Lessard-Sams Outdoor Heritage Council

ML 2022 Request for Funding

General Information

Date: 06/08/2021

Proposal Title: Knife River Habitat Rehabilitation-Phase VII

Funds Requested: $990,000

Manager Information

Manager's Name: Tony Cuneo (ZG) and Kevin J. Bovee (LSSA)
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Location Information

County Location(s): Lake and St. Louis.

Eco regions in which work will take place:

- Northern Forest

Activity types:

- Enhance

Priority resources addressed by activity:

- Forest
- Habitat
- Wetlands

Narrative

Abstract

Historic Knife River flooding has led to streambank and channel degradation. This degradation has resulted in slumping streambanks, sediment discharge exceeding the total maximum daily load (TMDL) and the loss of instream trout habitat. This is LSSA's 7th LSOHC Grant proposal in the Knife River Watershed. Since the LSSA began grant work on the Knife River (2013), the DNR has seen over a 200% increase in the returning adult steelhead population. Our LSOHC projects have also stabilized ~2 miles of stream channel, restored ~15,000 feet of streambanks and reduced annual sediment discharge by many tons.

Design and Scope of Work

Problem to be Addressed

The Knife River's forest has changed over the past century, which has led to instability of the stream channel during flood events. This channel instability has resulted in significant streambank erosion, channel widening, streambed downcutting and loss of trout habitat.

The LSSA's LSOHC grant projects have attempted to reverse this channel instability by restoring the underlying causes of these stream impairments, while at the same time improving the overall trout fishing. Our previous LSOHC projects have achieved this goal by stabilizing a couple miles of stream channel, restoring long stretches of streambank, reducing annual sediment discharge by hundreds of tons, replanting trees, shrubs and native pollinating species while observing over a 200% increase to the adult steelhead population. This >200% increase occurred while two prominent Lake Superior tributaries saw their steelhead return decrease (Brule River -4.5% from the long-term average) (Portage Creek -201% from 2007).

LSSA and DNR have worked together to identify priority restoration reaches. These restoration sites will not only rehabilitate key trout habitats but will also reverse the historic ecological damage to the watershed by stabilizing streambanks, reducing erosion, minimizing sediment discharge, decreasing turbidity levels, reconstructing riparian areas, reducing downstream flood impacts and reestablishing instream trout habitat in the watershed.

Scope of Work

- Assess, survey and design the stream reach(s) to obtain a permit with DNR and Army Corp of Engineers.
- Obtain baseline assessment data.
- Restore the stream channel's shape, dimension and profile.
- Remove flood debris and sediment from the streambed.
- Enhance instream trout habitat by strategically positioning large woody debris, rock structures and "J" hooks into the channel.
- Create new floodplains/wetlands.
- Reconnect the river channel to the floodplain.
- Raise the groundwater table.
- Stabilize streambanks.
- Rehabilitate the riparian tree canopy.
- Monitor water temperature.

How were Priorities Set

MPCA identified erosion areas within the Knife River Watershed during their TMDL study. The LSSA has assessed these MPCA identified impacts, along with other watershed reaches, for the presence of cool water, availability of quality trout habitat and to restore stream impacts. This has allowed LSSA to prioritize areas for restoration that provide the best benefit for aquatic life and improved water quality. The LSSA also has a policy to work from an upstream to downstream manner. Our top-down restoration approach eliminates re-impacting previous restored reaches and reduces downstream flooding and sedimentation.

Urgency and Opportunity of the Project

Reach 8 and below Reach 13 are within prime trout habitat sections of the Knife River. By restoring rearing habitat in these areas, adjacent to the lower spawning grounds, we can improve juvenile steelhead retention. Restoring the lower river rearing habitat will increase the number of 2 year old smolts that make up the majority of the returning adult steelhead.

Stakeholder Involvement

LSSA has consulted with DNR Lake Superior Area Supervisor, DNR Duluth Area Fisheries Supervisor, DNR Region 2 Stream Specialist and other stakeholders on this project.

How does the proposal address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and list targeted species?

