

Emerging Issues Project Proposal: Reducing Turtle Mortality through Exclusionary Fencing on MnDOT Right of Way

Request: Building on previous LCCMR-funded work and as outlined in report the “Reduce vehicle-animal collisions with installation of small animal exclusion fencing” (report number MN 2022-19), conducted by the MN Zoo and MnDOT, MnDOT is requesting funds from the Emerging Issues Account to build small animal exclusionary fencing as a corrective action to reduce turtle mortality caused by animal-vehicle collisions where Highway 61 crosses over the Cannon River near Red Wing, MN in Goodhue County. Timely construction could reduce 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.

The Situation in 2024: With two of the nine Minnesota native turtle species on the state’s threatened species list, it is safe to say our turtles are in trouble. Turtles face daily threats including habitat loss, illegal harvest, road construction and increased mortality from road kills where even small increases in mortality can result in declining populations. With recent calls for action, the Legislature enacted new laws effective January 1, 2024, to reduce overconsumption of certain non-threatened species. Minnesotans are more aware now than ever that turtles need real protections.

Despite legislation and other protective measures, some turtle populations exist in peril. Of grave concern is the mortality of wood turtles, a native Minnesota species which must reach 12-20 years before it begins laying eggs. Wood turtles have been on MN threatened species list since 1984, meaning 2024 marks the unfortunate 40th anniversary of this designation. Even with this enhanced protection, an alarming rate of decrease in wood turtles has been demonstrated. A 2016 to 2018 survey of eight different eastern Minnesota study sites showed a sharp decrease in the wood turtle population. The estimated population in 2016 was 247 wood turtles. By 2018, the numbers were just 88. 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. 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. The emergence of this information points to the very real possibility that only a handful of wood turtles remain today. In addition, the wood turtle is under review for federal listing, with a federal listing decision expected in federal fiscal year 2024 making state efforts to conserve the species an urgency.

Proposed Location: The project location is in Red Wing, MN along two borders of the Cannon River Turtle Preserve Scientific and Natural area, on Highway 61 between MnDOT bridges 25018/25021 and bridges 25017/25023. This 910-acre SNA protects a stretch of the Cannon River close to the confluence with the Mississippi River. The area is high risk for roadside turtle mortality as wood turtles tend to forage and nest within 500’ of rivers. When turtles encounter a wrap-around “J” feature in this design, they can be redirected to safer passage underneath bridges along existing routes, meaning no culverts or other infrastructure need be built to provide a safe crossing area - a necessary element for success. Upon a preliminary review, DNR staff from SNA and Region 3 Nongame support MnDOT’s fencing proposal. The Prairie Island Indian Community are working on a proposal for turtle eco-passages in a nearby-area on a county road. Initial conversations with them indicate an interest in this project as well.

Demonstrated Efficacy of Proposed Fencing: In 2022 the Minnesota Zoo and MnDOT finalized the LCCMR-funded report “Reduce vehicle-animal collisions with installation of small animal exclusion fencing” (Report No. MN 2022-19). This was the result of a four-year study conducted at multiple locations to test MnDOT-designed exclusionary fencing using cost-effective off-the-shelf materials. Installation and monitoring between 2019-2021 showed a reduction of adult turtle mortality by 83%. The hatchlings and juvenile turtles didn’t fare as well, but with a retrofit of hardware cloth at the base of the fence, results improved and showed a 91% reduction of mortality for all turtles, young and old alike. With the

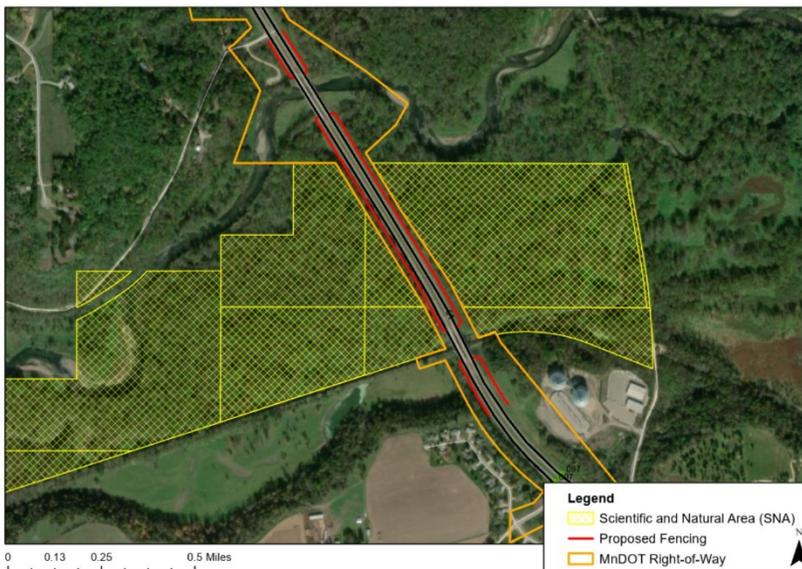
design proven effective, MnDOT can now use this low-cost fencing with confidence to prevent turtles, and other small animals from entering the roadway. The benefits extend beyond wildlife conservation as animal presence in the roadway creates dangers for motorists, bicyclists and pedestrians as they try to either avoid a collision or enter the roadway themselves to assist an animal in danger.

Deliverables:

- Approximately 6,160 feet of small animal exclusionary fencing 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.
- Additional 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), or other appropriate locations.
- Installation of native vegetation (e.g., wild strawberry, *Rubus* spp.) and nesting habitat (e.g., small piles of sand / gravel) that will support cover, foraging, and nesting for turtles and other species.
- Installation of trail cameras in four areas to document success in preventing turtles from entering the roadway.

Immediate Results Encourage Future Investment: This proposal has been created with involvement of the MnDOT Highway Sponsorship Program (HSP). The HSP leverages private-public partnerships to install landscape enhancement projects in our existing right of way which improve roadside beautification, native vegetation and pollinator and wildlife habitat. HSP staff are confident that securing funds and installing this exclusionary fencing will demonstrate to potential private sponsors our level of investment and in turn, encourage their partnership. The HSP is currently seeking partners for additional projects within this project area which would support the turtle population and increase the impact of LCCMR’s investment. Protecting turtles is not a new idea, nor are animal-vehicle collisions a new issue. But two critical pieces of information are emerging now: evidence that imperiled species like the wood turtle must be protected immediately, and that we have an effective and cost-efficient means to do so through exclusionary fencing.

Proposed Project Area



Budget:

Approx. 6,160’ of fencing and materials:	\$238,823
Vegetation for habitat and foraging:	\$6,500
Trail cameras:	\$2,000
Specialized fence and education signs:	<u>\$1,500</u>
Total:	\$248,823



Turtle at “j-hook” being re-directed