

Final Abstract

Final Report Approved on November 21, 2025

M.L. 2020 Project Abstract

For the Period Ending June 30, 2025

Project Title: Emerging Issues Reducing Turtle Mortality

Project Manager: Christopher Smith

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Funding Source:

Fiscal Year:

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 20c-1

Appropriation Amount: \$249,000

Amount Spent: \$244,594

Amount Remaining: \$4,406

Sound bite of Project Outcomes and Results

This project solves the road-mortality threat to Minnesota's rarest turtle on State Highway 61; adjacent to the Cannon River Turtle Preserve SNA. Road mortality is a leading threat to Minnesota's turtle populations, and this fencing reduces, by over 90%, turtle-road mortality and therefore contributes to rare-turtle population recovery efforts.

Overall Project Outcome and Results

Road mortality is a leading threat facing turtle populations in Minnesota, and Minnesota is home to two kinds of native wild turtles that are considered rare globally – the Blanding's turtle (*Emydoidea blandingii*) and the wood turtle (*Glyptemys insculpta*). This project constructed over 6,000 linear feet of Minnesota designed and tested permanent small animal fencing that has shown greater than 90% effectiveness at reducing turtle deaths on roadways by blocking turtle access to roadways and redirecting them to safe passage under bridges and through culverts (Markle and Stapleton, 2022). Reducing and eliminating turtle death on roadways in areas containing rare turtle populations is urgently needed to reverse population declines and prevent local extinctions. The project site on Minnesota State Highway 61 bisects the Cannon River Turtle Preserve Scientific and Natural Area (SNA), and area that once harbored a robust population of the rare wood turtle and is a site that is expected to be important for future recovery efforts.

Permanent Small Animal Fencing Standard: https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=38685779

Markle and Stapleton, 2022: <https://researchprojects.dot.state.mn.us/projectpages/details?id=19317&type=CONTRACT>

Cannon River Turtle Preserve SNA: <https://www.dnr.state.mn.us/snas/detail.html?id=sna01030>

Project Results Use and Dissemination

We are working with MnDOT communications staff to publish an article in our internal agency newsletter (“Newslines”) later this winter to better align with an upcoming training opportunity related to turtles and roads that will be offered via the MnDOT Leadership Development Program in May 2026. In spring 2026, additional social media posts will be made to highlight the project. Originally, we had hoped to do some of this in fall 2025, but we missed the fall turtle migration period. Given that turtle activity has stopped (or nearly so) for the season we plan to hold off until spring 2026.



Environment and Natural Resources Trust Fund

M.L. 2020 Approved Final Report

General Information

Date: December 2, 2025

ID Number: 2020-099

Staff Lead: Noah Fribley

Project Title: Emerging Issues Reducing Turtle Mortality

Project Budget: \$249,000

Project Manager Information

Name: Christopher Smith

Organization: Minnesota Department of Transportation

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Web Address: <https://www.dot.state.mn.us/>

Project Reporting

Final Report Approved: November 21, 2025

Reporting Status: Project Completed

Date of Last Action: November 21, 2025

Project Completion: June 30, 2025

Legal Information

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 20c-1

Appropriation Language: The following amounts, estimated to be \$284,000, are transferred to an emerging issues account authorized in Minnesota Statutes, section 116P.08, subdivision 4, paragraph (d):

- (1) the unencumbered amount, estimated to be \$100,000, in Laws 2015, chapter 76, section 2, subdivision 8, paragraph (b), Propagating Native Plants and Restoring Diverse Habitats;
- (2) the unencumbered amount, estimated to be \$50,000, in Laws 2016, chapter 186, section 2, subdivision 6, paragraph (c), Advancing Microbial Invasive Species Monitoring from Ballast Discharge;
- (3) the unencumbered amount, estimated to be \$11,000, in Laws 2017, chapter 96, section 2, subdivision 5, paragraph

