Lessard-Sams Outdoor Heritage Council

Little Devil Track River Restoration

Laws of Minnesota 2024 Accomplishment Plan

General Information

Date: 06/26/2024

Project Title: Little Devil Track River Restoration

Funds Recommended: $3,000,000

Legislative Citation: ML 2024, Ch. 106, Art. 1, Sec. 2, Subd. 5(y)

Appropriation Language: $3,000,000 the second year is to the commissioner of natural resources for an agreement with Cook County to restore and enhance stream habitat in the Little Devil Track River.

Manager Information

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Location Information

County Location(s): Cook.

Eco regions in which work will take place:

- Northern Forest

Activity types:

- Restore

Priority resources addressed by activity:

- Habitat

Narrative

Abstract

The project will restore and protect cold-water streams for natural occurring brook trout, a sensitive, and semi-rare species, by removing an undersized culvert. The structure is a fish barrier and is creating bank erosion. The project is part of a watershed project identified in local planning efforts and through collaboration with local partners. Installing a bridge and instream geomorphology will restore fish habitat, improve stream connectivity, provide cold water refuge upstream and in tributaries, improve climate resiliency, reduce sediment loading, eliminate the current "thumb over the firehose" effect in the river, and allow for future stream habitat work.

Design and Scope of Work

Northeast Minnesota contains many pristine lakes and rivers which support robust populations of wild brook trout and other sensitive or semi-rare aquatic organisms. Brook trout are significant to aquatic ecosystems, recreational fishing, and an indicator of healthy watersheds. Ecological functions of streams are diminished by roads, development, and impairments that degrade the aquatic ecosystem leading to reductions in brook trout populations. Tributaries provide critical services by providing thermal refugia to brook trout populations.

Little Devil Track River (LDTR) is a tributary to Devil Track River, a tributary to Lake Superior. The in-place culvert was identified as a high priority to be replaced for fish passage, being undersized, and having structural issues. The culvert has a scour pool and a drop outlet. Cook County has determined the culvert will be replaced with a bridge to improve native brook trout habitat, build for climate resiliency with increased precipitation events, and aid in maintaining and improving water quality. Cook County and Cook County Soil and Water Conservation District (SWCD), with input from the local MN DNR Fisheries, agree an open bottom structure will be the most beneficial for the water quality and aquatic habitat. Wild Brook Trout have been identified as the primary species in the river. Secondary species in LDTR include slimy sculpin and some sensitive macro-invertebrates indicating a high-water quality biological resource such as rihithrogena, epeorus, and rychacophila.

The current culvert is impeding fish passage, pinching the river since it is not at bankfull width, and does not have natural bottom substrate to accommodate natural aquatic passage. Because it is pinching the river at this location, it is causing an increase in velocity of stream flow, like holding your thumb over a firehose. The velocity is creating shear stress on downstream banks, causing bank erosion and contributing to sediment loading in the river. The project is part of a multi-phase project to restore areas where necessary throughout the LDTR corridor and watershed for the benefit of aquatic habitat and water quality.

Cook County is working to restore the area back to a natural state, meeting the river's bankfull and flood prone width. Instream geomoprhology has been completed to ensure the new stream bottom will provide the correct roughness runs and pools for Brook Trout habitat and spawning. Cook County will provide the following habitat benefits: low flow refugia, high flow refugia, spawning habitat, searing habitat, and invertebrate habitat. To accomplish these habitat benefits, different options are being explored such as: spawning gravels, mid-channel boulder clusters to create pocket water areas, cross vanes with small plunge pools, and woody debris.

In addition to this instream work, with separate funding, Cook County SWCD will be working on stabilizing the banks downstream using natural channel design. Their project will also be a continuation of this project and instream fish habitat work along with floodplain work, riparian revegetation, reestablishment of shade trees and stream bank stabilization. This collaborative effort is planned for 2024 construction with all permitting, design, and engineering complete by December 2023.

