Lessard-Sams Outdoor Heritage Council
Fiscal Year 2019 / ML 2018 Request for Funding

Date: May 31, 2017

Program or Project Title: Two Rivers Fish Passage Restoration and Habitat Enhancement

Funds Requested: $2,000,000

Manager's Name: Dave Treumer
Title: Mayor
Organization: City of Hallock
Address: 163 South 3rd ST
Address 2: PO Box 336
City: Hallock, MN 56728
Office Number: 218-843-3373
Email: adjuster64@hotmail.com
Website: http://www.hallockmn.org/

County Locations: Kittson

Regions in which work will take place:

- Prairie

Activity types:

- Restore
- Enhance

Priority resources addressed by activity:

- Habitat

Abstract:

The City of Hallock will restore and enhance habitat to facilitate fish passage by retrofitting the existing Hallock Dam on the South Branch of the Two Rivers and re-establishing a stable riffle-pool habitat downstream. The project will modify the existing 11 foot high dam with a rock arch rapids fishway that will provide lake sturgeon and walleye spawning habitat and reconnect more than 30 miles and in excess of 300 acres of high quality, diverse habitat along the South Branch. In addition to the fish habitat improvement, the project will provide enhanced recreational opportunities for paddlers along the river.

Design and scope of work:

Many native fish species migrate from the Red River to tributary streams, such as Two Rivers, to access quality spawning habitats. This is especially true for Lake Sturgeon, a native species recently re-introduced into the Red River Basin, which make very long migrations to reproduce in riffles and rapids found in high gradient areas. Barriers to fish passage, such as dams, prevent fish from making this seasonal spawning run. Much work has been done to eliminate these barriers but additional work is required. Restoring connections from the Red River to these critical habitats helps to re-establish and maintain healthy, robust native fish communities with greater resiliency to invasion by exotic species.

Fisheries surveys on Two Rivers clearly identified the Hallock Dam as a barrier to upstream migration. Recent fish surveys conducted by the DNR have found that 13 of the 43 species present in the Two Rivers are absent upstream of the dam in Hallock. Absent are large river species such as Channel Catfish, Sauger, and Freshwater Drum. The absence of these fish species also impact mussel populations which rely on the upstream migrations of large river species to transport juvenile life stages to hospitable habitat. Based on several DNR studies, removal of barriers create more diverse mussel and fish communities and also expand and improve fishing opportunities in river segments above barriers.

A fish passage project similar to the one proposed for Two Rivers was conducted on the Wild Rice River, another major tributary to the Red River. Similar to findings on Two Rivers, large river fish species such as Channel Catfish, Freshwater Drum, Goldeye, Sauger, and Smallmouth Bass were common below but rarely captured above the dam. Within one year of passage restoration at this dam, these large river species were common upstream of the dam, with channel catfish captured 70 river miles above the previous barrier. Restoration of fish passage on Two Rivers would likely yield similar results.

Retrofit of the Hallock dam with a rock arch rapids fishway will allow fish migration upstream of the Dam into a 30 plus mile stretch of river and more than 300 acres of aquatic habitat between Hallock and the Lake Bronson Dam. The river channel upstream of the reservoir created by the Hallock Dam between Lake Bronson and Hallock is a segment of river that is in its most natural, unaltered state. The channel undergoes a series of riffles and pools, and provides excellent fish and wildlife habitat.
Downstream of the dam, an unstable stream channel has caused degraded habitat and eroding banks. Here, the channel enhancement work will recreate the appropriate complex and diverse pool-riffle habitat. This will benefit both the project area and the habitat reaches downstream that will no longer need to handle the excessive sediment load. Natural channel design principles will be used to restore this channel.