The Knife River is a designated trout stream. DNR trout stream designations are provided to watersheds that have a cold-water resource. Cold-water streams receive special protection because of their value to fish and wildlife and because they are relatively scarce in Minnesota.

The Knife River is more unique than other trout streams in Minnesota because this watershed has anadromous (migratory trout) and does not have a barrier falls. The Knife River is the only watershed in Minnesota that has these two combined features. So, of the 60 + tributaries that connect to Lake Superior with anadromous trout populations, only the Knife River, does not have a barrier waterfall that limits upstream migration. Finally, the Knife River Watershed consists of over 65 miles of anadromous trout habitat, which represents over 50% of all the anadromous trout habitat in Minnesota.

The Knife River also has another unique feature; according to DNR genetics researcher Charles Kruger, the Knife River has a genetically distinct strain of steelhead. Not only are these trout genetically distinct from other North Shore watersheds, but Knife River steelhead are genetically distinct within its own watershed. This means that trout produced in the Main Knife River are genetically different and distinct than other trout produced within its tributaries of: Stanley Creek, McCarthy Creek, Main West Branch, Little West Branch, Captain Jacobson and Little Knife River.

This grant proposes to rehabilitate, restore and create instream habitat to enhance and protect the uniqueness of the Knife River's trout population. This project will specifically create, enhance and protect instream habitats that are critical to trout spawning, rearing and staging steelhead.

Finally, trout stocking has been discontinued in the Knife River with the closure of the French River Hatchery. The closing of this hatchery removes the safety net for the Knife River trout population. So essentially, the Knife River is on its own to maintain its trout population exclusively through natural reproduction and to continue to do so we need to focus on rehabilitating its degraded habitat.

What is the degree of timing/opportunistic urgency and why it is necessary to spend public money for this work as soon as possible?

By completing this project, we are diminishing the opportunity for downstream ecological damage that annually impacts the lower river. The funding of this project will prevent hundreds of tons of sediment from discharging from the proposed project banks, minimize downstream flood impacts because floodwaters will be retained in restored upstream wetlands and improve upstream access to the spawning grounds for anadromous trout.

The other reason timing is so critical is to reestablish the lost riparian canopy. A major component of rehabilitating a trout stream is to restore a mixed overhead canopy. This canopy takes 5 to 10 years for shrubs and 25 to 75 years for large trees to reestablish. The reestablishment of riparian cover is critical to minimize the colonization of invasive species, such as reed canary grass and buckthorn that are already present in the watershed.

Describe how the proposal uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey:

The LSSA uses scientifically based state of the art NCD principles and parameters for all of our stream restoration projects. Prior to conducting any LSOHC grant projects, the LSSA first conducts a series of stream assessments following the NCD protocol. The following are the results of our assessments.

The Main Knife River Stem is a geomorphically stable from Mile 23 (headwaters) downstream to Mile 16. This section has the coolest water and most intact tree canopy.

Mile 16-12 is where channel instability begins. This instability is observed by the down cutting of the streambed, eroding streambanks and sediment deposition. This section is where 90% of the spawning occurs because the streambed gradient flattens and gravel deposits form. This 4-mile section is the LSSA's "priority" area because our restoration work is most effective here. This is where the highest steelhead population exists and is also the start of channel instability coexist. Reach 8 is in this priority area due to the high frequency of steelhead spawning.

Mile 12 to the mouth is critical for steelhead staging and migration but is more noteworthy as the main fishing zone. This area is where large adult trout migrate and stage to pass over two waterfalls to reach the spawning grounds. Efficient movement of spawning trout through this section is critical, so they reach the spawning grounds in good reproductive condition.

The LSSA's restoration priorities feature a top/down approach. This approach overtime will ultimately extend suitable trout habitat corridor downstream because we have systematically improved the habitat by:

- Stabilizing the stream channel.
- Cooling water temperature.
- Restoring spawning gravel.
- Enhancing rearing habitat.
- Retaining floodwaters.
- Reducing erosion and sediment load.
- Reestablishing overhead riparian tree canopies.

