



Environment and Natural Resources Trust Fund

2021 Request for Proposal

General Information

Proposal ID: 2021-065

Proposal Title: Phase 2 - Prescribed-Fire Management for Roadside Prairies

Project Manager Information

Name: Nathan Johnson

Organization: Minnesota Department of Transportation

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Project Basic Information

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

Funds Requested: \$255,000

Proposed Project Completion: 2023-06-30

LCCMR Funding Category: Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

Project Location

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

Statewide

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

Statewide

When will the work impact occur?

During the Project

Narrative

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

In the last three years MnDOT has made significant progress in building a fire program. Prior to phase one of this project MnDOT was conducting on average 5 burns a year, since the project started MnDOT has been completing 25+ burns a year. We have identified several roadsides needing fire management, trained four prescribed fire crews around the state, and formally adopted MN DNR standards for training and qualifications. Despite this progress, we are currently constrained by a shortage of staff qualified to lead the fire crews. By adopting MN DNR standards, we have set a high bar for individuals to become qualified to lead prescribed fires, hereafter referred to as a "burn boss." To become qualified as a burn boss, an employee must take several classes and work with mentors to demonstrate competency with various skills. Depending on the availability of trainings and mentors, this process takes several years. Without enough qualified burn bosses, we are currently forced to rely on two burn bosses and therefore can only implement a small number of prescribed fires each year.

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

This project will temporarily bring in qualified fire personnel who will train and mentor MnDOT crews and crew leaders. With this mentoring we can continue to train a fully qualified burn boss from within each of our crews, making each crew more self-sufficient. Continuing to have an additional burn boss on staff has increased burning five fold and MnDOT doesn't want to lose that momentum. With phase two MnDOT will have a goal of conducting 40 to 60 burns a year.

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?

This project will also address several administrative constraints on our fire program. These include roadside vegetation inventory, site prioritization, planning, and monitoring. The increased assistance provided through would be temporary, but we are focusing it on areas that can create lasting change. This project will overcome hurdles and continue to build the capacity of our fire program. This will allow fire to become more regular and sustainable part of our vegetation management work. By increasing the long-term use of prescribed fire we will more effectively protect the biodiversity of prairie remnants, enhance existing native plantings, and restore additional roadside habitat.

Activities and Milestones

Activity 1: Prescribed Fire Implementation

Activity Budget: \$160,000

Activity Description:

MnDOT currently has four prescribed fire crews, in process of adding another crew, it has only two burn boss. This shortage results in several days each season during which one or more crews are unable to burn despite favorable weather and fuel conditions. To alleviate this, we will use project funds to hire a full time employee. This employee will be qualified as a burn boss and able to lead prescribed fires and mentoring crewmembers. This employee will work directly with existing crews to conduct prescribed fires on roadsides. The immediate result will be that MnDOT will more than double its annual prescribed fire accomplishments.

Activity Milestones:

Description	Completion Date
Conduct 20-50 prescribed burns (20-100 miles/80-500 acres of roadside) per year	2023-03-31

Activity 2: Mentor Prescribed Fire Crews

Activity Budget: \$15,000

Activity Description:

The MnDOT prescribed fire policy requires that fire personnel follow the same training and qualification standards as the MN DNR. These rigorous standards are important to ensuring the safety and effectiveness of roadside prescribed fire but they present a major obstacle to developing a self-sufficient fire program. While all existing crew members are trained to the basic level (that of Wildland Firefighter Type 2), at least one member of each crew needs to become qualified as a burn boss in order to lead that crew on prescribed fires. This employee will work with other fire agencies for burn crews to gain experience and qualifications on sites other than MnDOT right-of-ways.

Activity Milestones:

Description	Completion Date
Increase crewmembers level of experience by working on 10-20 burns per year.	2023-06-30
Qualify at least 2 MnDOT employees as MN Burn Boss Type 2.	2023-06-30
Qualify at least 4 MnDOT employees to the level of MN Ignition Specialist Type 2.	2023-06-30

Activity 3: Roadside prairie inventory and fire effects monitorin

Activity Budget: \$40,000

Activity Description:

There are hundreds or thousands of miles of roadsides that could benefit from prescribed fire. These need to be prioritized to promote the most efficient use of resources. The project staff will inventory and map roadsides with native vegetation. Roadsides with prairie vegetation will be ranked using various factors to prioritize them for burning. Ranking criteria will include quality of native plant communities, remnant or planted status, conduciveness to use of fire, etc.

