

Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2016 Accomplishment Plan



Date: October 26, 2015

Program or Project Title: Sand Hill River Fish Passage Restoration and Habitat Enhancement -- Phase II

Funds Recommended: \$ 828,000

Manager's Name: Daniel Wilkens

Title: Administrator

Organization: Sand Hill River Watershed District

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Legislative Citation:

Appropriation Language:

County Locations: Polk

Regions in which work will take place:

- Prairie

Activity types:

- Enhance
- Restore

Priority resources addressed by activity:

- Habitat

Abstract:

Phase 2 of this project will complete fish passage restoration from the Red River to 47 miles of quality upstream habitat in the Sand Hill River watershed and enhance stream habitat in a degraded segment of the Sand Hill River.

Design and scope of work:

Many native fish species migrate from the Red River to tributary streams, such as Sand Hill River, 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. The MN Department of Natural Resources in collaboration with federal and local partners has systematically removed and modified more than a dozen fish barriers in the Red River Basin over the past 15 years. 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.

Four concrete dams were installed on the Sand Hill River as part of a flood control project conducted by the Army Corps of Engineers in the 1950s. During normal flows, these dams create a vertical drop of approximately five feet. Surveys conducted by DNR Fisheries Biologists have conclusively identified these four dams on Sand Hill River as barriers to fish passage. Eleven species of fish were only found downstream of these dams. Many large river species such as Channel Catfish, Freshwater Drum, Goldeye, and Sauger that were

present below the dams were not captured upstream of the dams. Several other species were captured in much lower numbers upstream of the dams. Five fish species were captured exclusively upstream of the dams. Surveys also show mussel species are impacted by these barriers. One species of mussel (Giant floater) is only found above the dams while five other species are only found below the dams, including the Black sandshell, a species of special concern.

Initially, six fish passage barriers existed on this stream segment. The Sand Hill River Watershed District (SHRWD), in cooperation with the Minnesota Department of Natural Resources (DNR), developed the SHRWD Fish Passage Master Plan to restore upstream fish migration in the Sand Hill River by modifying these six structures. This project ranks second in the Minnesota DNR 2014 statewide Stream Restoration Priority List. To date, two of the six structures have been modified to allow fish passage. Funding provided by the Outdoor Heritage Fund in ML 2015 (\$990,000) and Minnesota DNR Stream Habitat Program (\$120,000) will be used to modify at least two and possibly three more of the remaining structures with construction slated to begin in fall 2015. Modification of all remaining structures to transform the fish passage barriers into riffles with a more gradual slope will restore river connectivity to the 113 miles (1,356 acres) of Sand Hill River and other perennial streams located upstream of dams. Reconnecting this substantial spawning and rearing habitat will improve the composition and quality of the fishery both in the Sand Hill River watershed and Red River basin. This is an opportunity to complete the fish passage restoration project. The number of acres restored has been prorated based on the percentage of the total project funded from multiple Outdoor Heritage Fund allocations. This request would fund 42% of the total project cost or 564 of the total of 1,356 acres restored.

Numerous fish passage restoration projects have been conducted in the Red River basin, with almost immediate positive impacts to fish communities. A fish passage project similar to the one proposed for the Sand Hill River was conducted on the Wild Rice River, another major tributary to the Red River. Fisheries surveys found a low head dam on the Wild Rice River blocked fish passage and impacted populations. Similar to findings on the Sand Hill River, large river fish species such as Channel Catfish, Freshwater Drum, Goldeye, Sauger, Smallmouth Bass, and Walleye 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 the Sand Hill River would likely yield similar results.

A second component of this project will enhance stream habitat within a channelized segment of the Sand Hill River downstream of the four drop structures. The river channel in this reach is unstable and has down cut significantly, creating a simplified habitat lacking in diverse substrate and depth. Habitat will be enhanced by constructing rock riffles in the channel to reduce velocities, increase pool/riffle habitat and provide more diverse substrate. The enhanced habitat would likely be used by many fish species for spawning, juvenile, and year round deep cover. The \$281,300 requested for this project will be matched by \$28,100 from the Sand Hill River Watershed District.