The only exception to the LSSA top/down approach involves fish migration impairments. Fish migration is the most critical restoration priority in the Knife River because anadromous trout migrate many miles upstream to access their spawning grounds. If these fish are confined to the Lower river, they will spawn in poor habitat and their offspring will prematurely leave the watershed and be heavily preyed upon in Lake Superior.

Which two sections of the Minnesota Statewide Conservation and Preservation Plan are most applicable to this project?

- H5 Restore land, wetlands and wetland-associated watersheds
- H6 Protect and restore critical in-water habitat of lakes and streams

Which two other plans are addressed in this proposal?

- Long Range Plan for Fisheries Management
- Other : Knife River Implementation Plan for Turbidity-Total Maximum Daily Load (TMDL). Plan implemented by MPCA.

Describe how your program will advance the indicators identified in the plans selected:

The DNR's Lake Superior Management Plan outlines how Rainbow Trout will be managed in Lake Superior tributaries. This plan provides data and recommendations for restoring Knife River steelhead. Below is some DNR data /management strategies.

- Juvenile steelhead appear to be prematurely emigrating from the Knife River due to poor rearing habitat.
- Early emigrating juveniles (age 1) are preyed upon at a high rate in Lake Superior and is a major limiting factor to the steelhead population in the Knife River.
- Restoring the Knife River's instream habitat should equate to greater 2-year old juvenile steelhead retention.
- This greater retention should significantly increase the adult steelhead population in the Knife River.
- The LSSA's past Knife River habitat project work has occurred from 2013-2020.
- The DNR's 2013-2020 Knife River trap data, concludes the steelhead population has increased >200%.
- Continued restoration of the Knife River should result in steelhead increases.

Which LSOHC section priorities are addressed in this proposal?

Northern Forest

- Protect shoreland and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and spawning areas

Describe how your program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife as indicated in the LSOHC priorities:

LSSA uses Natural Channel Design (NCD) for stream restoration projects. This process restores the stream's geomorphic parameters by placing natural materials in the streambed to rehabilitate the channel and stabilize streambanks. This is different from traditional restoration techniques that armor streambanks without addressing the underlying deficiencies within the watershed.

Another benefit of NCD projects, is the use of large woody debris. Before the turn of the century, large trees fell into the channel providing instream habitat and overhead cover. This instream deposition of wood created deep scour pools and accumulated gravel along current breaks that provide important lifecycle habitat. With the loss of large woody debris in the stream channel these habitat features are largely missing. The LSSA is restoring this lost woody habitat by importing logs from local loggers, which benefits the stream and provides additional income to loggers.

Another advantage of NCD projects, is they are designed and constructed to be self-maintaining by using the natural forces of the stream's current to maintain deep pools and deposit gravel. The manipulation of the stream's current is achieved by strategically placing log/rock structures to scour the center of pools and burying logs in the streambed to create current breaks that accumulate gravel. These scour pools support juvenile rearing and the accumulated gravels support adult spawning. This results in greater juvenile retention by enhancing and enlarging the prime steelhead spawning zone from 1 mile to 4 miles, which ultimately reduces juvenile competition for the best rearing habitat.

What other fund may contribute to this proposal?

- N/A

Does this proposal include leveraged funding?

Yes

Explain the leverage:

The LSSA has used its charitable gaming funds to perform over $500,000 for Knife River restoration work prior to the Legacy Amendment being passed. This funding donated money to the DNR for the Knife River fish trap, population assessments and creel census on the Knife River, stream access stairs and walking platforms to reduce bank erosion, signs to highlight regulation changes, in stream restoration, trees, tree planting materials and labor and stocking of fish.

We continued to use our gaming funds to supplement our first five phases of this LSOHC grant. The LSSA has spent approximately $60,000 to fund grant work on private, non-easement property design on the second falls restoration project and creation of two LSOHC promotional videos on our Grant Funded Projects. The LSSA has also spent approximately $30,000 on beaver flights, dam removal and beaver trapping in the watershed since this project was first funded in 2012.

