Lessard-Sams Outdoor Heritage Council
Laws of Minnesota 2019 Accomplishment Plan

Date: October 16, 2018

Program or Project Title: Knife River Habitat Rehabilitation-Phase IV

Funds Recommended: $ 891,000

Manager's Name: Tony Cuneo and Kevin J.Bovee
Title: Ex. Director and Project Manager
Organization: Zeitgeist (ZG) and Lake Superior Steelhead Association (LSSA)
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Legislative Citation: ML 2019, Ch. X, Art. 1, Sec. 2, subd, X(x)

Appropriation Language:

County Locations: 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

Abstract:

Poor historic forestry practices in the Knife River watershed have degraded trout habitat and resulted in a TMDL exceedance for turbidity. The LSSA proposes to locate, assess and rehabilitate identified stream impacts within the watershed. The LSSA will use the new MPCA and Natural Channel Design evaluation criteria to rank and prioritize locations for rehabilitation. Our major focus will be stabilizing streambanks, installation of instream habitat and replanting riparian forest. Only stream sections located on public lands and private lands with DNR easements will be considered for this project. See the LSSA website for more information on the project http://www.steelheaders.org/projects.html.

Design and scope of work:

PROBLEM TO BE ADDRESSED
The Knife River watershed once held one of the largest populations of natural reproducing steelhead in the Great Lakes. Since the late 1970's, the Knife River steelhead population has seen a dramatic decrease. One of the reasons for this decline is long-term habitat loss resulting from historic logging. The pre-settlement forest composition within the Knife River watershed consisted primarily of old growth trees. The removal of large trees from the riparian zone destabilized streambanks. The slumping streambanks have also resulted in a high rate of erosion causing a TMDL exceedance for turbidity in the Knife River. Recognizing the threat, the DNR started performing limited stream studies. These studies have determined that habitat degradation in the watershed has resulted in poor rearing conditions for juvenile trout.

SCOPE OF WORK
* Draft project RFP; put RFP out for bid per approved vendor list; award RFP. All according to MN DNR policies.
* Monitor water temperature.
* Enhance and restore in-stream habitat by placing large woody debris, rock vanes and “J” hooks into the channel.

STREAM STABILIZATION
The stream will be stabilized by realigning the stream bed to proper bounds by utilizing the data obtained in the initial assessment phase of the project. Also, an opportunity may exist for utilizing off channel wetlands which will enhance the riparian zone habitat. This opportunity will also be determined by the initial assessment data obtained.

RIPARIAN ZONE RESTORATON
The riparian zone will be restored via plantings of native pollinator shrubs and native deciduous and coniferous tree species. Riparian zone plantings can occur on the Main Knife River and its major tributaries. After planting the rehabilitation project construction sites, emphasis will be given to replanting the riparian zone in upper river stretches that lack any riparian cover presently.

URGENCY AND OPPORTUNITY OF THE PROJECT
The upper section of Reach 4 was funded in 2018 (Phase III). This project will restore approximately 2000 linear feet of Reach 4, which would be the approximate middle third of Reach 4. We are working from the top down on Reach 4.

STAKEHOLDER INVOLVEMENT
The LSSA will continue to inform the public concerning this project by using the LSSA's newsletter, Steelhead News, and its annual publication, the Lake Superior ANGLER. Zeitgeist will prepare community announcements as needed to inform stakeholders on the project.

How does the request address MN habitats that have: historical value to fish and wildlife, wildlife species of greatest conservation need, MN County Biological Survey data, and/or rare, threatened and endangered species inventories:

The Knife River is a designated trout stream. The trout stream designation is provided to watersheds that have a cold-water resource. Cold-water streams are designated for protection because of their value to fish and wildlife and their relatively scarce nature in Minnesota. The Knife River is even more unique than other cold-water trout resources in Minnesota because this watershed has an anadromous fishery and does not have a barrier falls. The Knife River is the only watershed in Minnesota that combines these two features. Of the 60 + tributaries that connect to Lake Superior with populations of anadromous trout, only the Knife River does not have a barrier waterfall that limits upstream migration of steelhead, coaster brook trout or brown trout.

