburn County Bridge Bid.

Bridge will be built to a state approved engineered drawing.

Bridge will be a free span truss style. Bridge will be set on current abutments & pilling.

This price includes structures, engineering, site prep, labor and rip rap.

The hardware that will be used in the project are:

3"x1/2" galvanized carriage bolts ½" galvanized washers ½" galvanized nuts Grk 5/16"x2 ¾" screws

The first layer of treated 2x12x12 decking will be bolted down using 3"x1/2" galvanized carriage bolts with  $\frac{1}{2}$ " galvanized washers and  $\frac{1}{2}$ " galvanized nuts 10 per board.

The second layer pf 2x12x12 treated decking will be fastened with Grk  $2\frac{3}{4}$ "x5/16" screws 10 per board. Welding standards.

The bridge will be constructed from core 10 structural steel and will be welded to D1.1 welding standards

I require 60% down payment to start the project and to order materials. The last 40% to be paid when bridge is completed and installed within 30 days.

The manufacture time will not start until down payment has been received.

To build and deliver and install the 150' Bridge with 2 15' approaches. Northwoods Bridge will do this work for \$473,397.50.

Pat Hover Owner Northwoods Bridge, Inc 715-205-1269

### **Process Sheets**

Date: 1/19/2024

Customer: Washburn County Bridge Bid

Item: Bridge

Tolerance: As shown on print

Material: A588 & A572 & A847

Wire Size: .045

Wire Type: Triple 7 SB285812-029

Wire feed: 450

Welder voltage: 18-22

Welder setting: 8-10

Standard: D1.1

Joint detail: Use D1.1 code 3.12 – 3.13 – 3.14

Pre-heat: Minimum 130 degrees Use D1.1 3.5 – 3.5.1 – 3.5.2

Inspection: All welds will be inspected for appearance using D1.1 standard

Notes: When information is not represented or lacking within prints use D1.1 standards for welding guidelines. When questions arise that is outside available information call engineer (Northland Engineering) for further direction.

Pre-heat will be necessary when temperature is below 32 degrees f. Use 130 heat stick as measure of surface temperature.



111 Willow Street Colfax, WI 54730 (715) 962-2800 FAX: (715) 962-2801

# PROPOSAL

January 23, 2024

To: Washburn County Snowmobile Trail Administrator

Re: Hay Creek Snowmobile Bridge Budget

### 3 @ 50' x 12' (clear width) steel truss bridges w/ (2) 15' Approaches

Design Standards: AASHTO

• Diagonals per Panel: 1

• Clear width: Inside face structural elements at deck level

End Vertical: Square

• Bearings: Equal Elevations

Steel Grade: A588/A847 (Unpainted self-weathering)

Deck: #1 Southern Yellow Pine (.40 MCA)

• Safety Rails: Horizontal (4" opening)

• Installation: Existing abutments/piers

Loads: 85 psf live load - 35 psf wind load - 25,000 lbs. vehicle load

FOB: Washburn County, WI

• Engineered Drawings State Seal: Wisconsin

Price\$217	7.	0	)(	)(	0
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•	Structures (Steel Truss)	\$170,000
•	Engineering	\$10,000
•	Soil Testing	\$0
•	Site Prep	\$5,000
•	Abutments	Existing
•	Labor	\$20,000
•	Rip Rap	\$2,000
•	Demolition/Disposal	\$10,000

\*\*\*\*\*\*This price is for budgetary purposes only\*\*\*\*\*\*

Please call with any questions.

Thank you,

Kory S. Weathers



### WASHBURN COUNTY FOREST FOREST ADMINISTRATOR

1760 Roundhouse Road SPOONER, WISCONSIN 54801 (715) 635-4490 Fax (715) 388-7947

### PROJECT NARRATIVE HAY CREEK BRIDGE PROJECT SCOPE CHANGE

<u>INTRODUCTION</u>: Washburn County secured grants in 2019 to re-deck a 150' long snowmobile/ATV trail bridge. Due to bridge design quirks, availability of materials, price of materials and excessive labor requirements, we are proposing to remove the bridge structure and place new pre-fabricated bridge segments on the existing footings and pilings.

<u>BACKGROUND</u>: The Hay Creek Bridge is part of ATV/Snowmobile Trail 39 in Washburn County. This trail is a critical connection between Spooner, Trego, Minong and Hayward. The bridge is steel frame, 150' long, with steel abutments and two steel pilings in the stream and wetlands. It was constructed on-site by Spooner Machine in 2002, and is weight rated for 12,000 pounds.

The bridge deck began to deteriorate and Washburn County applied for bridge rehabilitation grants in 2019. We secured \$15,317 from the snowmobile program (S-5411), \$15,317 from the ATV program (ATV-4099) and \$30,634 from RTP (93619M). Our intention was to replace all of the wood components on the bridge.