The LSSA anticipates contributing $10,000 to this project in the form of payments for a conservation easement on private land to work on Reach 8. The LSSA and Zeitgeist also intends to provide up to $23,000 of in-kind donations. Please note, we have not included DNR leverage to this project. The DNR spends approximately $10,000 each year to fly the watershed to locate beaver and trap them from critical steelhead habitats. The DNR also spends ~ $100,000 annually to monitor and man the adult and smolt traps in the spring and fall to measure the anadromous trout population in the Knife River. Finally, the DNR shocks young of the year to track anadromous fish spawning and rearing population each year.

Per MS 97A.056, Subd. 24, Please explain whether the request is supplanting or is a substitution for any previous funding that was not from a legacy fund and was used for the same purpose.

There will be no direct appropriation request from the OHF.

Non-OHF Appropriations

Year	Source	Amount
FY 2012	Great Lakes Commission (GLRI funded) - Hawk Hill Road Project	$ 293,000
FY 2014	Clean Water Fund - Copperhead Road Project	$ 212,000
FY 2015	LCMR - Buckthorn Removal (Invasive specie in watershed)	$ 54,000
FY 2016	MN DNR - Buckthorn Removal	$ 12,800

	(Invasive specie in watershed)	
FY 2017	Clean Water Fund - Buckthorn Removal (Invasive specie in watershed)	$ 144,000
FY 2018	Costal Zone Manangement Grant	$ 50,000

How will you sustain and/or maintain this work after the Outdoor Heritage Funds are expended?

A critical component of this project is to ensure beaver do not re-impact areas that have been rehabilitated. To ensure that the Lessard Sams Outdoor Heritage Council projects are maintained after project completion, annual helicopter flights are conducted to ensure beavers do not re-colonize the project areas. These beaver flights are conducted in late autumn by the DNR as they have been previously for over 15 years. If dams or beaver activity is noted in the annual flight, the DNR will contract with Federal trappers to remove the beavers and notch their dams. The estimated cost of the flight, beaver removal and dam notching throughout the entire Knife River watershed is approximately $15,000. If the DNR loses funding for this project, the TMDL implementation plan has budgeted $35,000 annually for this task. Included in this budget is beaver flights, trapping, dam notching and supplemental tree planting. See list below.

The LSSA will annually walk all reaches where work has been performed to monitor and assess the work.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
Jul 1, 2022 - June 30, 2023	MN DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2022 - June 30, 2023	LSSA	Beaver Trapping	Habitat Assessment, Spring Redd Walk and Tree Survival Walk	Tree Planting
July 1, 2023 - June 30, 2024	MN DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2023 - June 30, 2024	LSSA	Beaver Trapping	Habitat Assessment, Spring Redd Walk and Tree Survival Walk	Tree Planting
July 1, 2024 - June 30, 2025	MN DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2024 - June 30, 2025	LSSA	Beaver Trapping	Habitat Assessment, Spring Redd Walk and Tree Survival Walk	Tree Planting
July 1, 2025 - June 30, 2026	MN DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2025 - June 30, 2026	LSSA	Beaver Trapping	Habitat Assessment, Spring Redd Walk and Tree Survival Walk	Tree Planting

Identify indicator species and associated quantities this habitat will typically support:

Steelhead Trout are an indicator species in the Knife River.

- Knife River juvenile steelhead are genetically predetermined to leave the Knife River at age 2 for Lake Superior.
- Approximately 80% of Knife River juvenile steelhead prematurely emigrate to Lake Superior.
- When juvenile steelhead prematurely (before age 2) emigrate the Knife River to Lake Superior they are smaller in size and significantly preyed upon.
- When juvenile steelhead emigrate the Knife River at age 2 they are larger and are preyed upon less frequently.
- According to the DNR, 1 adult steelhead will return from Lake Superior to spawn in the Knife River out of every 350 early emigrating juveniles. This is a 1:350 ratio.
- By contrast, 1 adult steelhead will return from Lake Superior to spawn in the Knife River out of every 10

(age 2) emigrating juveniles. This DNR study concludes that juvenile steelhead that remain in the Knife River until age 2 return at a 1:10 ratio or 35 times greater rate.