The Sand Hill River Watershed District is responsible for administration of this project. Design and construction oversight for the fish passage component of the project will be provided by the Army Corps of Engineers, with substantial input from both Minnesota DNR and Sand Hill River Watershed District. The Army Corps of Engineers is also committed to funding the fish passage project at 75% of total costs, with every \$1.00 of state and local investment matched by \$3.00 of federal investment. The \$546,700 requested to complete the fish passage project will be matched by \$1,640,100 in federal investment.

This accomplishment plan approves an advancement of funds due to cash flow needs, if necessary, of \$546,000 to meet the federal match and move project forward. The receipts for this advancement must be turned into DNR Contracts Grants Management within 1-year of the advancement showing all costs spent. The advancement must be held in a separate non-interest bearing account.

Crops:

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

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:

Historical accounts suggest that Lake Sturgeon were abundant in the Red River basin until the late 1800's. By the mid-1900's Lake Sturgeon had effectively been extirpated from the Red River basin due to over exploitation, construction of dams, and declines in water quality. Reintroduction of Lake Sturgeon in the Red River basin was initiated in the late 1990's and fish appear to be surviving well. Barriers to fish passage are thought to be the most significant obstacle to the restoration of naturally reproducing Lake Sturgeon populations. The restoration of fish movement throughout the system will be a long process. As fish passage is restored, the maturing Lake Sturgeon population will be able to access historic spawning areas such as the beach ridge area upstream of these barriers and hopefully, reproduce naturally.

One species of mussel, the Black sandshell is listed as a species of special concern and known to be present in the Sand Hill River. However, the species is only present below the barriers. Restoring connectivity will allow upstream migrations of the fish hosts that

Black sandshell relies on to expand its range to the upper reaches of the Sand Hill River.

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

Only by modifying all four dams will the benefits of this project be realized by restoring connectivity to 113 miles of river upstream of the dams. The Army Corps is currently committed to this project, but if local match is not found they may shift resources to other projects.

Describe the science based planning and evaluation model used:

Stream surveys by the Minnesota DNR have conclusively identified these four dams as impacting fish and mussel populations in the Sand Hill River. Dam modification to allow fish passage has proven successful on many similar projects throughout Minnesota, including several in the Red River basin.

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:

- National Fish Habitat Action Plan
- Red River of the North Fisheries Management Plan

Which LSOHC section priorities are addressed in this proposal:

Prairie:

- Restore or enhance habitat on public lands

Relationship to other funds:

- Clean Water Fund

West Polk County Soil and Water Conservation District received \$475,000 to control grade and stabilize the channelized reach of the Sand Hill River. The primary goals of that project are to reduce sedimentation and turbidity to improve water quality in the Sand Hill River.

How does this proposal accelerate or supplement your current efforts in this area:

The Sand Hill River Watershed District (SHRWD), in cooperation with the Minnesota Department of Natural Resources (MDNR), developed the SHRWD Fish Passage Master Plan to restore upstream fish migration in the Sand Hill River by modifying six structures identified as barriers to fish passage. To date, two of the six structures have been modified and work to modify two more structures is scheduled to begin in fall 2015. However, additional funding is required to modify the final two structures and complete the overall project. Current plans are to place rock rapids downstream of the remaining four structures to transform the fish passage barriers into riffles with a more gradual slope and restore river connectivity. Neither the SHRWD or MDNR have funding available to complete the goals of the Fish Passage Master Plan. This is an opportunity to complete the fish passage restoration project and enhance stream habitat in a channelized reach of the Sand Hill River.

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

Appropriation Year	Source	Amount
NA	Minnesota DNR	500,000

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

The Sand Hill River Watershed District will be responsible for all maintenance of this project. The Watershed District is authorized by

law to complete long-term maintenance of this project (Minnesota Statutes 103D). This project is designed to mimic natural, stable stream channels. Numerous similar projects have been conducted in the Red River basin and have required little or no maintenance and work well for improving fish passage.