(a), Connecting Youth to Minnesota Waterways through Outdoor Classrooms;
(4) the unencumbered amount, estimated to be \$43,000, in Laws 2017, chapter 96, section 2, subdivision 5, paragraph (e), Local Planning and Implementation Efforts for Bird Habitat;
(5) the unencumbered amount, estimated to be \$30,000, in Laws 2017, chapter 96, section 2, subdivision 8, paragraph (a), Optimizing the Nutrition of Roadside Plants for Pollinators;
(6) the unencumbered amount, estimated to be \$10,000, in Laws 2017, chapter 96, section 2, subdivision 8, paragraph (f), Prescribed-Fire Management for Roadside Prairies;
(7) the unencumbered amount, estimated to be \$20,000, in Laws 2018, chapter 214, article 4, section 2, subdivision 4, paragraph (a), Pilot Program to Optimize Local Mechanical and Pond Wastewater-Treatment Plants; and
(8) the unencumbered amount, estimated to be \$20,000, in Laws 2018, chapter 214, article 4, section 2, subdivision 6, paragraph (e), Install and Evaluate an Invasive Carp Deterrent for Mississippi River Locks and Dams.

(d) Transfers and Availability

The transfers under this subdivision are effective June 30, 2021, and the transferred amounts are available until June 30, 2023.

M.L. 2022, Chp. 94, Sec. 2, Subd. 19 Carryforward; Extensions, (b) The availability of the transfers for the following projects is extended to June 30, 2024: (7) Laws of 2021 First Special Session, chapter 6, article 5, section 2, subdivision 20, paragraph (c), clauses (1) through (8), Emerging Issues Account

Appropriation End Date: June 30, 2024

Narrative

Project Summary: Build small animal exclusionary fencing on MnDOT Right of Way to reduce turtle mortality caused by animal-vehicle collisions where Highway 61 crosses the Cannon River near Red Wing, MN.

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Timely construction of this small animal exclusionary fencing will immediately start reducing turtle roadkill this spring and summer as turtles move between nesting and foraging areas. Using a standardized design, and off-the-shelf materials already tested, turtles can be redirected to existing under-bridge areas for safer passage. This is especially important for the wood turtle. The wood turtle is one of nine Minnesota native turtle species and is classified as "threatened." In 2023 staff from the Minnesota Biological Survey concluded a statewide study and found disturbing results; even in counties like Goodhue, which is home to the 910-acre Cannon River Turtle Preserve and Scientific Natural area, wood turtles are rare, and apparently declining. In fact, wildlife staff found just two adult wood turtles in the county, and they are the first known records for the county since 1999. With so few numbers, this species is particularly vulnerable as the loss of any individuals from their population this spring and summer could have a devastating effect. In addition, the wood turtle is under review for federal listing, with a federal listing decision expected in federal fiscal year 2024.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

Build approximately 6,160 feet of small animal exclusionary fencing on MnDOT in each direction between bridges 25018/25021 and 25017/25023. The fencing would be built from readily available, low-cost materials using an already approved design, thus eliminating the need for design work or expensive retrofits. Chain link fence would be installed with posts set at a minimum of 4 feet into the ground. Additionally, hardware cloth would be attached and buried 12 inches below the fence, and extend at least 2 feet above ground, which will prevent the small hatchlings and juveniles from fitting through the chain link fencing. Wrap-around "j-hook" end treatments at a minimum of 10' in length will be installed to redirect turtles toward the under-bridge safer passage routes.

Specialized signs attached at regular intervals indicating the specialized nature of this fencing and indicating repairs and replacement must be overseen by the MnDOT wildlife ecologist are included in this proposal. Additionally, educational signage may be placed at a designated parking area along the Cannon River Trail and a DNR public water access (both within the project area) -- educational signage may be installed outside the scope of the LCCMR appropriation.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

Studies between 2019 and 2021 showed this configuration of fencing reduced roadside turtle mortality by 91%. We expect similar results in this location. In addition to reducing turtle mortality, this fencing will prevent other small wildlife from entering the roadway. This serves wildlife conservation efforts, and improves human safety as animal presence in the roadway creates dangers for motorists, bicyclists and pedestrians.

Project Location

What is the best scale for describing where your work will take place?

City(s): Red Wing

What is the best scale to describe the area impacted by your work?

