

**Environment and Natural Resources Trust Fund
2015 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 047-B

Southeastern Minnesota Cover Crop and Soil Health Initiatives

Category: B. Water Resources

Total Project Budget: \$ 253,000

Proposed Project Time Period for the Funding Requested: 3 years, July 2015 - June 2018

Summary:

This project will help promote cover crops in Southeastern Minnesota by providing training and education to local practitioners, analyzing the economics of implementation, and providing funding for on-farm demonstration sites

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Sponsoring Organization: Board of Water and Soil Resources

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Location

Region: SE

County Name: Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona

City / Township:

Alternate Text for Visual:

Map of Cover Crop Initiative Project Area in Southeastern MN

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



Environment and Natural Resources Trust Fund (ENRTF)

2015 Main Proposal

Project Title: *Southeastern Minnesota Cover Crop and Soil Health Initiatives*

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I. PROJECT STATEMENT

Overall Project Goal: This project accelerates adoption of cover crops in agricultural cropping systems in southeastern Minnesota by: 1. Providing technical training, education, and outreach; 2. Conducting and completing a cover crop economic study for Southeastern Minnesota; and 3. Implementing cover crop projects on the ground. Implementation funds will enhance and leverage Federal USDA-EQIP funds to farmers with the ultimate goal of improving water quality and soil health.

Project Importance: Southeastern Minnesota is a unique and sensitive landscape that is prone to soil erosion from production agricultural practices. With over 1.3 million acres of highly erodible and vulnerable soils, SE MN is a prime geographic area for accelerating cover crop adoption to realize positive environmental outcomes. Environmental and on-farm benefits of cover crops include: reduced soil erosion and nutrient runoff, improved nutrient cycling and reduced fertilizer costs, reduced sedimentation and improved water quality, and increased soil organic matter and water holding capacity. The region’s vulnerability was exemplified in 2013 with intense storm events and flooding which resulted in catastrophic soil loss. Cover crops and other soil health activities minimize the damage from intense rainfall events by protecting the soil surface, increasing infiltration rates and total water holding capacity, and creating a more resilient system. Cover crops are also an important practice to reduce nutrient loss as identified in MPCA’s MN Nitrogen in Surface Water Report and will assist the state in achieving a 20% nitrogen reduction goal.

Current funding for cover crops provides on-the ground technical assistance to farmers interested in planting cover crops (CWF via BWSR) and applied research (MDA). Neither of these efforts fund cover crop education and outreach, which is the focus of this proposal.

Measurability: BWSR will work with our project partners to track and quantify the local landowners and citizens that have been engaged through this project. Also, pollution reductions to surface waters will be quantified for cover crops established on a per acre basis. We anticipate 500-700 acres of cover crops will be established in targeted locations that will have a high probability for reducing impacts to surface and ground water resources and high visibility.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Training, Education, & Outreach on Cover Crop Methods & Techniques Budget: \$110,000

This activity provides training to local practitioners on new cover crop methods and innovative techniques to enhance soil health within agricultural systems in southeastern Minnesota. Extension, BWSR, Technical Service Area 7 (TSA 7), and NRCS staff will lead tours of demonstration sites and facilitate discussion on cover crop benefits, establishment success, species selection, establishment and termination logistics, on-farm benefits to producers and benefits to soil health and water quality. The skills and knowledge shared at the field days has the potential to impact SE Minnesota’s nearly 2 million acres of land devoted to row crop production. Also, field days will inform farmers on the benefits of cover crops, opportunities and challenges associated with them, and the benefits of enhancing soil health over time.

Outcome	Completion Date
Develop website to post educational materials and project results	Spring 2016
Provide training to local SWCD, USDA-NRCS, and local agronomist staff in 2015 and 2016	Summer 2016
Develop educational materials focusing in on the unique SE MN landscape	Summer 2017
Conduct soil analysis using the Haney test to measure soil health benefits	Fall 2017
Conduct 9 field days and 6 winter workshops in 2016-2017 for farmers focusing on cover crops/soil health	Fall 2017



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Activity 2: Cover Crop Economic study for Southeastern Minnesota

Budget: \$50,000

A cost/benefit study will quantify the direct, indirect and opportunity costs associated with cover crop adoption. Comprehensive economic data on cover crops is a well-known information gap and providing such information will help communications on cover crop practices and accelerate adoption by farmers.

Outcome	Completion Date
Data gathering and survey work local experts	Spring 2016
DRAFT economic report developed	Fall 2017
Economic report finalized	Spring 2018

Activity 3: Cover Crop Implementation Projects

Budget: \$100,000

SEMN TSA 7 JPB staff will identify innovative farmers interested in working cover crops into their existing crop rotation. Demonstration sites will be established in fall of 2015 and fall of 2016. Site selection will target erosion prone soils (sloped and/or rotations leaving little vegetative cover). Depending on the farmer’s resource concern and needs, pilot plots will range in size and utilize tailored species mixes (e.g. rye, clover, millet, etc.).

