Environment and Natural Resources Trust Fund (ENRTF)
M.L. 2015 Work Plan

Date of Report:	May 20, 2015
Date of Next Status Update Report:	December 1, 2015
Date of Work Plan Approval:	June 11, 2015
Project Completion Date:	June 30, 2018
Does this submission include an amendment request?	No

PROJECT TITLE: Southeast Minnesota Cover Crop and Soil Health Initiatives

Project Manager: Matt Drewitz, Hydrologist 3

Organization: Minnesota Board of Water and Soil Resources

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Location (Counties): Goodhue, Rice, Dodge, Steele, Wabasha, Winona, Fillmore, Mower, Houston, Freeborn, Olmsted

Total ENRTF Project Budget:		
	ENRTF Appropriation:	**$253,000**
	Amount Spent:	**$0**
	Balance:	**$253,000**

Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 04e

Appropriation Language:
$253,000 the first year is from the trust fund to the Board of Water and Soil Resources to promote cover crops as a means of protecting soil and water quality in southeastern Minnesota through training and education for local practitioners, economic analysis of implementation, and on-farm demonstration sites. This effort must be coordinated with the University of Minnesota Forever Green Initiative. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: Southeast Minnesota Cover Crop and Soil Health Initiatives

II. PROJECT STATEMENT:

Overall Project Goal: This project aims to accelerate the adoption of cover crops in agricultural cropping systems in Southeastern Minnesota to reduce pollution runoff and sedimentation, improve water quality, and improve soil health. The three primary objectives of this project are outlined below:

1. **Providing technical training, education, and outreach:** BWSR, the University of Minnesota Forever Green Initiative, the University of Minnesota Extension, Natural Resource Conservation Service (NRCS), and the Southeast Minnesota Technical Service Area 7 Joint Powers Board staff will lead 6 workshops and 9 field days on cover crop management techniques and other soil health best management practices. In addition, this project will take approximately 400 soil tests at targeted demonstration sites to gauge and measure soil health. To demonstrate the effectiveness of cover crops in reducing soil erosion and runoff, a small rainfall simulator will be utilized for the on-farm demonstrations. This project component is important because training and education efforts have been limited in Minnesota and this effort will accelerate those efforts in Southeastern Minnesota, which is a region of the state where cover crops are greatly needed and can have significant positive environmental impacts.
2. **Conducting and disseminating a cover crop economic study for Southeastern Minnesota:** The lack of comprehensive economic data on cover crops is a road block to implementation. A cost benefit analysis will be conducted by Dr. William Lazarus with the University of Minnesota, Department of Applied Economics, to help farmers make informed choices about cover crop adoption and management. This work is one of the priority first steps that are needed to increase the adoption of cover crops in Southeastern Minnesota.
3. **Cover Crop Demonstration Sites:** This project will establish approximately 700 acres of cover crop demonstration projects on the ground to demonstrate the effectiveness of reducing soil erosion and runoff, improving water quality, improving the health of the soil, and providing secondary benefits of increased wildlife habitat. Demonstrating that cover crops can be successfully integrated into row crop agriculture is a crucial step towards increased adoption. This is especially critical in this project's target area in Southeastern Minnesota, which has a diverse landscape that is prone to soil erosion and pollution runoff from agricultural fields. This project will demonstrate cover crop methods in a variety of different landscapes and agricultural systems to maximize the education opportunities for this project. In addition, this project will enhance and leverage Federal United States Department of Agriculture-Environmental Quality Incentive Program funds to farmers to help increase the adoption of cover crops in the region.

Cover Crop Definition: Cover crops are plants seeded into agricultural fields, either within or outside of the regular growing season, with the primary purpose of improving or maintaining ecosystem quality.

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 out of 2.7 million total cropland acres in the target area of this project, Southeast Minnesota 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, and again in 2014, 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.

