

**Environment and Natural Resources Trust Fund
2017 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 157-F

Roadside Prairie Prescribed Fire

Category: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat

Total Project Budget: \$ 345,000

Proposed Project Time Period for the Funding Requested: 3 years, July 2017 - June 2020

Summary:

This project will protect biodiversity and enhance pollinator habitat on roadsides by helping to create a self-sufficient prescribed fire program at the Minnesota Department of Transportation.

Name: Ken Graeve

Sponsoring Organization: Minnesota Department of Transportation

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Location

Region: Central, Metro, Northwest, Southeast

County Name: Statewide

City / Township:

Alternate Text for Visual:

Map showing general locations of roadside remnant prairies on state and federal highways in Minnesota, with inset pictures showing roadside plantings of native grasses and forbs and a prescribed fire in progress on a roadside prairie remnant.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____ %



PROJECT TITLE: Roadside Prairie Prescribed Fire

I. PROJECT STATEMENT

MnDOT has a long history of protecting biodiversity and using native vegetation on roadsides. Our standards for native seed, protection of rare plants during construction, and response to emerging invasive species threats have won accolades around the state. MnDOT seeks to enhance this stewardship by increasing the use of prescribed fire in managing roadside prairies and native plantings.

The Minnesota Department of Transportation (MnDOT) manages 185,000 acres of roadsides on 12,000 miles of highways throughout the state. This includes approximately 350 miles of remnant prairie, harboring some of the last remaining populations of several rare plant species. In addition to the remnant prairies, many roadsides have been planted with native grasses and forbs and many more represent untapped potential as habitat for pollinators and other small wildlife, especially in intensively agricultural landscapes. But a lack of prescribed fire is leading to degradation of native plant communities and is limiting the potential for restoration of additional roadsides. This initiative will help to reverse this trend by building the capacity for a self-sufficient prescribed fire program at MnDOT.

In the last five years MnDOT has identified roadsides needing fire management, trained four prescribed fire crews around the state, and formally adopted MN DNR standards for training and qualifications. Currently, implementation of prescribed fire is constrained by a shortage of staff qualified to lead the fire crews and by systemic hurdles to attaining necessary qualifications. To overcome these constraints, this project will temporarily bring in highly qualified fire personnel who will train and mentor MnDOT crews and crew leaders and thus empower them to become self-sufficient. To further increase capacity this project will also inventory and prioritize additional roadsides in need of prescribed fire, prepare burn plans for these sites, and set up a monitoring program to quantify the effects of roadside prescribed fire.

By the end of this project MnDOT will have a self-sufficient prescribed fire program. The result will be an increased use of prescribed fire, enabling MnDOT to more effectively protect the biodiversity of prairie remnants, enhance existing native plantings, and restore additional roadside habitat.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Prescribed Fire Implementation

Budget: \$225,000

Work with MnDOT crews to implement prescribed fire on roadsides with remnant prairie or native plantings.

Outcome	Completion Date
1. Conduct 10-20 prescribed burns (10-40 miles/70-280 acres of roadside) per year	Annually

Activity 2: Mentor Prescribed Fire Crews

Budget: \$25,000

Mentor MnDOT crew members. Help burn boss trainees work through task books and gain the experience needed to lead a fire crew. Increase experience of crewmembers by exposing them to a variety of burning conditions and fuel types. Help crews to modify existing equipment for prescribed fire use.

Outcome	Completion Date
1. Qualify at least 3 MnDOT employees to the level of MN Ignition Specialist Type 2.	June 30 th , 2019
2. Qualify at least 2 MnDOT employees as MN Burn Boss Type 2.	June 30 th , 2020
3. Increase crewmembers level of experience by working on 10-20 burns per year.	Annually

Activity 3: Roadside prairie inventory and fire effects monitoring

Budget: \$70,000

Inventory roadside native plant communities to identify vegetation management objectives and prioritize prescribed fire needs. Implement a monitoring program to measure the effects of fire on roadside vegetation.

