Lessard-Sams Outdoor Heritage Council

Tamarac River Enhancement Project - Phase 1

Laws of Minnesota 2027 Accomplishment Plan

General Information

Date: 10/14/2026

Project Title: Tamarac River Enhancement Project - Phase 1

Funds Recommended: $3,070,000

Legislative Citation:

Appropriation Language:

Manager Information

Manager's Name: Lon Aune
Title: County Engineer
Organization: Marshall County
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Location Information

County Location(s): Marshall.

Eco regions in which work will take place:

Prairie

Activity types:

Enhance

Priority resources addressed by activity:

Habitat

Narrative

Abstract

The Tamarac River Enhancement Project – Phase 1 begins to correct issues created by the State's construction of State Ditch 2 in the early 1900s. When all phases are completed, the full project will enhance 8 miles of straight ditch into 9.6 miles of natural meandering stream within a 290-acre habitat corridor. The project will create a minimum 300-foot wide perpetually protected stream habitat corridor in Marshall County connecting habitat corridors along the Red River to the natural Tamarac River channel and larger blocks of natural lands to the east.

Design and Scope of Work

The straightened portion of the Tamarac River is a prime example of a problem common in the Red River Valley Prairie Ecological Section of Minnesota. Straight channels created by the State to alleviate flooding through the Lake Agassiz Plain created homogenous habitats that don't have the shallow riffles and deeper pools that are required by fish throughout the year and throughout their life cycle. These channels limit access to their floodplains increasing erosion in the channel, causing lowered habitat diversity, causing lower aquatic life diversity. Downstream habitat is negatively affected due to sediment deposition and increased sediment loading, reducing habitat quality while making flooding worse.

The proposed project addresses these issues using a natural Rosgen E-Channel design with a meandering river alignment within an enhanced floodplain corridor. The natural channel design has been developed with direct input from the MN DNR River Ecology Unit. A sinuous riffle-pool design is proposed to create the aquatic habitat diversity lacking in the currently straightened channel. This activates natural stream processes to maintain habitat stability/quality in the future, which supports MN DNR Fisheries aquatic habitat goals for the Red River Basin. Existing spoil banks will be pulled back and blended into the landscape to complement a more natural waterway, establishing a terrestrial habitat corridor.

The total 8-mile project extent was originally constructed as State Ditch #2 in the early 1900s and later renamed Marshall County Ditch #45 to connect the Tamarac River to the Red River through a pre-settlement prairie wetland that is now highly valuable agricultural land. The original construction included a straight channel with the spoil used as setback levees to confine the waterway and provide flood protection to the adjacent agricultural lands. Beyond the original habitat loss from this approach, the channel bottom has down-cut approximately 3 to 5 feet in depth, causing significant bank failures that have further degraded the limited habitat. By enhancing this artificial system using natural channel design approaches, it develops channel habitat diversity and process for aquatic life, with these benefits maintained in low-flow conditions to ensure fish migrations. It also creates upland and wetland habitats for waterfowl, migratory birds, and other valuable wildlife.

Since the estimated cost of enhancing the full 8-mile project length is approximately $15,800,000, Marshall County proposes to perform the project in phases. This application includes costs for engineering and permitting for the entire 8-mile project length and the construction costs of a portion of the 8 total miles as the funding allocation allows. In 2022, Marshall County partnered with local SWCDs, the Middle-Snake-Tamarac Rivers Watershed District to develop the MSTR Comprehensive Watershed Management Plan. This plan identified the proposed project as high priority. Several landowner meetings have occurred with very positive feedback regarding the natural E-channel design approach. The easement acquisition is in process and intends to use both WBIF and local funding.

Explain how the plan addresses habitat protection, restoration, and/or enhancement for fish, game & wildlife, including threatened or endangered species conservation