Watershed(s): Cannon River

When will the work impact occur?

During the Project and In the Future

Activities and Milestones

Activity 1: Construct Fence

Activity Budget: \$249,000

Activity Description:

This activity will construct the proposed fencing in accordance with the construction contract and MnDOT specifications.

Activity Milestones:

Description	Approximate Completion Date
Execute Construction Contract	April 30, 2024
Update budget upon contract award, itemize materials costs and labor costs.	April 30, 2024
Construct Fencing	June 30, 2024
Complete project inspections	June 30, 2024
Habitat Modifications (vegetation planting and nesting site creation)	June 30, 2024
Install ENRTF signage.	June 30, 2024
Install specialized signage	June 30, 2024

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Shawna Gibson	MnDOT Highway Sponsorship Program	Collaborator	No

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.

Upon completion of the project. MnDOT will work with MnDNR, ENRTF, and others to highlight the project on social media and via other venues to raise awareness of the conservation challenges Minnesota's turtles face. MnDOT will install at least one ENRTF signage in a prominent location at the project site.

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

Longterm maintenance will be achieved using MnDOT District funds. The Highway Sponsorship Program will seek sponsors who will have licenses to work in the MnDOT right of way to further improve the environmental sustainability in the immediate area through installing native plant species, improving habitat for pollinators and other wildlife and removing invasive plant species.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount	\$ Amount Spent	\$ Amount Remaining
Personnel										
							Sub Total	-	-	-
Contracts and Services										
							Sub Total	-	-	-
Equipment, Tools, and Supplies										
	Tools and Supplies	ENRTF Signage	Signage per communications requirements					\$377	-	\$377
							Sub Total	\$377	-	\$377
Capital Expenditures										
		Fencing materials	Materials used to construct fencing.	X				\$244,623	\$244,594	\$29
							Sub Total	\$244,623	\$244,594	\$29
Acquisitions and Stewardship										
							Sub Total	-	-	-
Travel In Minnesota										
							Sub Total	-	-	-
Travel Outside Minnesota										
							Sub Total	-	-	-
Printing and Publication										

							Sub Total	-	-	-
Other Expenses										
		Rounding up to avoid system error	Rounding up to avoid system error					\$4,000	-	\$4,000
							Sub Total	\$4,000	-	\$4,000
							Grand Total	\$249,000	\$244,594	\$4,406

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Capital Expenditures		Fencing materials	<p>Having MnDOT provide fencing materials will expediate project delivery and reduce overall project costs.</p> <p>Additional Explanation : Fencing to protect rare wildlife will remain in place as part of this project. Materials will be obtained by MnDOT and provided to contractor. Materials cost was significantly higher than expected. MnDOT will cover the cost of installation, and LCCMR funds will be used for materials purchases.</p>

Non ENRTF Funds

Category	Specific Source	Use	Status	\$ Amount	\$ Amount Spent	\$ Amount Remaining
State						
In-Kind	MnDOT operating funds	MnDOT staff time is provided in kind. MnDOT funding provide for labor / install.	Secured	\$246,628	\$246,628	-
			State Sub Total	\$246,628	\$246,628	-
Non-State						
			Non State Sub Total	-	-	-
			Funds Total	\$246,628	\$246,628	-

Attachments

Required Attachments

Visual Component

File: [101d606d-574.pdf](#)

Alternate Text for Visual Component

Chain link fence with "J-turn" end treatments....

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
Small animal fencing showing base treatment	e55fe34b-df8.jpe
ENRTF Sign 1	54b521fa-1a2.jpe
ENRTF Sign 2	102350ac-1ee.jpe
Access gate	4df49e58-e7e.jpe
Small Animal Fencing	2851ce1a-728.jpe
Fence end treatment ("J Hook")	0705785d-6cd.jpe
Maintenance access gate	bd3d5805-b2c.jpe
Project corridor	a7f0e805-0f0.jpe

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

No changes intended.

