Environment and Natural Resources Trust Fund

2022 Request for Proposal

General Information

Proposal ID: 2022-210

Proposal Title: Lawn Sustainability through a Pilot Lawn Ambassador Program

Project Manager Information

Name: Eric Watkins

Organization: U of MN - College of Food, Agricultural and Natural Resource Sciences

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Project Basic Information

Project Summary: We will train a group of lawn ambassadors in the Twin Cities to deliver knowledge about sustainable lawn care through existing personal and neighborhood social networks.

Funds Requested: $136,000

Proposed Project Completion: June 30 2024

LCCMR Funding Category: Small Projects (H)

Secondary Category: Environmental Education (C)

Project Location

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

Region(s): Metro

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.

Lawns play a central role in the lives of many Minnesotans. As places of rest and relaxation, spaces for families and neighbors to gather, and activity areas for play with pets and children (Barnes et al., 2020). The importance of the lawn in the lives of residents has increased in the past year due to COVID-19 as individuals seek safer places to recreate and socialize. If properly managed, lawns can contribute to promoting ecosystem services (e.g., water filtration) with co-benefits for people and nature (Monteiro, 2017). However, residents in the Twin Cities metropolitan area (TCMA) often lack basic knowledge about lawn care and best management practices (BMPs) that can result in the overuse of inputs (e.g., fertilizer, water), or under-management of lawns that can have negative environmental consequences (e.g., erosion; Martini & Nelson, 2015). Individuals then can play a significant role in driving individual-level changes in their own yards, changes among their neighbors, and slowly shift TCMA neighborhoods towards more sustainable practices.

Barnes et al. (2020). What's in a yardscape? Urban Ecosystems

Martini & Nelson (2015). The role of knowledge in lawn management. Environmental Man.

Monteiro (2017). Ecosystem services from turfgrass landscapes. Urb. Forestry & Urb. Greening

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.

Individuals can play a significant role in driving individual-level changes in their own yards, but they can also drive changes among neighbors to shift TCMA neighborhoods towards more sustainable practices. Research conducted in the TCMA has shown the importance of neighbors as sources of information regarding specific yard maintenance techniques and in broader dialogues about what is acceptable in a yard (Martini et al., 2014).

We propose to train a group of Lawn Ambassadors in select neighborhoods in the TCMA to deliver lawn knowledge and BMPs through existing personal and neighborhood social networks. Additionally, as part of this program, residents in selected neighborhoods will gather lawn quality data as part of a citizen science approach. Ambassadors will host in-person and virtual educational events for neighborhood residents with support from the University of Minnesota. Changes in sustainable lawn practices will be measured via surveys before and after the interventions along with semi-structured interviews with Lawn Ambassadors to assess the diffusion of knowledge throughout a neighborhood. Combined, the effects of a neighborhood Lawn Ambassador who is educated and knowledgeable about BMPs and residents engaging in data collection on their own yards will help shift neighborhoods toward sustainable yard maintenance practices.

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?

Training Lawn Ambassadors would expand the number of individuals who are experts in lawn BMPs in the TCMA. Additionally, residents in selected neighborhoods will be exposed directly to such information through attending lawn care events, posts on neighborhood social networks, and through contact with Lawn Ambassadors in their community. Indirectly, knowledge of best practices will diffuse through selected neighborhoods and nearby neighborhoods as well. Taken together the outcomes will have significant effects on the sustainability of urban lawns that will impact water quality and quality, erosion control, and generally improve the quality of lawns for more livable, sustainable communities.

Activities and Milestones

Activity 1: Develop and implement Lawn Ambassador Training Program

Activity Budget: $44,379

Activity Description:
The primary focus of this activity is to develop the Lawn Ambassador training program. The research and outreach team in turfgrass science at the University of Minnesota has generated extensive resources to inform sustainable lawn care practices in Minnesota. This information has been disseminated in a variety of ways to diverse audiences via blogs, articles, talks, webinars, and websites but the current proposal will gather this information together to design a training program for Lawn Ambassadors. The training program will directly involve members of the project team and crafted materials will leverage both existing resources based on recent science and extensive expertise. Lawn Ambassadors will be recruited via both existing experts (e.g., Master Water Stewards, Master Gardeners) and members of the public who are interested and engaged in gardening or other lawn-related activities. Training will occur both online and in-person to offer maximum flexibility to Lawn Ambassadors.

