# Lessard-Sams Outdoor Heritage Council
# Laws of Minnesota 2014 Final Report

**Date: August 12, 2019**

**Program or Project Title:** Knife River Habitat Rehabilitation Phase II

**Funds Recommended: $1,410,000**

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**Legislative Citation: ML 2014, Ch. 256, Art. 1, Sec. 2, Subd. 5(h)**

**Appropriation Language:** $1,410,000 in the second year is to the commissioner of natural resources for an agreement with the Lake Superior Steelhead Association to enhance trout habitat in the Knife River watershed. A list of proposed enhancements must be provided as part of the required accomplishment plan.

**County Locations:** Lake, and St. Louis.

**Eco regions in which work was completed:**

- Northern Forest

**Activity types:**

- Enhance

**Priority resources addressed by activity:**

- Habitat

## Summary of Accomplishments:

The goal of PH II-Knife River Habitat Rehabilitation project was to improve instream habitat, stabilize slumping streambanks and restore the immediate riparian zone.

Instream habitat and streambank stabilization was achieved by rehabilitating a 2200-foot stretch of stream utilizing Natural Channel Design methodology. This project reduced turbidity by stabilizing four slumping streambanks and creating instream habitat in two areas for adult trout spawning and two areas for 1+ juvenile rearing. Riparian plantings also occurred in this area.

Riparian restoration was achieved in the West Branch tributary of the Knife River through several volunteer plantings and multiple large-scale Conservation Corps Minnesota plantings.

## Process & Methods:

Process and Methods

The goal of PH II-Knife River Habitat Rehabilitation project was to improve instream habitat, stabilize slumping streambanks and restore the riparian tree canopy.

Site Selection:

The Lake Superior Steelhead Association (LSSA) conducted a rapid stream survey to determine the Knife River's overall condition. As stream impacts were identified during the survey, impaired stream reaches were photographed and mapped using a GPS unit. The LSSA also monitored water temperatures to determine where trout survival is the highest. Finally, biological data was collected to determine the quality of in-stream trout habitat. This data was combined to rank and prioritize restoration areas where the worst stream impacts are restored, that reside in coolest water zones, within the best habitat corridors. This data concluded that "first-priority reaches" were located in the upper main Knife River. This also achieves our goal of a top-down restoration approach

Riparian planting sites were determined by site accessibility and stream assessment using procedures listed above. Specified project riparian species were determined by the existing riparian habitat, upland or wetland conditions and exposure to sunlight.

Restoration Techniques:
Natural Channel Design (NCD) utilizes a science-based process to bring an unstable eroding stream reach back to a stable state. This method surveys an impacted stream reach to collect data to compare it to several stable stream sections. All survey work is performed using a geomorphic trained Stream Specialist. The assessment data that is collected includes: stream width to depth ratios, floodplain elevation, erosion calculations, longitudinal profile, cross-section elevation and vegetation cover. This assessment data is entered into a computer program called Geomorph to create plans and specifications that will redesign the impacted Knife River channel profile, dimensions and shape to mimic stable reaches within the Knife River Watershed. These plans create the basis for the construction project by depicting channel reconfiguration, placement of structures, location of streambed excavation, location and elevation of the floodplain and realignment of the channel.

The LSSA's NCD process also features a top/down restoration approach. This approach extends the habitat corridor downstream in three ways:
• Downstream habitats are protected because the upstream sediment load is reduced. By stabilizing these upstream eroding banks, hundreds of tons of sediment will no longer discharge into the stream channel each year. This discharged material will no longer fill pools and runs that are critical to rearing trout.
• Instream trout spawning success is more productive. When trout spawn they discharge their eggs into the gravel. When sediment discharges during high spring flood events, these eggs or newly hatched trout become covered by settling silts and suffocate larval trout. By stabilizing these upstream banks sediment discharge is greatly reduced, which generally aids trout production.
• Newly constructed stream channels are reconnected to the floodplain. These restoration projects reconnect the stream channel to the floodplains, which allows floodwaters to crest the bank and dissipate the current's energy. Floodwaters also become trapped and stored in associated floodplain wetlands. This results in a lower velocity of floodwater and less volume of floodwater that discharges downstream. This reduction of floodwater velocity and volume minimizes downstream erosion and habitat degradation.

