Lessard-Sams Outdoor Heritage Council
Fiscal Year 2020 / ML 2019 Request for Funding

HRE 07

CLEAN WATER LAND & LEGACY AMENDMENT

Date: May 30, 2018

Program or Project Title: Sauk River Dam Fish Passage

Funds Requested: $3,505,600

Manager's Name: Greg Berg
Organization: Stearns County SWCD
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County Locations: Stearns

Regions in which work will take place:

- Prairie

Activity types:

- Restore
- Enhance

Priority resources addressed by activity:

- Habitat

Abstract:

The Sauk River Dam in Melrose will be modified into a rapids, creating fish passage between the 53.7 miles of river downstream to over 16 miles of river upstream. An additional 500 feet of heavily modified stream and adjacent floodplain downstream from the dam will also be restored. The project will benefit fish species such as walleye, smallmouth bass, and channel catfish. Rare mussel species (black sandshell and creek heelsplitter) not currently found in the reach above Melrose will also benefit. The upcoming replacement of an adjacent bridge creates a unique opportunity to complete this project.

Design and scope of work:

The Stearns County Soil and Water Conservation District (Stearns SWCD) proposes to partner with the Minnesota Department of Natural Resources (MN DNR) and the City of Melrose to modify the Sauk River Dam at Melrose into a rapids to allow passage of fish and other aquatic life. An additional 500 feet of river downstream of the dam and 2 acres of floodplain would also be restored. The city of Melrose owns the dam, and is supportive of modifying the dam to improve the river through this reach, and has dedicated $500,000 to the project as cash match. Stearns SWCD provides local expertise in the implementation of restoration projects, and will serve as project manager. The City of Melrose, with SWCD oversight, will contract with a design consultant, hire a construction firm to complete the project, and oversee construction. MN DNR will assist with conceptual design, provide review of project plans to be completed by a consultant, and assist with construction oversight.

The County Road 13 bridge adjacent to the current Sauk River Dam is scheduled to be removed in 2019. If the dam is removed during the same project time frame as the bridge reconstruction, it is estimated that $500,000 - $750,000 will be saved. In addition, the environmental impacts would be greatly reduced by having the disturbance in the river and adjacent floodplain from both projects occur simultaneously. The reach is presently modified by concrete walls and rip-rap. Restoring this reach of the Sauk River will create quality habitat locally, and access to over 16 miles of habitat upstream.

MN DNR has been involved with numerous dam removal projects similar to this one. In place of the dam, a rapids will be built to gradually step the river bed down from the upstream reservoir pool to the riverbed downstream. Arches of boulders are integrated into the rapids to provide resting places for migrating fish, and to keep the highest flow velocity in the center of the rapids. Once constructed, there is generally little maintenance required. The City of Melrose has committed to providing any future maintenance

that is needed once OH funding expires.

Numerous fish species including walleye, smallmouth bass, and channel catfish will benefit from connectivity between the two stream reaches. Neither smallmouth bass nor channel catfish are currently found upstream of the Melrose Dam, despite suitable habitat. Walleye numbers are considerably lower upstream of the dam than in downstream reaches. Black sandshell and creek heelsplitter are mussel species that are currently found downstream of the dam but not in the reach upstream. Removing the dam will create access for them to recolonize suitable habitat upstream, as has been seen in other similar projects in Minnesota.

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

- H2 Protect critical shoreland of streams and lakes
- H6 Protect and restore critical in-water habitat of lakes and streams

Which other plans are addressed in this proposal:

- Minnesota DNR Strategic Conservation Agenda
- Minnesota Department of Natural Resources Fish Habitat Plan

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

Goal 1 in the MN DNR Strategic Conservation Agenda focuses on natural resource management. Among the strategies that are called for is to "connect fragments of high-quality habitat", to "conserve endangered, threatened, rare, declining, and vulnerable species", and "Restore the health of degraded lakes, wetlands, rivers, grasslands, and forests". Our stream restoration and fish passage projects represent those strategies well.

