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

HRE 02

CLEAN WATER LAND & LEGACY AMENDMENT

**Date: May 30, 2018**

**Program or Project Title:** DNR Aquatic Habitat Restoration and Enhancement

**Funds Requested: $8,586,200**

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**County Locations:** Aitkin, Anoka, Becker, Big Stone, Brown, Carlton, Carver, Cass, Chippewa, Clay, Clearwater, Cook, Crow Wing, Dakota, Douglas, Fillmore, Freeborn, Goodhue, Hubbard, Kandiyohi, Lake, Le Sueur, Marshall, Meeker, Mille Lacs, Mower, Olmsted, Otter Tail, Pope, Redwood, Renville, Rice, Scott, Sherburne, St. Louis, Wabasha, Waseca, Washington, Winona, and Wright.

**Regions in which work will take place:**

- Northern Forest
- Forest / Prairie Transition
- Southeast Forest
- Prairie
- Metro / Urban

**Activity types:**

- Restore
- Enhance

**Priority resources addressed by activity:**

- Habitat

## Abstract:

The Minnesota Department of Natural Resources (MNDNR) will complete three fish passage projects to reconnect reaches of habitat for fish and other aquatic life, and restore reaches of four different rivers, creating 12.3 miles of diverse habitat. The footprint of fish passage projects is small, but projects will reconnect almost 5,700 acres of lake and river habitat. Stream projects were selected from a statewide list, prioritized by factors such as ecological benefit, scale of impact, urgency of completion, and local support. On Aquatic Management Areas, MNDNR will enhance over 1,200 acres of riparian and terrestrial habitat.

## Design and scope of work:

The Minnesota Department of Natural Resources (MNDNR) annually updates a statewide list of stream habitat projects. Submittals come both from MNDNR staff and from partner organizations. Projects are prioritized based on scale-of-impact, urgency, local support, and critical habitat for rare species. Based on this list, MNDNR and our partners are proposing three fish passage projects and four channel restorations, leveraging over $500,000.

Access to different habitats is critical for fish and other aquatic organisms to complete various life stages. The habitats they use to spawn, live as juveniles, over-winter, and feed as adults may all be different. These habitats can be fairly unique, such as high-gradient riffles favored by many spawning fish, and may be miles apart. When dams or other obstructions prevent aquatic life from reaching ideal habitat, they are forced to use less optimal locations that can reduce their success. In some cases this leads to the complete loss of sensitive species upstream of a barrier. Modifying or removing the barriers through our three proposed fish passage projects would have a footprint of 3 acres, but create upstream access to almost 5,700 acres of lake and river habitat. This will benefit fish such as walleye, northern pike, and brook trout present in these rivers, as well as five mussel species classified as threatened or special concern.

Streams naturally form habitat through the meandering of the river. Deeper, slower habitat is created by scour into the bed of the river around the outside of bends, while faster water and a rockier bottom is found in the straight sections in between. Wood, overhanging vegetation, and boulders serve as cover and current breaks for fish. In degraded sections of river, these natural processes are disrupted. Some reaches have been artificially straightened, preventing the meandering that forms diverse habitat. In other places, streams have become surrounded by tall banks that prevent high flows from spilling out onto a floodplain. When floods are trapped within the stream channel, the river erodes the banks. This not only mobilizes tons of sediment that degrades downstream habitat, but results in a wide, shallow channel during low-flow periods that is avoided by adult fish. Channel restoration projects will address these issues by using Natural Channel Design methods, which bases design on a reference location with high-quality habitat. Working with partners, we will restore 12.3 miles of habitat on four streams. These restored reaches also will connect upstream and downstream reaches of quality habitat.

We propose to enhance over 1,200 acres of riparian habitat and associated uplands on 85 Aquatic Management Areas (AMA), costing approximately $650,000. The DNR manages these lands to protect critical shoreline habitat used by fish spawning, waterfowl, wading birds, reptiles and amphibians. Uplands in these parcels provide a buffer to protect water quality, and habitat for more terrestrial species. Our enhancement work includes shoreline plantings, invasive species control, and prescribed burns. Projects are selected based on management guidance documents that have been written for each AMA.

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

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

## Which other plans are addressed in this proposal:

- Minnesota DNR Strategic Conservation Agenda
- National Fish Habitat Action Plan

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

The DNR's Strategic Conservation Agenda includes strategies to identify priority lands and waters at greatest risk, and manage lands and waters for ecosystem health and resilience. Our proposal will address each of these through our prioritization of projects, and the management actions we will take.

The National Fish Habitat Action Plan looks to increase the support for fish habitat efforts, recognizing that we can not have good fishing without good fish habitat. The plan emphasizes the critical role of connectivity in aquatic systems, allowing fish to reach places to live, eat, and reproduce. We have secured a matching grant from the Glacial Lakes Fish Habitat partnership that would be used to match Outdoor Heritage funding.