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

- H3 Improve connectivity and access to recreation
- H6 Protect and restore critical in-water habitat of lakes and streams

Which other plans are addressed in this proposal:

- Long Range Plan for Fisheries Management
- Red River of the North Fisheries Management Plan

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

The City of Hallock will restore and and reconnect more than 30 miles and in excess of 300 acres of habitat along the South Branch by retrofitting the existing Hallock Dam and re-establishing a stable riffle-pool habitat downstream. This project addresses several objectives of the identified plans by 1. Providing uninterrupted fish passage/river connectivity and reconnects river habitats and energy pathways by modifying a high priority dam and 2. Providing heterogeneous and complex physical habitat components important to aquatic species in the Red River basin and 3. Improving habitats so that they sustain healthy systems and fish populations. This project could be viewed as a first step in that it would provide fish passage up to the Lake Bronson Dam which if modified in a future step could provide full South Branch connectivity and improved fishing opportunities at the State Park.

Which LSOHC section priorities are addressed in this proposal:

Prairie:

- Restore or enhance habitat on public lands

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:

This project will permanently restore and enhance habitat within a one mile stretch of Public Water by reconnecting a disconnected reach of the South Branch Two Rivers and restoring a degraded reach of the river. The project will allow fish and mussel species to repopulate the 30 plus mile reach of the river upstream of the dam. Modification of the Hallock dam will provide more consistent fish passage to this reach. Most significantly, this project will provide fish and other aquatic species access to a high quality reach of the river located upstream of the dam. This project will expand and improve fishing opportunities upstream of the Hallock Dam. This project is a step in providing full connectivity in the South Branch. A future step of modifying the Lake Bronson Dam would provide full connectivity within this river.

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:

It is recognized that dams create significant fragmentation of aquatic habitat. Recent DNR stream surveys indicate that 13 of 43 expected fish species are found upstream of the dam. The project eliminates the fragmentation and will allow passage of all of the fish species in the river system. The project will expand habitat corridors by opening up the reach of the South Branch Two Rivers upstream of the Hallock Dam. Both game and non-game species will benefit. River degradation downstream of the dam will also be addressed through the restoration of habitat in the mile of channel downstream of the dam. The project uses natural channel design principles. This project has been identified by the Two Rivers Watershed District as a priority in this subwatershed of the District.

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:

A significant fishery exists on the Two Rivers, benefiting from the resource of the Red River. Stream survey work was done by the Minnesota DNR recently. This work identified 43 species of fish within the watershed but only 13 of these species upstream of the dam.

The project will benefit lake sturgeon (Acipenser fulvescens) which is a MN species of Special Concern. The project will modify the existing 11 foot high dam with a rock arch rapids fishway that will provide lake sturgeon spawning habitat and reconnect more than 30 miles and in excess of 300 acres of habitat along the South Branch. Several other game species will benefit, including walleye, northern pike, channel catfish, largemouth bass, black crappie, bluegill, sauger, and various other non-game fish species.

In addition to the game species listed above, many non-game species of animals also exist within the South Branch river corridor. These include, but are not limited to sandhill crane, great blue heron, magpie, bald eagle, timber wolf, garter snake, various frog species, American bittern, marbled godwit, loon, and many others.

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

The project will modify the existing 11 foot high dam with a rock arch rapids fishway that will provide lake sturgeon spawning habitat and reconnect more than 30 miles and in excess of 300 acres of habitat along the South Branch. The primary fishery management species that will benefit are lake sturgeon (Acipenser fulvescens) and channel catfish (Ictalurus punctatus). Lake sturgeon are a MN species of Special Concern. Walleye (Sander vitreum), northern pike (Esox lucius), and sauger (Sander canadensis) will also benefit.

Outcomes:

Programs in prairie region:

- Protected, restored, and enhanced habitat for migratory and unique Minnesota species *This project will restore and enhance habitat within a Public Water by reconnecting a disconnected reach and restoring a degraded reach of the South Branch Two Rivers. The project provides lake sturgeon and walleye spawning habitat and reconnects more than 30 miles and in excess of 300 acres of aquatic habitat. The restoration of the downstream reach will result in more complex diverse habitat which will promote aquatic diversity. Future stream surveys will confirm improvements in species diversity and populations. The project will also provide enhanced recreational opportunities for paddlers which can be tracked through City campground use statistics.*

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

The City of Hallock will maintain the installed project features into the future. Initially, the project will be monitored to ensure that the project is functioning as intended. The project will follow natural channel design principles, which create habitat conditions that are self-sustaining. Significant long-term maintenance costs are not expected. The City of Hallock will use funds currently used for dam maintenance to conduct required project maintenance.