The National Fish Habitat Action Plan plan asks, "Can fish reach all of the habitats they need to complete their life cycle and maximize their production?" This matches with the goal of reestablishing fish passage on the Sauk River. In addition, the National Plan includes a section on direct habitat alternation. It looks to restore locations were streams and their floodplains have been modified, as is the case in currently impounded section of the Sauk River where we will the river to a meandering stream channel surrounded by floodplain.

Which LSOHC section priorities are addressed in this proposal:

Prairie:

- Protect, enhance, or restore existing wetland/upland complexes, or convert agricultural lands to new wetland/upland habitat complexes

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:

The removal of the Melrose Dam will leave a lasting conservation legacy. Fish passage will be restored between 53 miles of river downstream, and 16 miles of river upstream. Once completed, no further maintenance work will be required in perpetuity. We expect that popular game fish species of smallmouth bass and channel catfish will become established upstream of the dam and create an improved fishery in that portion of the river. Rare mussel species will also be able to colonize that reach. The rapids as well as 500 feet of river and associated floodplain downstream of the dam will replace the existing channel that is constrained by concrete walls and riprap banks, creating poor habitat. The new channel will create a natural amenity in the City of Melrose, in addition to the habitat benefits.

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:

This project will reduce fragmentation of the Sauk River, connecting over 53 miles of river downstream with over 16 miles of river upstream. Fish passage between these two reaches will allow fish, mussels, and other aquatic species to migrate between key habitats such as spawning and overwintering. This will better allow them to complete all stages of their life cycle in appropriate habitats, enhancing the success of the aquatic community found in this river.

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:

This project will create access to over 16 miles of suitable habitat for black sandshell and creek heelsplitter mussels. Both are listed as species of special concern by the State of Minnesota, as well as species of greatest conservation need. Both species are found in the

reach downstream, but not in the reach upstream of the dam. Similar fish passage projects have resulted in recolonization by downstream mussel species.

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

We expect that the reach upstream from the Melrose Dam will support channel catfish at a density of approximately 116 per acre, and mussel populations of 8000 per acres. These are typical values provided by MN DNR for rivers such as the Sauk.

Outcomes:

Programs in prairie region:

- Protected, restored, and enhanced habitat for migratory and unique Minnesota species *MN DNR conducts periodic surveys of the Sauk River. Future surveys will compare fish and mussel populations to assess the benefit of the removal of the dam. We expect that rare mussel species currently absent upstream of the dam will become established. Channel catfish and smallmouth bass will become established upstream of the dam, and walleye abundance will increase. All of these species must migrate between different habitats (e.g., spawning, over-wintering) in order to complete their life processes. Catch per hour rates for different species will be compared between pre and post-removal time periods.*

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

Dam removals are advantageous as compared to other types of habitat projects in that they do not require maintenance once completed. The restored stream channel is planned to have three years of vegetation maintenance to allow establishment of native plants. Once that finished, maintenance work is expected to be minimal and will be the responsibility of the City of Melrose through their municipal funds.

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

Year	Source of Funds	Step 1	Step 2	Step 3
2021	OHF	Control invasive species in riparian areas		
2022	OHF	Following initial high flow, inspect rapids to see if any adjustments are needed.		
2022	OHF	Control invasive species in riparian areas		
2023	OHF	Control invasive species in riparain areas		
Ongoing	City of Melrose	Maintain native vegetation in riparian area, inspect rapids for any issues needing maintenance		

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 County Road 13 bridge adjacent to the current Sauk River Dam is scheduled to be removed in 2019. If the dam is removed during the same project timframe as the bridge reconstruction it is estimated that $500,000 - $750,000 will be saved. In addition, the environmental impacts would be greatly reduced by having the disturbance in the river and adjacent floodplain occur simultaneously for both projects. The Melrose community has bought into this project and would like to see a coordinated effort in implementing a natural channel design with adjacent riparian restoration.

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

City of Melrose has levied $500,000 in matching funds for the project.

Relationship to other funds:

- City of Melrose

Describe the relationship of the funds:

City of Melrose has levied funds for the project.

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:

The Stearns County SWCD is continually working with partners for funding restoration work within the immediate Sauk River Watershed and Stearns County. These sources include CWF, USFWS, CPL as well as other natural resource and conservation programs.