- The average annual number of juvenile steelhead that emigrate the Knife River is ~13,000.
- By increasing the number of 2-year old steelhead from ~ 20% to ~ 50%, we would expect the population of adult steelhead to increase three-fold or 300%. This would equate to a run of ~2,200 adults.
- This population increase is possible within the next 12 years because the LSSA's work has seen the steelhead population double since 2014 (6 years).

How will the program directly involve, engage, and benefit BIPOC (Black, Indigenous, People of Color) and diverse communities:

Fishing on the Knife River is open to all people no matter their race, religion or sex. The beauty of this specialized type of fishing activity, is there is little gear required to participate. Stream trout and Knife River steelhead fishing is conducted exclusively from shore. The only gear a person needs is a rod, sinker, hook and yarn or bait. There are no expensive boats, electronics or lures to buy. One can usually fish from shore in rubber boots without the need of expensive waders.

The LSSA started a fishing class just for this reason. The class is for kids along with their parents. This class provides all the gear for the youngsters and teaches the participants to fish in two classroom sessions and a session on the river. Over the 10 years the LSSA has provided this class, we have had youth and parent participants that have included women, minorities and LGBT individuals.

Activity Details

Requirements

If funded, this proposal will meet all applicable criteria set forth in MS 97A.056?
Yes

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program?
Yes

Is the restoration and enhancement activity on permanently protected land per 97A.056, Subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15?
Yes

Where does the activity take place?

- Permanently Protected Conservation Easements
- Public Waters

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program?
No

Other OHF Appropriation Awards

Have you received OHF dollars in the past through LSOHC?
Yes

Approp	Approp	Amount	Leverage	Leverage	Acres	Acres	Complete/Final

Year	Amount Received	Spent to Date	Reported in AP	Realized to Date	Affected in AP	Affected to Date	Report Approved?
2020	$700,000	$62,000	$65,000	-	300	0	No
2019	$891,000	$697,800	$96,600	$90,000	300	275	No
2017	$927,000	$858,500	$142,900	$142,900	356	356	No
2014	$1,410,000	$1,404,400	$147,200	$147,200	612	612	Yes
2012	$380,000	$380,000	$19,200	$19,200	255	255	Yes

Timeline

Activity Name	Estimated Completion Date
Assess, design and permit Knife River Restoration Reach	July 1, 2022 - July 1, 2024
Construction Activities-Reach 8	June 15, 2023 - September 15, 2025
Tree/Shrub/Pollinator Planting	September 1, 2023 _ June 30, 2025
Construction Activities downstream of Reach 13	July 1, 2023 - June 30, 2025
Post Construction Survey as Required by MN DNR Permit	June 30, 2026

Budget

Totals

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Personnel	$160,000	-	-	$160,000
Contracts	$767,000	$2,000	Private Source: LSSA	$769,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	$4,000	Private Source: ZG and LSSA	$4,000
Professional Services	-	$17,500	Private Source: ZG and LSSA	$17,500
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	$500	-	-	$500
Supplies/Materials	$62,500	-	-	$62,500
DNR IDP	-	$75,000	MN DNR	$75,000
Grand Total	**$990,000**	**$98,500**	**-**	**$1,088,500**

Personnel

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
Fiscal Management	0.6	4.0	80000	-	-	$80,000
Project Management	0.6	4.0	80000	-	-	$80,000

Amount of Request: $990,000
Amount of Leverage: $98,500
Leverage as a percent of the Request: 9.95%
DSS + Personnel: $160,000
As a % of the total request: 16.16%
Easement Stewardship: -
As a % of the Easement Acquisition: -

Describe and explain leverage source and confirmation of funds:
LSSA's charitable gaming, general fund and in-kind donations. Allocated by LSSA Board approval. ZG funds allocated by ZG Board Approval. Other Knife River leverage estimated at $ 100,000: MNDNR weir operation, creel census, easement work, temp monitoring and population assessments. PLEASE NOTE: this estimate not included in budget.