Riparian Zone Planting Projects:
• The species of trees/shrubs being incorporated into the planting plan depends on the area to be planted. Rehabilitating an abandoned beaver meadow will require species that can tolerate rather damp conditions and even periods of flooding. The planting of higher elevations, which are not as wet and experience less flooding events, will utilize a wider array of species.
• Wet area species include: white spruce, tamarack, swamp white oak, river birch, silver maple and speckled alder.
• Higher elevation/dryer area species include: red pine, white pine, red maple, silver maple, bur oak, red oak, northern mountain ash and speckled alder.
• Shrubs/Pollinator Species That Are Utilized: viburnum, red twig dogwood, black chokeberry, snowberry, downy arrow-wood, sand bar willow.
• Several species listed above can be utilized in multiple planting locations.
• The LSSA uses locally procured stock for all of our plantings.

Scope of Work:
• In stream Habitat Work Area: For PH II of the Knife River Habitat Rehabilitation Project, we restored approximately 2200 linear feet of stream on the main Knife River using the NCD processes. Included in the area was the rehabilitation of largest slumping clay bank above Lake County Hwy 11. This bank alone deposited tons of sediment downstream annually.
• Riparian Zone Work Area: We performed planting projects on the main stem of the Knife River and tributaries-the Main West Branch and Stanley Creek. We planted both low areas and higher ground areas using the species mentioned above.

Project Successes:
• In stream Habitat Work: Immediately following construction (and even during the project construction) trout were seen utilizing this stretch of river, ranging from young of the year to spawning adult ages. Sediment being transported and deposited downstream or even out in Lake Superior has been lessened with the project.
• Riparian Zone Work: We planted many hundreds of trees in PH II creating a diverse riparian zone for years to come.

Unique Aspects of the Project:
• Instream Habitat Work: One unique feature of our project is that we contracted with area loggers to bring in toe wood for areas where designated on the design plans. Some groups prefer to take as much of the needed supplies from the work zone (toe wood, rocks, etc) but this increases the impact on the environment. The LSSA tries to be as minimally intrusive on the stream and the riparian

zone as possible in the project area. All material that has to be removed for the project is 100% reincorporated back to the project area.
• Riparian Zone Work: The LSSA tried carrying in tree plugs to very remote areas in five gallon buckets. We found that you could carry almost 50 plugs in one bucket to far removed planting sites much easier than individually potted trees. This process worked best on areas that had recent beaver activity but the beaver had moved on and the dams had been breached.

## Explain Partners, Supporters, & Opposition:

The Knife River Habitat Rehabilitation Phase II project had three dynamic parts, instream habitat work, sediment reduction and riparian zone rehabilitation:
• Instream Habitat and Sediment Reduction Work: Partners include the MN DNR-Area Stream Specialist, Fisheries and Ecological and Water Resources; Lake County Soil and Water Conservation District; Lake County Forestry; U.S. Army Corps of Engineers and local, private landowners.
• Riparian Rehabilitation: Partners include MN DNR; Conservation Corps of Minnesota; Hammer Nursery; Boreal Natives; Boy Scouts of America-Voyageurs Area Council-Troop Seven of Rice Lake, MN; Lake County Forestry; St. Louis County Forestry; the Lake Superior Steelhead Association Board of Directors/families and cooperating private landowners.

Opposition to this project: None that we knew about

## Additional Comments:

*Exceptional challenges, expectations, failures, opportunities, or unique aspects of program*

Phase II of the Knife River Habitat Rehabilitation Project would not have been possible without the tremendous support of private landowners in the project area. The work performed was done in MN DNR easement areas but to get to those areas, we had to cross private property. All the involved landowners were extremely supportive of the goals of the project and politely tolerated two years of work on their respective properties. All involved were thrilled with the final outcome.

One pleasantly surprising outcome of the project is how quickly fish adapted to the new habitat opportunities. We saw several adults utilizing the undercut bank and juvenile fish being attracted to the habitat even during construction.

We did learn that weather can be a very large driving affect for instream construction. Not only do you have the rainfall event itself, the water level rises and you have to wait for the water levels to drop after the event, which could take a couple to several days to occur. Water levels seemed to drop slower after an event than they rose during the event.

## Other Funds Received:

- Not Listed

**How were the funds used to advanced the program:**

Clean Water Fund money is being used for the Knife River Watershed's middle sections (clay bank sections). This money is being used to stabilize slumping clay banks as part of the TMDL implementation plan. This money has been provided to the South St. Louis Soil and Water Conservation District (SWCD). The LSSA and SWCD are working cooperatively on separate sections of river to insure the entire watershed is improved. The LSSA is primarily working on the upper river spawning and rearing tributaries on public land, while the SWCD is working on the middle river sections (clay bank section) and concentrating primarily on private lands.