This project is designed to permanently enhance a vital ecological corridor within the Lake Agassiz Glacial Plain, a region that once supported vast upland and wetland prairie communities. In total the multi-phase project would

restore and enhance the 8-miles straightened reach of Tamarac River into a natural E-channel design and 290 acres of associated riparian habitat, creating a corridor of perpetual upland and wetland conservation easements. Habitat benefits for fish and wildlife will be achieved by our holistic approach centered around the restored natural stream; these will extend to aquatic invertebrates, amphibians, reptiles, and semi-aquatic mammals. Fish habitat improvements will support goals for the Tamarac River and the Red River of the North, specifically by promoting natural stream habitat, connectivity, and more natural hydrology. The stream habitat improvements will benefit Channel Catfish, Northern Pike, and the other 20 native fish species in the Tamarac River. Some species of fish will also benefit from the project as a result of a larger quantity of enhanced quality spawning habitat. The project is consistent with the Comprehensive Watershed Management Plan and will complement other ongoing work in the watershed to improve fish and wildlife habitat, water quality, and reduce flood damage. Terrestrial Species of Greatest Conservation Need (SGCN) within the project area that would benefit greatly from habitat quality improvement are the Nelson's Sparrow, Yellow Rails, and Marbled Godwit. Additionally, there are 3 species of native mussel present downstream of the straightened reach that are missing above. MN DNR hopes a channel restoration will promote natural range expansion of these important but often overlooked native species.

What are the elements of this plan that are critical from a timing perspective?

Timing is important for implementation of this project, as a major feature of our proposal is the conversion of cropland to perpetual wildlife habitat. Landowners currently are willing to move forward with the proposed project. We need to capitalize on the current high level of interest and concept momentum as the easement needs drive the project. As the drainage authority of the straightened portion of the Tamarac River (MCD #45), Marshall County received BWSR Water Quality Funding for project feasibility. That was used to gain concurrence with landowners along the river. With that work and funding nearing completion, additional funding is needed to complete final engineering, permitting, and begin Phase 1 construction.

Describe how the plan expands habitat corridors or complexes and/or addresses habitat fragmentation:

This is a multi-phase habitat corridor project to enhance the straightened 8-mile reach of the Tamarac River into a natural E-channel design, which will be situated within 290 acres of associated riparian habitat corridor. Perpetual conservation easements will protect these upland and wetland habitats, reconnecting a fragmented stream habitat corridor between the Tamarac River and Red River of the North. Fish and wildlife habitat benefits are diverse; in addition to the creation and natural maintenance of improved habitat for the fish and other aquatic life, the stream restoration corridor will also link isolated habitat patches that support migratory birds, pollinators, and grassland species. Amphibians, reptiles, and semi-aquatic mammals will benefit through the improved ecosystem connectivity. The wide channel corridor further serves as a buffer from adjacent land uses, improving ecological function and long-term habitat viability.

Which top 2 Conservation Plans referenced in MS97A.056, subd. 3a are most applicable to this project?

Minnesota Prairie Conservation Plan

Minnesota's Wildlife Action Plan 2015-2025

Which LSOHC section priorities are addressed in this program?

Prairie

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

Outcomes

Programs in prairie region:

Agriculture lands are converted to grasslands to sustain functioning prairie systems ~ *The overall project will enhance 8 miles of straight ditch into 9.6 miles of natural meandering stream within a 290-acre habitat corridor. The project will create a minimum 300-foot wide perpetually protected stream habitat corridor connecting habitat corridors along the Red River to the Tamarac River and larger blocks of natural lands to the east. The perpetual easement to sustain this habitat corridor will be surveyed and recorded with Marshall County so the easement perpetually will stay with the land for the future to come.*

Per MS 97A.056, Subd. 24, Please explain 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.

No

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

Marshall County is the drainage authority for multiple drainage ditches within the county and provides joint authority on multiple ditch systems that overlap between counties. With the Tamarac River Enhancement Project being MCD #45, Marshall County would still act as the drainage authority and have taxation capabilities for long term maintenance of the project assuming full responsibility for operation and maintenance under drainage law. Annual inspections and adaptive management will ensure functionality over time and that long term habitat benefits continue into the future.
Furthermore, the very specific design details incorporated into a natural channel design (e.g. Rosgen E-channel, stream geometry & dimensions) are intended to produce outcomes beyond immediate habitat improvements. More importantly, these choices establish necessary preconditions for natural processes to maintain stream habitat quality into the future. The emphasis on long-term beneficial outcomes via stream habitat processes is why we chose the natural channel restoration approach.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
Annual	Marshall County Ditch #45 ditch fund	Inspection of the project performance in coordination with MNDNR staff	Monitor & maintain vegetation	Monitor & maintain vegetation

Provide an assessment of how your program celebrates cultural diversity or reaches diverse communities in Minnesota, including reaching low- and moderate-income households:

Project Partners will complete: 1. Outreach to tribal authorities on natural resource benefits. 2. Consultation with tribal authorities on cultural resources associated with the project area. 3. Project Partners will plan additional education outreach on the cultural significance and history of the area.