The employee will continue fire effects monitoring program to evaluate results. This information will be used to ensure that fires are meeting vegetation management objectives while limiting negative impacts on wildlife, including insects.

With this information we will be able to adjust the timing, frequency, and intensity of fires as needed. Monitoring data will also be used to demonstrate accomplishments.

Inventory and monitoring data will be stored in GIS format in a geodatabase.

Activity Milestones:

Description	Completion Date
Monitor fire effects at 20-40 sites across the state.	2023-06-30
1. Inventory prairie remnants and native plantings on 2000 miles (30,000 acres) of roadside.	2023-06-30

Activity 4: Prescribed fire program support

Activity Budget: \$40,000

Activity Description:

Prior to conducting a prescribed fire we require a detailed plan that has been reviewed by qualified fire personnel and signed by relevant department officials. The time required to write these prescribed fire plans has limited their number and therefore has limited the number of roadsides on which fire can be used. As part of this activity the employee will assist and mentor burn boss trainees in preparing plans. Plans will be written for roadsides that have been identified as priorities using data gathered in Activity 3. This has a dual impact on increasing self-sufficiency in that plans will be useful for several years and burn boss trainees will gain skills needed to write new plans (or update existing plans) as needed.

Implementing a prescribed fire requires a great deal of preparation. This includes creating and maintaining fire breaks, arranging for and preparing equipment, obtaining burn permits, notifying local authorities and neighbors, preparing press releases, and reporting accomplishments. The employee will assist district crews with this coordination, helping to do the work when necessary but empowering crews to do it themselves as much as possible.

Activity Milestones:

Description	Completion Date
Complete 10 new and update 20 prescribed fire plans across the state	2023-06-30

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 be funded?

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.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Prescribed Fire Management for Roadside Prairies	M.L. 2017, Chp. 96, Sec. 2, Subd. 08f	\$345,000

Project Manager and Organization Qualifications

Project Manager Name: Nathan Johnson

Job Title: Prescribe Burn Coordinator

Provide description of the project manager's qualifications to manage the proposed project.

Nate Johnson provides technical support at the Minnesota Department of Transportation for invasive species control, vegetation management, and grassland restoration. I coordinate the prescribed fire program at MnDOT and serves as the member of the Minnesota Prescribed Fire Committee and Minnesota Fire Council.

Prior to working at MnDOT I worked for DNR wildlife for 18 years and two years for DNR Fisheries, earning a bachelor's degree in Environmental Science from Southwest Minnesota State University from Marshall Minnesota. I have over 20 years of experience in ecological restoration and prescribed fire. During my years working for the DNR I have done many grassland and wetland restorations, worked on many prescribed fire crews, met lots of DNR personnel around the state, which has and will continue to be a good avenue for collaboration between the two agencies.

Organization: Minnesota Department of Transportation

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 provide excellent pollinator habitat and 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.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
1 Fire Staff		Help build MnDOT Prescribed Fire Program			25%	200		\$180,000
							Sub Total	\$180,000
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Equipment	Personal protective equipment, Fire Shelters, Fire coats, web gear, etc. (12+ sets).	To provide safety for fire fighters					\$20,000
	Equipment	ATV tank, pump, sprayers (5 spray units).	Provide ATVs with sprayers to increase productivity and safety.					\$25,000
	Tools and Supplies	Fire handtools and supplies	To provide fire fighters with tools necessary to effectively fight fire.					\$5,000
							Sub Total	\$50,000
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Travel cost associated to burning and burning activities	To get to and from burns, inventory, monitoring, etc.					\$20,000
							Sub Total	\$20,000

Travel Outside Minnesota								
	Conference Registration Miles/ Meals/ Lodging	Travel, meals, lodging, registration feed	To get into fire trainings outside of MN.					\$5,000
							Sub Total	\$5,000
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$255,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

Acquisition and Restoration

Parcel List

Name	County	Site Significance	Activity	Acres	Miles	Estimated Cost	Type of Landowner	Easement or Title Holder	Status of Work
Fire Region	Statewide	prairie	Restoration	-	-	-	Public	No	In progress
Totals				0	0	-			

Restoration

1. Provide a statement confirming that all restoration activities completed with these funds will occur on land permanently protected by a conservation easement or public ownership.