## 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

**Forest / Prairie Transition:**

- Protect, enhance, and restore wild rice wetlands, shallow lakes, wetland/grassland complexes, aspen parklands, and shoreland that provide critical habitat for game and nongame wildlife

**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

**Metro / Urban:**

- Protect, enhance, and restore riparian and littoral habitats on lakes to benefit game and nongame fish species

**Southeast Forest:**

- Protect, enhance, and restore habitat for fish, game, and nongame wildlife in rivers, cold-water streams, and associated upland habitat

## 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 fish passage and channel restoration projects included in this proposal represent opportunities to make major and lasting positive changes for those streams. For fish passage projects such as at the Phelps Mill Dam, we have the potential to create access to high-quality upstream habitat for species that are currently blocked, which includes game fish and state-listed mussel species. A defined project done in one location can benefit several of miles of river upstream, and the benefit will last in perpetuity. Little to no follow-up maintenance is needed. Similarly, our stream channel restoration projects would restore previously-altered reaches of river back to high quality habitats. This not only creates habitat within the project area, but also makes it easier for fish and other aquatic life to move between upstream and downstream habitats. All of this enhanced connectivity makes for much healthier and resilient populations.

## 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:

Our proposal features projects that are intended to reduce fragmentation. Dams and other obstructions in rivers fragment areas of suitable habitat, similar to when pieces of prairie are separated by large areas of row-crop farmland. By removing or modifying barriers in streams, we will allow fish and other aquatic life to move between different patches of habitat that may be critical for their life-processes, such as spawning. Connectivity also acts as a route for recolonization should something catastrophic such as drought happen in one portion of a watershed. We have prioritized fish passage projects that connect large areas of high-quality habitat.

Similarly, our stream channel restoration projects target reaches of river where habitat is poor due past alterations. Lengths of poor habitat can themselves act as barriers to animal movement, where a fish may choose not to migrate through a reach without adequate depth or cover to reach more suitable habitat upstream. Restoring the stream channel removes that "barrier" of poor habitat that fragments the stream. In the process, we also create high-quality habitat within the formerly degraded reach as well.

## 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:

Fish passage projects on the Otter Tail River and at Lake Carlos will benefit three state-listed mussel species: black sandshell (special concern), fluted-shell (threatened), and creek heelsplitter (special concern). Dams are currently blocking the upstream movement of juvenile mussels during the life-stage when they live on the gills of fish. Juvenile mussels hitch a ride from the fish, and eventually drop off in habitat where they spend the rest their lives. If fish are blocked from movement, so are mussels. Without connectivity to other reaches of the river, mussels can eventually disappear. These two projects will create connectivity to over 8 miles of suitable mussel habitat.

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

The estimated abundances below provide general averages for potential aquatic indicator species in Minnesota. These averages are generated from available data and published sources, and do not capture the variability inherent in populations of fish and mussels. Natural populations, including healthy populations with good habitat, vary among locations, and also rise and fall within lakes and rivers. Most fish surveys conducted by DNR produce an index of abundance (catch per unit effort) rather than a population estimate. For the Fredenberg Creek and Sucker River projects we expect to raise the brook trout abundance to 40 lbs/acre. For the Phelps Mill, Stony Creek, North Branch Whitewater, and Whiskey Creek projects we expect to support northern pike at 10 adults/acre, and mussels at 8000/acre. The Lake Carlos Dam project will support walleye abundance of 2 adults/acre.

## Outcomes:

**Programs in the northern forest region:**

- Improved aquatic habitat indicators *For the Sucker River and Fredenberg Creek projects, we will evaluate instream habitat as well as brook trout populations to assess success.*

**Programs in forest-prairie transition region:**

- Protected, restored, and enhanced aspen parklands and riparian areas *Our AMA work will enhance riparian areas in this region. Will will assess the amount of native plant cover and the control of invasive plant species as measures of our success.*

**Programs in metropolitan urbanizing region:**

- Improved aquatic habitat indicators *Our AMA work will enhance riparian areas in this region. Will will assess the amount of native plant cover and the control of invasive plant species as measures of our success.*

**Programs in southeast forest region:**

- Rivers, streams, and surrounding vegetation provide corridors of habitat *We will evaluate instream and riparian habitat measures to evaluate the success of the North Branch Whitewater River restoration.*

**Programs in prairie region:**

- Two stream channel restorations in this region will improve in-channel and riparian habitat. We will use metrics that evaluate instream and floodplain habitat to assess our success.

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

For stream channel restoration and fish passage projects, we do not anticipate significant maintenance will be required once vegetation becomes established. Any minor maintenance will be paid for using non-OHF money such as Game and Fish or Heritage Enhancement. For AMA enhancement work, management of vegetation has ongoing costs. DNR uses a mixture of Game and Fish, Heritage Enhancement, and Outdoor Heritage funding to pay for subsequent maintenance. If OHF money were not available in the future, we would likely reduce the frequency of vegetation maintenance work.