## What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

Using the Natural Channel Design (NCD) engineering parameters, projects should be self maintaining if the initial assessment/data obtained were sound, the plans derived from that data were designed properly and the construction was according to the design plans, elevations and specs. This is one of the reasons that we take such particular care in the data collection portion of the project. Plus, this is why we try to have the engineers onsite as much as needed to ensure quality construction processes. The MN DNR, through their annual beaver flights in the entire Knife River watershed, will alert us to any incursion into the construction areas by beaver and to any potential problems that may occur once the beaver are established. Finally, the Lake Superior Steelhead Association (LSSA) walks the entire length of productive spawning water in the Knife River each spring and these walks will alert us to any impacts to the project work areas, both instream work and riparian work.

## Outcomes:

*The original accomplishment plan stated the program would*

**Programs in the northern forest region:**

- Healthy populations of endangered, threatened, and special concern species as well as more common species
- Improved aquatic habitat indicators
- Increased availability and improved condition of riparian forests and other habitat corridors
- Greater public access for wildlife and outdoors-related recreation
-
- This project will retain water through increased transpiration via tree planting and reduce erosion through streambank stabilization.

**How will the outcomes be measured and evaluated?**

First-the project will lessen the amount of sediment washed downstream in the Knife River as far as Lake Superior. Second-the LSSA will conduct annual spring stream walks to quantify the number and location of spawning beds. Third-it is assumed that the project will enhance and improve the habitat so that more adult fish will make the annual spring run from Lake Superior and the weir below the HWY 61 Expressway will quantify the annual run numbers.

# Budget Spreadsheet

*Final Budget line item reallocations are allowed up to 10% and do not need require an amendment to the Accomplishment Plan*

Total Amount: $1,410,000

**Budget and Cash Leverage**

| Budget Name | Request | Spent | Cash Leverage (anticipated) | Cash Leverage (received) | Leverage Source | Total (original) | Total (final) |
|---|---|---|---|---|---|---|---|
| Personnel | $152,000 | $181,400 | $0 | $9,600 | Private Source | $152,000 | $191,000 |
| Contracts | $960,000 | $990,200 | $0 | $29,000 | Private Source, LSSA | $960,000 | $1,019,200 |
| Fee Acquisition w/ PILT | $0 | $0 | $0 | $0 | | $0 | $0 |
| Fee Acquisition w/o PILT | $0 | $0 | $0 | $0 | | $0 | $0 |
| Easement Acquisition | $0 | $0 | $0 | $0 | | $0 | $0 |
| Easement Stewardship | $0 | $0 | $0 | $0 | | $0 | $0 |
| Travel | $1,000 | $0 | $0 | $11,300 | Private Source | $1,000 | $11,300 |
| Professional Services | $5,000 | $0 | $0 | $36,500 | Private Source, LSSA | $5,000 | $36,500 |
| Direct Support Services | $0 | $0 | $0 | $53,000 | MNDNR, Private Source | $0 | $53,000 |
| DNR Land Acquisition Costs | $0 | $0 | $0 | $0 | | $0 | $0 |
| Capital Equipment | $0 | $0 | $0 | $0 | | $0 | $0 |
| Other Equipment/Tools | $35,000 | $34,500 | $0 | $0 | | $35,000 | $34,500 |
| Supplies/Materials | $257,000 | $198,300 | $0 | $7,800 | Private Source, LSSA | $257,000 | $206,100 |
| DNR IDP | $0 | $0 | $0 | $0 | | $0 | $0 |
| Total | $1,410,000 | $1,404,400 | $0 | $147,200 | | $1,410,000 | $1,551,600 |

**Personnel**

| Position | FTE | Over # of years | Spent | Cash Leverage | Leverage Source | Total |
|---|---|---|---|---|---|---|
| Manager | 0.50 | 4.00 | $181,400 | $9,600 | Private Source | $191,000 |
| Total | 0.50 | 4.00 | $181,400 | $9,600 | | $191,000 |

## Explain any budget challenges or successes:

The largest budget challenge was having proper cash flow. Construction projects, when in full swing and looking at a short construction window, can generate large invoices. The LSSA managed the project well.