<u>ENGINEERING:</u> Before starting the project, we consulted with the engineer that initially designed the bridge to determine if there was a feasible way to increase the weight rating of the bridge and simplify the anchoring system that attached the wood to the steel. The bridge has 3" white oak attached to steel with 2" treated pine deck over the top. The white oak is attached with an extensive bolt system as shown in the attached Image 1 & 6. Their review included the following:

- The 3" white oak "sub-deck" fastened directly to steel is integral to the function of the bridge and would need to be replaced with same.
- They recommend substituting 3" white oak with 4" treated pine (rough sawn, not dimensional).
- Surface decking shall be at least 2" x 8" rough sawn treated southern yellow pine.

### **ISSUES:**

- White oak has not proven to be a viable deck material due to rot/deterioration
- 4" treated pine is difficult to source and was impossible to secure during Covid

- Surface decking would require special order rough sawn treated (this is not dimensional lumber).
- Anchoring system is large bolts through the sub deck and I-beams. Bolt holes would need to be aligned on 8" intervals lengthwise across 4 beams (almost 1,000 ¾" bolts to align from beneath the bridge).
- The cost of materials has increased substantially since we applied for the grant in 2019.
   It is evident that we would need to secure a major funding increase on the project just to replace with an in-kind bridge deck, and we question the long-term viability of this bridge design.

<u>PROPOSAL</u>: After extensive review, we feel that removing the bridge structure and replacing it with pre-fabricated clear span structures would be the most viable and cost effective long term approach based on the following:

- Engineer review shows that the existing abutments and pilings are suitable to place a new bridge structure
- Three 50' bridge spans can be placed on the existing substructure
- Life span of commercially manufactured clear-span segments will be much longer than the wooden components designed in the original bridge
- Future re-decking projects can be done with commonly available dimensional treated lumber.
- We feel that replacing the bridge materials as designed will result in a need to rehabilitate the project in 10 years.
- New bridge would be rated to 25,000 lbs.

We respectfully request a scope change of S-5411, ATV-4099 and RTP 93619M from Hay Creek Bridge rehabilitation to Hay Creek Bridge partial replacement. Our low estimate for this project is \$217,000. Scope change of the grants would allocate \$61,268 to the new project.

Image 1

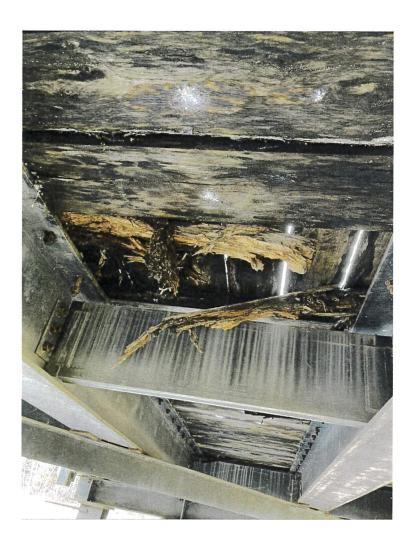
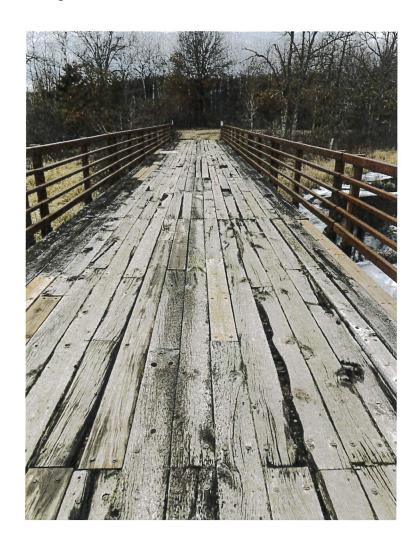
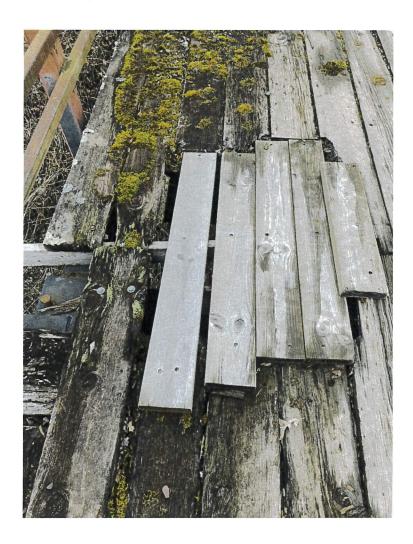


Image 2









### Hay Creek Bridge Replacement – Photos

Image 5

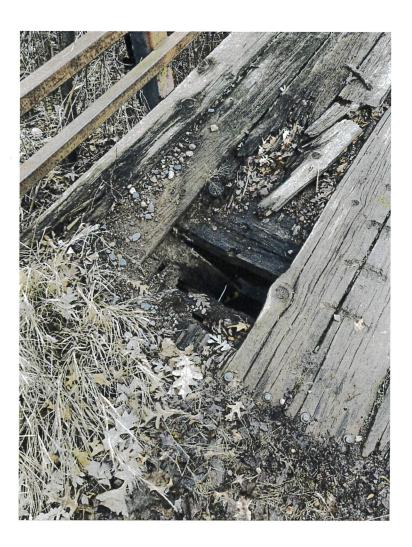


Image 6



### Hay Creek Bridge Rehabilitation Project - Trail 39

