



Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2016 Final Report

General Information

Date: 02/01/2021

Project Title: St. Louis River Restoration Initiative Phase 3

Funds Recommended: \$2,707,000

Legislative Citation: ML 2016, Ch. 172, Art. 1, Sec. 2, Subd. 5(g)

Appropriation Language: \$2,707,000 the second year is to the commissioner of natural resources to restore aquatic habitats in the St. Louis River estuary. A list of proposed restorations must be provided as part of the required accomplishment plan.

Manager Information

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Location Information

County Location(s): St. Louis.

Eco regions in which work will take place:

- Northern Forest

Activity types:

- Restore

Priority resources addressed by activity:

- Habitat

Narrative

Summary of Accomplishments

Kingsbury Bay: completed engineering, design, permitting, and contracting. Began a multi-year restoration of a wetland complex impacted by excessive sediment and non-native species in 2019 (to be completed fall 2021).

Grassy Point: completed engineering, design, permitting, and contracting. Began a multi-year restoration of a wetland complex impacted by legacy milling waste and non-native species in 2019 (to be completed fall 2021).

40th Ave. West: placed biomedium (organic-rich sediment sourced from Kingsbury Bay) to help restore benthic macroinvertebrate and aquatic plant communities at a MN Pollution Control Agency (MPCA) restoration site. This task was completed in 2020.

Process & Methods

From early concept design and feasibility assessments to on-the-ground construction, the SLRRI followed a programmatic, partner-driven approach to implement large, complex, aquatic restoration projects. Conceptual designs were developed around specific restoration goals and objectives. These designs recognized and integrated current knowledge of natural processes in the St. Louis River. Throughout the formal design process, SLRRI involved a Restoration Site Team (RST) composed of local resource managers, experts, researchers, and stakeholders. The RST contributed expertise and knowledge, reviewed the design at various points throughout the process, and provided input and recommendations. This involvement contributed greatly to the goal of designing resilient, self-sustaining habitat components that met project goals and objectives.

Grassy Point and Kingsbury Bay:

SLRRI is completing restorations at Grassy Point and Kingsbury Bay as a combined project. Project objectives include excavation of accumulated sediments from Kingsbury Bay to restore open water wetlands and coastal marsh habitats. MNDNR will beneficially use the clean sediments removed from Kingsbury Bay to remediate wood waste impairments at Grassy Point and facilitate the establishment of healthy open-water wetland. The project will construct a complex of created islands that will shelter the bay behind them. The islands will also increase the overall project site diversity by supporting healthy upland and littoral functions. Funds from this appropriation were used by SLRRI to manage and coordinate all steps necessary to advance these large, complex restoration projects. The SLRRI also applied ML2016 funds to project design, engineering, and construction contracts.

The SLRRI awarded a contract to Barr Engineering in March 2017 to complete the project design using funds from the OHF and the USEPA - GLRI. The design process was completed with input from the public and technical partners on the RST. A Health Impact Assessment (HIA) was completed by the USEPA, which incorporated additional public input to evaluate the impact of the design on fish and wildlife habitat, water quality, and other public health-related issues. No funding from OHF was used for the HIA. The findings of the HIA showed a positive social health outcome by implementing the MNDNR Draft Final Design. A Record of Decision pertaining to the state's Environmental Review was issued, and all necessary permits and agreements were obtained.

The Final Design and bid documents were completed in March 2018. In April 2019, a construction contract was awarded to Veit, Inc. Construction began in June 2019. Major activities completed in 2019 included: underwater buttress and berm construction at Grassy Point, sediment excavation at Kingsbury Bay with beneficial use at Grassy Point, and non-native cattail removal at Kingsbury Bay. Construction resumed in spring 2020; over 120,000 cubic yards of legacy wood waste were removed from the waters of Grassy Point, and used to construct a series of islands. At Kingsbury Bay, the remaining non-native cattails were removed, as well as excess sediments. The clean

sediments were beneficially used to cap the constructed island features at Grassy Point, and to restore benthic habitat at both Grassy Point and a nearby project at 40th Avenue West (led by the MPCA, see below). Channel control structures (j-hooks, boulder vanes, and log sills) were constructed at the inlets to Kingsbury and Keene Creeks. During the 2020 construction season, it became apparent that production rates would extend the completion of both projects into 2021. The project is currently scheduled for completion in fall 2021.