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

| Year | Source of Funds | Step 1 | Step 2 | Step 3 |
|---|---|---|---|---|
| Annual | Game and Fish | Inspect project | Control invasives | Make instream adjustments as needed |

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

Phelps Mill Dam has received funding from the US Fish and Wildlife Service and a previous OHF appropriation, but a change to a full modification of the dam has increased the estimated cost. Failure to secure additional funds would jeopardize completion of the project. The remaining projects on our list have local support that may not be present in the future if public sentiment were given time to change, which can happen with dam removal or modification projects. Matching funds are currently available for four of our projects. Completing these projects would take advantage of those funds while they are available.

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

This proposal will leverage over $500,000 in matching funds. Funding sources include USFWS Fish Passage Grant for Phelps Mill, Fargo-Moorhead Diversion Authority and Red River Basin Flood Damage Reduction matching funds for Stony Creek and Whiskey Creek, and a grant from the Midwest Glacial Lakes Fish Habitat Partnership for Lake Carlos. We will seek additional funding that could stretch OHF dollars even further. Staff time from local partners and MN DNR are not counted as match, but represent substantial investments on the part of these organizations to complete proposed projects.

## Relationship to other funds:

- Not Listed

**Describe the relationship of the funds:**

Not Listed

## 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 request is an acceleration of DNR aquatic habitat work to a level not attainable but for the appropriation.

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

| Appropriation Year | Source | Amount |
|---|---|---|
| 2017 | Game and Fish, Heritage Enhancement, and Federal Grants | 3,681,500 |
| 2016 | Game and Fish, Heritage Enhancement, and Federal Grants | 3,267,000 |
| 2014 | Game and Fish, Heritage Enhancement, and Federal Grants | 3,596,000 |
| 2013 | Game and Fish, Heritage Enhancement, and Federal Grants | 4,062,000 |
| 2012 | Game and Fish, Heritage Enhancement, and Federal Grants | 2,404,000 |

# 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 (AMA, County/Municipal, Public Waters, State Park)**

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** - $300000

## 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 |
|---|---|
| Design of fish passage and channel restoration projects | March, 2020 |
| Permitting and environmental review of fish passage and channel restoration projects | December, 2020 |
| Construction of fish passage and channel restoration projects | September, 2022 |
| Vegetation maintenance on fish passage and channel restoration projects | June, 2024 |
| Enhancement of riparian areas and associated uplands on Aquatic Management Areas | June, 2024 |

# Budget Spreadsheet

**Total Amount of Request: $8,586,200**

**Budget and Cash Leverage**

| Budget Name | LSOHC Request | Anticipated Leverage | Leverage Source | Total |
|---|---|---|---|---|
| Personnel | $0 | $0 | | $0 |
| Contracts | $8,469,700 | $502,700 | USFWS, Fargo-Morhead Diversion Authority, Red River Basin Flood Damage Reduction, Midwest Glacial Lakes Fish Habitat Partnership | $8,972,400 |
| 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 | $36,000 | $0 | | $36,000 |
| Direct Support Services | $14,900 | $0 | | $14,900 |
| DNR Land Acquisition Costs | $0 | $0 | | $0 |
| Capital Equipment | $0 | $0 | | $0 |
| Other Equipment/Tools | $0 | $0 | | $0 |
| Supplies/Materials | $65,600 | $0 | | $65,600 |
| DNR IDP | $0 | $0 | | $0 |
| Total | $8,586,200 | $502,700 | - | $9,088,900 |

| | |
|---|---|
| Amount of Request: | $8,586,200 |
| Amount of Leverage: | $502,700 |
| Leverage as a percent of the Request: | 5.85% |
| DSS + Personnel: | $14,900 |
| As a % of the total request: | 0.17% |
| Easement Stewardship: | $0 |
| As a % of the Easement Acquisition: | -% |

**How did you determine which portions of the Direct Support Services of your shared support services is direct to this program:**

DNR calculates the program's fair share to pay for support costs directly related to and necessary for the appropriation, and an internal Service Level Agreement (contract) guarantees each program will receive the services for the calculated amount.

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

100%

**Describe and explain leverage source and confirmation of funds:**

Grants and leveraged funds are all confirmed. USFWS Fish Passage Grant for Phelps Mill, Fargo-Moorhead Diversion Authority and Red River Basin Flood Damage Reduction matching funds for Stony Creek and Whiskey Creek, and a grant from the Midwest Glacial Lakes Fish Habitat Partnership for Lake Carlos.

**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:**

Projects come from a prioritized list. If we do not receive our full request, we would fund only the top projects from our list that fit within the amount allocated. Outputs would be impacted, corresponding to the output of dropped projects. We do not expect an "economy of scale" impact.