Focus will be put on sites with a high risk of soil erosion, high potential for ground water impacts, and fields that are highly visible to the public. This activity leverages existing regional Farmer Councils to facilitate development of cover crop mentors.

Outcome	Completion Date
Establish cover crop mentors in strategic watersheds	Fall 2015
Targeted projects identified and implementation begins	Fall 2015
Cover crop projects (years 1, 2, and 3) implementation completed	Fall 2017

III. PROJECT STRATEGY A. Project Team/Partners

Project Partner and Affiliation	Partner Role	Receiving or Contributing \$
SEMN Technical Service Area 7 JPB staff	Assist in training, work with landowners, implement on the ground projects	Receiving
Carissa Spencer, State Agronomist and local USDA-NRCS Staff	Assist with guidance and training efforts and at the local level work with landowners, provide EQIP funds to supplement project, assist with training	Contributing
Dr. William Lazarus, U of M Applied Economics	Develop feasibility analysis.	Receiving
Jill Sacket and other technical support staff, U of M Extension	Help conduct training, organize field days, bring in local experts, and develop educational materials	Receiving
BWSR staff	Provide grant oversight, assist with training, review documentation created through project.	Contributing In-Kind
MDA Staff	Assist with training and field days	Contributing In-Kind

B. Project Impact and Long-Term Strategy

This project will help Minnesota work towards meeting the goals established in the recently published Nutrient Reduction Strategy. Over the next 30 years, a 45% reduction in nitrogen of phosphorus will be in the Mississippi River basin to meet Minnesota goals of this strategy to curb these nutrients from entire our rivers and streams. Cover crops are one of the key practices needed to meet the goals of Minnesota Nutrient Reduction Strategy.

C. Timeline Requirements (July 2015 to June 2018): 3 years. This project contains three complete field seasons and ends June 2018. Cover crop season one: fall 2015 – spring 2016. Cover crop season two: fall 2016 to spring 2017. Cover crop season three: fall 2017 to spring 2018.

2015 Detailed Project Budget

Project Title: Southeastern Minnesota Cover Crop and Soil Health Initiatives

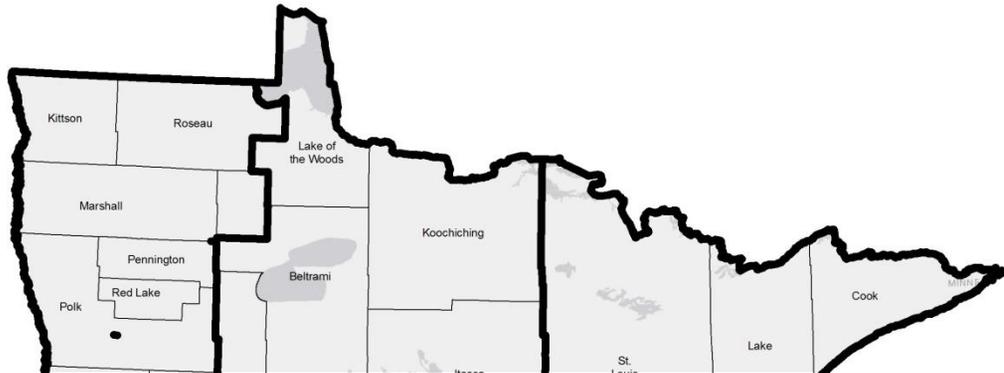
IV. TOTAL ENRTF REQUEST BUDGET (3 years)

BUDGET ITEM (See "Guidance on Allowable Expenses", p. 13)	AMOUNT
Contracts: University of Minnesota: Funds will be for organizing field days, and training local staff and farmers on cover crop and soil health methodologies, developing education and outreach materials (Contract amount is a conservative estimate and will likely decrease as details are confirmed.)	\$ 80,000
Contracts: University of Minnesota Applied Economics Department for cover crop feasibility and suitability analysis.	\$ 43,000
Contracts: SE MN Technical Joint Powers Board: Funds will be for implementation dollars to establish cover crops in targeted locations that will help improve soil health, protect water quality, and be accessible for field days and on-farm demonstrations. Funds will also be used to establish a cover crop mentor program.	\$ 100,000
Equipment/Tools/Supplies: Portable rainfall simulator to be used by local cover crop technician, SWCD staff, and NRCS staff for undertaking the demonstrations of the benefits of cover crops on soil erosion.	\$ 10,000
Additional Budget Items: Haney soil tests of fields with established cover crops. These tests directly measure the biologic activity of the soil and will be essential to measuring the effectiveness of cover crops in increasing soil health.	\$ 20,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 253,000