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

Year	Source of Funds	Step 1	Step 2	Step 3
Annually	City of Hallock - Local Tax Levy	Inspect Rock Fishway and downstream habitat restoration features	Perform maintenance/repairs, as needed	
One year after project completion	MN DNR - Fisheries	Fish survey conducted by Minnesota DNR fisheries		
5 years after project completion	MN DNR - Fisheries	Fish survey conducted by Minnesota DNR fisheries		
10 years after project completion	MN DNR - Fisheries	Fish survey conducted by Minnesota DNR fisheries		

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

The City is ready to implement the project. Without OHF funding, making this project reality is unlikely.

How does this proposal include leverage in funds or other effort to supplement any OHF appropriation:

The project does not have any leverage funds at this time, however, the City will continue to pursue funding from other sources to help complete this work. The US Fish and Wildlife Service has provided small amounts of funding for similar projects in the past but no commitment of funding yet toward this project. The DNR Dam Safety unit has provided some funding for similar projects in the past, but no commitment at this point.

Relationship to other funds:

- Not Listed

Describe the relationship of the funds:

Not Listed

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

Not Listed

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 activity on permanently protected land per 97A.056, subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 - **Yes (Private Land, County/Municipal, Public Waters)**

Do you anticipate federal funds as a match for this program - **Yes**

Are the funds confirmed - **No**

What is the approximate date you anticipate receiving confirmation of the federal funds - **12/31/2017**

Land Use:

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

Accomplishment Timeline

Activity	Approximate Date Completed
Finalize Restoration project construction plans	September 2018
Complete project permitting	November 2018
Begin Construction	December 2018
Complete Construction	October 2019
Full Project Maintenance Begins	November 2019

Budget Spreadsheet

Total Amount of Request: $2,000,000

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	$0	$0		$0
Contracts	$1,800,000	$0	City of Hallock Local Tax Levy	$1,800,000
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	$0		$0
Professional Services	$200,000	$0		$200,000
Direct Support Services	$0	$0		$0
DNR Land Acquisition Costs	$0	$0		$0
Capital Equipment	$0	$0		$0
Other Equipment/Tools	$0	$0		$0
Supplies/Materials	$0	$0		$0
DNR IDP	$0	$0		$0
Total	$2,000,000	$0	-	$2,000,000

Amount of Request:	$2,000,000
Amount of Leverage:	$0
Leverage as a percent of the Request:	0.00%
DSS + Personnel:	$0
As a % of the total request:	0.00%
Easement Stewardship:	$0
As a % of the Easement Acquisition:	-%

Does the amount in the contract line include R/E work?

All of the contract line is for R/E work.

Describe and explain leverage source and confirmation of funds:

At this point potential leverage sources have been identified and will be pursued by the City, however, no confirmed funds at this time.

Does this proposal have the ability to be scalable? - Yes

Tell us how this project would be scaled and how administrative costs are affected, describe the "economy of scale" and how outputs would change with reduced funding, if applicable:

There is limited ability to scale this project. The project could be broke into two projects: Dam modification $1,700,000 and downstream channel restoration/enhancement work $300,000. Greatest benefits are from the dam project and that project will be difficult to complete without full funding.