# Output Tables

## Table 1a. Acres by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats | Total |
|---|---|---|---|---|---|
| Restore | 0 | 0 | 0 | 148 | 148 |
| 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 | 1,267 | 1,267 |
| Total | 0 | 0 | 0 | 1,415 | 1,415 |

## Table 2. Total Requested Funding by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats | Total |
|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $7,001,100 | $7,001,100 |
| 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 | $1,585,100 | $1,585,100 |
| Total | $0 | $0 | $0 | $8,586,200 | $8,586,200 |

## Table 3. Acres within each Ecological Section

| Type | Metro/Urban | Forest/Prairie | SE Forest | Prairie | Northern Forest | Total |
|---|---|---|---|---|---|---|
| Restore | 0 | 0 | 12 | 120 | 16 | 148 |
| 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 | 116 | 186 | 62 | 388 | 515 | 1,267 |
| Total | 116 | 186 | 74 | 508 | 531 | 1,415 |

## Table 4. Total Requested Funding within each Ecological Section

| Type | Metro/Urban | Forest/Prairie | SE Forest | Prairie | Northern Forest | Total |
|---|---|---|---|---|---|---|
| Restore | $0 | $0 | $776,300 | $5,453,500 | $771,300 | $7,001,100 |
| 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 | $109,000 | $661,800 | $38,700 | $218,100 | $557,500 | $1,585,100 |
| Total | $109,000 | $661,800 | $815,000 | $5,671,600 | $1,328,800 | $8,586,200 |

## Table 5. Average Cost per Acre by Resource Type

| Type | Wetlands | Prairies | Forest | Habitats |
|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $47,305 |
| 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 | $1,251 |

## Table 6. Average Cost per Acre by Ecological Section

| Type | Metro/Urban | Forest/Prairie | SE Forest | Prairie | Northern Forest |
|---|---|---|---|---|---|
| Restore | $0 | $0 | $64,692 | $45,446 | $48,206 |
| 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 | $940 | $3,558 | $624 | $562 | $1,083 |

## Target Lake/Stream/River Feet or Miles

12

**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:**

MN DNR uses a prioritized list to select stream habitat projects for submission. Project submissions are solicited from MN DNR staff as well as partner organizations. Criteria used to rank projects includes the scale of impact, critical habitat for rare species, the urgency of completing the project, feasibility, and local support. From that list we select the highest-ranked projects that we feel could be completed during the life of the OHF appropriation.

For Aquatic Management Area (AMA) enhancement projects, MN DNR staff write Management Guidance Documents for each AMA that includes the highest priority habitat enhancement needs. Those projects feed into our proposal, based on our capacity to complete projects during the appropriation's time span.

## Section 1 - Restore / Enhance Parcel List

### Aitkin

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Mud River AMA | 04527205 | 10 | $10,000 | Yes |

### Anoka

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Ham Lake AMA | 03223220 | 7 | $2,400 | Yes |

### Becker

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Cotton Lake AMA | 13940203 | 8 | $5,000 | Yes |
| Straight Lake AMA | 14036220 | 10 | $10,000 | Yes |
| Toad Lake AMA | 13938216 | 40 | $10,000 | Yes |

### Big Stone

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Minnesota River Headwaters AMA | 12146209 | 10 | $2,400 | Yes |

### Brown

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Cottonwood River AMA | 10932203 | 18 | $4,800 | Yes |

### Carlton

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Blackhoof River AMA | 04717227 | 50 | $5,000 | Yes |
| Little Otter Creek AMA | 04817206 | 11 | $5,000 | Yes |

### Carver

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Lotus Lake AMA | 11623201 | 5 | $14,400 | Yes |

### Cass

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Ah Gwah Ching | 14131202 | 25 | $0 | Yes |
| Buetow AMA | 14228216 | 5 | $5,000 | Yes |
| Woman Lake AMA | 14029201 | 5 | $5,000 | Yes |

### Chippewa

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Wakan Wakpa AMA | 11741213 | 1 | $2,400 | Yes |

### Clay

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Silver Lake AMA | 13945225 | 52 | $15,000 | Yes |
| Stony Creek | 13746202 | 48 | $1,944,000 | Yes |
| Whisky Creek | 13746218 | 72 | $3,500,000 | Yes |

### Clearwater

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Lost Lake AMA | 14327220 | 5 | $5,000 | Yes |

### Cook

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Fredenberg Creek | 05805203 | 1 | $346,500 | Yes |

### Crow Wing

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Bertha-Moody Lake AMA | 13528232 | 25 | $10,000 | Yes |
| Gilbert Lake AMA | 13428228 | 50 | $10,000 | Yes |
| Nokassippi River AMA | 04529228 | 50 | $10,000 | Yes |
| North Long Lake AMA | 13428204 | 30 | $15,000 | Yes |

### Dakota

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Gores AMA | 11517223 | 10 | $5,000 | Yes |

### Douglas

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Big Chippewa Lake AMA | 12939201 | 5 | $14,600 | Yes |
| Bliss AMA | 13037221 | 8 | $4,800 | Yes |
| Geneva Lake AMA | 12837216 | 1 | $2,400 | Yes |
| Ida Lake AMA | 12938226 | 5 | $4,800 | Yes |
| Jessie Lake AMA | 12837227 | 11 | $6,200 | Yes |
| Lake Carlos Dam | 12937216 | 1 | $180,000 | Yes |
| Maple Lake AMA | 12737231 | 5 | $2,400 | Yes |
| Mary Lake AMA | 12738216 | 45 | $2,400 | Yes |
| Miltona AMA | 13037232 | 20 | $9,600 | Yes |
| Pearson Cove AMA | 12838227 | 2 | $2,400 | Yes |
| West Rachel Shores AMA | 12839215 | 9 | $6,100 | Yes |