## All revenues received by the recipient that have been generated from activities on land with money from the OHF:

Total Revenue: $0

Revenue Spent: $0

Revenue Balance: $0

# Output Tables

## Table 1a. Acres by Resource Type

| Type | Wetlands (original) | Wetlands (final) | Prairies (original) | Prairies (final) | Forest (original) | Forest (final) | Habitats (original) | Habitats (final) | Total (original) | Total (final) |
|---|---|---|---|---|---|---|---|---|---|---|
| Restore | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee with State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee W/O State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Easement | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Enhance | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 612 | 612 | 612 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 612 | 612 | 612 |

## Table 2. Total Funding by Resource Type

| Type | Wetlands (original) | Wetlands (final) | Prairies (original) | Prairies (final) | Forest (original) | Forest (final) | Habitats (original) | Habitats (final) | Total (original) | Total (final) |
|---|---|---|---|---|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Enhance | $0 | $0 | $0 | $0 | $0 | $0 | $1,410,000 | $1,404,400 | $1,410,000 | $1,404,400 |
| Total | $0 | $0 | $0 | $0 | $0 | $0 | $1,410,000 | $1,404,400 | $1,410,000 | $1,404,400 |

## Table 3. Acres within each Ecological Section

| Type | Metro Urban (original) | Metro Urban (final) | Forest Prairie (original) | Forest Prairie (final) | SE Forest (original) | SE Forest (final) | Prairie (original) | Prairie (final) | N Forest (original) | N Forest (final) | Total (original) | Total (final) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Restore | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee with State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Fee W/O State PILT Liability | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Protect in Easement | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Enhance | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 612 | 612 | 612 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 612 | 612 | 612 | 612 |

## Table 4. Total Funding within each Ecological Section

| Type | Metro Urban (original) | Metro Urban (final) | Forest Prairie (original) | Forest Prairie (final) | SE Forest (original) | SE Forest (final) | Prairie (original) | Prairie (final) | N Forest (original) | N Forest (final) | Total (original) | Total (final) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Restore | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee with State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Fee W/O State PILT Liability | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Protect in Easement | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Enhance | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,410,000 | $1,404,400 | $1,410,000 | $1,404,400 |
| Total | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,410,000 | $1,404,400 | $1,410,000 | $1,404,400 |

*Automatic system calculation / not entered by managers*

**Target Lake/Stream/River Feet or Miles (original)**

51

**Target Lake/Stream/River Feet or Miles (final)**

51

## Explain the success/shortage of acre goals:

Phase II turned out to be very successful for meeting our goals. Our riparian zone plantings reintroduced trees where they haven't been for several decades and will continue to improve the watershed for decades to come. And once these trees reach the end of their life cycle, some will fall back into the river providing large wood debris which is excellent instream habitat for all fish species and also invertebrates within the system. The improvement of the instream habitat was obvious almost from the start of construction as young trout worked into the construction zone.

# Parcel List

## Section 1 - Restore / Enhance Parcel List

Lake

| Name | TRDS | Acres | Total Cost | Existing Protection? | Description |
|---|---|---|---|---|---|
| West Branch of Knife River and other tributaries of the Knife River | 05311205 | 24 | $54,000 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311207 | 4 | $9,000 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311208 | 24 | $54,000 | Yes | steambed and stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311217 | 8 | $18,000 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311218 | 17 | $38,200 | Yes | streambed nd stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311220 | 28 | $63,000 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311232 | 10 | $22,500 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries of the Knife River | 05311233 | 37 | $83,200 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries to Knife River | 05311229 | 22 | $49,500 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries to the Knife River | 05211206 | 25 | $56,300 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries to the Knife River | 05211204 | 31 | $69,700 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries to the Knife River | 05211205 | 25 | $56,200 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries to the Knife River | 05411232 | 21 | $47,200 | Yes | streambed ans stream bank |
| West Branch of Knife River and toerht tributaries to the Knife River | 05211208 | 49 | $110,200 | Yes | streambed and stream bank |