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

Appropriation Year	Source	Amount
2013	BWSR CWF Thiel Creek	$46,624
2017	BWSR State Cost Share	$36,814
2018	BWSR Buffer Funds	$60,000
2015	BWSR CWF Middle Sauk River	$210,000
2015	BWSR CWF Cold Spring	$137,050
2017	USFWS Midwest Glacial Lakes	$63,000
2015	BWSR CWF Rice Lake	$243,750
2013	BWSR CWF SRWD Sauk River Whitney Park	$149,191
2014	MPCA CWP SRWD Sauk River Whitney Park	$49,284
2015	BWSR Farm Bill Assistance	$45,000
2016	BWSR Buffer Funds	$35,000
2016	BWSR State Cost Share	$36,814
2016	BWSR CWF Two Rivers Lake	$187,983
2017	BWSR Conservation Delivery	$22,030
2017	BWSR Farm Bill Assistance	$58,500
2017	BWSR Buffer Funds	$35,000
2017	BWSR CWF Sauk River Chain Of Lakes	$150,000

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 (County/Municipal, Public Waters)**

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

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
Site surveying and project design.	December 2019
Permitting and environmental review	May 2020
Construction	November 2021
Floodplain vegetation maintenance	June 2024

Budget Spreadsheet

Total Amount of Request: $3,505,600

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	$17,600	$0		$17,600
Contracts	$3,488,000	$500,000	City of Melrose funds	$3,988,000
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	$0	$0		$0
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	$3,505,600	$500,000	-	$4,005,600

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Project development and grant administration	0.04	3.00	$17,600	$0		$17,600
Total	0.04	3.00	$17,600	$0	-	$17,600

Amount of Request:	$3,505,600
Amount of Leverage:	$500,000
Leverage as a percent of the Request:	14.26%
DSS + Personnel:	$17,600
As a % of the total request:	0.50%
Easement Stewardship:	$0
As a % of the Easement Acquisition:	-%

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

100%

Describe and explain leverage source and confirmation of funds:

City of Melrose has levied $500,000 in matching funds for the project.

Does this proposal have the ability to be scalable? - No

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	192	192
Total	0	0	0	194	194

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	$0	$0	$0	$890,000	$890,000
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	$2,615,600	$2,615,600
Total	$0	$0	$0	$3,505,600	$3,505,600

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	192	0	192
Total	0	0	0	194	0	194

Table 4. Total Requested Funding within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	$0	$0	$0	$890,000	$0	$890,000
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	$2,615,600	$0	$2,615,600
Total	$0	$0	$0	$3,505,600	$0	$3,505,600

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	$0	$0	$0	$445,000
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	$13,623

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	$0	$0	$0	$445,000	$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	$13,623	$0

Target Lake/Stream/River Feet or Miles

16 miles

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:

Removal of the Sauk River Dam represents a unique opportunity to improve aquatic habitat. Because of the opportunity afforded by the City of Melrose's plan to replace a downstream bridge that will greatly reduce removal costs, and the significant benefit to a long reach of the river from a single project, we have chosen to propose this project of Outdoor Heritage Funding.

Section 1 - Restore / Enhance Parcel List

Stearns

Name	TRDS	Acres	EstCost	Existing Protection?
Sauk River	12633234	2	$890,000	Yes
Sauk River Dam	12633234	192	$2,615,600	Yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

