Environment and Natural Resources Trust Fund

2021 Request for Proposal

General Information

Proposal ID: 2021-400

Proposal Title: Unearthing Soil Health Economics in Southern Minnesota

Project Manager Information

Name: Jennifer Hahn

Organization: Minnesota Soil Health Coalition

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Project Basic Information

Project Summary: This project will accelerate adoption of soil health practices by building a coalition of soil health farmers to learn together, provide economic research, and sharing of information in Southern Minnesota.

Funds Requested: $200,000

Proposed Project Completion: 2023-06-30

LCCMR Funding Category: Small Projects (H)

Secondary Category: Foundational Natural Resource Data and Information (A)

Project Location

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

Region(s): SW, SE,

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

Region(s): SE, SW,

When will the work impact occur?

During the Project and In the Future

Narrative

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

A vital opportunity for improved water quality, environmental and economic sustainability in the Minnesota River Basin is increasing the adoption of soil health practices. Advancing cover crop adoption is a central strategy for nutrient reduction (Nutrient Reduction Strategy), water quality improvement (WRAPS), and regional economic sustainability yet widespread adoption is limited. Research shows that primary barriers for soil health practice adoption is:
1) lack of regional economic data,
2) lack of understanding the long term economic and environmental benefits, and
3) lack of access to technical advisors to mentor and advise farmers managing the transition.

This project will fuel increased cover crop adoption in some of the most impaired watersheds in the state by strengthening the existing network of farmer-led initiatives and harnessing the power of local on-farm research and farmer peer-to-peer learning and networking. The project will result in:

- Creating a regional, baseline, multi-year economic dataset based on 20 farms in Southern Minnesota
- Supporting and sustaining local soil health groups
- Connecting farmers to mentors, soil health teams, and other specialists
- Communicating the benefits of implementing soil health practices through publications, social media, meetings, field days, and farmer mentoring
- Improved regional coordination and communication among farmers, agencies, lenders, and agronomists

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 utilize existing multiyear economic data by working with farmers to acquire, analyze, and report on information to farmers, lenders, agronomists, and organizations. This will allow for the development of a comprehensive research project with meaningful data used to develop program payment rates, guide farmers in risk management for planning, and provide lenders and agronomists with quantifiable metrics. FinBin, which houses farm economics, will be utilized for comparison data matching the same geographic location using full width tillage without cover crops.

Increasing implementation by strengthening regional education, outreach, and mentoring
Capturing how to develop and grow local soil health groups will also be completed to develop a model to share with others. The areas with the highest soil health adoption rates are those with local soil health groups. By working with existing local teams to determine the success factors, this information will be shared with others to aid in their development of local soil health groups. Southern Minnesota has a mixture of strong local soil health groups and the absence of them creating a unique opportunity to learn and build within high production acres and heavily degraded natural resources.

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?

The project supports a win-win: providing the opportunity to improve the economic situation for farmers, simultaneously improving environmental sustainability. Improved regional coordination will accelerate adoption to reduce pollutant levels in ground and surface waters, protect soils, store water and reduce flows in priority, highly-impaired watersheds.

Foundational economic and environmental data will be acquired creating a regional economic database to make the case to farmers about the benefits of soil health practice adoption and help foster long-lasting, conservation ethics.

This project supports and strengthens the coalition of soil health farmers and conservation partners to learn together, collect data, and share information.

Activities and Milestones

Activity 1: Develop economic database: identify farmers, obtain and manage economic and management data

Activity Budget: $103,000

Activity Description:
Design and develop databases, develop tracking systems, and identify up to 20 farmers for data acquisition. Each farmer will have the following information collected: Economic data collected includes planting cash crop, spraying, fertilizer application, herbicide, pesticide, fungicide, and fertilizer costs, manure application, manure costs, harvest, tillage, labor, cash crop seed, cover crop seed and planting, cover crop termination costs, forage value of cover crops, income from cash crop, yields, conservation program payments, and erosion related repairs.
Analyze economics to identify trends and produce reports.
Collaborate with existing local soil health groups and create a model for building and growing groups.
Develop a specialist database for the region including technical staff.