St. Louis

| Name | TRDS | Acres | Total Cost | Existing Protection? | Description |
|---|---|---|---|---|---|
| West Branch of Knife River and other tribs to Knife River | 05312216 | 4 | $9,000 | Yes | streambed and stream bank |
| West Branch of KnifeRiver and other tribs to teh Knife River | 05412236 | 24 | $54,000 | Yes | streambed and stream bank |
| West Branch of Knife river and other tribs to the Knife River | 05312235 | 27 | $60,700 | Yes | streambed and stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05312227 | 23 | $51,700 | Yes | streambed and stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05212201 | 22 | $49,500 | Yes | streambed and stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05312215 | 29 | $65,200 | Yes | streambebd and stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05312223 | 20 | $45,000 | Yes | streambed ans stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05312234 | 27 | $60,800 | Yes | streambed and stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05312236 | 6 | $13,500 | Yes | streambed and stream bank |
| West Branch of Knife River and other tribs to the Knife River | 05412235 | 28 | $63,000 | Yes | strembed and stream bank |
| West Branch of Knife River and other tributaries to the Knbife River | 05312210 | 25 | $56,200 | Yes | streambed and stream bank |
| West Branch of Knife River and other tributaries to the KnifeRiver | 05312203 | 16 | $36,000 | Yes | streambed and stream bank |
| West Branch of Knife River ands other tribs to the Knife River | 05312222 | 19 | $42,700 | Yes | streambed and stream bank |
| West Branch of Knife River and toerh tribs to the Knife River | 05312228 | 5 | $11,200 | Yes | streambed ans stream bank |
| West Branch of the Knife river and other tributaries to Knife River | 05312202 | 27 | $60,700 | Yes | streambed and stream bank |

## 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.

# Completed Parcel: West Branch of Knife River and other tribs to Knife River

| | |
|---|---|
| **# of Total Acres:** | 4 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 16 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $9,000 |

# Completed Parcel: West Branch of KnifeRiver and other tribs to teh Knife River

| | |
|---|---|
| **# of Total Acres:** | 24 |
| **County:** | St. Louis |
| **Township:** | 054 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 36 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $54,000 |

# Completed Parcel: West Branch of Knife river and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 27 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 35 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $60,700 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 23 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 27 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $51,700 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 27 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 34 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $60,800 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 6 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 36 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $13,500 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 28 |
| **County:** | St. Louis |
| **Township:** | 054 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 35 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $63,000 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 29 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 15 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $65,200 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 22 |
| **County:** | St. Louis |
| **Township:** | 052 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 01 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $49,500 |

# Completed Parcel: West Branch of Knife River and other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 20 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 23 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $45,000 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 10 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 32 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $22,500 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 24 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 08 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $54,000 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 28 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 20 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $63,000 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 8 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 17 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $18,000 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 17 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 18 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $38,200 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 37 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 33 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $83,200 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 4 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 07 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $9,000 |

# Completed Parcel: West Branch of Knife River and other tributaries of the Knife River

| | |
|---|---|
| **# of Total Acres:** | 24 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 05 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $54,000 |

# Completed Parcel: West Branch of Knife River and other tributaries to Knife River

| | |
|---|---|
| **# of Total Acres:** | 22 |
| **County:** | Lake |
| **Township:** | 053 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 29 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $49,500 |

# Completed Parcel: West Branch of Knife River and other tributaries to the Knbife River

| | |
|---|---|
| **# of Total Acres:** | 25 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 10 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $56,200 |

# Completed Parcel: West Branch of Knife River and other tributaries to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 25 |
| **County:** | Lake |
| **Township:** | 052 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 06 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $56,300 |

# Completed Parcel: West Branch of Knife River and other tributaries to the KnifeRiver

| | |
|---|---|
| **# of Total Acres:** | 16 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 03 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $36,000 |

# Completed Parcel: West Branch of Knife River and other tributaries to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 25 |
| **County:** | Lake |
| **Township:** | 052 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 05 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $56,200 |

# Completed Parcel: West Branch of Knife River and other tributaries to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 21 |
| **County:** | Lake |
| **Township:** | 054 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 32 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $47,200 |

# Completed Parcel: West Branch of Knife River and other tributaries to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 31 |
| **County:** | Lake |
| **Township:** | 052 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 04 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $69,700 |

# Completed Parcel: West Branch of Knife River ands other tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 19 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 22 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $42,700 |

# Completed Parcel: West Branch of Knife River and toerh tribs to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 5 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 28 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $11,200 |