Activity Details

Requirements

If funded, this program 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 or on lands to be acquired in this program?
Yes

Where does the activity take place?

Permanently Protected Conservation Easements

Public Waters

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program, either by the proposer or the end owner of the property, outside of the initial restoration of the land?
No

Will insecticides or fungicides (including neonicotinoid and fungicide treated seed) be used within any activities of this program either in the process of restoration or use as food plots?
No

Timeline

Activity Name	Estimated Completion Date
River Enhancement Construction (Phase 1)	October 2030
Easement Acquisition/Permitting	May 2028
Final (Design/Plans) Engineering	February 2028

Date of Final Report Submission: 01/31/2031

Availability of Appropriation: Subd. 7. Availability of Appropriation
(a) Money appropriated in this section may not be spent on activities unless they are directly related to and necessary for a specific appropriation and are specified in the accomplishment plan approved by the Lessard-Sams Outdoor Heritage Council. Money appropriated in this section must not be spent on indirect costs or other institutional overhead charges that are not directly related to and necessary for a specific appropriation. Money appropriated for fee title acquisition of land may be used to restore, enhance, and provide for public use of the land acquired with the appropriation. Public-use facilities must have a minimal impact on habitat in acquired lands.
(b) Money appropriated in this section is available as follows:
(1) money appropriated for acquiring real property is available until June 30, 2031;
(2) money appropriated for restoring and enhancing land acquired with an appropriation in this section is available for four years after the acquisition date with a maximum end date of June 30, 2035;
(3) money appropriated for restoring or enhancing other land is available until June 30, 2032;
(4) notwithstanding clauses (1) to (3), money appropriated for a project that receives at least 15 percent of its funding from federal funds is available until a date sufficient to match the availability of federal funding to a maximum of six years if the federal funding was confirmed and included in the original approved draft accomplishment plan; and
(5) money appropriated for other projects is available until the end of the fiscal year in which it is appropriated.

Budget

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

Totals

Item	Funding Request	Leverage	Leverage Source	Total
Personnel	-	-	-	-
Contracts	$2,210,000	$78,000	BWSR Watershed Based Implementation Funds	$2,288,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	$50,000	MCD #45 fund, WBIF	$50,000
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	$860,000	-	-	$860,000
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	**$3,070,000**	**$128,000**	**-**	**$3,198,000**

Amount of Request: $3,070,000
Amount of Leverage: $128,000
Leverage as a percent of the Request: 4.17%
DSS + Personnel: -
As a % of the total request: 0.0%
Easement Stewardship: -
As a % of the Easement Acquisition: -

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?
The reduced appropriation will still be used the same way for the engineering and permitting of the full 8-mile project extents. The construction limits of Phase 1 will likely have to be reduced from the proposed 4-miles in the original application to adjust for the funding shortfall.

Detail leverage sources and confirmation of funds:
Marshall County: Drainage authority of MCD #45 has existing ditch account funds and taxing authority of benefited lands to leverage additional funds.
WBIF: This project is listed in the Middle-Snake-Tamarac Rivers Comprehensive Watershed Management Plan and partners agree to assist with funding.
Letters are forthcoming supporting funding of project easements.

Does this project have the ability to be scalable?
Yes

If the project received 50% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
Professional services would be completed so final design and permitting would be accomplished for the project. The project construction would be broken into additional phases to complete portions as funding allows.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Not applicable

Contracts

What is included in the contracts line?
Construction

Professional Services

What is included in the Professional Services line?