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	2	2
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	10	10
Total	0	0	0	12	12

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	$0	$0	$0	$1,700,000	$1,700,000
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	$300,000	$300,000
Total	$0	$0	$0	$2,000,000	$2,000,000

Table 3. Acres within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	0	0	0	2	0	2
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	10	0	10
Total	0	0	0	12	0	12

Table 4. Total Requested Funding within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	$0	$0	$0	$1,700,000	$0	$1,700,000
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	$300,000	$0	$300,000
Total	$0	$0	$0	$2,000,000	$0	$2,000,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	$0	$0	$0	$850,000
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	$0	$30,000

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	$0	$0	$0	$850,000	$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	$30,000	$0

Target Lake/Stream/River Feet or Miles

1

I have read and understand Section 15 of the Constitution of the State of Minnesota, Minnesota Statute 97A.056, and the Call for Funding Request. I certify I am authorized to submit this proposal and to the best of my knowledge the information provided is true and accurate.

Parcel List

Explain the process used to select, rank and prioritize the parcels:

All parcels within the project reach have been identified. Restoration parcels will be prioritized over Enhancement parcels.

Section 1 - Restore / Enhance Parcel List

Kittson

Name	TRDS	Acres	EstCost	Existing Protection?
300182480	16148218	0	$45,000	No
300182520	16148218	0	$15,000	No
320004100	16149212	0	$20,000	No
320005000	16149213	0	$40,000	No
320005200	16149213	0	$40,000	No
320005400	16149213	0	$100,000	No
320005600	16149213	0	$40,000	No
320005800	16149213	0	$40,000	No
320006200	16149213	0	$1,100,000	No
320006400	16149213	0	$500,000	No
320080600	16149213	0	$5,000	No
320081000	16149213	0	$5,000	No
320081200	16149213	0	$5,000	No
320081400	16149213	0	$5,000	No
320081600	16149213	0	$5,000	No
320081800	16149213	0	$5,000	No
320082000	16149213	0	$5,000	No
320082200	16149213	0	$5,000	No
320082400	16149213	0	$5,000	No
320082800	16149213	0	$5,000	No
320083000	16149213	0	$5,000	No
320083200	16149213	0	$5,000	No

Section 2 - Protect Parcel List

No parcels with an activity type protect.