Leveraging BWSR Clean Water Fund Goals: Current funding for cover crops with Clean Water Funds provides on-the ground technical assistance to farmers planting cover crops (Clean Water Fund Accelerated Implementation Grants via the Board of Water and Soil Resources) and applied cover crop research (Minnesota Department of Agriculture). Of note, neither of these efforts funded with the Clean Water Fund address cover crop education and outreach, which is the focus of this project. Specifically, the Board of Water and Soil Resources Clean Water Fund grant to the Southeast Minnesota Technical Service Area 7 Joint Powers Board provides for a Soil Health Technician, Dean Thomas, who will be instrumental in selecting and assisting farmers in establishing demonstration sites (Activity 3) for this project. Dean has many years of experience working with landowners in Southeastern Minnesota and his work, along with our other project partners, will be critical to the success of this project.

Measurability: Board of Water and Soil Resources will work with our partners to track and quantify the following through the course of the project through the following methods:

- **Environmental Outcomes:** Board of Water and Soil Resources staff will work with Southeast Minnesota Technical Service Area 7 to determine the soil and phosphorus reduction outcomes for each specific demonstration site.
- **Soil Health Measurements:** An integrated approach is used to test chemical and biological components of the soil. The soil testing methodology used in this project measures soil biology and its role in nutrient cycling. By utilizing a holistic testing approach, we will quantify the wide-ranging benefits soil health benefits of cover crops. Measured parameters include soil phosphorus, nitrogen, potassium, soil organic phosphorus and organic nitrogen, microbial activity, water extractable carbon, and the carbon to nitrogen ratio.
- **Economic Study and Barriers:** The National Wildlife Federation's *Roadmap to Increased Cover Crop Adoption* publication identifies the lack of economic analysis on cover crops as a barrier to implementation. Farmers make agronomic decisions based partly on cost/benefit analysis. Without cover crop-specific cost/benefit data, producers cannot make an informed decision on integrating cover crops into their crop rotation. Dr. Lazarus and a graduate student will collect detailed information from participating farmers and input the data into an economic model. Data collected includes agronomic practices, labor and equipment costs, fuel and chemical costs, forage and cash crop yields, etc.
- **Social Measures:** The Board of Water and Soil Resources will utilize our Training Coordinator staff person, in conjunction with the University of Minnesota Extension, to thoroughly evaluate the 6 workshops and 9 field days for their effectiveness. The feedback from the participants, especially the farmers in the region, will be important in improving how we as a State approach cover crops and soil health issues. Additionally, the Board of Water and Soil Resources is tentatively planning to contribute additional match to this project (match funds beyond our initial proposal) to quantify specific social indicators related to individual, regional, and organizational, and programmatic levels.

III. OVERALL PROJECT STATUS UPDATES:

Project Status as of December 1, 2015:

Project Status as of June 1, 2016:

Project Status as of December 1, 2016:

Project Status as of June 1, 2017:

Project Status as of December 1, 2017:

Overall Project Outcomes and Results August 1, 2018:

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Training, Education, & Outreach on Cover Crop Methods & Techniques
Description: 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 through six (6) practitioner workshops and nine (9) field days at targeted demonstration sites. In addition, site specific soil sampling to measure soil health will be conducted at field demonstration sites. Lastly, a portable rain fall simulator will be used to demonstrate the effectiveness of cover crops in reducing soil erosion and runoff.

Workshops and Field Days: The University of Minnesota Extension, Southeast Minnesota Technical Service Area 7, and NRCS staff, and the Board of Water and Soil Resources will be the primary leaders of these educational events. Jill Sackett, University of Minnesota Extension Cover Crop Expert, will be lead staff person in organizing, promoting, and facilitating the workshops and field days. Dean Thomas, Soil Health Technician with the Southeast Minnesota Technical Service Area 7 will also be assisting Jill Sackett as well. The 6 workshops will take place during the winter time and will be focused on providing technical information to practitioners in Southeastern Minnesota. The 9 field days taking place at the demonstration sites will facilitate the discussion of cover crop benefits, establishment success, species selection, establishment and termination logistics, on-farm benefits to producers and benefits to soil health and water quality. It is anticipated that approximately 40 people will attend each workshop and that 30 people will attend individual field days for a total of approximately 510 individuals being trained through this project. The skills and knowledge shared at these workshops and field days has potential to impact SE Minnesota's nearly 2.7 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.

Educational Materials: The University of Minnesota Extension, with cooperation with the project partners, will develop and disseminate educational materials for this project. Those materials will be made available in electronic format on the web, as well as in printed form at the educational events described above.