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

Year	Source of Funds	Step 1	Step 2	Step 3
2018	Minnesota DNR Fisheries	Conduct fisheries survey one year after project completion to assess immediate changes to fish community.		
2023	Minnesota DNR Fisheries	Conduct fisheries survey six years after project completion to assess intermediate term changes to fish community.		
2028	Minnesota DNR Fisheries	Conduct fisheries survey 11 years after project completion to assess long term changes to fish community.		

Activity Details:

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 (Public Waters)**

Accomplishment Timeline:

Activity	Approximate Date Completed
Award Construction Contract	09/30/2016
Complete Construction of Modified Dams	11/30/2017

Date of Final Report Submission: 11/30/2018

Federal Funding:

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

Are the funds confirmed - **Yes**

Documentation

What are the types of funds?

Cash Match - \$1640100

In-Kind Match - \$

Other -

Outcomes:

Programs in prairie region:

- Protected, restored, and enhanced habitat for migratory and unique Minnesota species *This project will restore fish passage to 50 miles of spawning, nursery, and resident fish habitat that is currently inaccessible. Additionally, stream habitat will be enhanced in a channelized segment of the Sand Hill River. Fisheries surveys will be conducted after the project is completed to document fish community changes.*

Budget Spreadsheet

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

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

A bid was awarded for the first phase of construction in early October. This bid came in below Army Corps of Engineers estimated cost. With the cost savings from Phase 1, we expect to be fully funded at this reduced amount.

Total Amount of Request: \$ 828000

Budget and Cash Leverage

BudgetName	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$0	\$0		\$0
Contracts	\$799,900	\$1,665,400	USACE, Sand Hill River Watershed District	\$2,465,300
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	\$28,100	\$2,800	Sand Hill River Watershed District	\$30,900
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	\$828,000	\$1,668,200		\$2,496,200

Budget and Cash Leverage by Partnership

BudgetName	Partnership	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	Sand Hill River Watershed District	\$0	\$0		\$0
Contracts	Sand Hill River Watershed District	\$253,200	\$25,300	Sand Hill River Watershed District	\$278,500
Fee Acquisition w/ PILT	Sand Hill River Watershed District	\$0	\$0		\$0
Fee Acquisition w/o PILT	Sand Hill River Watershed District	\$0	\$0		\$0
Easement Acquisition	Sand Hill River Watershed District	\$0	\$0		\$0
Easement Stewardship	Sand Hill River Watershed District	\$0	\$0		\$0
Travel	Sand Hill River Watershed District	\$0	\$0		\$0
Professional Services	Sand Hill River Watershed District	\$28,100	\$2,800	Sand Hill River Watershed District	\$30,900
Direct Support Services	Sand Hill River Watershed District	\$0	\$0		\$0
DNR Land Acquisition Costs	Sand Hill River Watershed District	\$0	\$0		\$0
Capital Equipment	Sand Hill River Watershed District	\$0	\$0		\$0
Other Equipment/Tools	Sand Hill River Watershed District	\$0	\$0		\$0
Supplies/Materials	Sand Hill River Watershed District	\$0	\$0		\$0
DNR IDP	Sand Hill River Watershed District	\$0	\$0		\$0
Total		\$281,300	\$28,100		\$309,400

Budget Name	Partnership	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	USACE	\$0	\$0		\$0
Contracts	USACE	\$546,700	\$1,640,100	USACE	\$2,186,800
Fee Acquisition w/ PILT	USACE	\$0	\$0		\$0
Fee Acquisition w/o PILT	USACE	\$0	\$0		\$0
Easement Acquisition	USACE	\$0	\$0		\$0
Easement Stewardship	USACE	\$0	\$0		\$0
Travel	USACE	\$0	\$0		\$0
Professional Services	USACE	\$0	\$0		\$0
Direct Support Services	USACE	\$0	\$0		\$0
DNR Land Acquisition Costs	USACE	\$0	\$0		\$0
Capital Equipment	USACE	\$0	\$0		\$0
Other Equipment/Tools	USACE	\$0	\$0		\$0
Supplies/Materials	USACE	\$0	\$0		\$0
DNR IDP	USACE	\$0	\$0		\$0
Total		\$546,700	\$1,640,100		\$2,186,800