40th Avenue West

This is a "remediation to restoration" project being completed under the St. Louis River Area of Concern program and led by the MPCA. At 40th Avenue West, MPCA constructed six underwater shoals to eliminate contaminant exposure pathways and restore shallow sheltered bay habitat to improve fish, wildlife, and native plant communities. The shoals were completed in 2018. The project's design included a six-inch application of "biomedium" over the completed shoal features. Biomedium describes clean sediment rich in organic material, plant propagules, and benthic macroinvertebrates and is intended to "jump start" bug and plant communities on the constructed features. After the sediments in Kingsbury Bay were characterized, MNDNR and MPCA identified an opportunity to collaborate by beneficially using approximately 19,000 cubic yards of the dredged Kingsbury Bay sediments as biomedium to cover a 27-ac portion of the shoals. This work was completed in 2020.

How did the program address habitats of significant value for wildlife species of greatest conservation need, threatened or endangered species, and/or list targeted species?

The 12,000 acre St. Louis River Estuary, at the head of Lake Superior, is a unique Minnesota resource. It is the largest source of biological productivity to Lake Superior as well as the world's largest freshwater shipping port. The combination of extensive wetlands, warmer waters and the connection to Lake Superior resulted in it becoming the primary source of productivity for the western Lake Superior fishery and a critical flyway for waterfowl and other migratory birds. Nearly two-thirds of the estuary's native wetlands have been altered, eliminated or impaired as a result of historic impacts of dredging, filling and waste disposal associated with industrial activities. The St. Louis River Restoration Initiative Program targets locations such as Grassy Point, Kingsbury Bay, and others for restorations that will directly benefit species of greatest conservation need, threatened/endangered species, and targeted species by improving habitat quality and extent in strategic locations to maximize benefits to populations.

How did the program use science-based targeting that leveraged or expanded corridors and complexes, reduced fragmentation, or protected areas in the MN County Biological Survey.

Science-based targeting is used to identify, design, monitor, and ensure the quality of all SLRRI projects. This comes in the form of comprehensive planning, team-lead project development, and partnering with researchers and subject matter experts.

The MNDNR worked with many local, state, tribal, and federal resource professional as well as stakeholders to develop the Habitat Plan, a comprehensive science-based plan for protecting, restoring, and managing the estuary's fish and wildlife habitat. Partners developed the Habitat Plan to guide and prioritize restoration work, and it has been the foundation of the SLRRI.

While developing a Remedial Action Plan for the estuary, AOC partners used a source-stressor model to identify legacy impairments to the Estuary. The model identified conservation targets, stresses limiting those targets, and recommended actions to address the source of the stress. All project areas supported by Great Lakes Restoration Initiative funding also require the development of a Quality Assurance Project Plan to further ensure successful outcomes of the conservation actions.

Restoration Site Teams (RSTs) are developed for each implementation project to identify site-specific restoration targets and objectives. Natural resource managers, ecologists, biologists, and other partners associated with the estuary examine conceptual restoration project alternatives and assess and evaluate habitat benefits and trade-offs between conceptual designs using both qualitative and quantitative measures of habitat value. Site-specific habitat needs and opportunities are also evaluated in the context of Estuary-wide restoration objectives and planned or completed projects. Knowledge transfer from previously completed OHF-funded projects is facilitated in RSTs by engaging local resource experts on multiple SLRRI projects.

Scientists from University of Minnesota, National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service, MNDNR, and MPCA continue to monitor and evaluate the Estuary's fish and wildlife populations and habitat to prioritize restoration projects, model expected outcomes of restoration alternatives, and evaluate restoration outcomes.