Soil Test: BWSR will work with the project partners to undertake Soils tests at the landowner demonstration sites and potentially at other long term sites that have been established already in the region. The tests look at both the nutrient content (ex. nitrogen, phosphorus, potassium, and micronutrients) as well as the living microbial components. This comprehensive test provides the best single metric for measuring soil health. Megan Lennon, State Soil Scientist with BWSR, will coordinate this element of the project. It is anticipated that 400 soil tests at $50 per test will be analyzed for this project in testing the 700 acres of cover crops being demonstrated through this project.

Portable Rainfall Simulator: To assist with the field day demonstrations, this project will utilized a portable rainfall simulator to show the benefits of cover crops in reducing soil erosion, sheet water runoff, and increased water infiltration capacity. Most rain fall simulators are large, bulky, and very expensive. This rainfall simulator is relative small, more economical, and can be set up quickly and easily in variety of terrains. This simulator will be used at the 9 field days and potentially at other soil health and cover crops events in southeast Minnesota. Dean Thomas, Soil Health Technician with the SE MN Technical Joint Power Board, will work with USDA Natural Resource Conservation Service and Minnesota Department of Agriculture staff in utilizing this rainfall simulator in the field.

Summary Budget Information for Activity 1:

ENRTF Budget: $110,000
Amount Spent: $ 0
Balance: $110,000

Outcome	Completion Date
1. Develop website and post educational materials	Spring 2016
2. Provide training to local SWCDs, USDA-NRCS, crop consultants and local agronomist staff in 2015 and 2016	Summer 2016
3. Develop educational materials focusing in on the unique Southeast Minnesota landscape	Summer 2017
4. Conduct soil tests and analysis to measure soil health benefits	Fall 2017
5. Conduct 9 field days and 6 winter workshops in 2015-2017 for farmers focusing on cover crops/soil health	Fall 2017

Activity Status as of December 1, 2015:

Activity Status as of June 1, 2016:

Activity Status as of December 1, 2016:

Activity Status as of June 1, 2017:

Activity Status as of December 1, 2017:

Final Report Summary August 1, 2018:

ACTIVITY 2: Cover Crop Economic Study for Southeastern Minnesota
Description: Dr. William Lazarus with the Department of Applied Economics at the University of Minnesota, and one graduate student will be working to develop a cost/benefit study will quantify the direct, indirect and opportunity costs associated with cover crop adoption.

Identified Need for this Economic Analysis:
The need for this activity was identified as a top priority in 2012 within the document *Roadmap to Increased Cover Crop Adoption*, which was published by the National Wildlife Federation. This document was a product of a consortium of experts in the Upper Midwest that identified critical policy, research, social, and technological needs to increase cover crop adoption. This project component is important in realizing this unmet need and will provide a valuable resource in analyzing the economics of cover crops for this region of Minnesota. Dr. Lazarus will identify and quantify specific costs and benefits and related information that may drive farmer's economic decisions to establish cover crops.

Some of the information that would be useful in a cost/benefit budget may be things that the producers themselves would know and have readily available during interviews. Other things may need to be estimated indirectly based on what is known generally about the specific farm situation. One example of the latter might be the impact of the cover crop on soil erosion, which could be estimated via the RUSLE2 software and the soil mapping unit, slope, and crop rotation on the specific field.

The following is a list of items that could be included in questionnaires for the producers, and/or estimated indirectly:

- Farming system (row crops, grazing, livestock operations, canning crops),
- Previous main crop where the cover crop was/will be seeded, and timing of main crop harvest,

- Cover crop species seeded (one species or mixture),
- Cover crop establishment method, seeding rates, equipment and labor required, and timing of cover crop seeding,
- Costs per unit for seed, equipment, labor, and any other inputs involved,
- Success of the cover crop establishment (how to define success, and in particular, how much growth is associated with how much nitrogen sequestration, erosion mitigation, and other benefits),
    - Completely successful
    - Partially successful
    - Total failure
- Equipment, labor, chemicals, and any other inputs required for cover crop termination, and timing of cover crop termination,
- Forage harvested from the cover crop, yield/acre,
    - Utilization of the harvested cover crop
    - Value of the forage harvested, $/ton
    - Harvesting cost, $/acre
- Main crop planted following the cover crop, and impact on yield of the following main crop,
- Impact on soil erosion – possibly estimate via RUSLE2 for specific situations,
- Impact on soil organic carbon (Dr. John Baker, University of Minnesota, says this has been documented under a kura clover living mulch in pecan orchards, but seems doubtful about winter annual cover crops in Minnesota.)