Does this proposal have the ability to be scalable?
Yes

If the project received 70% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
Less field/construction work would be accomplished which would mean that another grant will have to be applied for to complete the work outlined in this initial PH VII grant application. We would prioritize work that could be completed with the appropriation in that specific amount.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Personnel would be adjusted proportionately.

If the project received 50% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
Less field/construction work would be accomplished which would mean that another grant will have to be applied for to complete the work outlined in this initial PH VII grant application. We would prioritize work that could be completed with the appropriation in that specific amount.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Personnel would be adjusted proportionately.

Personnel

Has funding for these positions been requested in the past?
No

Contracts

What is included in the contracts line?
Contracts line includes cost of contractor to complete the project as outlined in the Project RFP. Also included would be use of Conservation Corps Minnesota, NRRI or other professional groups whose skills may be needed to do the best job possible for the taxpayers of the state of Minnesota.

Other Equipment/Tools

Give examples of the types of Equipment and Tools that will be purchased?
Possible replacement parts for auger, shovels, etc.

Federal Funds

Do you anticipate federal funds as a match for this program?
No

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0
Protect in Easement	0	0	0	0	0
Enhance	-	0	315	-	315
Total	**0**	**0**	**315**	**0**	**315**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	$990,000	-	$990,000
Total	**-**	**-**	**$990,000**	**-**	**$990,000**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0
Enhance	0	0	0	0	315	315
Total	**0**	**0**	**0**	**0**	**315**	**315**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	-	$990,000	$990,000
Total	**-**	**-**	**-**	**-**	**$990,000**	**$990,000**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	-	-	$3,142	-

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State	-	-	-	-	-

PILT Liability					
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	-	$3,142

Target Lake/Stream/River Feet or Miles

17

Outcomes

Programs in the northern forest region:

- Healthy populations of endangered, threatened, and special concern species as well as more common species ~ *By funding this project, anadromous trout (steelhead, coaster brook trout and brown trout) and resident stream trout (brook trout) populations should increase. Population increases will be seen by MNDNR during the weir operation and upstream population assessment work. This project will also provide habitat to invertebrates, amphibians, reptiles, birds and mammals. This project also will replant the riparian zone of the river with native, old growth tree species and various native pollinator shrubs and native flower species. These multiple specie plantings will establish a varied and lush riparian canopy benefitting the entire watershed and neighboring areas for decades to come.*