Design/Engineering

Surveys

Federal Funds

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

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	45	45
Total	**-**	**-**	**-**	**45**	**45**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	$3,070,000	$3,070,000
Total	**-**	**-**	**-**	**$3,070,000**	**$3,070,000**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	45	-	45
Total	**-**	**-**	**-**	**45**	**-**	**45**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	$3,070,000	-	$3,070,000
Total	**-**	**-**	**-**	**$3,070,000**	**-**	**$3,070,000**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	-	-	-	$68,222

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	$68,222	-

Target Lake/Stream/River Feet or Miles

Parcels

Parcel Information

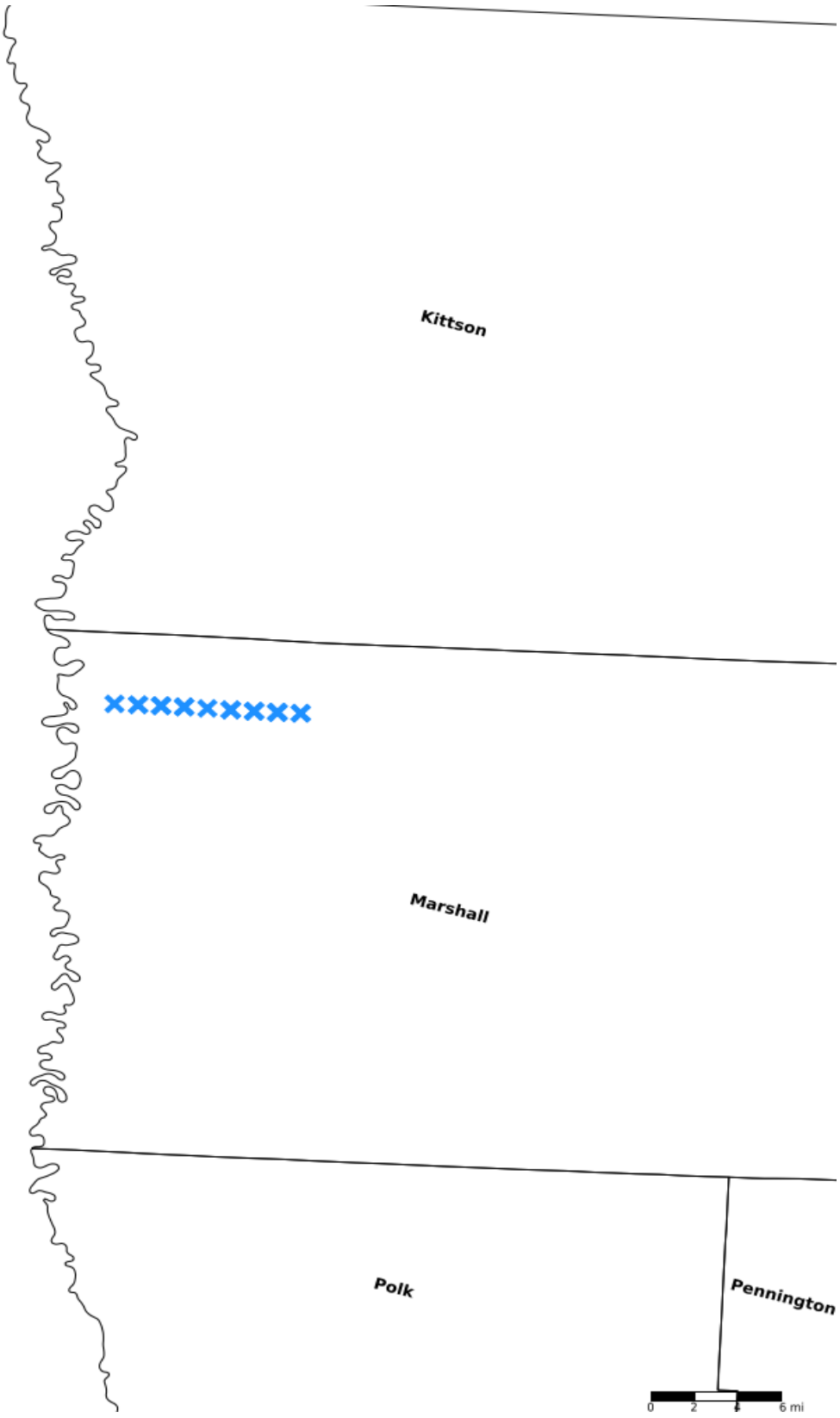
Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
All the parcels are along the straight portion of the Tamarac River and are required for perpetual easement for the full implementation of the project. Some of this easement area is within existing ditch right of way and won't be of additional cost to the drainage authority or WBIF but is of poor habitat quality and will be enhanced for upland and aquatic habitat through implementation of the project. Although the additional easement needs are anticipated to be purchased with funds outside this LSHOHC funding request, the estimated dollar amounts to acquire the easements are given. The full project limits have been listed below, but Phase 1 construction area will be prioritized first as funding allows.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
10-0049-000	Marshall	15849219	17	$15,545	Yes	-
10-0050-000	Marshall	15849219	8	$7,170	Yes	-
10-0051-000	Marshall	15849219	8	$8,355	Yes	-
10-0052-000	Marshall	15849220	34	$31,522	Yes	-
10-0053-000	Marshall	15849221	15	$15,497	Yes	-
10-0053-001	Marshall	15849221	1	$356	Yes	-
10-0054-000	Marshall	15849221	19	$15,925	Yes	-
10-0055-000	Marshall	15849222	13	$16,002	Yes	-
10-0055-006	Marshall	15849222	10	$8,152	Yes	-
10-0056-000	Marshall	15849222	10	$8,065	Yes	-
10-0057-000	Marshall	15849223	5	$14,597	Yes	-
10-0058-000	Marshall	15849223	3	$4,223	Yes	-
10-0059-000	Marshall	15849223	7	$4,729	Yes	-
10-0059-001	Marshall	15849223	15	$11,259	Yes	-
10-0059-003	Marshall	15849223	5	$4,230	Yes	-
10-0060-000	Marshall	15849224	1	$0	Yes	-
10-0062-000	Marshall	15849224	38	$48,784	Yes	-
11-0081-000	Marshall	15850222	1	$0	Yes	-
11-0086-000	Marshall	15850223	35	$23,021	Yes	-
11-0087-000	Marshall	15850223	1	$2,238	Yes	-
11-0088-000	Marshall	15850224	23	$14,485	Yes	-
11-0089-000	Marshall	15850224	4	$7,655	Yes	-
11-0090-000	Marshall	15850224	7	$6,785	Yes	-