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

This proposal addresses rehabilitating instream habitat to enhance and protect the uniqueness of the Knife River trout population. This project will provide, enhance and protect instream habitats that are critical to trout spawning, rearing and staging prior to emigrating to Lake Superior.

This project is even more critical with the closing of the French River Hatchery and also because the Knife River is no longer stocked. Trout stocking has been discontinued in the Knife River to protect the unique genetics of over 100 years and with the closure of the French River Hatchery the safety net is gone to reestablish a Knife River fishery. So essentially, the Knife River is its own natural fish hatchery that must be protected and enhanced to continue to produce trout that have evolved unique genetic qualities and traits since the late 1800s.

Describe the science based planning and evaluation model used:

NCD utilizes a science-based process to bring an unstable eroding stream reach back to a stable state. This method surveys an impacted stream reach to collect data to compare it to several stable stream sections. All survey work is performed using a geomorphic trained Stream Specialist. The assessment data that is collected includes: stream width to depth ratios, floodplain elevation, erosion calculations, longitudinal profile, cross-section elevation and vegetation cover. This assessment data is entered into a computer program called Geomorph to create plans and specifications that will redesign the impacted Knife River channel profile, dimensions and shape to mimic stable reaches within the Knife River watershed. These plans create the basis for the construction project by depicting channel reconfiguration, placement of structures, location of streambed excavation, location and elevation of the floodplain

and realignment of the channel.
The LSSA's NCD process also features a top/down restoration approach. This approach extends the habitat corridor downstream in three ways:
• Downstream habitats are protected because the upstream sediment load is reduced. By stabilizing these upstream eroding banks, hundreds of tons of sediment will no longer discharge into the stream channel each year. This discharged material will no longer fill pools and runs that are critical to rearing trout.
• Instream trout spawning success is more productive. When trout spawn they discharge their eggs into the gravel. When sediment discharges during high spring flood events, these eggs or newly hatched trout become covered by settling silts and suffocate larval trout. By stabilizing these upstream banks sediment discharge is greatly reduced, which generally increases trout production.
• Newly constructed stream channels are reconnected to the floodplain. These restoration projects reconnect the stream channel to the floodplains, which allows floodwaters to crest the bank and dissipate the current's energy. Floodwaters also become trapped and stored in associated floodplain wetlands. This results in a lower velocity of floodwater and less volume of floodwater that discharges downstream. This reduction of floodwater velocity and volume minimizes downstream erosion and habitat degradation.
Our Reach 4 project will protect approx. 17 miles of downstream stream habitat and stabilize streambanks.

Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this program:

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

Which other plans are addressed in this program:

- Long Range Plan for Fisheries Management
- National Fish Habitat Action Plan

Which LSOHC section priorities are addressed in this program:

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

Relationship to other funds:

- Clean Water Fund
- Coastal Grant Program

Describe the relationship of the funds:

The LSSA was awarded a Coastal grant (NOAA funded, MN DNR administered). The Coastal grant will be used to match LSOHC funds (PH III) for the assessment, design and permitting of the entire Reach 4 complex. Even though the coastal grant will be used prior to the work outlined in PH IV, the coastal funding will allow the proposed work in PH IV to be implemented in a very short time frame. PH IV will be very close to shovel ready requiring only a RFP and its awarding.

In 2012, Legacy Clean Water Fund and Great Lakes Commission provided money to the Lake County Soil and Water Conservation District for the Knife River watershed's private stream sections. This money was used to stabilize slumping clay banks as part of the TMDL implementation plan. This money was awarded to the Lake County Soil and Water Conservation District. The Lake County SWCD has also received three Buck thorn removal grants to protect the Knife River riparian zone.

The LSSA and SWCD have been working cooperatively on separate sections of river to insure the entire watershed is addressed and improved. The LSSA is primarily working on the upper river habitat on public lands and private lands with easements, while the SWCD is working on the lower river sections and concentrating on private lands.

Does this program include leverage in funds:

No

Per MS 97A.056, Subd. 24, Any state agency or organization requesting a direct appropriation from the OHF must inform the LSOHC at the time of the request for funding is made, 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:

This funding request by ZG/LSSA does not supplant or substitute any previous funding.