Activity Milestones:

Description	Completion Date
Identify farmers and secure signed agreements (up to 20)	2021-03-31
Develop and design database and tracking systems	2021-09-30
Collaborate and create a model for building and growing local soil health teams	2021-11-30
Develop specialist database	2023-01-31
Annual tracking, and analyzing data (up to 20)	2023-05-31

Activity 2: Increasing Implementation by strengthening regional education, outreach, and mentoring

Activity Budget: $97,000

Activity Description:
Share study findings with producers, organizational staff (conservation and industry partners), lenders, agronomists, and the public. Support existing and new local soil health groups and farmer to farmer mentoring. Host 6 field days, 8 targeted trainings for producers, create 4 technical documents, providing mentoring to a minimum of 200 producers, and develop a website with story maps, case study summary disseminating findings to maximize sharing of findings.

Activity Milestones:

Description	Completion Date
Develop story map and case study summaries to disseminate findings	2023-06-30
Farmer to farmer mentoring and support for a minimum of 200 producers	2023-06-30
Develop educational materials and technical documents (4 total) and share across the state	2023-06-30
Host 8 targeted trainings for producers, agronomists, and lenders	2023-06-30
Host field days to share data (reaching ~400 people)	2023-06-30

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Kimberly Musser	Minnesota State Water Resources Center	Collaborator and partner in project development and implementation	Yes

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?

Results will provide valuable data for improving local, state, and federal programs, farmer, lender, agronomist, and insurance decisions as well as increasing implementation utilizing local network groups. Long term funding is being sought to continue and expand this project to provide data and products around the state specific to each region. Results will continue to be shared after the project duration and by creating a model, additional implementation will be readily possible. Funding for regional coordination of these efforts are also being pursued to provide additional support for further expansion of these efforts.

Project Manager and Organization Qualifications

Project Manager Name: Jennifer Hahn

Job Title: Coalition Coordinator

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

Jennifer Hahn has been managing an award currently with the Federal Government and the Minnesota Soil Health Coalition as well as three additional grants. Jennifer has 15 years of conservation planning, working with farmers to plan and implement practices, and has worked with farmers to obtain and analyze farming economics and improvements to increase profitability. Jennifer has also been a soil scientist testing and analyzing soils as well as working with farmers to understand the dynamics of improving soils, has formed a local soil health team, and helped to form the Minnesota Soil Health Coalition.

Organization: Minnesota Soil Health Coalition

Organization Description:

The Minnesota Soil Health Coalition was developed to fill a need of the producers in Minnesota; to provide them with a producer driven and operated, statewide hub that will provide them with support, information, networking, and mentoring in addition to a voice that is their own. Natural resources are becoming depleted on the ground that we rely on to produce food and fuel for our Nation. Going beyond the norm of providing technical information to producers by non-producers, the producer driven/managed/directed Coalition will provide information, networking, and mentoring to other producers. The Coalition will remain an independent 501(C)(3) non-profit organization with an elected producer Board that will collaborate with other organizations, agencies, and businesses to promote the education, implementation, and support of soil health practices.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Principle investigator		Grant management, obtaining and analyzing data, outreach and education			30%	0.4		$75,000
							Sub Total	**$75,000**
Contracts and Services								
Minnesota State Water Resources Center	Professional or Technical Service Contract	2 Staff and 1 student PT. Regional coordination and meeting support, developing educational materials, summary publications, technical documents, case study overviews, performing research, website support , videography, GIS support and story map development. (Includes salaries, travel, printing)				0.4		$75,400
Participating Farmers	Sub award	Stipend for participating farmers to provide their data and education and outreach				0.2		$14,000
Participating Soil and Water Conservation Districts	Sub award	Funding to local soil health groups for coordination, vetting producers, education, and outreach				0.2		$15,000
							Sub Total	**$104,400**
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-

Travel In Minnesota								
	Miles/ Meals/ Lodging	$0.575 rate roughly 6960 miles	Traveling for obtaining economics and outreach/education					$4,000
							Sub Total	**$4,000**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
	Printing	Project results (1000)	To provide education of the economics of soil health statewide for farmers, lenders, agronomists, technical staff, and the general public					$4,000
							Sub Total	**$4,000**
Other Expenses								
		Educational Events (14)	Field days and meetings to share the results and provide education to farmers, lenders, agronomists, and technical staff about the economics of soil health					$12,600
							Sub Total	**$12,600**
							Grand Total	**$200,000**