### Fillmore

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Etna Creek AMA | 10213236 | 5 | $7,400 | Yes |
| Lanesboro Hatchery AMA | 10310225 | 10 | $4,800 | Yes |
| Petersen Hatchery AMA | 10408232 | 20 | $4,800 | Yes |

### Freeborn

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Juglans Woods AMA | 10221225 | 10 | $9,600 | Yes |

### Goodhue

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Gemini AMA | 11217207 | 48 | $7,200 | Yes |

### Hubbard

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Bottle Lake AMA | 14134214 | 3 | $5,000 | Yes |
| Grace Lake AMA | 14532205 | 9 | $5,000 | Yes |
| Lester Lake AMA | 14232206 | 15 | $10,000 | Yes |
| Spider Lake AMA | 14133228 | 5 | $5,000 | Yes |
| Straight River AMA | 13935210 | 5 | $5,000 | Yes |

### Kandiyohi

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Elizabeth AMA | 11833203 | 10 | $9,600 | Yes |
| Games AMA | 12235232 | 2 | $4,800 | Yes |
| Kasota AMA | 11934236 | 4 | $4,800 | Yes |
| New London Hatchery AMA | 12134209 | 1 | $1,500 | Yes |
| Norway Lake AMA | 12136201 | 25 | $2,400 | Yes |
| Norway Lake AMA | 12136206 | 1 | $2,000 | Yes |

### Lake

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Balsam Lake AMA | 05807203 | 15 | $5,000 | Yes |
| Baptism River AMA | 05707234 | 15 | $5,000 | Yes |
| East Beaver River AMA | 05608221 | 15 | $5,000 | Yes |

### Le Sueur

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| German Lake AMA | 11024232 | 2 | $2,400 | Yes |
| St. Peter AMA | 11026214 | 7 | $9,600 | Yes |
| Tetonka Lake AMA | 10923217 | 4 | $3,600 | Yes |
| Volney Lake AMA | 11024201 | 2 | $2,400 | Yes |
| Waterville Hatchery AMA | 10923228 | 5 | $9,600 | Yes |

### Marshall

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Frank Rose AMA | 15750230 | 40 | $10,000 | Yes |

### Meeker

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Little Wolf AMA | 11829227 | 3 | $6,000 | Yes |
| Long Lake AMA | 11830223 | 3 | $4,800 | Yes |
| Minniebelle AMA | 11831212 | 16 | $7,000 | Yes |
| North Fork Crow River AMA | 12132224 | 10 | $9,600 | Yes |

### Mille Lacs

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Chuck Davis AMA | 03626203 | 16 | $15,000 | Yes |

### Mower

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Cedar River AMA | 10218215 | 34 | $6,000 | Yes |

**Olmsted**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| North Branch Whitewater River | 10712216 | 12 | $775,000 | Yes |

**Otter Tail**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Franklin Lake AMA | 13742222 | 14 | $5,000 | Yes |
| Jewett Lake AMA | 13443223 | 12 | $5,000 | Yes |
| Otter Tail River at Phelps Mill | 13146229 | 1 | $400,000 | Yes |
| Toad River AMA | 13738232 | 20 | $10,000 | Yes |

**Pope**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Glenwood HQ AMA | 12538211 | 12 | $19,000 | Yes |

**Redwood**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Sanborn AMA | 10936227 | 10 | $9,600 | Yes |
| Whispering Ridge AMA | 11439232 | 25 | $30,000 | Yes |

**Renville**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Beaver Falls AMA | 11335221 | 5 | $4,800 | Yes |

**Rice**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Cannon River AMA | 11120215 | 23 | $12,000 | Yes |
| Dudley-Kelly AMA | 11021208 | 2 | $2,400 | Yes |

**Scott**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Eagle Creek AMA | 11521207 | 40 | $41,600 | Yes |
| O Dowd Lake AMA | 11522219 | 3 | $4,800 | Yes |

**Sherburne**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Eagle Lake AMA | 03427232 | 15 | $9,600 | Yes |

**St. Louis**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| French River HQ AMA | 05213209 | 50 | $30,000 | Yes |
| Lester River AMA | 05113233 | 50 | $5,000 | Yes |
| Sucker River | 05212230 | 16 | $770,000 | Yes |

**Wabasha**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Miller Creek AMA | 11112209 | 15 | $2,400 | Yes |

**Waseca**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| St. Olaf Lake AMA | 10522213 | 3 | $2,400 | Yes |

**Washington**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Browns Creek AMA | 03020221 | 12 | $4,800 | Yes |

**Winona**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Coolridge Creek AMA | 10509223 | 12 | $19,200 | Yes |

**Wright**

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---|---|---|---|---|
| Cokato Lake AMA | 11928214 | 4 | $4,800 | Yes |
| Granite Lake AMA | 12027230 | 3 | $4,600 | Yes |
| Howard Lake AMA | 11927233 | 10 | $2,400 | Yes |
| Indian Lake AMA | 12127201 | 2 | $4,800 | Yes |
| Ramsey Lake AMA | 12026218 | 5 | $9,600 | Yes |

## Section 2 - Protect Parcel List

No parcels with an activity type protect.