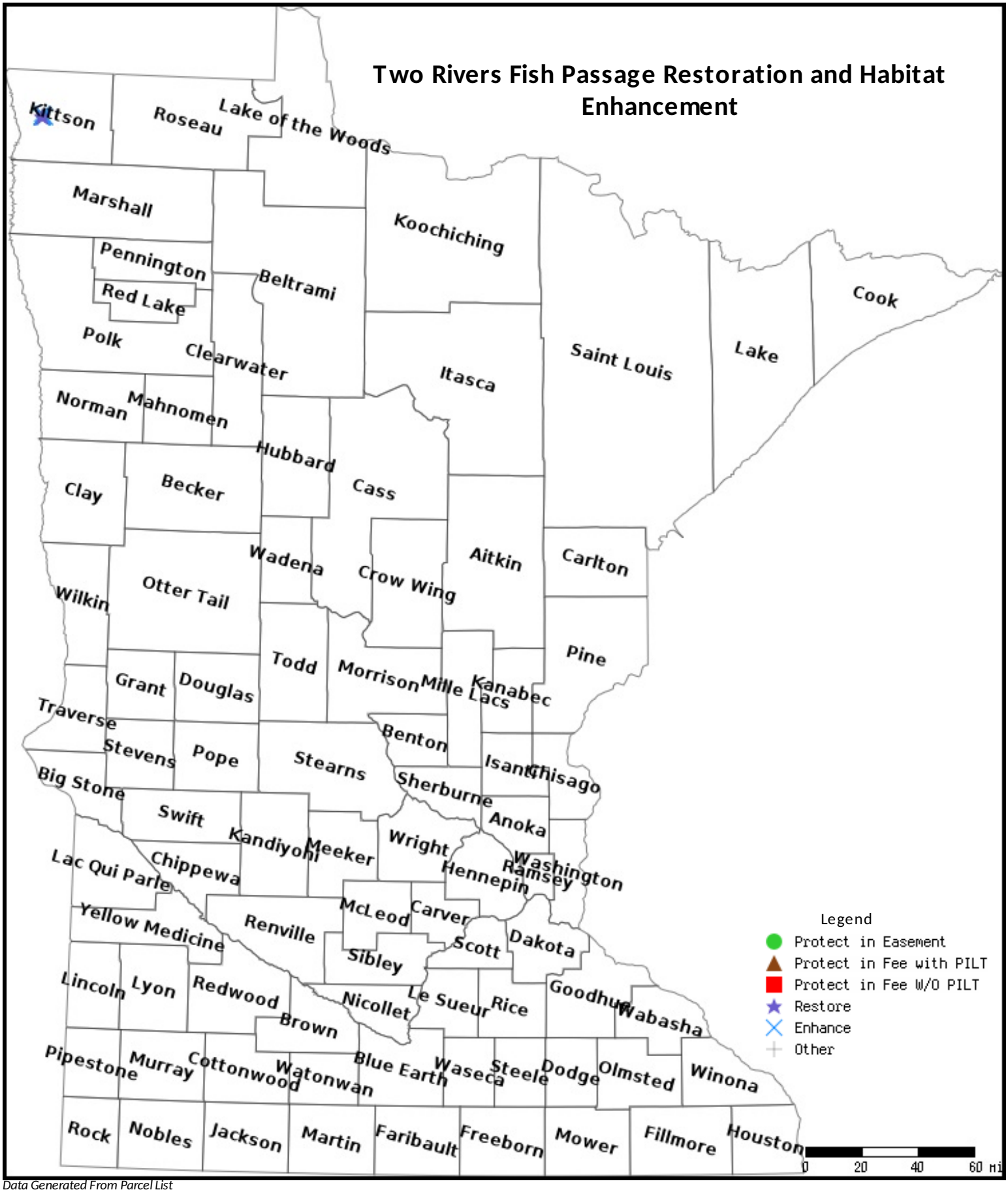
Section 2a - Protect Parcel with Bldgs

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

Two Rivers Fish Passage Restoration and Habitat Enhancement

Project Background & Scope

Many native fish species migrate from the Red River to tributary streams—such as Two Rivers—to access quality spawning habitats. This is especially true for Lake Sturgeon, a native species recently re-introduced into the Red River Basin, which make very long migrations to reproduce in riffles and rapids found in high gradient areas. Barriers to fish passage, such as dams, prevent fish from making this seasonal spawning run. Much work has been done to eliminate these barriers but additional work is required. Restoring connections from the Red River to these critical habitats helps to re-establish and maintain healthy, robust native fish communities with greater resiliency to invasion by exotic species.

Fishery surveys on Two Rivers clearly identified the Hallock Dam as a barrier to upstream migration. Recent fish surveys conducted by the DNR have found that 13 of the 43 species present in the Two Rivers are absent upstream of the dam in Hallock. Absent are large river species such as Channel Catfish, Sauger, and Freshwater Drum. The absence of these fish species also impact mussel populations that rely on the upstream migrations of large river species to transport juvenile life stages to hospitable habitat. Based on several DNR studies, removal of barriers create more diverse mussel and fish communities and also expand and improve fishing opportunities in river segments above barriers.

A fish passage project similar to the one proposed for Two Rivers was conducted on the Wild Rice River—another major tributary to the Red River. Similar to findings on Two Rivers, large river fish species such as Channel Catfish, Freshwater Drum, Goldeye, Sauger, and Smallmouth Bass were common below but rarely captured above the dam. Within one year of passage restoration at this dam, these large river species were common upstream of the dam with channel catfish captured 70 river-miles above the previous barrier. Restoration of fish passage on Two Rivers would likely yield similar results. Retrofit of the Hallock dam with a rock arch rapids fishway will allow fish migration upstream of the Dam into a 30-plus mile stretch of river and more than 300 acres of aquatic habitat between Hallock and the Lake Bronson Dam. The river channel upstream of the reservoir created by the Hallock Dam between Lake Bronson and Hallock is a segment of river that is in its most natural, unaltered state. The channel undergoes a series of riffles and pools, and provides excellent fish and wildlife habitat.