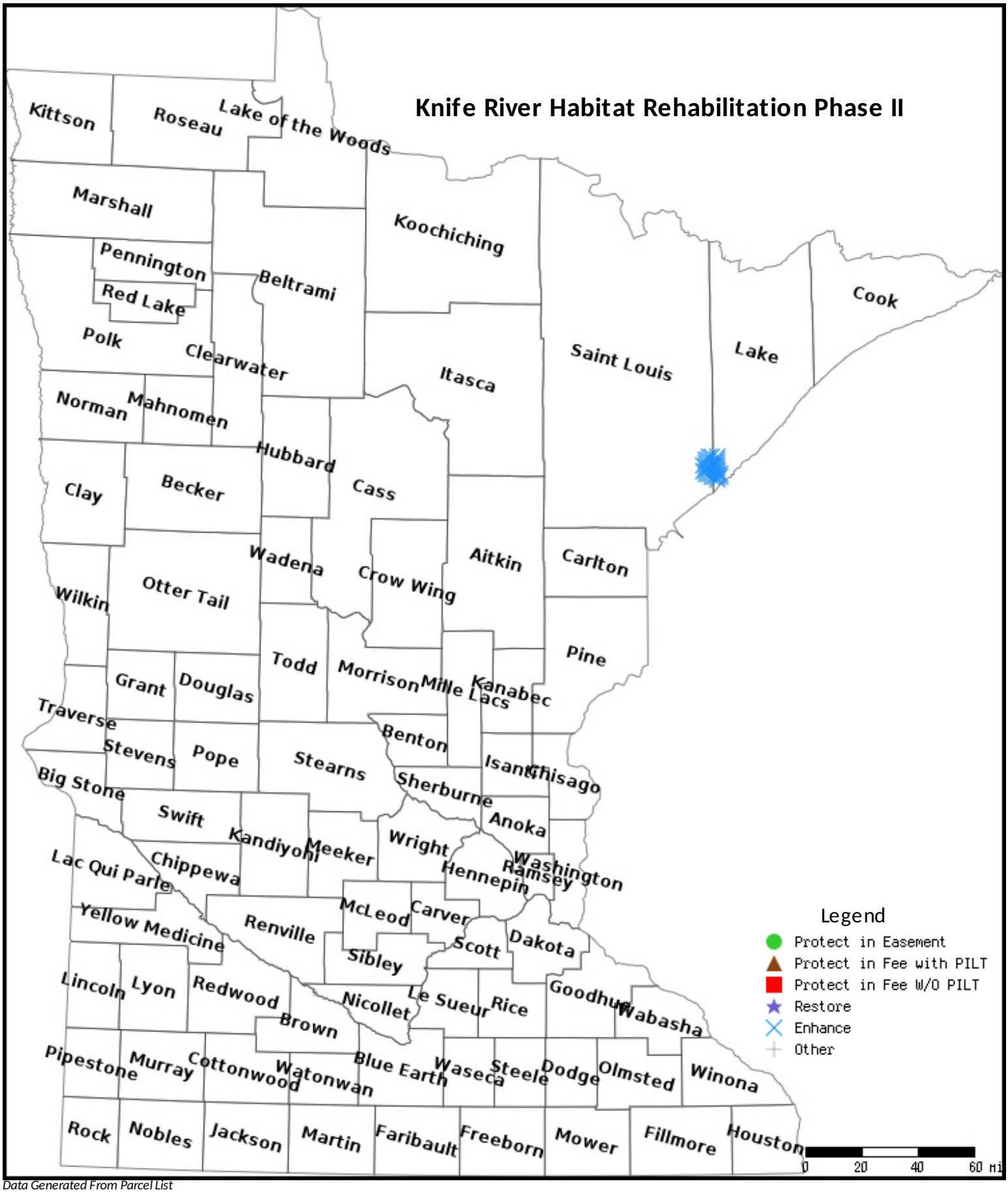
# Completed Parcel: West Branch of Knife River and toerht tributaries to the Knife River

| | |
|---|---|
| **# of Total Acres:** | 49 |
| **County:** | Lake |
| **Township:** | 052 |
| **Range:** | 11 |
| **Direction:** | 2 |
| **Section:** | 08 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $110,200 |

# Completed Parcel: West Branch of the Knife river and other tributaries to Knife River

| | |
|---|---|
| **# of Total Acres:** | 27 |
| **County:** | St. Louis |
| **Township:** | 053 |
| **Range:** | 12 |
| **Direction:** | 2 |
| **Section:** | 02 |
| **# of Acres: Wetlands/Upland:** | |
| **# of Acres: Forest:** | |
| **# of Acres: Prairie/Grassland:** | |
| **Amount of Shorline:** | |
| **Name of Adjacent Body of Water (if applicable):** | |
| **Has there been signage erected at the site:** | Yes |
| **Total cost of Restoration/Enhancement:** | $60,700 |

# Parcel Map




*Data Generated From Parcel List*