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

Currently, the river has a box culvert with a scour pool, plunge pool and high velocity of water going through it, acting as a barrier for fish passage. The new bridge structure will be wide enough to accommodate bankfull width and be able to handle flood stages of 100-year and larger storm events. It will fully restore the area back to a more natural state. The instream area of the new structure will have natural channel design to aid in fish passage and aquatic habitat. Preliminary work on pebble counts and a geomorphic study have been completed to ensure stream roughness and stream velocity are incorporated into the project.

The reduction in the velocity of water passing through the structure will reduce the shear stress of the downstream banks. The project allows for success of downstream work by reducing the stream velocity and creating additional habitat not currently present. The banks will be restored as the fish passage structure is replaced, ensuring additional habitat restoration and increasing success of the bank stabilization downstream. In addition to downstream habitat benefits, during larger precipitation events, there is backwater upstream of the current structure. This will be resolved following the replacement of the structure, improving fish habitat. The project will reduce sediment loading which warms waters, reduces food for macro-invertebrates and other invertebrates, disrupts food chains, and depletes dissolved oxygen in the water. It will open up an additional 4.25 miles upstream of cold-water refuge for fish in the river and connecting tributaries.

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

With increased precipitation in rain and snow melt events, it is important to be proactive and complete the work now before additional issues arise from an improperly sized culvert. Scouring from the in-place culvert, downstream erosion on the river banks, and fish passage barriers will continue to degrade the quality of the river as long as the culvert is in place. The project allows for success of downstream work by reducing the stream velocity and creating additional habitat not currently present. The opportunity to collaborate between partners to fix this problem area is now. Cook County SWCD has the funding secured to complete the bank stabilization when there is access to the river from this project, minimizing construction disturbance in the stream corridor. Cook County has worked closely with the SWCD as a partner for the importance of the benefits of the fish and aquatic habitat.

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

Little Devil Track River is tributary to Devil Track River which flows directly into Lake Superior. The Little Devil Track River has smaller tributaries flowing into it. The project will connect an estimated 4.25 miles of the river and tributaries to the river will be connected, addressing habitat fragmentation. The Minnesota Pollution Control Agency has monitored the Index of Biological Integrity (IBI) of the river since 1997. The fish numbers from the studies indicate a healthy fish population both above and below the culvert. The project will allow fish from both upstream and downstream of the culvert to have more habitat and begin to expand their genetic pool with more mobility in the river.

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

- Minnesota's Wildlife Action Plan 2015-2025
- Other : Lake Superior North, One Watershed One Plan

Explain how this plan will uniquely address habitat resilience to climate change and its anticipated effects on game, fish & wildlife species utilizing the protected or restored/enhanced habitat this proposal targets.

By incorporating natural channel design, meeting bankfull width, and floodplain connection, the river will return to a natural state and be more climate resilient to handle precipitation challenges. Natural sediment deposition will be less disrupted, providing a more natural channel evolution of the river. The stream will not be pinched to a confined area causing upstream and downstream issues. Flood waters will be able to flow in a more natural way, allowing the stream to function and adapt more naturally. The long-term benefits of this project tie into other projects of bank stabilization downstream. By reducing water velocity and shear bank stress, the bank stabilization will also address climate resiliency through riparian planting, floodplain connection, toe stabilization and natural channel design. Improving stream connectivity will aid in fish accessibility to cold water refuges upstream. These are common practices to help reduce warming water trends.

Which LSOHC section priorities are addressed in this program?

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

Outcomes

Programs in the northern forest region:

- Improved aquatic habitat indicators ~ *The project will eliminate impediments for Brook Trout passage to 4.25-miles of upstream headwaters habitat expected to hold spawning reaches by restoring 220-feet of new channel (in place of the existing culvert). Modeling of the current culvert condition suggests the current bankfull velocities to prohibit fish passage, which would present a fish barrier. To fully restore fish passage, the project proposes to fully restore the Little Devil Track River back to its natural habitat with various features to meet aforementioned habitat: Low flow refugia, High flow refugia, Spawning habitat, Rearing habitat, and Invertebrate habitat.*

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.

These funds are not supplanting or substituting previous funds allocated for this project.

