



## Lessard-Sams Outdoor Heritage Council

Highbanks Ravine Bat Hibernaculum  
Laws of Minnesota 2024 Accomplishment Plan

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### General Information

**Date:** 06/26/2024

**Project Title:** Highbanks Ravine Bat Hibernaculum

**Funds Recommended:** \$2,300,000

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

**Appropriation Language:** \$2,300,000 the second year is to the commissioner of natural resources for an agreement with the city of St. Cloud to enhance the Highbanks Ravine Bat Hibernaculum in St. Cloud.

### Manager Information

**Manager's Name:** Emma Larson

**Title:** Assistant Public Utilities Director

**Organization:** City of St. Cloud

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### Location Information

**County Location(s):** Stearns.

**Eco regions in which work will take place:**

- Forest / Prairie Transition

**Activity types:**

- Enhance

**Priority resources addressed by activity:**

- Habitat

## Narrative

### **Abstract**

The City of St. Cloud is proposing a project that will enhance a critical bat hibernaculum in central Minnesota. The DNR protected Highbanks Bat Hibernaculum is a brick-and-mortar structure constructed in the early 1900s. The hibernaculum has historically been home to hundreds of bats, but over the past several years, stormwater flow and flooding to the top of the structure have been detrimental for the bats to roost. The project, which is fully designed and shovel ready, will remove the stormwater and flooding from the hibernaculum, enhancing the habitat to where bats will continue to utilize the hibernaculum.

### **Design and Scope of Work**

The Highbanks Bat Hibernaculum has historically been studied by St. Cloud State University staff starting in 1952 through the early 2000's. Surveys indicated the number of bats within the hibernaculum to range from 50 to over 500 bats. Surveys were also completed by Gerda Norquist with the MNDNR in 1992, 2006, 2012 and 2016, who noted that the early surveys completed prior to 2006 found hundreds of bats roosting in the hibernaculum. The most recent surveys found only two (2) big brown bats (*Eptesicus fuscus*) on both occasions. Ms. Norquist noted during her recent visits the occurrence of more frequent flash flood events and evidence of stormwater flooding to the top of the structure, which is detrimental to bats roosting there. The hibernaculum is also an active stormwater conveyance system. Stormwater from approximately 125 acres of residential and commercial land use drain into the hibernaculum, causing the detrimental flooding events. The hibernaculum/stormwater conveyance discharges into the 680 linear foot, 40-foot-deep Highbanks Ravine which outlets into the Mississippi River. Stormwater flows through the ravine cause significant erosion and sedimentation into the Mississippi River, impacting fish and aquatic habitat. The plume of sediment is visible on aerials.

According to an article (The Chronicle [January 23, 1979] ([stcloudstate.edu](http://stcloudstate.edu))) the hibernaculum should be a cool place (32-44°F) with a water supply as the bats will crawl down and get a drink occasionally. The brick-and-mortar tunnel provides the perfect environment with cool temperatures, cracks for the bats to crawl into for the winter, and a water source (Mississippi River) nearby. The Highbanks Ravine habitats are listed as a Floodplain Forest and Mesic Hardwood Forest. Having this habitat adjacent to the river and hibernaculum is ideal for the bats as they emerge from hibernation. The bats can exit, find food immediately and rest in the trees.

The City has been working closely with the MNDNR over the past eight years to identify a solution to address the negative and detrimental stormwater impacts on the bat hibernaculum and Mississippi River. After a detailed assessment of varying options ranging from eliminating the bat hibernaculum, creating an alternative bat roosting area, re-routing stormwater flow, and many other options, the MNDNR and City have identified the best option to enhance habitat in the area is to remove/route the stormwater flow away from the bat hibernaculum and around the ravine.

The proposed project is unique and a non-traditional habitat enhancement project in that the project includes the installation of a stormwater pipe.

The new stormwater pipe alignment includes revamping the stormwater system to eliminate flows to the brick-and-mortar tunnel by rerouting the lateral stormwater pipes to the south along 4th Street South and would outlet directly into the Mississippi River. The new route will improve water quality by eliminating flow and erosion within the ravine. This re-route is critical in the enhancement of the hibernaculum as it eliminates the flooding of the tunnel and improves fish and aquatic habitat by reducing sediment into the Mississippi River.