Describe the source and amount of non-OHF money spent for this work in the past:

Appropriation Year	Source	Amount
FY 2012	Great Lakes Commission-Hawk Hill Road Project	$ 293,000.00
FY 2012	Clean Water Fund-Copperhead Road Project	$ 212,000.00
FY 2015	LCMR-Buckthorn Removal	$ 54,000.00
FY 2016	DNR-Buckthorn Removal	$ 12,800.00
FY 2017	Clean Water Fund-Buckthorn Removal	$ 144,000.00
FY 2018	Federal-MN Coastal Grant (LSSA)	$ 50,000.00

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

A critical component of this project is to insure beaver do not re-impact areas that have been rehabilitated. To insure that the Lessard Sams Outdoor Heritage Council projects are maintained after project completion, annual helicopter flights are conducted to insure 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.

Explain the things you will do in the future to maintain project outcomes:

Year	Source of Funds	Step 1	Step 2	Step 3
July 1, 2019 - June 30,2020	DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2019 - June 30, 2020	LSSA	Beaver Flights	Beaver Trapping	Tree Planting
July 1, 2020 - June 30, 2021	DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2020 - June 30, 2021	LSSA	Beaver Flights	Beaver Trapping	Stream Walks/Assessment
July 1, 2021 - June 30, 2022	DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2021 - June 30, 2022	LSSA	Beaver Flights	Beaver Trapping	Tree Planting
July 1, 2022 - June 30, 2023	DNR	Beaver Flights	Beaver Trapping	N/A
July 1, 2022 - June 30, 2023	LSSA	Beaver Flights	Beaver Trapping	Stream Walk/Assessment

Activity Details:

If funded, this program will meet all applicable criteria set forth in MS 97A.056 - **Yes**

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

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

Is the activity on permanently protected land per 97A.056, subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 - **Yes (Permanently Protected Conservation EasementsCounty/Municipal, Public Waters)**

Accomplishment Timeline:

Activity	Approximate Date Completed
Project Out On RFP; Award RFP	Fall of 2019
Project Construction	October, 2019 through September 2022
Tree Planting and Maintenance	September, 2020 through September, 2022

Date of Final Report Submission: 11/1/2024

Federal Funding:

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

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 and stream trout populations should increase. This project will also provide habitat to invertebrate, amphibians, reptiles, birds and mammals. This project also will replant the riparian zone of the river with old growth tree species and pollinator shrubs. These plantings will reestablish a healthy riparian canopy. Stream flow should increase due to less evaporation and improved riparian cover should help cool the water.*

Budget Spreadsheet

Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan

How will this program accommodate the reduced appropriation recoomendation from the original proposed requested amount

Construction will include less linear feet of stream due to reduced appropriation. Design plans and all necessary permits will be obtained previously. After the RFP and awarding of same, this project will be totally SHOVEL READY for implementation.

Total Amount of Request: $ 891000

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	$137,000	$0		$137,000
Contracts	$645,000	$3,600	Private Source: LSSA	$648,600
Fee Acquisition w/ PILT	$0	$0		$0
Fee Acquisition w/o PILT	$0	$0		$0
Easement Acquisition	$0	$0		$0
Easement Stewardship	$0	$0		$0
Travel	$0	$6,000	Private Source: ZG and LSSA	$6,000
Professional Services	$4,000	$10,000	Private Source: ZG and LSSA	$14,000
Direct Support Services	$0	$0		$0
DNR Land Acquisition Costs	$0	$0		$0
Capital Equipment	$0	$0		$0
Other Equipment/Tools	$3,000	$12,000	Private Source: LSSA	$15,000
Supplies/Materials	$102,000	$0		$102,000
DNR IDP	$0	$65,000	MN DNR	$65,000
Total	$891,000	$96,600		$987,600

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Project Fiscal Lead	0.60	4.00	$66,500	$0		$66,500
Project Field Manager	0.60	4.00	$70,500	$0		$70,500
Total	1.20	8.00	$137,000	$0		$137,000

Amount of Request:	$891,000
Amount of Leverage:	$96,600
Leverage as a percent of the Request:	10.84%
DSS + Personnel:	$137,000
As a % of the total request:	15.38%

What is included in the contacts line?