Explain Partners, Supporters, & Opposition

The MNDNR coordinated and managed the design and contracting of Kingsbury Bay and Grassy Point with assistance from the Minnesota Land Trust (MLT). Key partners in this process included USACE, City of Duluth, and USEPA. Funding partners include OHF, GLRI, and the St. Louis River/Interlake/Duluth Tar Superfund Site Natural Resources Damages Assessment Settlement.

There was no opposition to these projects.

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

Kingsbury Bay and Grassy Point represent MNDNR's largest construction contract to date, with challenges that are expected for a project of this size and complexity. For example, several bidding rounds were necessary before receiving a bid meeting the state's requirements and MNDNR's budget. Additional Federal funds were pursued and obtained to accommodate construction contract amendments. Working with harsh weather conditions and a short construction season means that large projects may take multiple seasons to complete. A unique and valuable component of the project's development was USEPA's application of a community and stakeholder-driven Health Impact Analysis (completed using separate funding).

What other funds contributed to this program?

- Clean Water Fund

How were the funds used to advance the program?

Clean Water Fund (CWF): To date, the CWF has been matched with funding from the USACE to characterize contaminated sediments within the entire Minnesota portion of the St. Louis River Area of Concern (AOC). As related to this specific ML2016 appropriation, Clean Water Funds obtained by the MPCA were used to develop the 2012 concept plans for the project.

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

Habitat restoration projects completed in the St. Louis River estuary as part of the SLRRI and supported by the Legacy Amendment are designed to be maintained by the natural processes that define this system and it is not anticipated that long-term maintenance will be required. Construction contracts for all SLRRI projects include a one-year warranty period, with costs for applicable maintenance covered by the contractor. Post-project monitoring for all Area of Concern (AOC) projects will be completed through AOC delisting with funding support from the USEPA. All parcels included in this appropriation (Chambers Grove, Kingsbury Bay, Grassy Point, and

Perch Lake) will be included in this AOC monitoring project. These parcels will also be included in an estuary-wide survey to document post-restoration bathymetry (separate funding and contract pending). Data collected through the AOC program will be used to compare post-project ecological health to restoration targets established for the estuary. After AOC delisting, the restored resources will be monitored and maintained under the authority of the State of Minnesota’s environmental agencies. Budget calculations for future natural resource management by MNDNR are difficult to estimate, but this work is anticipated to be covered through existing state funding mechanisms and programs.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2021-2022	Current contract	1-year construction warranty period - necessary maintenance is the responsibility of the contractor.	-	-
2021-2025	GLRI	St. Louis River AOC monitoring of restoration sites - managed by the MPCA	Results of post-restoration monitoring may trigger maintenance	Results of post-restoration monitoring included in removal of beneficial use impairments
2022-2026	state, other (as needed for maintenance)	Inspect site annually and after major weather events.	Determine if maintenance is required.	Implement required maintenance.
2027-ongoing	state, other (as needed for maintenance)	Continued monitoring and maintenance of St. Louis River estuary wildlife populations and habitat as a system.	Determine if maintenance is required.	Implement required maintenance.

Budget

Totals

Item	Request	Spent	Antic. Leverage	Received Leverage	Leverage Source	Original Total	Final Total
Personnel	\$485,000	\$70,500	\$160,000	-	State-DNR	\$645,000	\$70,500
Contracts	\$2,108,000	\$2,587,100	\$1,500,000	\$5,000,000	NRDA, GLRI	\$3,608,000	\$7,587,100
Fee Acquisition w/ PILT	-	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-	-
Travel	\$9,500	\$600	-	-	-	\$9,500	\$600
Professional Services	\$20,000	\$4,700	-	-	-	\$20,000	\$4,700
Direct Support Services	\$66,000	\$38,700	-	-	-	\$66,000	\$38,700
DNR Land Acquisition Costs	-	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-	-
Other Equipment/Tools	\$13,000	-	-	-	-	\$13,000	-
Supplies/Materials	\$5,500	\$5,400	-	-	-	\$5,500	\$5,400
DNR IDP	-	-	-	-	-	-	-
Grand Total	\$2,707,000	\$2,707,000	\$1,660,000	\$5,000,000	-	\$4,367,000	\$7,707,000