Downstream of the dam, the river has a degradation problem that has resulted in stream bank failures that has degraded the habitat. Here, channel enhancement work will recreate the appropriate complex and diverse habitat. This will benefit both the project area and the habitat reaches downstream that will no longer need to handle the excessive sediment load. Natural channel design principles will be used to restore this channel.

Outcomes/Benefits

- Reconnection of in-stream habitat corridor provided between Hallock Dam and Lake Bronson Dam
- 30+ miles of reconnected river
- 300+ acres of reconnected habitat
- Sturgeon and catfish spawning habitat created by rock fishway and provided in the reconnected reach

South Branch Two Rivers upstream of Hallock

Timeline

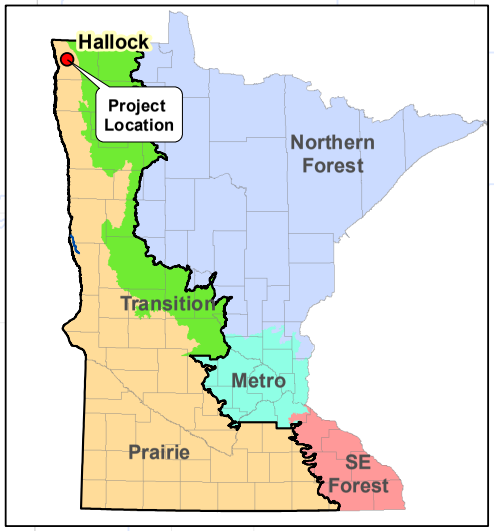
September 2018
Finalize restoration project construction plans

November 2018
Complete project permitting

December 2018
Begin construction

October 2019
Complete construction

November 2019
Full project maintenance begins



Hallock

Hallock Dam

South Branch

Reconnected River Habitat - 30+ Miles 300+ Acres of in Stream Habitat

Lake Bronson

Lake Bronson Dam

Halma

Existing Hallock Dam

Proposed Hallock Dam

Two Rivers Watershed District

In Roseau, Kittson, & Marshall Counties

Board of Managers: President-Darrel Johnson, V.P.- Allen Brazier, Secretary-Daryl Klegstad, Treasurer-Paul Olsonawski
Manager-Roger Anderson, Manager- Jim Kukowski, Manager-Gary Johnson
Staff: Dan Money, District Administrator; Matt Thompson, Head Technician

410 5th Street S., Suite 112, Hallock, MN 56728 - Phone (218) 843-3333 - Email: daniel.money@mn.nacdnet.net
World Wide Web: www.TwoRiversWD.com

May 30, 2017

City of Hallock
P.O. Box 336
Hallock, MN 56728

To Whom It May Concern,

This letter is in reference to the project the City of Hallock is contemplating regarding modifications to the Hallock dam, located within the city limits on the South Branch Two Rivers. The Two Rivers Watershed District supports this project.

The Overall Plan of the Two Rivers Watershed District lists the following goals:

- Reduce erosion and sedimentation
- Participate in efforts to enhance, establish, and protect stream corridors and riparian areas
- Participate in efforts to enhance, provide, and protect habitats
- Support the expansion of water based recreation

The plan states one of the natural resources enhancement alternatives is to "evaluate the Hallock dam and develop a plan to modify or remove the dam while providing for the needs of the City of Hallock". A key element of this potential project is to involve all of the potential stakeholders, including the City of Hallock, the Two Rivers Golf Club, the Two Rivers Watershed District, and the various citizens that use the river for recreation.

If all stakeholders are informed and engaged in the planning process, we are confident a plan can be devised and implemented to provide fish passage, while maintaining the current pool elevation to provide a reservoir for boating and a water source for golf course irrigation.

Sincerely,

Dan Money

Dan Money
District Administrator