Outcome	Completion Date
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1. Inventory prairie remnants and native plantings on 2000 miles (30,000 acres) of roadside.	June 30 th , 2020
2. Research and set up monitoring protocol.	June 30 th , 2018
3. Monitor fire effects at 20-40 sites across the state.	June 30 th , 2020

Activity 4: Prescribed Fire Program Support

Budget: \$70,000

Prepare prescribed fire plans and coordinate the necessary local outreach and site preparation activities.

Outcome	Completion Date
1. Complete or update prescribed fire plans for at least 20 sites across the state.	June 30 th , 2020
2. Coordinate site preparation as needed prior to burning each site.	Ongoing

III. PROJECT STRATEGY

A. Project Team/Partners

Funds from the ENRTF will be used by the MnDOT Office of Environmental Stewardship to greatly increase the support it can provide to the prescribed fire program. This increased support will allow MnDOT to overcome current obstacles to building self-sufficient fire crews and will set in motion a sustainable prescribed fire program.

Project Leader: Ken Graeve, MnDOT Prescribed Fire Program Coordinator

Ken will coordinate the work of the burn boss and the district fire crews, prioritize prescribed fire sites and objectives, identify the training needs of the district burn boss trainees, and support the program in other ways as needed.

Pollinator/Entomology Advisor: Christopher Smith, MnDOT Wildlife Ecologist

Chris will assess the impacts of roadside prescribed fire on pollinator and insect species and recommend ways to reduce adverse impacts on insect communities.

MnDOT District fire crew coordinators:

There are five coordinators in four districts. They will provide local coordination of crews and equipment while simultaneously working toward their burn boss qualifications.

MnDOT District Fire Crews:

There are four crews composed primarily of maintenance personnel. These crews will implement prescribed fires under the leadership of the burn boss and the district fire crew coordinators.

Railroads:

Three railroads have expressed willingness to allow MnDOT to burn prairies on their property where it is adjacent to MnDOT right of way. MnDOT has already begun collaborating with Canadian Pacific, Burlington Northern-Santa Fe, and Minnesota Northern Railroads in this regard. This program would enable increased collaboration.

B. Project Impact and Long-Term Strategy

Past prescribed fire at MnDOT was inconsistent and heavily reliant upon outside assistance. While interagency collaboration will always be important, a self-sufficient fire program is necessary to effectively manage the hundreds of miles of native vegetation on MnDOT roadsides. This project will catalyze MnDOT's prescribed fire program by empowering existing crews to become self-sufficient. This increased capacity will ensure that fire becomes a routine part of roadside vegetation management and allow MnDOT to effectively protect the biodiversity of remnant prairies and manage native plantings on roadsides.

C. Timeline Requirements

This project will mentor and train fire crews for three years. Burning will occur each spring and fall. Inventory and monitoring will take place each summer. Plan preparation will be done each winter.

2017 Detailed Project Budget

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IV. TOTAL ENRTF REQUEST BUDGET 3 years

BUDGET ITEM	AMOUNT
Personnel:	
One 1.0 FTE Burn Boss for 3 yrs; mean salary \$60,000/yr + 33% fringe	\$ 240,000
One 0.25 FTE Seasonal Fire Assistant for 3 yrs; mean salary \$50,000/yr +33% fringe	\$ 50,000
Professional/Technical/Service Contracts:	NA
Equipment/Tools/Supplies:	
Monitoring supplies, safety equipment, and miscellaneous supplies	\$ 8,000
Acquisition (Fee Title or Permanent Easements):	NA
Travel:	
Meals and lodging: approximately 180 days of meals and 85 days of lodging for burn boss and assistant between all activities	\$ 20,000
Mileage: approximately 48,000 miles between all activities	\$ 27,000
Additional Budget Items:	NA
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 345,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ To Be Applied To Project During Project Period:	NA	NA
Other State \$ To Be Applied To Project During Project Period: MnDOT funded student worker to assist burn boss with vegetation monitoring and inventory	\$ 15,000	Pending
In-kind Services To Be Applied To Project During Project Period: -Participation of existing MnDOT fire crew and equipment on prescribed fires @ \$4,000/burn * average 15burns/yr = \$180,000 -Project mgmt by existing MnDOT prescribed fire program coordinator, 0.2FTE for 3 yrs = \$45,000 -Office and computer provided by MnDOT Office of Environmental Stewardship -Railroad flagging service: \$700/day for approximately 20 burn days over 3 years=\$14,000	\$ 239,000	Secured
Funding History:	NA	NA
Remaining \$ From Current ENRTF Appropriation:	NA	NA