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				
In-Kind	Minnesota Soil Health Coalition	Farmer mentor time, administration of managing results and information on the Coalition website, social media, and newsletters.	Secured	$65,000
In-Kind	Minnesota Water Resources Center	Coordination, management of data, planning and production of outreach and education	Secured	$65,000
Cash	North Central Region SARE	Obtaining, analyzing, and reporting on economics of soil health practices including education and outreach	Pending	$250,000
Cash	USDA-NRCS	Website development and management for information and story map	Secured	$30,000
			Non State Sub Total	**$410,000**
			Funds Total	**$410,000**

Attachments

Required Attachments

Visual Component

File: de83b0de-6f2.pdf

Alternate Text for Visual Component

Map of nitrate loading into surface waters of Minnesota with the highest concentrations in South Central Minnesota where the project is focusing.
Targeting Soil Health Practice Adoption in Impaired Watersheds of South Central MN. Local soil health groups will engage farmers in high loading watersheds. Increasing soil health practice implementation will accelerate water quality improvement towards statewide goals (TMDLs, WRAPS, Nutrient Reduction Strategy). The Minnesota River is listed for the following impairments: Nutrients, Turbidity, Total suspended solids, PCBs, and Aquatic life.
Acquiring Economic Data &
On-farm Research (20 farms)
Obtaining and reporting on farmer's economics that are implementing soil health practices will provide additional data for local, state, and federal programs, lenders, agronomists, and farmers to improve programs, understanding, and increase implementation.

Supporting Farmer-driven, Farmer-led Networks as Hubs for Mentoring and Dissemination
Minnesota Soil Health Coalition
Faribault Soil Health Team
Freeborn Soil Health Team
Waseca Soil Health Team

Financial Capacity

File: 644625cd-bcc.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

No

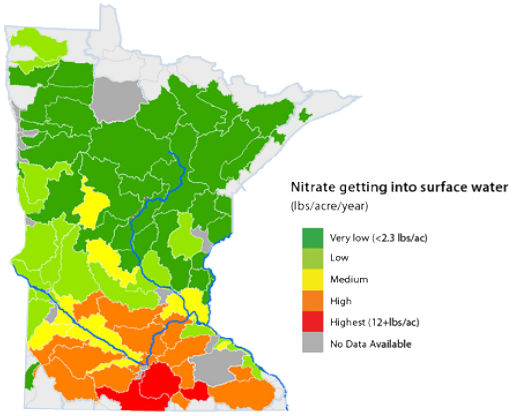
Does your project include research?

Yes

Does the organization have a fiscal agent for this project?

No

UNEARTHING SOIL HEALTH ECONOMICS IN SOUTHERN MINNESOTA



Source: Nitrogen in Minnesota Surface Waters (MPCA, 2013)

Targeting Soil Health Practice Adoption in Impaired Watersheds of South Central MN

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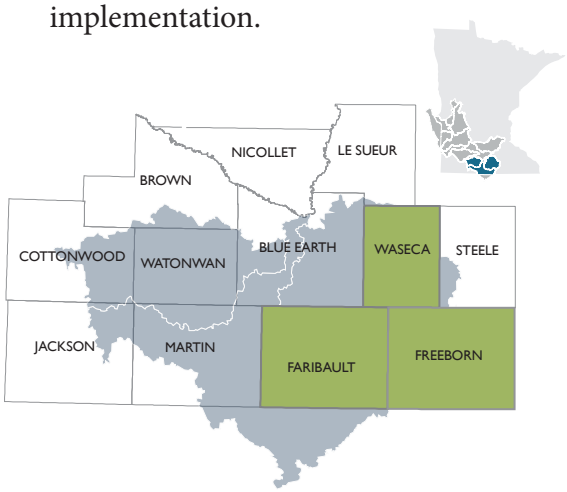

Supporting Farmer-driven, Farmer-led Networks as Hubs for Mentoring and Dissemination

Minnesota Soil Health Coalition
Faribault Soil Health Team
Freeborn Soil Health Team
Waseca Soil Health Team

MINNESOTA SOIL HEALTH coalition

WRC
WATER RESOURCES CENTER
MINNESOTA STATE UNIVERSITY, MANKATO

Freeborn Area Soil Health Team

FARIBAULT COUNTY SOIL HEALTH TEAM

WASECA COUNTY SWCD