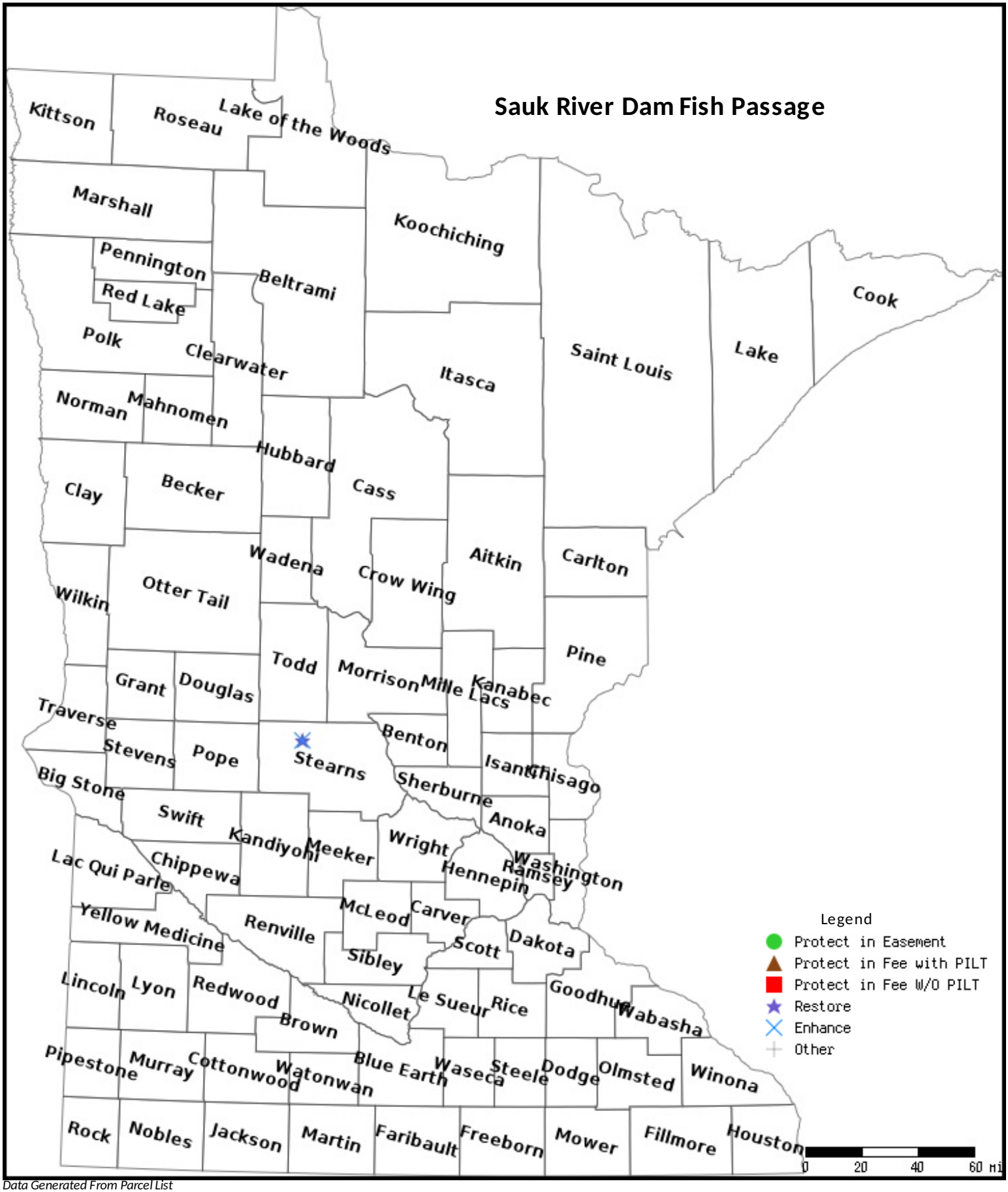
Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

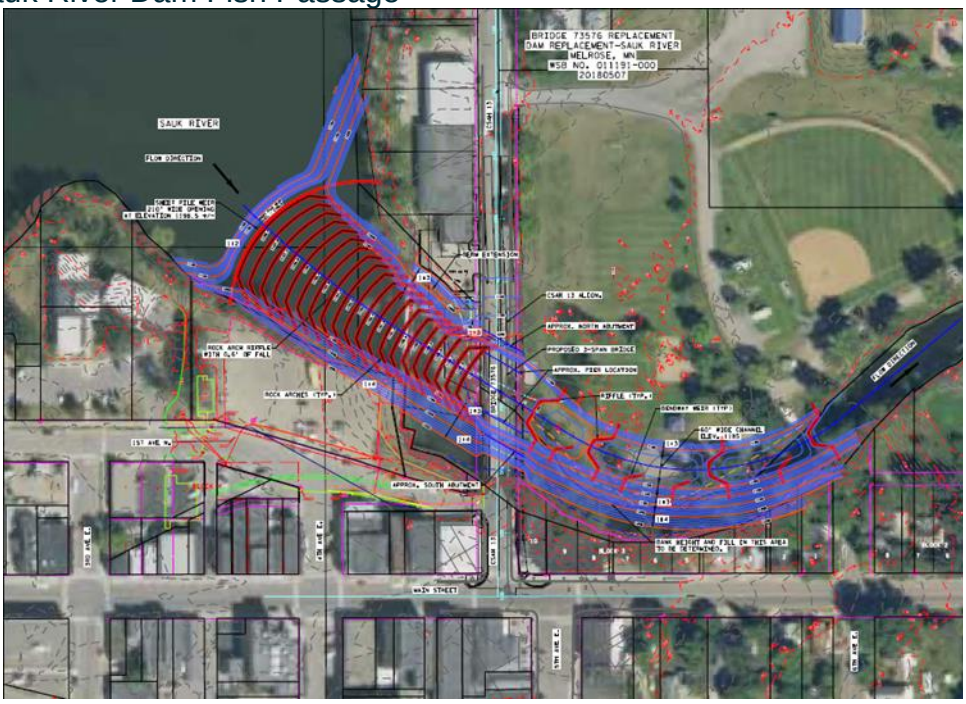
Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map