Identifying Barriers to Adoption of Cover Crops: Barriers to adopting cover crops are directly related to economic constraints and uncertainties. Dr. Lazarus will be interviewing farmers in the region to quantify those barriers to adoption cover crops and determine what solutions from and economic standpoint are needed to increase adoption rates. Comprehensive economic data on cover crops is a well-known information gap and a barrier to cover crop adoption and this project's goal is to help quantify and disseminate this information to practitioners in this region. Conducting a comprehensive economic analysis and disseminating the economic outcomes helps market cover crop practices and accelerates adoption by farmers. An assigned graduate student and Dr. Lazarus in the Department of Applied Economics at the University of Minnesota will collect data on farms participating in the implementation and demonstration project component of this project.

Tool for Farmers and Practitioners: The educational materials and tools developed from this project will be disseminated through efforts in Activity 1, as well as through other modes of outreach through the University of Minnesota Extension Service.

Summary Budget Information for Activity 2:

ENRTF Budget: $43,000
Amount Spent: $ 0
Balance: $43,000

Outcome	Completion Date
1. Data gathering – field season one	Summer 2016
2. Data gathering – field season two	Summer 2017
3. DRAFT economic report developed	Fall 2017
4. Economic report finalized and dissemination	Spring 2018

Activity Status as of December 1, 2015:

Activity Status as of June 1, 2016:

Activity Status as of December 1, 2016:

Activity Status as of June 1, 2017:

Activity Status as of December 1, 2017:

Final Report Summary August 1, 2018:

ACTIVITY 3: Cover Crop Implementation Projects

Description: Southeast Minnesota Technical Service Area (TSA) 7 Joint Powers Board staff, in cooperation with local SWCD and NRCS staff, will identify innovative farmers interested in working cover crops into their existing crop rotation. The goal is to work with approximately 10 different sites throughout the target area for establishing demonstration sites. Demonstration sites will be established in fall of 2015, fall of 2016 and fall of 2017 for a total of approximately 700 acres.

Demonstration Sites: Site selection will target erosion-prone soils (sloped fields 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 that include legumes, grasses, brassicas, and other appropriate plant species. Cover crop plants are typically in place on the landscape for short time windows before, during, or after the growing season and native seed mixes used with other types of conservation practices would not be appropriate for cover crop establishment. Farmer cooperators will be given financial incentive payments to implement these practices. 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. Use of existing inventories and geographic information system (GIS) data will be used to prioritize practices and target specific landowners and landscapes that will provide environmental benefits and to meet the full objective of this project.

Project Match - Soil Health Technician: Dean Thomas, staff with Southeast Minnesota Technical Service Area (TSA) 7 Joint Powers Board, will provide technical support for this project for Activity 3 directly and also will provide technical services for Activity 1 as well. Dean's position is funded for four (4) years with Clean Water Funds from a Board of Water and Soil Resources Accelerated Implementation competitive grant ($250,000). Without Deans' position in place, this project as a whole would be very difficult to implement. No LCCMR funds will be used to fund Dean's position or any administrative costs associated with Activity 3.

Landowner Contracts: Payments to landowners will be based on current United States Department of Agriculture-Natural Resources Conservation Service rates for cover crop practices. Southeast Minnesota Technical Service Area (TSA) 7 Joint Powers Board will be responsible for these contracts and will follow established Board of Water and Soil Resources protocols for land owner contracts, operation and maintenance, record keeping, and grant administration.

This project will leverage existing regional Farmer Councils to facilitate development of cover crop mentors. Mentors are producers with experience in successfully using cover crops. Mentors are a peer-to-peer resource and provide guidance on local resource concerns, seeding rates and dates, planting strategies, successful termination and pest control.