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

The bat hibernaculum is currently under a conservation easement with the MNDNR. Over the past several years the conditions within the hibernaculum have become less favorable for the bat species. The DNR noted in the last surveys it appears the brick-and-mortar structure has flooded to near the ceiling, which would be detrimental to any bats using the hibernaculum for shelter. Bat habitat and particularly hibernaculum are critical to bat survival. Minnesota has white-nose syndrome (WNS) which is a disease that is killing bats across North America. There have been no bats with WNS found within the Highbanks hibernaculum. The enhancement and re-establishment of a healthy hibernaculum would be extremely beneficial to the bat population in Central Minnesota. The goal of the enhancement would be to retire this historic brick-and-mortar tunnel as a stormwater mainline conveyance by installing a new mainline system. The project would remove the lateral stormwater connections to the hibernaculum, which will likely increase the temperature of the brick-and-mortar tunnel returning it to the favorable environmental conditions of the 1950– 2000's.

Protection of the river from sediment is important for water quality, spawning habitat, and general quality of the water. The Highbanks Ravine has been prone to erosion and this sediment ends up in the Mississippi river. The ravine itself is an important habitat for bats emerging from hibernation. The forested floodplain habitat of the ravine bottom provides areas of rest and/or a food source immediately outside the hibernaculum.

The ravine and hibernaculum are critical habitat for the Big Brown bat (*Eptesicus fuscus*), Tricolored bat (*Perimyotis subflavus*), and the Northern Long-eared bat (*Myotis septentrionalis*).

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

The City of St. Cloud has already completed a preliminary design, topographic surveys, design, and permitting for the project. The City has also secured two other grants to help fund the project through FEMA and LCCMR. Due to significant material cost increases over the past couple of years, there remains a funding gap preventing the project from being constructed. If additional funds are not secured to complete the project, the funds already in hand will not meet completion deadlines and the money will have to be returned to the agencies, resulting in the project not being completed. In addition to funding, the ravine slopes continue to erode. The erosion significantly increases each year, threatening the ravine habitat, bat hibernaculum entrance and the integrity of adjacent buildings and infrastructure.

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

Known public bat hibernacula are not common with approximately 30 total hibernacula being identified by the USFWS and MNDNR. There are likely many private areas, such as homes or barns, that may provide locations for bats to hibernate. However, these areas are generally not protected or regulated. This puts the bats and hibernaculum sites at risk as development occurs and people either remove or seal up hibernaculum locations used by bats. The enhancement of the brick-and-mortar tunnel back to the conditions found in the 1950 – 1980's would provide the opportunity for the bats to expand the use of the hibernaculum, bringing population from two (2) into the hundreds. By removing erosion potential from the adjacent ravine, eroded areas can reestablish creating a more favorable and flourishing Floodplain Forest and Mesic Hardwood Forest habitat within the ravine, between the bat hibernaculum to the Mississippi River.

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

- Minnesota DNR Nongame Wildlife Plans
- Minnesota Statewide Conservation & Preservation 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.

As we continue to see more significant and intense precipitation events the impacts to the bat hibernaculum flooding will continue to worsen making it impossible for bats to roost within the brick-and-mortar structure. This would eliminate the benefit of the bat hibernaculum. By establishing a new stormwater conveyance to remove the stormwater flow from the bat hibernaculum and around the ravine, large and intense precipitation events can be better managed and conveyed, saving the bat hibernaculum and improving water quality and aquatic habitat.

## Which LSOHC section priorities are addressed in this program?

### Forest / Prairie Transition

- Protect, restore, and enhance habitat for waterfowl, upland birds, and species of greatest conservation need

## Outcomes

### Programs in forest-prairie transition region:

- Protected, restored, and enhanced nesting and migratory habitat for waterfowl, upland birds, and species of greatest conservation need ~ *The success of the brick-and-mortar tunnel hibernaculum will be measured in the ability to create the environmental conditions that bat species will desire for the winter. The ideal habitat is air temperatures of 32 – 44 degrees F; fresh water available; and tunnel does not flood. These conditions can be measured by placement of an electronic measuring device post construction. The ultimate measure of success for the hibernaculum will be bat use, which will likely occur via MNDNR surveys. The measurement of success of the bank stabilization portions include the establishment of permanent vegetation and no erosion.*

## 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.

This funding request does not supplant or substitute for previous funding that was not from a legacy fund. Other project funds have been secured through LCCMR and through FEMA, and the LSOHC funds would be used to fill the remaining funding gap. It does not replace previous funding.