Activity Milestones:

Description	Completion Date
Develop training materials for Lawn Ambassador Program	October 31 2022
Establish a training plan and relevant logistics	November 30 2022
Recruitment of Lawn Ambassadors from existing experts and the public	December 31 2022
Develop citizen science data collection protocols	December 31 2022
Training program implementation	March 31 2023

Activity 2: Pilot the Lawn Ambassador Program in Three TCMA neighborhoods

Activity Budget: $47,417

Activity Description:
This activity focuses on the implementation of the Lawn Ambassador Program. During this period neighborhood Lawn Ambassadors will undertake relevant activities to educate residents of their neighborhoods with support from the project team. Activities can include in-person activities where knowledge dissemination and demonstrations of best practices will take place. Information distribution by Lawn Ambassadors will also occur during this period in ways that the Lawn Ambassador deems appropriate to their neighborhood. Existing social networks for neighborhoods will be leveraged to disseminate knowledge in places where residents already congregate virtually. Neighborhood events can also be utilized for lawn education such as National Night Out and community clean-up events on Earth Day. Also during this period, residents will be recruited to participate in data collection in their own yards with coordination handled by the local Lawn Ambassadors supported by the university project team.

Activity Milestones:

Description	Completion Date
Distribution of pre-program surveys to neighborhoods	June 30 2023
Lawn Ambassador Pilot Program period	September 30 2023
Citizen science data collection period	September 30 2023

Activity 3: Evaluation of the Lawn Ambassador Pilot Program

Activity Budget: $44,204

Activity Description:

The final activity focuses on the evaluation of the effectiveness of the program through two mechanisms. First, a post-program survey will be distributed to the same neighborhoods as the pre-survey to evaluate if resident knowledge of lawn BMPs increased and to see if BMPs were implemented compared to the pre-survey results. In addition to general residents, Lawn Ambassadors will participate in semi-structured interviews involving their perceptions of the program and its effectiveness. To assess knowledge diffusion more directly, Lawn Ambassadors will report on their connections and discussions with neighborhood residents to develop a dissemination map. These evaluation measures will reflect on the effectiveness of the pilot program and provide guidance for the project team to revise the program for future applications in other locations.

Activity Milestones:

Description	Completion Date
Distribution of post-program surveys to neighborhoods	December 31 2023
Lawn Ambassador interviews	December 31 2023
Evaluation data assessment and program revisions	April 30 2024
Program reports	June 30 2024

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Maggie Reiter	University of Minnesota Extension	Maggie Reiter, assistant Extension professor for turfgrass, leads an outreach program to connect Minnesota turfgrass managers and users with research-based information. She will coordinate delivery of outreach to pilot ambassadors and collaborate on all parts of the project.	Yes
Michael Barnes	University of Minnesota	Michale Barnes is a social scientist working as a postdoctoral associate in the turfgrass group in the Department of Horticultural Sciences. He will lead evaluation of the pilot ambassador program and lead reporting activities.	No

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?

This project will provide valuable information to extension and outreach efforts for environmental change. This is readily applicable to the ongoing outreach of project collaborators in UMN Extension and programs like the UMN Master Gardeners; if successful this program can be utilized and expanded by UMN Extension. We know that social networks matter in general, but our results will deepen understanding of networks in this context—urban landscape management in residential yard microsites. Outreach professionals from UMN Extension can participate in these networks, and can also design programs that connect to influential or boundary-spanning individuals.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Bee Pollinator Habitat Enhancement - Phase II	M.L. 2016, Chp. 186, Sec. 2, Subd. 08a	$387,000

Project Manager and Organization Qualifications

Project Manager Name: Eric Watkins

Job Title: Professor

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

Eric Watkins leads the turfgrass science program where his research interests are focused on the development and utilization of low-input turfgrasses for cold climates. His group conducts wide-ranging research that includes plant adaptation to shade, plant-microbe interactions, germplasm improvement, plant genomics, lawn water conservation education, and species recommendations for Minnesota roadsides. He has worked with the Met Council for several years on strategies to reduce lawn water use in the Twin Cities Metropolitan Area, with strategies ranging from irrigation controller technologies to low-water-use turfgrass species. He has led multiple successful multidisciplinary grant proposals, and is active in outreach to Minnesota stakeholders through blog posts, professional trade magazine articles, in-person seminars, and site visits.