Summary Budget Information for Activity 3:

ENRTF Budget: $100,000
Amount Spent: $ 0
Balance: $100,000

Outcome	*Completion Date*
1. Establish cover crop mentors in strategic watersheds	Fall 2015
2. Targeted projects identified and implementation begins	Fall 2015

3. Cover crop projects (years 1, 2, and 3) implementation completed at approximately 10 sites for a total of 700 acres.	Fall 2017

Activity Status as of December 1, 2015:

Activity Status as of June 1, 2016:

Activity Status as of December 1, 2016:

Activity Status as of June 1, 2017:

Activity Status as of December 1, 2017:

Final Report Summary August 1, 2018:

V. DISSEMINATION:

Description: This project will be working with U of M Extension staff (Activity 1) to help facilitate the majority of the dissemination of project results and education and outreach to conservation practitioners, farmers, and agricultural industry representatives. One-on-one exposure of cover crop techniques through field days and training events will be one of the primary methods of dissemination of information. BWSR will leverage the knowledge and time of our Training Coordinator and our Communications Director to ensure that information about this project is disseminated effectively and that we are connecting with our target audiences. These BWSR staff will help with dissemination via social media and technical forms of communication. BWSR will also work with the U of M Applied Economics Department staff (Activity 2) to provide training on the results of the economic analysis and any tools developed from this activity.

Status as of December 1, 2015:

Status as of June 1, 2016:

Status as of December 1, 2016:

Status as of June 1, 2017:

Status as of December 1, 2017:

Final Report Summary August 1, 2018:

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget Overview:

Budget Category	$ Amount	Overview Explanation
Personnel:	$ 0	
Professional/Technical/Service Contracts:	$ 223,000	Three Contracts: U of M Extension, U of M Applied Economics, and the SE MN Technical Joint Powers Board
Equipment/Tools/Supplies:	$ 20,000	Soil test analysis
Capital Expenditures over $5,000:	$ 10,000	Purchase portable rain fall simulator
TOTAL ENRTF BUDGET:	**$ 253,000**	

Explanation of Use of Classified Staff: No BWSR staff will be paid with this appropriation. BWSR staff services will be in-kind.

Explanation of Capital Expenditures Greater Than $5,000: Portable rainfall simulators are teaching tool used at field days, workshops and other education and outreach events. The rainfall simulators demonstrate the differences in soil erosion across different cropping systems and management techniques. For the purposes of this project, the rainfall simulator will demonstrate in real time the soil quality benefits of cover crops. The rainfall simulator will be used at all 9 demonstration site events and 6 workshops. After this project is completed, the University Extension and BWSR will continue to use the simulator in education and outreach events.

Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation: None.

Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation: Jill Sackett .1 FTE, Department of Applied Economics graduate student .37 FTE each year for 2 years.

B. Other Funds:

Source of Funds	$ Amount Proposed	$ Amount Spent	Use of Other Funds
Non-state			
USDA-NRCS EQIP financial assistance to landowners	$ 50,000*	$ 0	*Potential for EQIP funds to leverage LCCMR funds for implementation of cover crops by local landowners. The funding amount for EQIP is dependent on the Federal Budget for the Farm Bill and allocations for the future are not set at this time. The level of funding may be more or less depending on future funding levels and NRCS priorities.
State			
BWSR staff in-kind time	$ 30,000	$ 0	BWSR employee in-kind time. Matt Drewitz and Megan Lennon, 5% time each, fringe and benefits total $30,000.
Landowner in-kind time	$ 20,000	$ 0	Landowner Time associated with cover crop field days, implementation projects, and training. 10 landowners at 50 hours each $40 per hour.
FY 2014 BWSR Clean Water Fund Grant	$ 250,000	$ 0	The Southeast Minnesota Technical Joint Powers Board has received a 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 $250,000 for 4 years and will complement the timeframe of the LCCMR grant. No LCCMR funds will be used to fund this position.
TOTAL OTHER FUNDS:	**$ 350,000**	**$ 0**	