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

The project is part of larger scope of projects in the Devil Track River watershed through an adopted 319 Nine Element Plan to benefit water quality. The Little Devil Track River has several banks that will be restored over the next 16 years and bluff and riparian areas to be protected and vegetated. The bridge that will allow the Little Devil Track River to be restored back to its natural habitat will be maintained by Cook County for the lifespan of the structure and, in partnership with Cook County SWCD, future structures and the Little Devil Track River will be maintained into perpetuity.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2024 and beyond	local	monitor restored stream	document observations	continue to monitor stream and make

				necessary adjustments
2024 and beyond	local	initial bridge inspection	document observations	continue inspections and documentation for lifespan of structure

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

Enhancing and protecting the Devil Track River watershed is in direct alignment with the goals set out by the 1854 Treaty Authority to protect, preserve, and enhance the hunting, fishing and gathering rights of the Grand Portage and Bois Forte bands of Lake Superior Chippewa in the 1854 Treaty area. By improving the water quality, creating better fish habitat, and reducing bank erosion this project is directly benefiting the Grand Portage and Bois Forte bands of Lake Superior Chippewa.

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?

- Public Waters
- County/Municipal

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
End Construction	October 2024
Begin Construction	July 2024
Bid Letting	December 2023
Design, engineering, and permitting	September 2023

Date of Final Report Submission: 11/01/2024

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, 2028;
(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, 2032;
(3) money appropriated for restoring or enhancing other land is available until June 30, 2029;
(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	$9,800	$31,600	county levy	$41,400
Contracts	$2,990,200	$2,259,800	state and federal	$5,250,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	-	-	-	-
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	**$3,000,000**	**$2,291,400**	**-**	**$5,291,400**

Personnel

Position	Annual FTE	Years Working	Funding Request	Leverage	Leverage Source	Total
Cook County Engineer	1.0	1.0	-	$7,000	county levy	$7,000
Cook County Inspector	1.0	1.0	-	$24,600	county levy	$24,600
SWCD Habitat Coordinator	1.0	1.0	$9,800	-	-	$9,800

Amount of Request: $3,000,000
Amount of Leverage: $2,291,400
Leverage as a percent of the Request: 76.38%
DSS + Personnel: $9,800
As a % of the total request: 0.33%
Easement Stewardship: -
As a % of the Easement Acquisition: -

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?
New funding became available while the appropriation process was ongoing. State bridge bonds, PROTECT fund allocation ($800,000), and BROS ($600,000) funds were allocated towards this project recently.

Detail leverage sources and confirmation of funds:
Local levy/tax dollars pay the inspector and engineer leverage. State funds come from Cook County's annual state

aid allocation for use on construction projects on state aid routes. Federal funds comes from secured grant and regionally allocated sources. State and federal sources will cover construction leverage.

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?
The project could not proceed at 30% of requested funding. The county does not have funding to restore the Little Devil Track River back to its natural state so the problems of poor fish habitat, bank erosion, sediment loading, and lack of climate resiliency would still persist.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?
The county does not have the funding.

Personnel

Has funding for these positions been requested in the past?
No

Contracts

What is included in the contracts line?
Included in the contracts line are costs associated with mobilizing equipment, removing the existing culvert, abutment concrete, concrete beams and diaphragms, excavation of fill material, piling, stream restoration, stream diversion, and riprap.

Federal Funds

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

Are the funds confirmed?
Yes

Is Confirmation Document attached?
Yes

- Other : Federal Lands Access Program

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	-	-	-	1	1
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	-	-
Total	**-**	**-**	**-**	**1**	**1**

Total Requested Funding by Resource Type (Table 2)

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

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	-	-	-	-	1	1
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**1**	**1**

Total Requested Funding within each Ecological Section (Table 4)

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

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	$3,000,000
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	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	-	$3,000,000
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