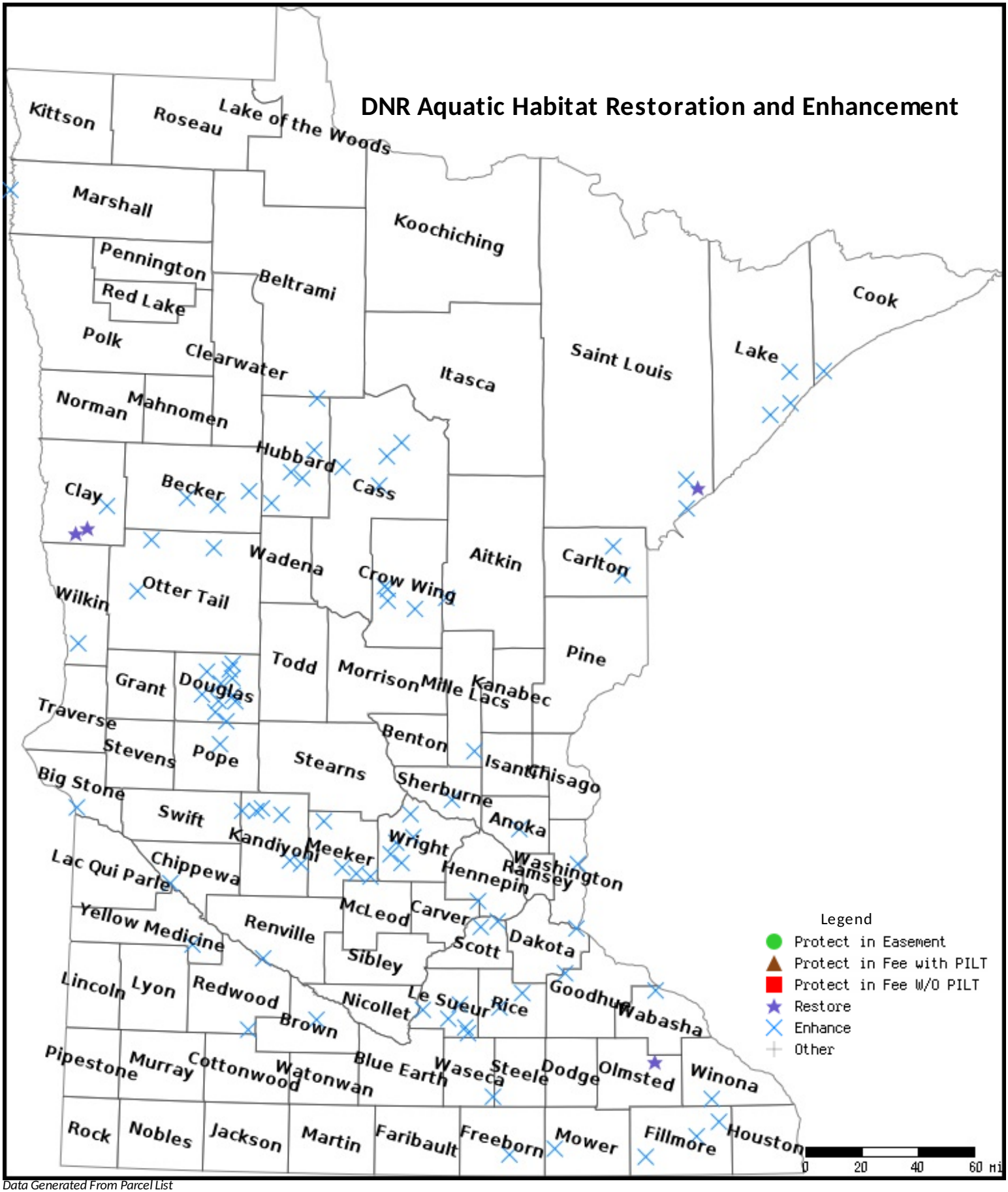
## Section 2a - Protect Parcel with Bldgs

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*

# DNR Aquatic Restoration and Enhancement- Phase 2

**Total Request: $8.6 million over 5 years; leverages over $500,000 of match**

# Channel Restoration Projects

## Sucker River channel restoration

- Assessment of the watershed identified this reach as the top priority for restoration in order to address sedimentation of downstream habitat.
- A 1.3 mile reach will be restored to address erosion of high banks, and will create quality riffle and pool habitat.
- Partnership with South St. Louis SWCD.