Contracts include cost of subcontractor to complete the project as outlined in the RFP and also the use of Conservation Corps Minnesota to perform miscellaneous field work on the project.

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 and easement work. PH III work will allow for a shovel ready project for PH IV.

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
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	0	300	0	300
Total	0	0	300	0	300

Table 2. Total Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
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	$0	$891,000	$0	$891,000
Total	$0	$0	$891,000	$0	$891,000

Table 3. Acres within each Ecological Section

Type	Metro Urban	Forest Prairie	SE Forest	Prairie	N Forest	Total
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	300	300
Total	0	0	0	0	300	300

Table 4. Total Funding within each Ecological Section

Type	Metro Urban	Forest Prairie	SE Forest	Prairie	N Forest	Total
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	$891,000	$891,000
Total	$0	$0	$0	$0	$891,000	$891,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	$0	$0	$0	$0
Protect in Fee with State PILT Liability	$0	$0	$0	$0
Protect in Fee W/O State PILT Liability	$0	$0	$0	$0
Protect in Easement	$0	$0	$0	$0
Enhance	$0	$0	$2970	$0

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
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	$0	$0	$0	$2970

Automatic system calculation / not entered by managers

Target Lake/Stream/River Feet or Miles

15+ linear miles of stream.

Parcel List

For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.

Section 1 - Restore / Enhance Parcel List

Lake

Name	TRDS	Acres	Est Cost	Existing Protection?
Knife River	05211204	0	$0	Yes
Knife River	05211208	0	$0	Yes
Knife River	05211217	0	$0	Yes
Knife River	05211218	0	$0	Yes
Knife River	05211219	0	$0	Yes
Knife River	05211231	0	$0	Yes
Knife River	05311218	0	$0	Yes
Knife River	05311220	0	$0	Yes
Knife River	05311229	0	$0	Yes
Knife River	05311232	0	$0	Yes
Knife River	05311233	0	$0	Yes

St. Louis

Name	TRDS	Acres	Est Cost	Existing Protection?
Knife River	05212224	0	$0	Yes
Knife River	05212225	0	$0	Yes
Knife River	05212225	0	$0	Yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

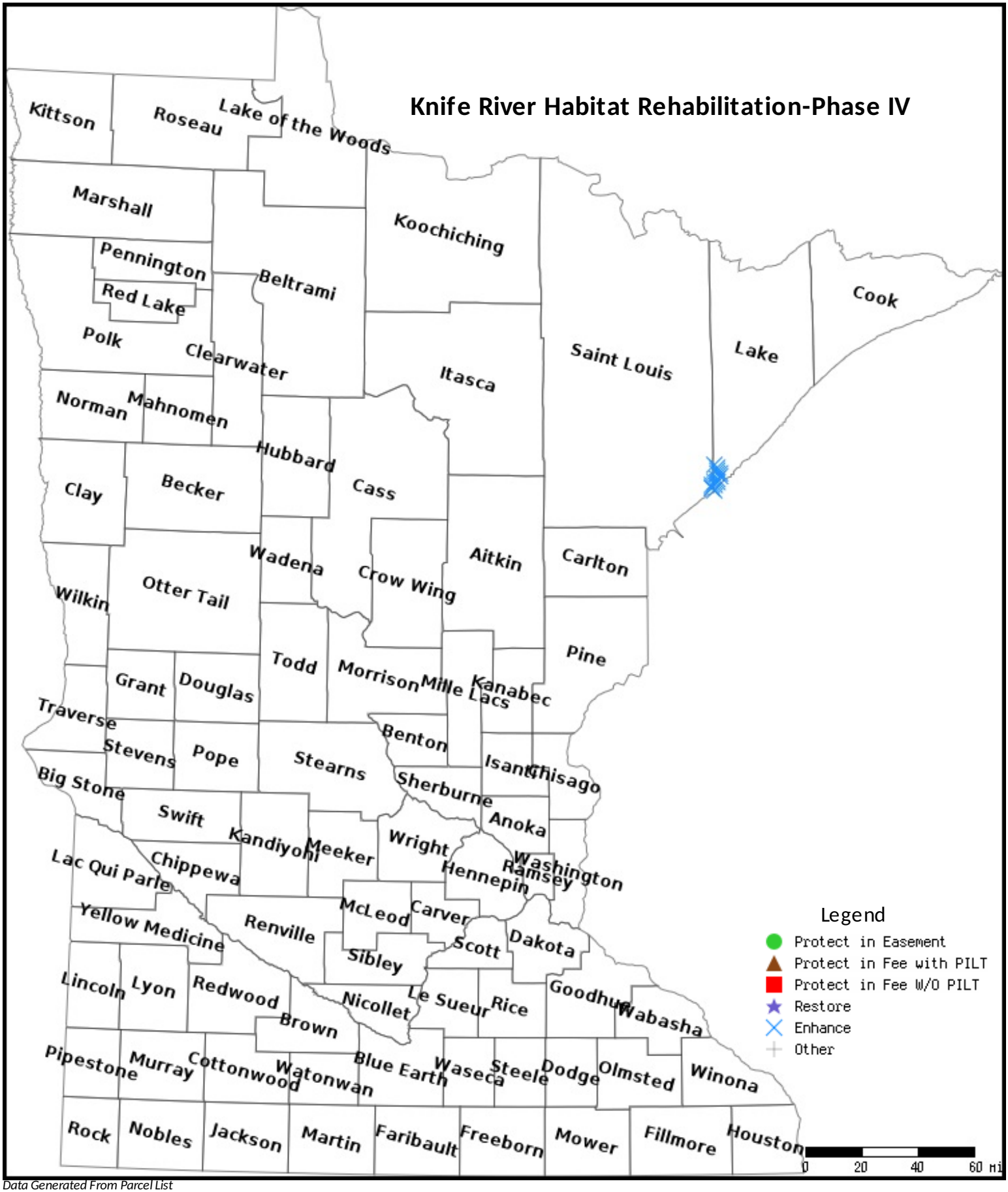
Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map