4.25 miles

Parcels

Parcel Information

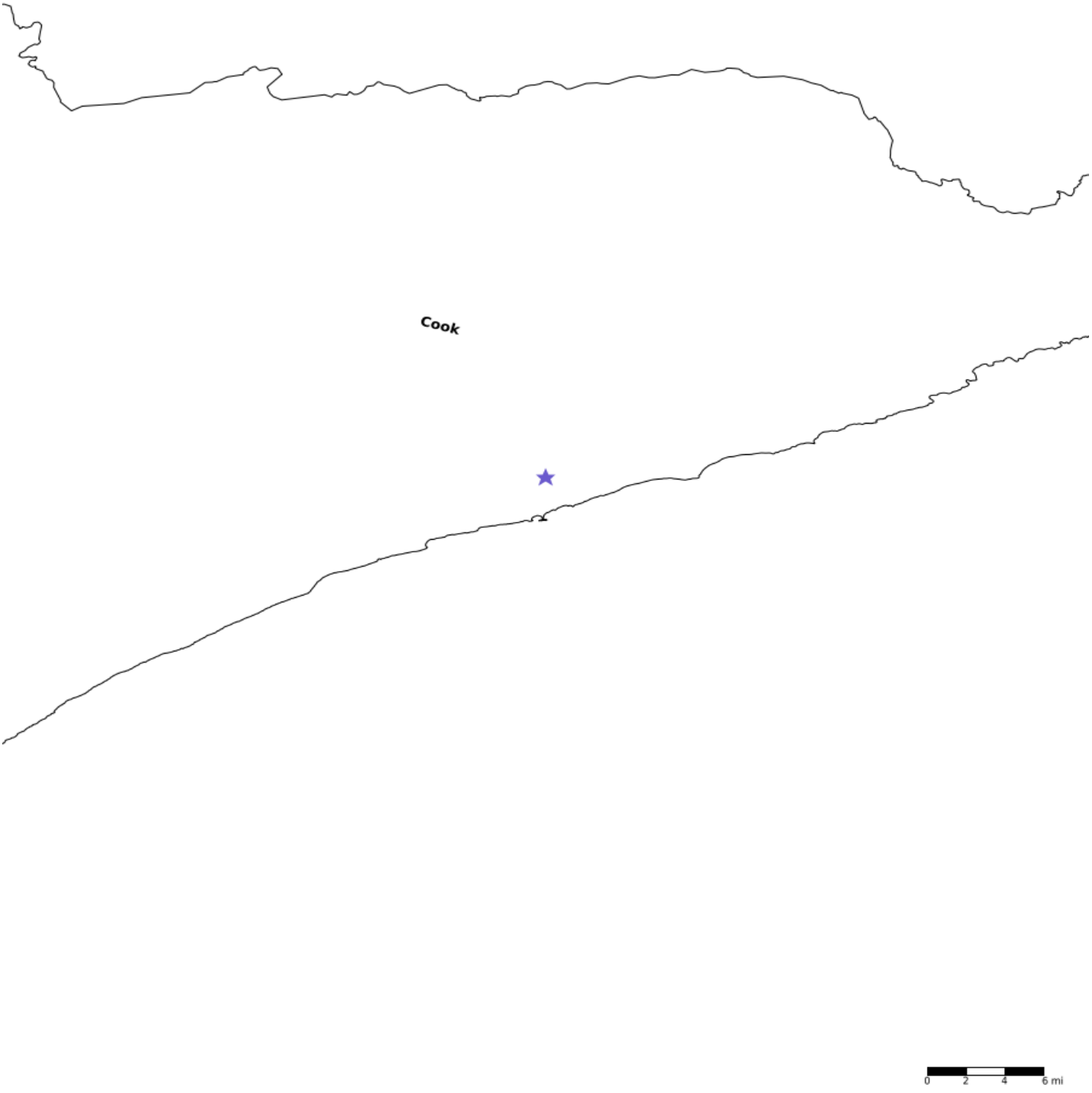
Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
The parcel identified below is the location of the fish barrier.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
Remove fish barrier	Cook	06101209	1	$4,435,800	-	Remove fish barrier

Parcel Map


Cook
0
2
4
6 mi
Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other