Data Generated From Parcel List



SAUK RIVER DAM FISH PASSAGE

Stearns County SWCD, the City of Melrose, and Minnesota Department of Natural Resources are excited to partner on a project to modify the Sauk River Dam at Melrose into a rapids to create passage for fish, mussels, and other aquatic life. A 500-foot downstream reach of river and 2 acres of surrounding floodplain will also be restored. The planned renovation of the bridge immediately downstream of the dam creates a once-in-a-generation opportunity to remake this heavily modified stretch of the Sauk River, and allows over $500,000+ cost savings vs. a standalone project.

18’ dam is a barrier to fish passage

Fish species such as channel catfish and walleye are blocked from over 16 miles of upstream habitat

Dam would be modified into a rapids, with boulder arches providing resting places for migrating fish

LSOHF request: $3.5 million
Match: $500,000

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Sauk River Dam at Melrose

- Built 1873, refurbished in 1922 and 1974.
- Originally used for mill power; reservoir now used for recreation and water supply for an industrial business.
- City land surrounds the dam and downstream reaches of the Sauk River
- Dam is 18 feet tall, and is a complete barrier to fish passage.
- Reconstruction of the downstream bridge creates a rare window to remake this reach of river.

Melrose Dam

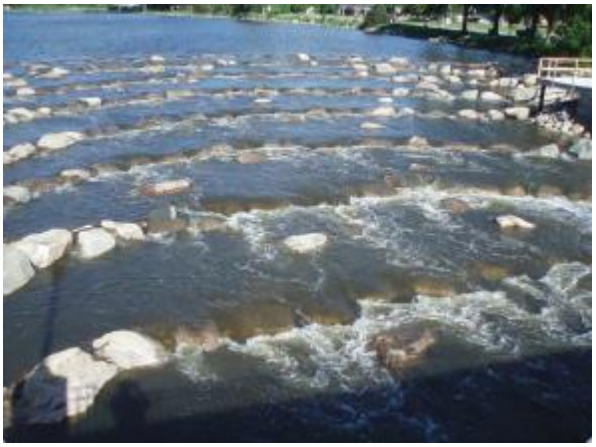
The Sauk River

- The Sauk River supports a diverse fish community, including game species such as walleye, smallmouth bass, channel catfish, and northern pike.
    - Channel catfish and smallmouth bass are not found upstream of the dam despite suitable habitat.
- Rare mussel species such as black sandshell and northern heelsplitter are found downstream of the dam but not upstream.

Freshwater mussels in the streambed

Dam Conversions

- Numerous examples of successful similar projects are found throughout Minnesota.
- Monitoring of similar projects has documented establishment of fish and mussel species previously not found upstream of the dam.
- Post-project maintenance is rarely needed once projects are complete.



An arch-rapids, similar to what would be built to replace the Melrose Dam

Roles

- Stearns SWCD: Project management
- City of Melrose: Owner of the dam and surrounding land. Matching funds for design, and contracting for design and construction.
- MN DNR: Assistance with project design review and construction oversight.