Parcels

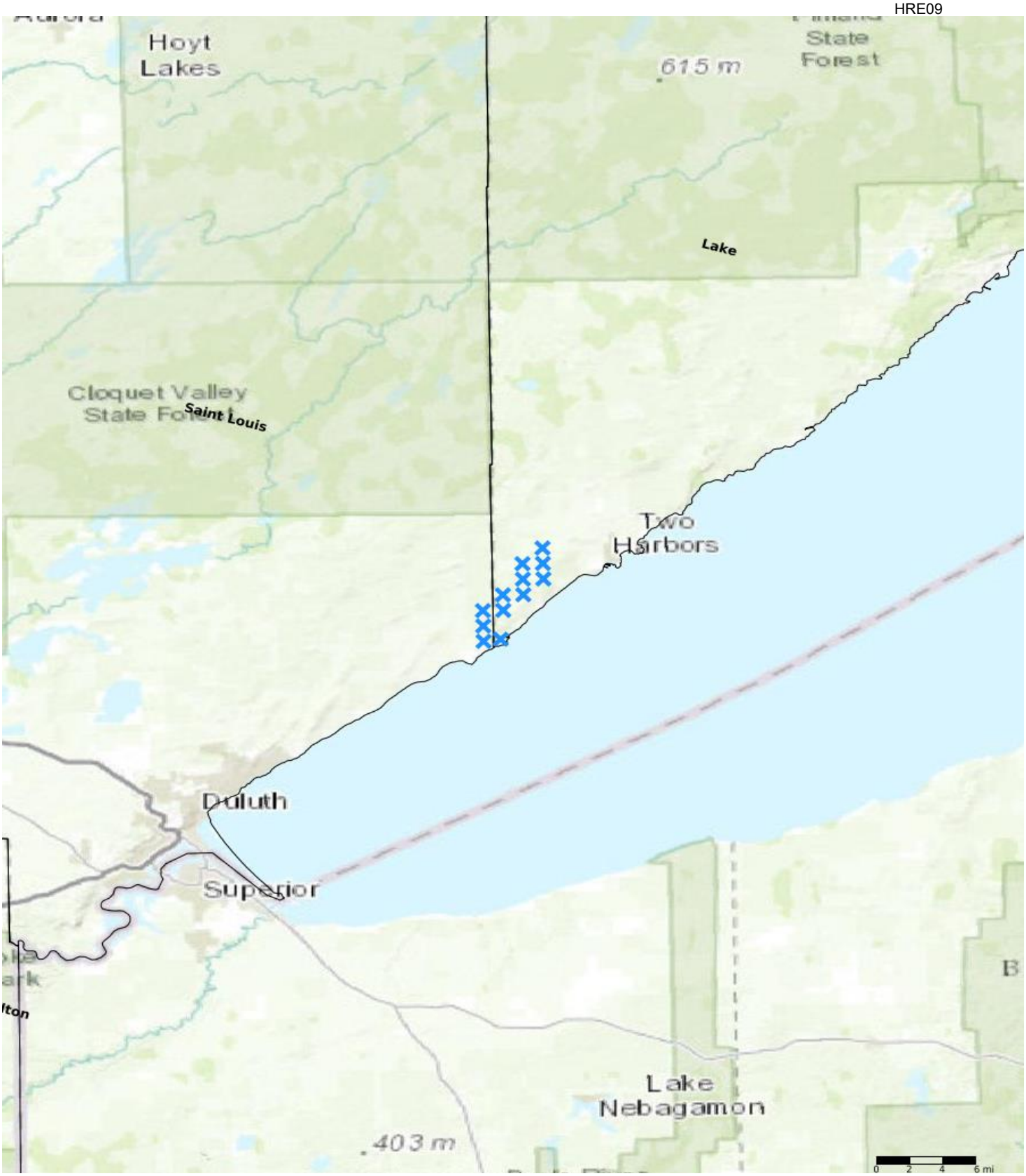
Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
Eroding clay banks were determined to be the main cause of the excess sedimentation/turbidity within the Knife River watershed, which necessitated the inclusion of the Knife River on the impaired waters list for Minnesota. The MPCA identified erosion areas within the Knife River watershed TMDL study.The LSSA assessed these MPCA identified erosion areas, along with other stream reaches in the system for the presence of cool (trout supporting) water, availability for access by trout, existing trout habitat and the potential to restore negative stream impacts. This in-depth analysis has allowed the LSSA to prioritize areas for restoration that provide the best benefit to all aspects of aquatic life and improved water quality.

The LSSA also has a policy to work from the top of a reach downstream. Restoration of Reach 8 in this grant application will complete all the work the LSSA has identified above Lake County Road #11 and all future work will move downstream below County lake Road#11. Our top-down restoration approach eliminates re-impacting restored reaches downstream and reduces future downstream flooding and sedimentation.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Knife River	Lake	05211209	-	-	Yes
Knife River	Lake	05211205	-	-	Yes
Knife River	Lake	05211204	-	-	Yes
Knife River	Lake	05211219	-	-	Yes
Knife River	Lake	05211231	-	-	Yes
Knife River	Lake	05211217	-	-	Yes
Knife River	Lake	05211208	-	-	Yes
Knife River	Lake	05311233	-	-	Yes
Knife River	Lake	05211218	-	-	Yes
Knife River	St. Louis	05212225	-	-	Yes
Knife River	St. Louis	05212236	-	-	Yes
Knife River	St. Louis	05212224	-	-	Yes



Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other

Parcel Map
Knife River Habitat Rehabilitation-Phase VII
(Data Generated From Parcel List)

Knife River Habitat Rehabilitation - PH VII

Reach 8 bank stabilization: Note the raw clay bank discharging sediment to the stream. This project will restore the spawning habitat at the tail end of the pool and provide instream overhead cover for juvenile rearing habitat.