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

The perpetual MNDNR conservation easement over, under, and upon the bat hibernaculum, protects the hibernaculum from any topographic changes or alterations of the natural landscape in any fashion.

The City has also completed a structural assessment of the brick-and-mortar structure and is working closely with the MNDNR to identify and implement improvements to the structure to maintain its structural integrity as part of the project. The MNDNR and the City are working to incorporate structural improvements that will further enhance habitat within the hibernaculum.

The new proposed storm sewer convenience system will be located within the City of St Cloud owned right-of-way and will be maintained in accordance with City’s current stormwater system maintenance program.

**Actions to Maintain Project Outcomes**

Year	Source of Funds	Step 1	Step 2	Step 3
Annually	City of St. Cloud	Inspect and monitor	Complete any identified maintenance activities	Plan for and budget any necessary capital improvements

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

An assessment of the project was completed utilizing the Minnesota Pollution Control Agency's "Understanding Environmental Justice" tool, which identified the project area as an "environmental justice area of concern" due to the fact that more than 40% of the residents living in the neighborhood around the habitat restoration area have income of less than 185% of the federal poverty level. Additionally, more than 50% of the people living in the neighborhood directly to the south of the project area are people of color. While the benefits of habitat restoration extend far beyond the project site, including protection of a threatened bat species, it is important to be aware of how the project will impact the people living in close proximity to the site. Should grant funds be awarded, the project benefits will extend to the adjacent neighborhoods as well, including future potential research and educational opportunities in partnership with St. Cloud State University.

**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
- 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
Final completion and project closeout	August 2025
Phase 2 construction begins	August 2024
Bid Phase 2	July 2024
Phase 1 construction begins (non-LSOHC funding)	March 2024
Bid Phase 1 (non-LSOHC funding)	December 2023

**Date of Final Report Submission:** 10/31/2025

### **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	-	\$15,000	City of St. Cloud, Stearns County	\$15,000
Contracts	\$2,300,000	\$3,327,000	FEMA and LCCMR	\$5,627,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	\$40,000	City of St. Cloud	\$40,000
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	-	\$620,000	City of St. Cloud	\$620,000
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
<b>Grand Total</b>	<b>\$2,300,000</b>	<b>\$4,002,000</b>	-	<b>\$6,302,000</b>

**Personnel**

Position	Annual FTE	Years Working	Funding Request	Leverage	Leverage Source	Total
Public Utilities Staff	0.1	5.0	-	\$10,000	City of St. Cloud	\$10,000
Stearns County Staff	0.05	5.0	-	\$5,000	Stearns County	\$5,000

**Amount of Request:** \$2,300,000

**Amount of Leverage:** \$4,002,000

**Leverage as a percent of the Request:** 174.0%

**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?**

N/A

**Detail leverage sources and confirmation of funds:**

City and County staff time is committed toward this project. An LCCMR grant in the amount of \$825,000 has been secured, as has a FEMA grant in the amount of \$2,897,000.

**Does this project have the ability to be scalable?**

No

## **Contracts**

**What is included in the contracts line?**

Contracts includes the contracts to be awarded to contractors selected through a competitive procurement process, including construction of new storm water pipes to re-route the water away from the bat hibernaculum, enhance the hibernaculum once the water is removed, and stabilize the erosion that has occurred in the ravine.

## **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 : FEMA Grant



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	-	-	-	2	2
<b>Total</b>	-	-	-	2	2

**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	-	-	-	\$2,300,000	\$2,300,000
<b>Total</b>	-	-	-	\$2,300,000	\$2,300,000

**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	-	2	-	-	-	2
<b>Total</b>	-	2	-	-	-	2

**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	-	\$2,300,000	-	-	-	\$2,300,000
<b>Total</b>	-	\$2,300,000	-	-	-	\$2,300,000