Parcel Map



- Protect in Easement
- Protect in Fee with PILT
- Protect in Fee W/O PILT
- Restore
- Enhance
- Other

Lessard-Sams Outdoor Heritage Council

Tamarac River Enhancement Project - Phase 1

Comparison Report

Program Title: ML 2027 - Tamarac River Enhancement Project - Phase 1
Organization: Marshall County
Manager: Lon Aune

Budget

Requested Amount: $7,876,000
Appropriated Amount: $3,070,000
Percentage: 38.98%

Item	Requested Proposal	Leverage Proposal	Appropriated AP	Leverage AP	Percent of Request	Percent of Leverage
Personnel	-	$45,000	-	-	-	0.0%
Contracts	$7,016,000	$200,000	$2,210,000	$78,000	31.5%	39.0%
Fee Acquisition w/ PILT	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-
Easement Acquisition	-	$988,500	-	$50,000	-	5.06%
Easement Stewardship	-	-	-	-	-	-
Travel	-	-	-	-	-	-
Professional Services	$860,000	-	$860,000	-	100.0%	-
Direct Support Services	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-
Supplies/Materials	-	-	-	-	-	-
DNR IDP	-	-	-	-	-	-
Grand Total	**$7,876,000**	**$1,233,500**	**$3,070,000**	**$128,000**	**38.98%**	**10.38%**

If the project received 70% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
Professional services would be completed so final design and permitting would be accomplished for the project. The project construction would be broken into additional phases to complete portions as funding allows.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Not applicable

If the project received 50% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
Professional services would be completed so final design and permitting would be accomplished for the project. The project construction would be broken into additional phases to complete portions as funding allows.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
Not applicable

Output

Acres by Resource Type (Table 1)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	-	-
Protect in Fee with State PILT Liability	0	-	-
Protect in Fee w/o State PILT Liability	0	-	-
Protect in Easement	0	-	-
Enhance	145	45	31.03%

Total Requested Funding by Resource Type (Table 2)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	-	-	-
Protect in Fee with State PILT Liability	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-
Protect in Easement	-	-	-
Enhance	$7,876,000	$3,070,000	38.98%

Acres within each Ecological Section (Table 3)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	-	-
Protect in Fee with State PILT Liability	0	-	-
Protect in Fee w/o State PILT Liability	0	-	-
Protect in Easement	0	-	-
Enhance	145	45	31.03%

Total Requested Funding within each Ecological Section (Table 4)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	-	-	-
Protect in Fee with State PILT Liability	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-
Protect in Easement	-	-	-
Enhance	$7,876,000	$3,070,000	38.98%