Amount of Request: \$828,000
Amount of Leverage: \$1,668,200
Leverage as a percent of the Request: 201.47%

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	564	564
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	42	42
Total	0	0	0	606	606

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$546,700	\$546,700
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	\$281,300	\$281,300
Total	\$0	\$0	\$0	\$828,000	\$828,000

Table 3. Acres within each Ecological Section

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
Restore	0	0	0	564	0	564
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	42	0	42
Total	0	0	0	606	0	606

Table 4. Total Requested Funding within each Ecological Section

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
Restore	\$0	\$0	\$0	\$546,700	\$0	\$546,700
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	\$281,300	\$0	\$281,300
Total	\$0	\$0	\$0	\$828,000	\$0	\$828,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	\$0	\$0	\$0	\$969
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	\$6698

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	\$0	\$0	\$0	\$969	\$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	\$6698	\$0

Target Lake/Stream/River Feet or Miles

50.5

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

Polk

Name	TRDS	Acres	Est Cost	Existing Protection?
Barrier #3	14745219	0	\$70,200	Yes
Barrier #4	14745230	0	\$476,400	Yes
In channel riffles	14746226	0	\$70,300	Yes
In channel riffles	14747223	0	\$70,300	Yes
In channel riffles	14747224	0	\$70,300	Yes
In channel riffles	14747225	0	\$70,300	Yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

Section 2a - Protect Parcel with Bldgs

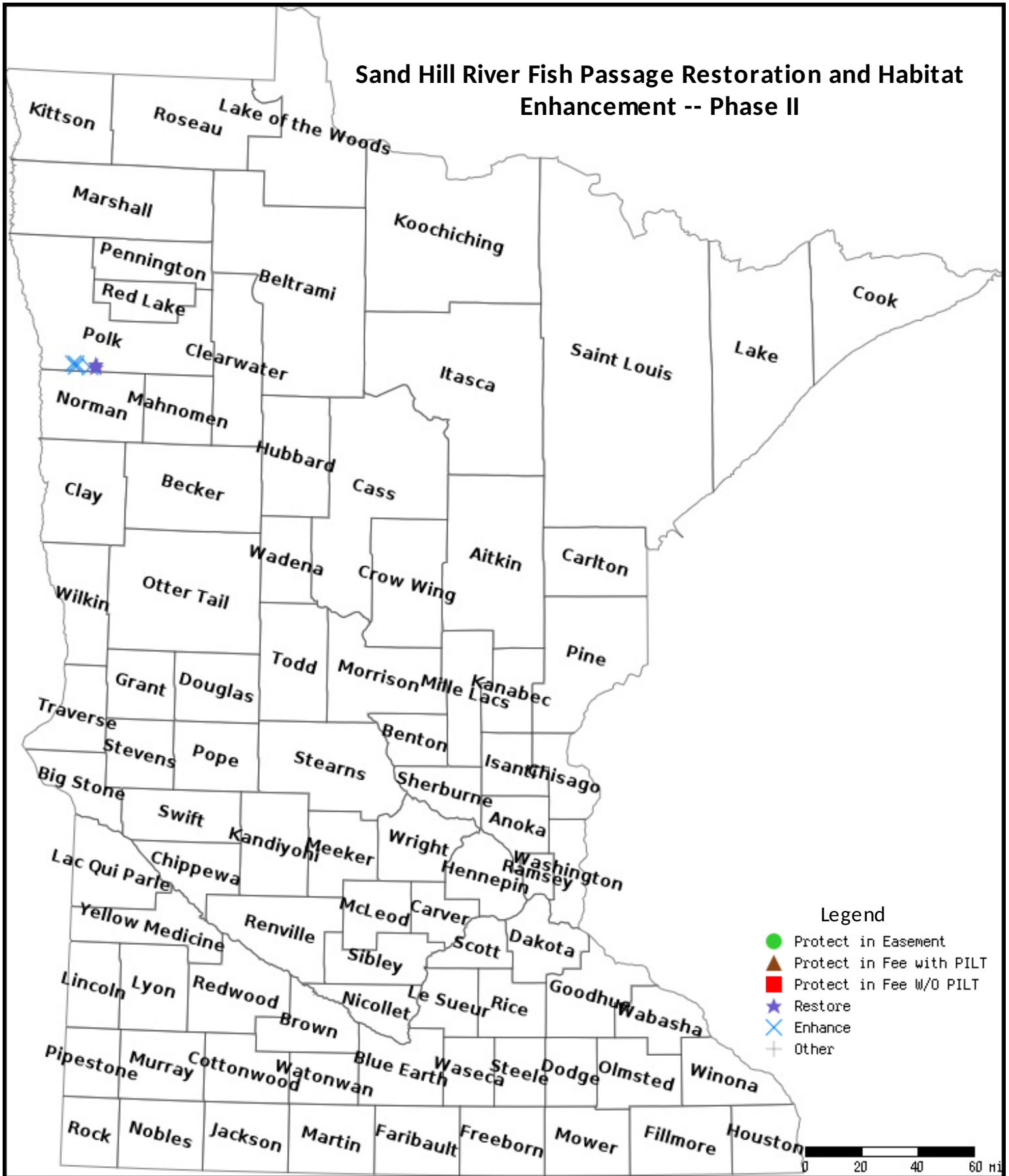
No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map