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

Yes

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

N/A

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No

Work Plan Amendments

Amendment ID	Request Type	Changes made on the following pages	Explanation & justification for Amendment Request (word limit 75)	Date Submitted	Approved	Date of LCCMR Action
1	Amendment Request	<ul style="list-style-type: none"> • Other • Budget - Professional / Technical Contracts • Budget - Capital, Equipment, Tools, and Supplies • Budget - Other • Budget - Non-ENRTF Funds Contributed 	Materials quote came in much higher than expected (\$244,623). We anticipate covering the materials with the LCCMR appropriation, and MnDOT will provide additional funding to cover labor / installation (~ \$100,000, TBD).	June 24, 2024	Yes	August 23, 2024
2	Completion Date	Previous Completion Date: 06/30/2024 New Completion Date: 06/30/2025	Contractor delays, do in part to weather conditions. I believe we have used all available funds, but please also confirm on LCCMR side of things.	April 7, 2025	Yes	May 9, 2025
3	Amendment Request	<ul style="list-style-type: none"> • Budget - Non-ENRTF Funds Contributed 	Bids came in higher than originally estimated and budgeted for. MnDOT covered the additional costs via MnDOT funds. Slight savings on the LCCMR appropriation budget line item which covered materials.	August 18, 2025	Yes	October 16, 2025

Status Update Reporting

Final Status Update August 14, 2025

Date Submitted: November 10, 2025

Date Approved: November 21, 2025

Overall Update

The project set out to install small animal fencing along Hwy 61 where it crosses the Cannon River and associated backwaters to prevent turtle access to the busy roadway in order to reduce or eliminate turtle-road mortality. This fencing redirects turtles to safe crossing locations at existing bridges. The State (DNR) manages lands adjacent to this area, including the Cannon River Turtle Preserve Scientific and Natural Area (SNA), and the installation of this fencing addresses an identified threat to rare turtles in urgent need of conservation actions to prevent local extirpations / extinctions. Project is complete. Fence is installed, as are the ENTTF signs.

Activity 1

Complete.

(This activity marked as complete as of this status update)

Dissemination

We are working with MnDOT communications staff to publish an article in our internal agency newsletter ("Newslines") later this winter to better align with an upcoming training opportunity related to turtles and roads that will be offered via the MnDOT Leadership Development Program in May 2026. In spring 2026, additional social media posts will be made to highlight the project. Originally, we had hoped to do some of this in fall 2025, but we missed the fall turtle migration period. Given that turtle activity has stopped (or nearly so) for the season we plan to hold off until spring 2026.

Additional Status Update Reporting

Additional Status Update August 12, 2025

Date Submitted: August 18, 2025

Date Approved: October 16, 2025

Overall Update

Project is complete.

Activity 1

This activity was previously marked complete.

(This activity marked as complete as of this status update)

Dissemination

In progress. Anticipated in September.

Additional Status Update Reporting

Additional Status Update July 15, 2025

Date Submitted: August 18, 2025

Date Approved: October 16, 2025

Overall Update

Project is complete and awaiting closeout.

Activity 1

Fence complete.

(This activity marked as complete as of this status update)

Dissemination

MnDOT is in the process of planning some social media postings related to fencing, tentatively scheduled for Sept. (during fall turtle migration).

Additional Status Update Reporting

Additional Status Update August 14, 2024

Date Submitted: April 7, 2025

Date Approved: August 12, 2025

Overall Update

Project is approximately 50% complete and was delayed due to weather and contractor schedule.

Activity 1

Milestone 1 is complete. Milestone 2 is approximately 50% complete.

Dissemination

In the works. Did respond to one public inquiry about the project.

Status Update Reporting

Status Update April 1, 2024

Date Submitted: June 24, 2024

Date Approved: August 23, 2024

Overall Update

Estimated quantities and supplies order has been completed. Project is still on track to purchase materials prior to the end of fiscal year. Fencing will then be installed in late June or July.

Activity 1

Materials will be purchased prior to the end of the state fiscal year. Installation will occur shortly thereafter. Materials quote came in much higher than expected (\$244,623). We anticipate covering the materials with the LCCMR appropriation, and MnDOT will provide additional funding to cover labor / installation (~ \$100,000, TBD) plus in-kind staff time (~ \$60,000).

Dissemination

In progress