VII. PROJECT STRATEGY:

A. Project Partners

- *Project Partners receiving LCCMR funds:*
  - **University of Minnesota Extension** ($80,000): Jill Sackett, Extension Educator working with cover crops, and other technical support staff with Extension, will help develop and conduct workshops, develop and conduct field days, coordinate participation of local and regional experts for educational events, and develop and disseminate educational materials.
  - **University of Minnesota Applied Economics Department** ($43,000): Dr. William Lazarus, Agricultural Economist, will work with a graduate student to develop an economic analysis of cover crop implementation in Southeast Minnesota target area.
  - **Southeast Minnesota Technical Service Area 7 Joint Powers Board** ($100,000): The LCCMR funding will be utilized by this organization for establishing demonstration sites. In addition, project match will be proivded by staff who will assist in training, work with landowners, implement on the ground projects,
- *Project Partners assisting in the implementation of the project, but not receiving LCCMR funds:*
  - **Minnesota Board of Water and Soil Resources:** Megan Lennon, State Soil Scientist, and Matt Drewitz, Hydrologist, will assist in managing the overall project, provide technical assistance, ensure project goals and objectives are being met, and report project outcomes to LCCMR. Also, the Communications Coordinator and Training Coordinator for the Board of Water and Soil Resources will be assisting with this project. (All BWSR staff are unpaid)
  - **University of Minnesota Forever Green Initiative:** Dr. Don Wyse and/or his associates with the Forever Green Initiative will provide advice the to project partners in the development of field days and works shops, along with species selection for on the ground practices. Additionally, informaton and resources from Forever Green will be distributed to the targeted audiences through the outreach component of this project.
  - **Soil and Water Conservation Districts within the project area:** Staff from member SWCDs apart of the SEMN Technical Service Area 7 JPB will assist with workign with landowners and setting up field days. (Unpaid)
  - **United States Deparment of Agriculture-Natural Resource Conservation Service (NRCS):** Carissa Spencer, NRCS State Agronomist, and local USDA-NRCS Staff will assist with guidance and training efforts at the local level work with landowners, potentially provide EQIP funds to supplement the implementation coponent of this project, and assist with training and field days. (Unpaid)
  - **Minnesota Department of Agriculure (MDA):** Mark Zumwinkle and other staff as assigned with the Minnesota Department of Agriculture will assist with training and field days for this project. (Unpaid)

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 and phosphorus will be necessary 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 identified as one of the key practices needed to meet the goals of Minnesota Nutrient Reduction Strategy.

C. Funding History: LCCMR has not funded this project in the past.

VIII. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS:

A. Parcel List: Does not apply, as land acquisition is not a part of this project.

B. Acquisition/Restoration Information: Does not apply, as land acquisition is not a part of this project.

IX. VISUAL COMPONENT or MAP(S): See attached map of the project area.

X. RESEARCH ADDENDUM: Not applicable to this specific project.

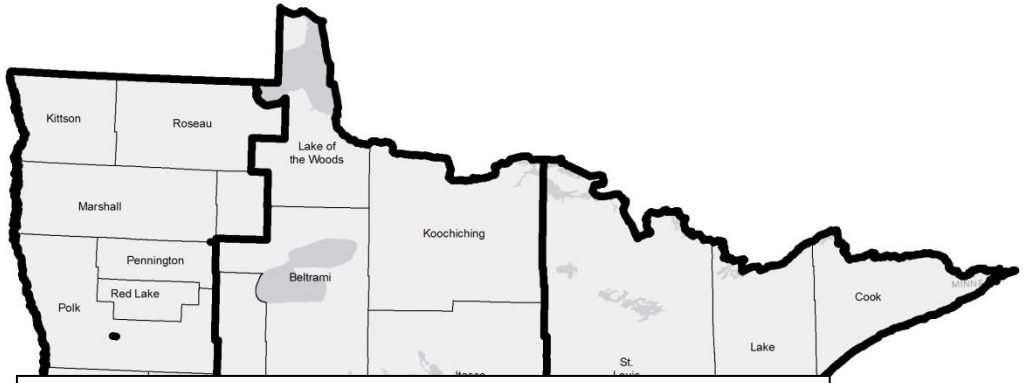
XI. REPORTING REQUIREMENTS:
Periodic work plan status update reports will be submitted no later than December 1, 2015, June 1, 2016, December 1, 2016, June 1, 2017, and December 1, 2017, and June 1, 2018. The Board of Water and Soil Resources will be responsible for all reporting to the LCCMR and will work with project partners to effectively report back on project outcomes. A final report and associated products will be submitted between June 30 and August 15, 2018.