**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	-	-	-	\$1,150,000

**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	-	\$1,150,000	-	-	-

**Target Lake/Stream/River Feet or Miles**

## Parcels

### Parcel Information

#### Sign-up Criteria?

No

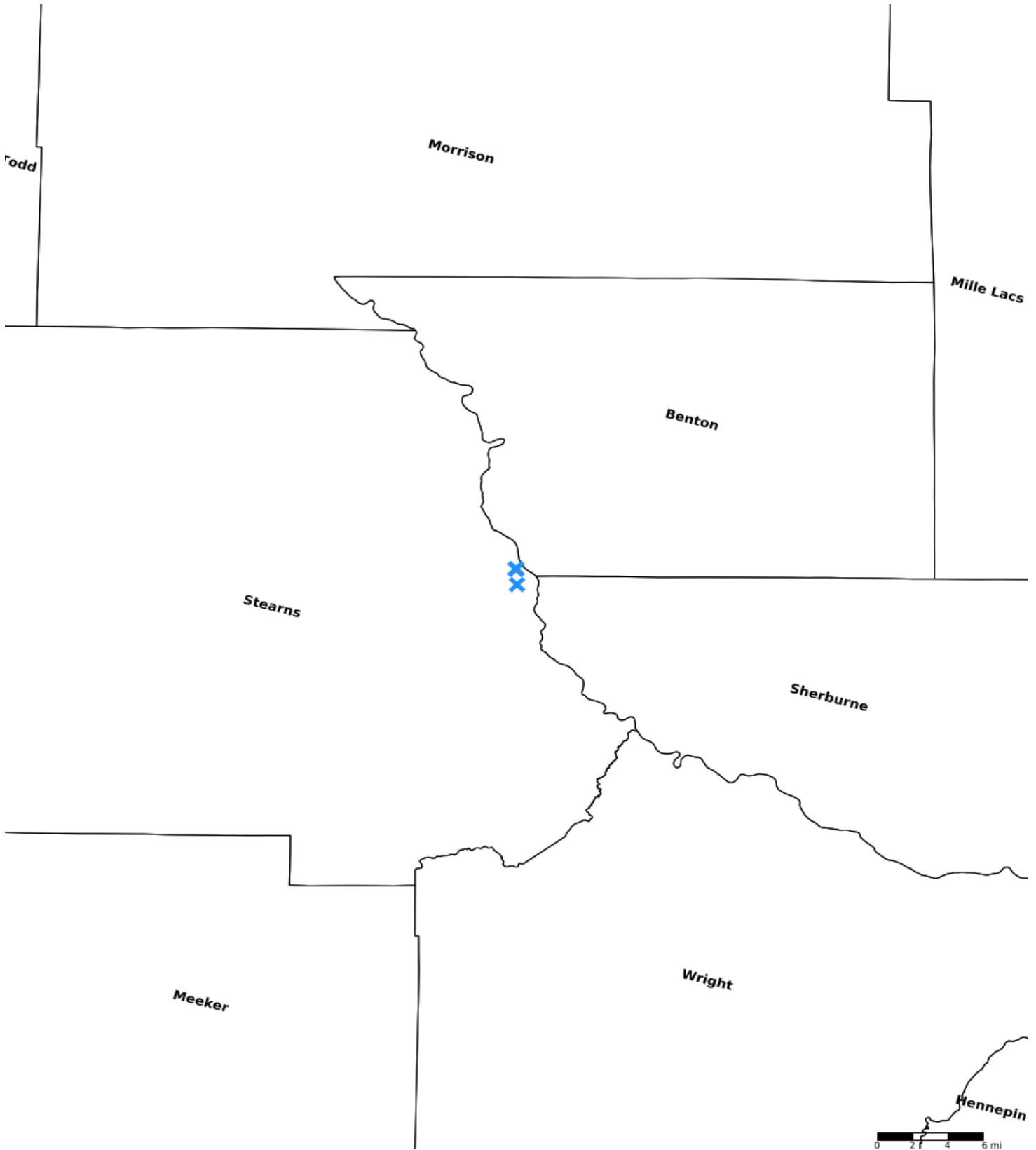
#### Explain the process used to identify, prioritize, and select the parcels on your list:

These parcels were selected because they contain the project area, including the bat hibernaculum, the ravine, and the area where the new pipe would re-route the stormwater.

### Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
82.51570.0000	Stearns	12428211	-	-	Yes	Portion of parcel is in project area
82.51569.0000	Stearns	12428211	-	-	Yes	Portion of parcel is in project area
82.51977.0000	Stearns	12428214	-	-	Yes	Portion of parcel is in project area
82.51569.0200	Stearns	12428211	-	-	Yes	Portion of parcel is in project area
City owned right of way	Stearns	12428211	-	-	Yes	Portion of right of way is in project area
82.51977.0010	Stearns	12428211	-	-	Yes	Portion of parcel is in project area

# Parcel Map



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