Sand Hill River Fish Passage Restoration and Habitat Enhancement -- Phase II



Data Generated From Parcel List

Lessard-Sams Outdoor Heritage Council Comparison Report

Program Title: 2016 - Sand Hill River Fish Passage Restoration and Habitat Enhancement -- Phase II

Organization: Sand Hill River Watershed District

Manager: Daniel Wilkens

Budget

Requested Amount: \$1,451,900

Appropriated Amount: \$828,000

Percentage: 57.03%

Budget Item	Total Requested		Total Appropriated		Percentage of Request	
	LSOHC Request	Anticipated Leverage	Appropriated Amount	Anticipated Leverage	Percentage of Request	Percentage of Leverage
Personnel	\$0	\$0	\$0	\$0	-	-
Contracts	\$1,415,400	\$3,191,900	\$799,900	\$1,665,400	56.51%	52.18%
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	\$0	\$0	\$0	-	-
Professional Services	\$36,500	\$3,700	\$28,100	\$2,800	76.99%	75.68%
Direct Support Services	\$0	\$0	\$0	\$0	-	-
DNR Land Acquisition Costs	\$0	\$0	\$0	\$0	-	-
Capital Equipment	\$0	\$0	\$0	\$0	-	-
Other Equipment/Tools	\$0	\$0	\$0	\$0	-	-
Supplies/Materials	\$0	\$0	\$0	\$0	-	-
DNR IDP	\$0	\$0	\$0	\$0	-	-
Total	\$1,451,900	\$3,195,600	\$828,000	\$1,668,200	57.03%	52.20%

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

A bid was awarded for the first phase of construction in early October. This bid came in below Army Corps of Engineers estimated cost. With the cost savings from Phase 1, we expect to be fully funded at this reduced amount.

Output

Table 1a. Acres by Resource Type

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	660	564	85.45%
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	42	42	100.00%

Table 2. Total Requested Funding by Resource Type

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	1,051,900	546,700	51.97%
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	400,000	281,300	70.33%

Table 3. Acres within each Ecological Section

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	660	564	85.45%
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	42	42	100.00%

Table 4. Total Requested Funding within each Ecological Section

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	1,051,900	546,700	51.97%
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	400,000	281,300	70.33%