Proposed restoration site below Lake County Road 11: Note the raw clay bank and instream deposit of rock and cobble. Our project will restore the low flow channel, create deeper holding habitat and provide overwater woody cover for juvenile trout rearing.

Post construction assessment using an underwater drone on Reach 4 (Grants 3 and 4 Restoration project): The adult steelhead is holding under a toe wood structure. We restored this pool by placing woody debris in the channel. This provides overhead cover for fish and substrate for aquatic insects.

Another post construction assessment image using the underwater drone on Reach 4 (Grants 3 and 4). This image shows Dace minnows holding under a placed toe wood structure. This is an example how these projects benefit more species than just trout. Our projects benefit frogs, turtles and clams.

Saint Louis County

First District Commissioner • 100 No. 5th Avenue West, Room 205 • Duluth, MN 55802
Phone: (218) 726-2450 • Fax: (218) 726-2469 • Email: jewellf@stlouiscountymn.gov

Frank Jewell
County Commissioner

May 25, 2021

Lessard Sams Outdoor Heritage Council
100 Rev. Dr. Martin Luther King Jr. Blvd.
State Office Building, Room 95
St. Paul, MN 55155

Ladies and Gentlemen,

I am writing to support a grant application from the Lake Superior Steelhead Association (LSSA) to restore a reach of the Knife River in St. Louis County. The Knife River is critically important for Steelhead along Minnesota's North Shore and the reach of the LSSA plans to restore is a known spawning area. This reach was heavily impacted by flooding in 2012 and has several steep eroding banks contributing excessive sediment to the stream.

In 2019 I visited the area with Kevin Bovee, an Association member, to look at a completed restoration they did on the Knife River. It was extremely well done and I was impressed by the way in which the Association worked with private property owners to accomplish it. I intend to make another visit to the river this year to see further work that has been completed. To date the project has been very successful and clearly demonstrates LSSA's ability to succeed in this next phase.

It is important to St. Louis County that there are NGO's that can drive these projects and assure that they get done. While this project is aimed at fish habitat I know, as Chair of the MN Clean Water Council, that it will also have clean water benefit, decreasing the turbidity downstream. I lend my wholehearted support to their work and look forward to touring another successful project.

Sincerely,

Frank Jewell
St. Louis County Commissioner, First District

PETE STAUBER
8TH DISTRICT, MINNESOTA

461 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-6211

Congress of the United States
House of Representatives
Washington, DC 20515–2308

May 25, 2021

Lessard-Sams Outdoor Heritage Council
100 Rev. Dr. Martin Luther King Jr. Blvd.
State Office Building, Room 95
St. Paul, MN 55155

Dear Lessard-Sams Outdoor Heritage Council,

I write in support of the the Lake Superior Steelhead Association's (LSSA) grant application in Phase 7 of their plan to restore a section of the Knife River in St. Louis County, Minnesota. The Knife River is critically important for Steelhead along Minnesota's North Shore and the section the LSSA plans to restore is an ideal area for spawning. This section was heavily impacted by flooding in 2012 and has several steep eroding banks contributing excessive sediment to the stream. Reducing turbidity will not only benefit Steelhead, but the entire riparian ecosystem. Restoration plans for this project are consistent with current best practices aimed at restoring aquatic habitat and helps fulfill Lessard-Sams Outdoor Heritage Council's goal to "…restore, protect, and enhance Minnesota's wetlands, prairies, forests, and habitat for fish, game, and wildlife…".

Fish habitat in our rivers, and especially those along the North Shore of Lake Superior, are critically important to northeastern Minnesota. The Lake Superior Steelhead Association's Knife River restoration project aimed at improving water quality and boosting natural fish reproduction in Lake Superior is immensely beneficial to our area and it has my full support.

Sincerely,

Pete Stauber
Member of Congress
Minnesota's 8th Congressional District

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