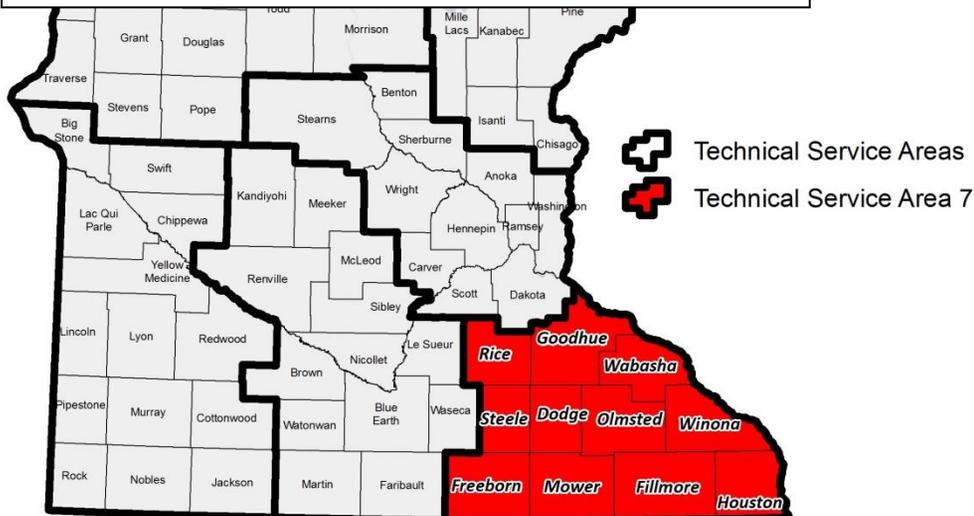
V. OTHER FUNDS (This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ To Be Applied To Project During Project Period: USDA NRCS EQIP contracts for landowners that will be apart of this project.	\$ 50,000	<i>Pending</i>
Other State \$ To Be Applied To Project During Project Period: The Southeast Minnesota Technical Joint Powers Board will be receiving a \$250,000 Clean Water Fund Accelerated Implementation grant to employ a regional cover crop and soil health staff person to work with landowners and local staff in implementing cover crops projects in the region. This grant is for 4 years and will complement the timeframe of the LCCMR grant.	\$ 250,000	<i>Secured</i>
In-kind Services To Be Applied To Project During Project Period: <ul style="list-style-type: none"> • Landowner Time associated with cover crop field days, implementation projects, and training. 10 landowners at 50 hours each \$40 per hour. • BWSR employee in-kind time. Matt Drewitz and Megan Lennon, 5% time each, fringe and benefits total \$30,000. 	\$ 50,000	<i>Pending</i>
Funding History: N/A	\$ -	
Remaining \$ From Current ENRTF Appropriation: N/A	\$ -	

Area of project focus – Technical Service Area 7



1.3 million acres in TSA 7 are classified as Highly Erodible Lands (HEL).



A winter rye cover crop growing in early spring, Fillmore County.

Southeastern Minnesota is a unique and sensitive landscape prone to soil erosion from production agricultural practices. Cover crops and other soil health activities **minimize the damage from intense rainfall events** by protecting the soil surface, **increase infiltration rates and total water holding capacity**, and create a more **resilient system**.

BWSR Staff Project Manager Expertise

Matt Drewitz, Clean Water Specialist:

Education:

- B.A Biology, Gustavus Adolphus College
- M.S. Environmental Science, Minnesota State University-Mankato
 - Master's Thesis: *Effectiveness of Ridge Tillage and Conventional Tillage Practices on Soil Conservation*

Work Experience:

- **Board of Water and Soil Resources (BWSR) Hydrologist 3** (2006 –present): Works specifically on Clean Water Fund efforts in BWSRs Southern Region. Currently assists in managing numerous Clean Water Fund grants and implementing the BWSR clean water program. Works with agency staff from DNR, MPCA, MDA, and MDH on addressing water quality issues in southern Minnesota.
- **Minnesota Department of Agriculture Senior Planner, Water Quality** (2000-2006): Managed numerous contracts with the University of Minnesota, including an MPCA 319 grant to develop the MN Phosphorus Index tool. Managed two separate LCCMR projects dealing specifically with anaerobic manure digestion topics.
- **Rice County Water Planner** (1998-2000): Implemented water planning activities in Rice County and worked cooperatively with other County and SWCD staff in southeastern MN on surface and ground water initiatives.