## Stony Creek

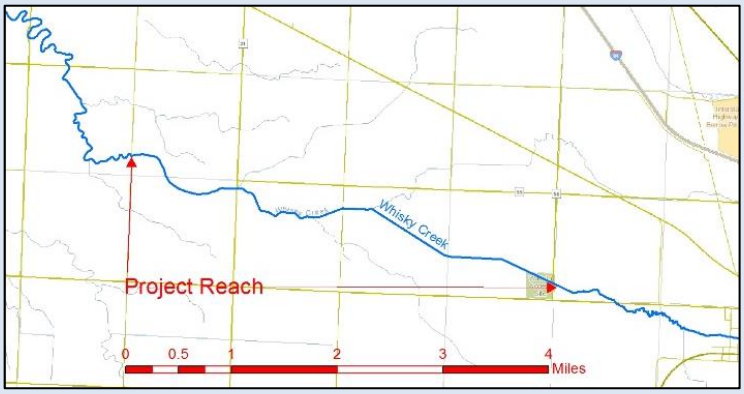
- Restores over 4 miles of a straightened river to a meandering stream.
- High quality habitat is present upstream and downstream of the project section.
- Partnership with the Buffalo-Red River Watershed District


## North Branch Whitewater River

- Restoration of approximately one mile of previously straightened river.
- Creates a new floodplain that will store floodwater and provide riparian habitat.
- Partnership with Olmsted SWCD

## Whisky Creek

- Restores 6 miles of straightened river to a meandering stream.
- High-quality habitat present upstream and downstream
- Partnership with the Buffalo-Red River Watershed District

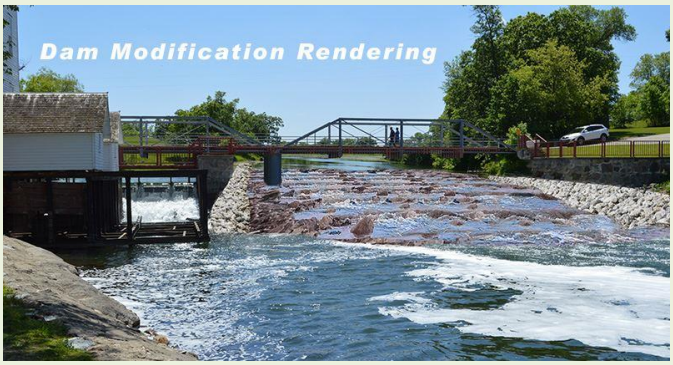


# DNR Aquatic Restoration and Enhancement- Phase 2

## Fish Passage Projects

### Otter Tail River at Phelps Mill

- Dam is currently a complete barrier to fish passage.
- Project will benefit walleye, northern pike and many other fish species.
- Two rare mussel species are found in this part of the Otter Tail River, and will benefit as well.
- Partnership with Otter Tail County.




### Lake Carlos Dam modification

- Over 121 miles of habitat on the Long Prairie River, all the way to its mouth at the Crow Wing River, is separated from Lake Carlos and the Alexandria Chain of lakes
- Over 5,500 lake acres would be connected, benefitting species such as walleye and northern pike

### Fredenberg Creek fish passage

- Fredenberg Creek is a coldwater tributary to Two Island River, providing over 3 miles of refuge habitat for brook trout during warm parts of summer
- Culverts near the mouth are currently impassable during most flows.
- Connectivity would be restored in partnership with Cook County SWCD

## Aquatic Management Area enhancement

- Shorelines are critical habitat for numerous fish and wildlife species
- Projects will enhance over 1200 acres of habitat on shorelines and associated uplands
- Projects include prescribed burns, invasive species control, and native plantings.

### Contact

Brian Nerbonne, Stream Habitat Coordinator, MNDNR Fisheries, brian.nerbonne@state.mn.us, (651) 259-5205