Environment and Natural Resources Trust Fund
M.L. 2015 Project Budget

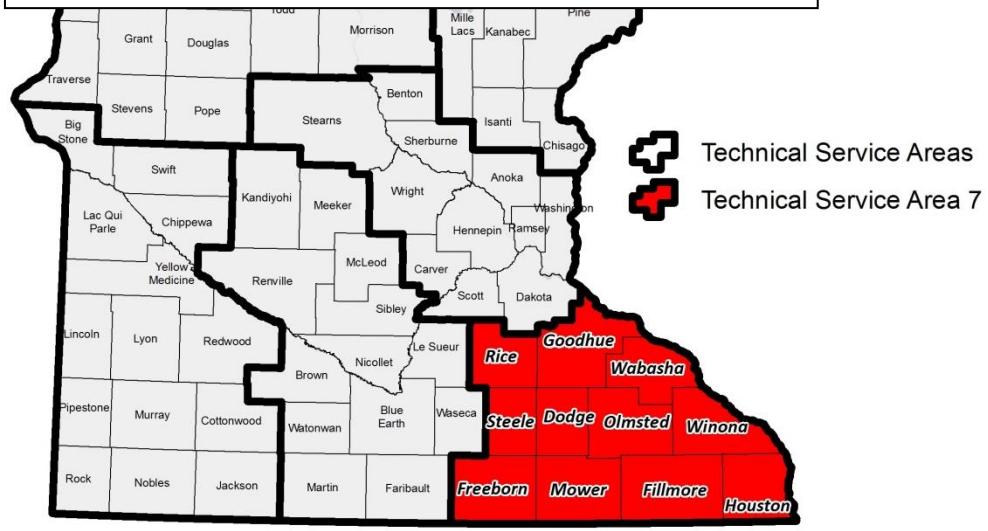
Project Title: Southeast Minnesota Cover Crop and Soil Health Initiatives
Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 04e
Project Manager: Matt Drewitz
Organization: BWSR
M.L. 2015 ENRTF Appropriation: $253,000
Project Length and Completion Date: 3 Years, June 30, 2018
Date of Report: May 20, 2014

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Activity 1 Balance	Activity 2 Budget	Amount Spent	Activity 2 Balance	Activity 3 Budget	Amount Spent	Activity 3 Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	**Training, Education, & Outreach on Cover Crop Methods & Techniques**			**Cover Crop Economic study for Southeastern Minnesota**			**Cover Crop Implementation Projects**				
Professional/Technical/Service Contracts											
University of Minnesota Extension Service (Sole Source PT Contract): The University of Minnesota Extension service will lead local workshops and training on cover crop establishment and techniques. Jill Sackett, Extension Educator and Cover Crop Expert, will be the staff lead for this	$80,000	$0	$80,000							$80,000	$80,000
University of Minnesota Applied Economics Department (Sole Source PT Contract): Contract with Dr. William Lazarus and 1 graduate student to conduct the economic analysis to determine the economic feasibility of cover crop implementation and barriers for adoption in Southeastern Minnesota.				$43,000	$0	$43,000				$43,000	$43,000
SE MN Technical Joint Powers Board (Sole Source PT Contract): 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. The SE MN Technical Joint Powers Board is a coalition of Soil and Water Conservation Districts that will administer the funds and develop local contracts with landowners to implement practices on the ground.							$100,000	$0	$100,000	$100,000	$100,000
Equipment/Tools/Supplies										$0	$0
Soil Test Analysis: Approximately 400 soil tests, at $50 dollars per test will be conducted in conjunction the cover crop demonstration sites for	$20,000	$0	$20,000							$20,000	$20,000
Capital Expenditures Over $5,000										$0	$0
Portable Rainfall Simulator : The simulator will be used at field days and at demonstration sites to effectively demonstrate the preventative effects of cover crops on soil erosion and runoff on small plot	$10,000	$0	$10,000							$10,000	$10,000
COLUMN TOTAL	**$110,000**	**$0**	**$110,000**	**$43,000**	**$0**	**$43,000**	**$100,000**	**$0**	**$100,000**	**$253,000**	**$253,000**

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**.