Roadside Prairie Prescribed Fire

This project will protect biodiversity and enhance pollinator habitat on roadsides by helping to create a self-sufficient prescribed fire program at the Minnesota Department of Transportation

Minnesota’s state & federal highways contain:

- Over 350 miles of remnant prairie
- Some of the last remaining populations of certain rare plant species
- Hundreds more miles of native grass and forb plantings
- Thousands of miles of potential habitat for pollinators and other wildlife

Prescribed fire is critical to protecting and maintaining roadside prairies



Figure 1: Roadside native grass and wildflower planting

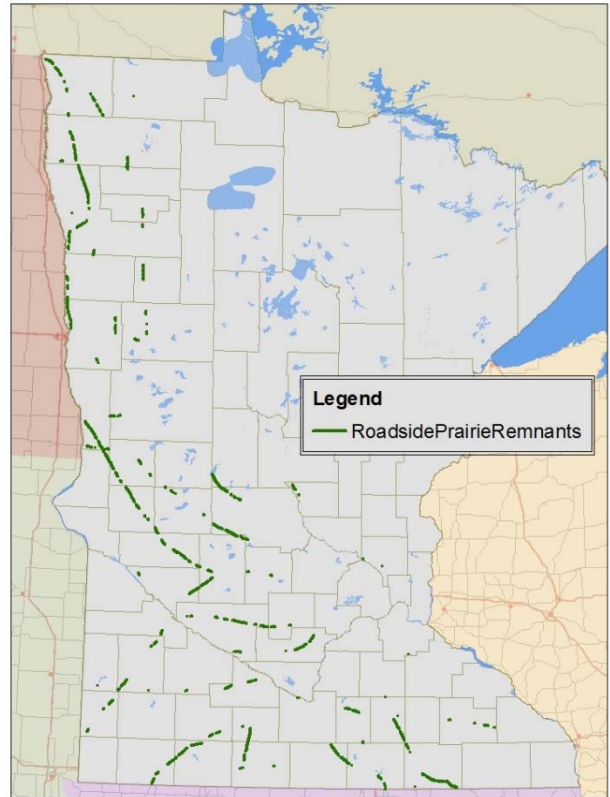


Figure 2: Map of roadside prairie remnants in Minnesota



Figure 3: Prescribed fire in progress on a roadside prairie remnant

For More Information

Contact: Ken Graeve, MnDOT, 651-366-3613, kenneth.graeve@state.mn.us



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Project Manager Qualifications

Project Manager: Ken Graeve, Prescribed Fire Program Coordinator
Affiliation: Department of Transportation, Office of Environmental Stewardship
Mailing Address: 395 John Ireland Blvd, St Paul, MN 55155
Telephone: 651-366-3613
Email: Kenneth.graeve@state.mn.us

Ken Graeve provides technical support at the Minnesota Department of Transportation for invasive species control, seed mixes, vegetation management, rare plant species protection, and wetland restoration. He coordinates the prescribed fire program at MnDOT and serves as the chair of the Minnesota Department of Agriculture's Noxious Weed Advisory Committee. Ken has over 15 years of experience in ecological restoration and prescribed fire. Prior to working at MnDOT Ken spent time in the private sector working in ecological restoration and native seed production, and earning a bachelor's degree in biology from St John's University in Minnesota.

Organization Description:

The Minnesota Department of Transportation is responsible for the care of 175,000 acres of un-paved right of way on 12,000 miles of state and federal highways around the state. These roadside acres have disproportionate impacts, both positive and negative, on the state. Without proper management, roadsides can be corridors for invasive species and population sinks for wildlife. If managed well, roadsides can serve as a first line of defense against new invasive species, as important refugia for rare plant and animal species, and as critical stormwater management infrastructure. Well managed roadsides can also positively support the tourism industry and the quality of life for Minnesotans and visitors. These roadsides are typically planted during construction projects and managed by maintenance staff, with technical support provided by the Office of Environmental Stewardship.