| Project ID | Stream Name | Project Type | Project Type | Resource Potential | Scale of Impact | Critical Habitat | Invasive Species | Community Support/ Acceptance | Timing | Technical Feasibility | Compatibility with other initiatives | Professional Judgement | Total Score | DNR Share of Project Cost | Total Project Cost | Region Priority | Region | Current Contact and Year Submitted | Township | Range | Section |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Wild Rice River | Channel Restoration | 10 | 10 | 10 | 8 | 9 | 5 | 4 | 4 | 3 | 4 | 67 | $46,000,000 | 0 | 1 | NW | Jamison Wendel, FAW (2015) | 144 | 46 | 29, 30 |
| | Phelps Mill Part 2 | Dam Modification | 8 | 10 | 8 | 9 | 8 | 5 | 5 | 5 | 3 | 5 | 66 | $400,000 | $1,200,000 | | NW | Howard Fullhart, FAW (2018) | 134 | 41 | 34/35 |
| | Otter Tail River | Channel Restoration | 10 | 10 | 10 | 10 | 9 | 3 | 3 | 4 | 3 | 4 | 66 | $30,000,000 | 0 | | NW | Jamison Wendel, FAW (2014) | 143 | 45 | 33, 32, 31+ |
| | Willow River | Dam Removal/Modification | 8 | 10 | 8 | 10 | 8 | 3 | 5 | 5 | 3 | 5 | 65 | $650,000 | $650,000 | | NE | Mike Duval, EWR (2017) | 44 | 20 | 2 |
| | Sauk River Dam | Dam Modification and Channel Restoration | 8 | 10 | 9 | 7 | 8 | 5 | 5 | 5 | 3 | 5 | 65 | $2,768,000 | $3,468,000 | | SE | Greg Berg, Stearns County SWCD (2018) | 126 | 33 | 34/35 |
| | Stony Creek | Channel Restoration | 10 | 10 | 10 | 9 | 9 | 5 | 2 | 4 | 3 | 3 | 65 | $1,944,000 | $2,160,000 | | NW | Bruce Albright, BRRWD (2017) | 137 | 46 | 2,3,4,11,12,13 |
| | N. Br. Whitewater | Channel Restoration | 10 | 10 | 10 | 7 | 9 | 4 | 3 | 4 | 3 | 3 | 63 | $775,000 | $775,000 | | SE | Jeff Weiss, EWR (2018) | 107 | 12 | 16,21 |
| | Whisky Creek | Channel Restoration | 10 | 8 | 10 | 9 | 9 | 5 | 2 | 4 | 3 | 3 | 63 | $3,500,000 | $3,900,000 | | NW | Bruce Albright, BRRWD (2017) | 137 | 46 | 18-23 |
| | Pine River/Norway Lake | Dam Modification | 8 | 8 | 8 | 7 | 8 | 4 | 5 | 4 | 3 | 5 | 60 | $1,000,000 | $1,000,000 | | NW | Marc Bacigalupi, FAW (2012) | 138 | 29 | 31 |
| | Lake Carlos Dam | Dam Modification | 8 | 8 | 7 | 10 | 9 | 4 | 3 | 5 | 3 | 3 | 60 | $180,000 | $180,000 | | NW | Chris Weir-Koetter, PAT (2016) | 129 | 37 | 16 |
| | Sucker River | Channel Restoration | 10 | 8 | 9 | 7 | 9 | 4 | 3 | 4 | 3 | 3 | 60 | $770,000 | $770,000 | | NE | Ann Thompson, South St. Louis Water Conservation District (2018) | 52 | 12 | 30 |
| | S. Trib of Whisky Creek | Channel Restoration | 10 | 7 | 10 | 7 | 9 | 5 | 2 | 4 | 3 | 2 | 59 | $2,250,000 | $2,500,000 | | NW | Bruce Albright. BRRWD (2017) | 137 | 46 | 14,15,23,24,25,36 |
| | Bostic Creek | Channel Restoration | 10 | 9 | 10 | 8 | 9 | 3 | 1 | 1 | 3 | 3 | 57 | $500,000 | $500,000 | | NW | Lori Clark, EWR (2017) | 161 | 33 | 12 |
| | Fredenberg Culverts | Culvert Replacement and Channel Restoration | 8 | 9 | 7 | 7 | 9 | 4 | 3 | 3 | 3 | 3 | 56 | $346,500 | $446,500 | | NE | Phil Larson, Cook County SWCD (2018) | 58 | 5 | 3 |
| | Pelican Rapids Dam | Dam Modificaiton | 8 | 8 | 8 | 10 | 9 | 3 | 3 | 2 | 3 | 2 | 56 | $751,000 | $751,000 | | NW | Jim Wolters, FAW (2017) | 136 | 43 | 22 |
| | Elizabeth Dam/Pelican River | Dam Modification | 7 | 9 | 9 | 8 | 9 | 2 | 2 | 3 | 3 | 2 | 54 | $451,000 | $451,000 | | NW | Jim Wolters, FAW (2017) | 134 | 43 | 32 |
| | Whetstone | Channel Reconnection | 10 | 9 | 7 | 7 | 9 | 3 | 2 | 3 | 3 | 0 | 53 | $2,000,000 | $6,600,559 | | SW | SHP and Chris Domeier (2016) | 121 | 46 | 16 |
| | Seven Mile Creek Dam | Dam Removal | 8 | 8 | 7 | 7 | 9 | 2 | 1 | 4 | 3 | 2 | 51 | $350,000 | $350,000 | | SW | Brooke Hacker, EWR (2017) | 109 | 27 | 4 |
| | Sand Lake Dam | Dam Modification | 8 | 7 | 6 | 7 | 9 | 4 | 3 | 4 | 2 | 0 | 50 | $100,000 | $100,000 | | NE | Dana Dostert and REU EWR (2018) | 60 | 18 | 28 |
| | Tischer Creek Removal | Dam Removal with Channel Restoration | 10 | 8 | 8 | 5 | 7 | 2 | 1 | 3 | 2 | 1 | 47 | $1,000,000 | $1,000,000 | | NE | Deserae Hendrickson, FAW (2012) | 50 | 14 | 2, 3 |
| | Cannon River- Malt-O-Meal Dam | Dam Modification | 8 | 8 | 8 | 8 | 8 | 1 | 1 | 3 | 1 | 0 | 46 | $500,000 | $2,300,000 | 2 | SE | Ian Chisholm, EWR (before 2010) | 111 | 20 | 1 |

Not requesting funding through DNR for ML2019