Data Generated From Parcel List

Lessard-Sams Outdoor Heritage Council
Comparison Report

Program Title: 2019 - Knife River Habitat Rehabilitation-Phase IV
Organization: Zeitgeist (ZG) and Lake Superior Steelhead Association (LSSA)
Manager: Tony Cuneo and Kevin J.Bovee

Budget

Requested Amount: $2,400,000
Appropriated Amount: $891,000
Percentage: 37.13%

	Total Requested		Total Appropriated		Percentage of Request	
Budget Item	**LSOHC Request**	**Anticipated Leverage**	**Appropriated Amount**	**Anticipated Leverage**	**Percentage of Request**	**Percentage of Leverage**
Personnel	$382,000	$5,000	$137,000	$0	35.86%	0.00%
Contracts	$1,735,000	$9,000	$645,000	$3,600	37.18%	40.00%
Fee Acquisition w/ PILT	$0	$0	$0	$0	-	-
Fee Acquisition w/o PILT	$0	$0	$0	$0	-	-
Easement Acquisition	$0	$0	$0	$0	-	-
Easement Stewardship	$0	$0	$0	$0	-	-
Travel	$0	$13,000	$0	$6,000	-	46.15%
Professional Services	$0	$11,000	$4,000	$10,000	-	90.91%
Direct Support Services	$0	$0	$0	$0	-	-
DNR Land Acquisition Costs	$0	$0	$0	$0	-	-
Capital Equipment	$0	$0	$0	$0	-	-
Other Equipment/Tools	$8,000	$36,200	$3,000	$12,000	37.50%	33.15%
Supplies/Materials	$275,000	$0	$102,000	$0	37.09%	-
DNR IDP	$0	$60,000	$0	$65,000	-	108.33%
Total	$2,400,000	$134,200	$891,000	$96,600	37.13%	71.98%

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?

Construction will include less linear feet of stream due to reduced appropriation. Design plans and all necessary permits will be obtained previously. After the RFP and awarding of same, this project will be totally SHOVEL READY for implementation.

Output

Table 1a. Acres by Resource Type

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	325	300	92.31%

Table 2. Total Funding by Resource Type

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	2,400,000	891,000	37.13%

Table 3. Acres within each Ecological Section

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	325	300	92.31%

Table 4. Total Funding within each Ecological Section

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	2,400,000	891,000	37.13%