Personnel

Position	Annual FTE	Years Working	Funding Request	Antic. Leverage	Leverage Source	Total
FAW AOC Coordinator	0.5	3.0	\$23,500	-	-	\$23,500
FAW OAS	0.75	3.0	\$23,500	-	-	\$23,500
EWR Project Manager	0.5	3.0	\$23,500	-	-	\$23,500

Direct Support Services

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

Used MNDNR LSOHC direct cost table

Explain any budget challenges or successes:

As described in the narrative, multiple rounds of bidding were required in order to enter into a construction contract for Kingsbury Bay and Grassy Point that met the projects' budget. To accommodate subsequent amendments to the construction contract, additional federal funds were obtained to account for an increased budget (construction in progress). All ML2016 budget adjustments requiring amendments were done to move funds from non-construction categories into construction-related categories (e.g. contracts, professional services). We were able to obtain other sources of funding to cover the non-construction costs. These adjustments were made with the intention of spending down our oldest OHF appropriations first.

Total Revenue: \$0

Revenue Spent: \$0

Revenue Balance: \$0

Of the money disclosed above, what are the appropriate uses of the money:

- E. This is not applicable as there was no revenue generated.

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Acres (AP)	Total Acres (Final)
Restore	0	0	0	0	0	0	40	67	40	67
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	0	0	0	0
Total	0	0	0	0	0	0	40	67	40	67

Total Requested Funding by Resource Type (Table 2)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)	Total Funding (AP)	Total Funding (Final)
Restore	-	-	-	-	-	-	\$2,707,000	\$2,707,000	\$2,707,000	\$2,707,000
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	\$2,707,000	\$2,707,000	\$2,707,000	\$2,707,000

Acres within each Ecological Section (Table 3)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	0	0	0	0	0	0	0	0	40	67	40	67
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in	0	0	0	0	0	0	0	0	0	0	0	0

Fee w/o State PILT Liability													
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0	
Enhance	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	40	67	40	67

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)	Total (AP)	Total (Final)
Restore	-	-	-	-	-	-	-	-	\$2,707,000	\$2,707,000	\$2,707,000	\$2,707,000
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	\$2,707,000	\$2,707,000	\$2,707,000	\$2,707,000

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland (AP)	Wetland (Final)	Prairie (AP)	Prairie (Final)	Forest (AP)	Forest (Final)	Habitat (AP)	Habitat (Final)
Restore	-	-	-	-	-	-	\$67,675	\$40,402
Protect in Fee with State PILT Liability	-	-	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	-	-

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro / Urban (AP)	Metro / Urban (Final)	Forest / Prairie (AP)	Forest / Prairie (Final)	SE Forest (AP)	SE Forest (Final)	Prairie (AP)	Prairie (Final)	N. Forest (AP)	N. Forest (Final)
Restore	-	-	-	-	-	-	-	-	\$67,675	\$40,402
Protect in Fee with	-	-	-	-	-	-	-	-	-	-

State PILT Liability										
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-	-	-	-	-
Enhance	-	-	-	-	-	-	-	-	-	-

Target Lake/Stream/River Feet or Miles

Outcomes

Programs in the northern forest region:

- Improved availability and improved condition of habitats that have experienced substantial decline ~ *MNDNR evaluates habitat restoration effectiveness using a variety of physical and biologic metrics measured pre- and post-project. Completed restoration associated with the AOC will be measured in acres of habitat restored and evaluated to remove beneficial use impairments and ultimately delist the AOC.*

Parcels

Sign-up Criteria?

No

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
40th Ave W	St. Louis	04914217	27	\$180,000	Yes
Kingsbury Bay	St. Louis	04914218	20	\$602,950	Yes
Grassy Point	St. Louis	04914217	20	\$1,808,850	Yes



- Protect in Easement
- ▲ Protect in Fee with PILT
- Protect in Fee W/O PILT
- ★ Restore
- ✕ Enhance
- ⊕ Other

Parcel Map
St. Louis River Restoration Initiative Phase 3
(Data Generated From Parcel List)