Organization: U of MN - College of Food, Agricultural and Natural Resource Sciences

Organization Description:

The College of Food, Agricultural, and Natural Resources Sciences, at the University of Minnesota, aims to inspire minds, nourish people, and enhance the natural environment. The college's vision is to advance Minnesota as a global leader in food, agriculture, and natural resources through extraordinary education, science-based solutions, and dynamic public

engagement that nourishes people and enhances the environment in which we live. The college has 13 academic departments, including Horticultural Science, home of the turfgrass science program. The turfgrass science program has the field, laboratory, growth chamber, and greenhouse facilities needed for innovative research to serve the needs of Minnesota stakeholders.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Faculty		Lead and coordinate project			36.5%	0.12		$23,042
Extension Faculty		Coordinate outreach			36.5%	0.2		$18,647
Postdoctroal Associate		Lead network analysis research, evaluation, reporting			25.4%	0.8		$52,708
Project Coordinator		coordination, scheduling, editing, logistiics			31.8%	0.4		$33,415
undergraduate student researcher		assist with data collection, assist with lawn ambassador meetings,			0%	1		$3,000
							Sub Total	**$130,812**
Contracts and Services								
University of Minnesota Soil Testing Lab	Internal services or fees (uncommon)	soil tests will be taken from participating lawns in all 3 neighborhoods, results will be reported back to the resident				0		$2,888
							Sub Total	**$2,888**
Equipment, Tools, and Supplies								
	Tools and Supplies	food and refreshments	for in-person training of lawn ambassadors and neighborhood gatherings					$550
							Sub Total	**$550**
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								

							Sub Total	**-**
Travel In Minnesota								
	Miles/ Meals/ Lodging	travel to Twin Cities lawn ambassador neighborhood meetings	Help with training, meeting participants, etc.					$200
							Sub Total	**$200**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
	Printing	printing training materials	Needed for use in training pilot lawn ambassadors and for use at neighborhood meetings					$1,550
							Sub Total	**$1,550**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$136,000**

Classified Staff or Generally Ineligible Expenses

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

Non ENRTF Funds

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

Attachments

Required Attachments

Visual Component

File: 91db7d85-ce6.pdf

Alternate Text for Visual Component

Alt Text: A map of the Macalester-Groveland neighborhood in St. Paul with pinpoints indicating homeowners and a lawn ambassador clustered in one area towards the right of the map. Eight other pinpoints spread on the left side of the map, representing distal homeowners....

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

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

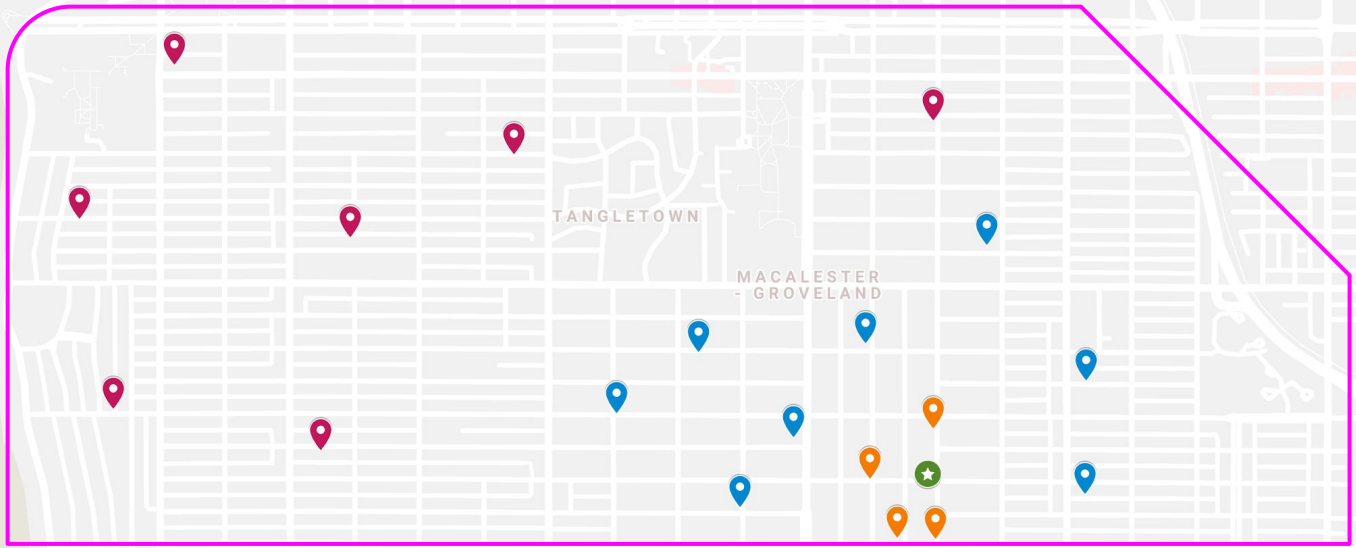
Does your project include original, hypothesis-driven research?

Yes

Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration

LAWN AMBASSADORS SPREAD KNOWLEDGE



Starting with a single Lawn Ambassador (Green Star), networks begin to build within a neighborhood (Purple). First, with direct interactions with neighbors (Orange), then through local events others enter the network (Blue), and finally individuals not connected (Red) can still receive diffused information via neighborhood social networks.