All restoration associated with the project will occur on state of MN property.

2. Summarize the components and expected outcomes of restoration and management plans for the parcels to be restored by your organization, how these plans are kept on file by your organization, and overall strategies for long-term plan implementation.

MnDOT goal is to burn 80 to 500 acres of right-of way per year and all burns will be recorded in ARCMAP and in MnDOT burn summary worksheet.

3. Describe how restoration efforts will utilize and follow the Board of Soil and Water Resources “Native Vegetation Establishment and Enhancement Guidelines” in order to ensure ecological integrity and pollinator enhancement.

All restored prairie will follow the Board of Soil and Water Resources guidelines.

4. Describe how the long-term maintenance and management needs of the parcel being restored with these funds will be met and financed into the future.

Long term maintenance and management needs will be picked up in the districts the restoration occur. Once burn crews are self sufficient with a burn boss, they will be able to maintain these parcels long term.

5. Describe how consideration will be given to contracting with Conservation Corps of Minnesota for any restoration activities.

If contracting occurs for the project consideration will be given to Conservation Corps of Minnesota.

6. Provide a statement indicating that evaluations will be completed on parcels where activities were implemented both 1) initially after activity completion and 2) three years later as a follow-up. Evaluations should analyze improvements to the parcel and whether goals have been met, identify any problems with the implementation, and identify any findings that can be used to improve implementation of future restoration efforts at the site or elsewhere.

Monitoring of fire effects will be conducted on 20+ burns annually and 10+ on a three year basis.

Attachments

Required Attachments

Map

File: [4e308bca-965.pdf](#)

Alternate Text for Map

Attachment has map of Remnant prairies in Minnesota, photo of what a MnDOT right-of-way looks like after a burn, photo of a prescribed fire in progress.

Administrative Use

Does your project include restoration or acquisition of land rights?

Yes: Restoration,

Does your project have patent, royalties, or revenue potential?

No

Does your project include research?

Yes

Does the organization have a fiscal agent for this project?

No

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

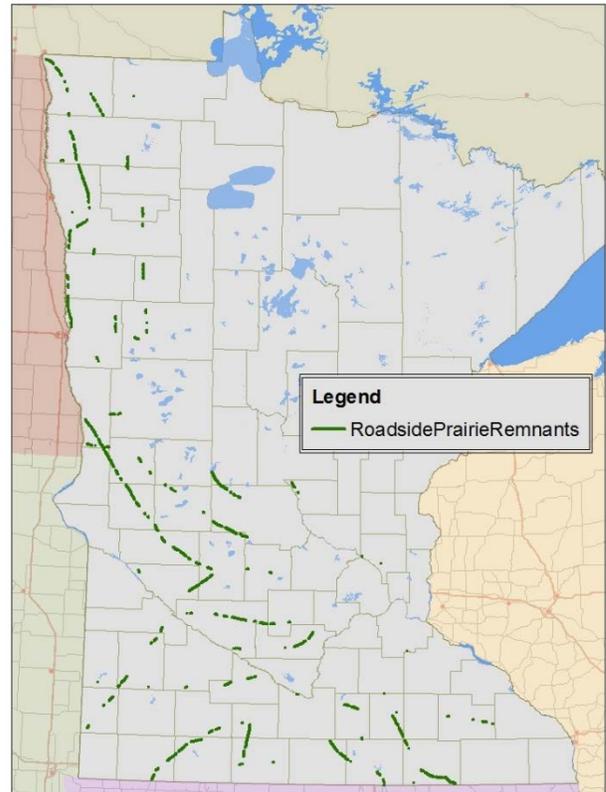


Figure 2: Map of roadside prairie remnants in Minnesota



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

For More Information

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