Environment and Natural Resources Trust Fund 2020 Request for Proposals (RFP)

Project Title:	ENRTF ID: 238-F
Local Agriculture Steward Partnership: Science to Sustainable Action	
Category: F. Methods to Protect, Restore, and Enhance Land, Water, and	Habitat
Sub-Category:	
Total Project Budget: \$ 620,420	
Proposed Project Time Period for the Funding Requested: June 30, 202	3 (3 vrs)
Summary:	
To enhance water quality through implementation and evaluation of regenerative acres of land, education through four outreach events within the Middle Fork C	ve farming practices on 5,000 row River Watershed.
Name: Margaret Johnson Sponsoring Organization: Middle Fork Crow River Watershed District	
Job Title: Administrator	
Department:	
Address: P.O. Box 8	
Spicer <u>MN</u> 56288	
Telephone Number: (320) 796-0888	
Email margaret@mfcrow.org	
Web Address: http://www.mfcrow.org/	
Location:	
Region: Central	
County Name: Kandiyohi, Meeker, Pope, Stearns	

City / Township: Spicer

Alternate Text for Visual:

This map shows an implementation profile identifying feasible management and structural BMPs, estimated sediment and phosphorus load reductions, and annualized cost-benefits in the Middle Fork Crow River.

Funding Priorities Multiple Benefits	OutcomesKnowledge Base
Extent of Impact Innovation	_Scientific/Tech Basis Urgency
Capacity ReadinessLeverage	TOTAL%



PROJECT TITLE:

Local Agriculture Steward Partnership: Science to Sustainable Action

I. PROJECT STATEMENT

This partnership seeks to turn science into action by implementing conservation practices that: 1. gain local farmer-led acceptance; 2. improve the quantity and quality of our water supplies; 3. provide on-farm education and outreach opportunities. This project plans to implement 4,000 acres of in-field soil health practices (i.e. cover crops, conservation tillage, and nutrient management plans) and treat an additional 1,000 acres with structural conservation practices (i.e. bioreactors). Four events will be planned to showcase the projects at the field level to help sustain the local farm economy and support healthy rural communities.

This agricultural stewardship partnership leverages local, state, and regional experts from public and private sectors to deliver agroeconomic solutions to rural communities. The project will be focused in the Middle Fork Crow River Watershed and will seek to implement practices that result in positive economic outcomes for farmers, while improving the environmental condition. This effort will also improve social dynamics and challenge conventional thinking of the relationship between agricultural and environmental outcomes, while offering a new perspective on ways agriculture can lead environmental improvements in the State of Minnesota.

This LCCMR project concept will dovetail into an existing working partnership between Middle Fork Crow River Watershed District (MFCRWD), Houston Engineering, Inc. (HEI), and Minnesota Soybean Research and Promotion Council (MSR&PC) for the development and application of a framework to create and sustain farmerled councils that provide input on local conservation priorities. The conservation practices implemented through the proposed project will be driven by the input received from the farmer-led council in the Middle Fork Crow River Watershed. Bringing together this diverse private-public group increases the likelihood of project success by capitalizing on existing farmer relationships through a wide range of technical experience. Discovery Farms will bolster the partnership by providing edge-of-field research and demonstration sites as well as providing education and outreach services. This project will also use the prioritized, targeted, and measurable implementation goals of the locally adopted North Fork Crow River One Watershed, One Plan (1W1P), the plan that governs MFCRWD's local activities.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1 Title: Implement Farmer-Led Conservation Practices

Description: This activity will leverage feedback obtained from the engagement of a farmer-led conservation council within the MFCRW regarding preferred conservation practices. This feedback will be used to guide the implementation of 4,000 acres of in-field management practices that promote soil health, such as cover crops, perennials, conservation tillage, and nutrient management plans. The partnership plans to treat an additional 1,000 acres with structural conservation practices, such as bioreactors and sediment control basins. The environmental outcomes from **Activity 1** will be assessed as part of **Activity 2** within this project.

Outcome	Completion Date
1. Engineering and design development for conservation implementation practices	02-28-2021
2. 1,000 acres treated with structural practices	05-30-2022
3. 4,000 acres of in-field management practices	11-30-2022

ENRTF BUDGET: \$507,300

Activity 2 Title: Demonstrate Environmental Outcomes

Description: The environmental impacts of implementing the conservation practices will be assessed at both a



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watershed (Activity 1) and field scale. At the field scale, monitoring data will be collected for up to two years at two demonstration sites to evaluate the performance of selected systems.

One demonstration site will be an in-field management practice (i.e. nutrient management), and at least one demonstration site will be a structural practice (i.e. bioreactor). Installation, maintenance, and monitoring will be carried out by Discovery Farms. At the watershed scale, advanced software applications will be used to gauge effectiveness. The Minnesota Board of Water and Soil Resources' (BWSR's) Prioritize, Target, and Measure Application (PTMApp) will be used to evaluate the water quality improvements realized through conservation practices. We will also use a method developed by HEI through a MSR&PC project to evaluate the water quality benefits of the conservation practices. HEI will lead efforts to evaluate the water quality and quantity benefits associated with the conservation practices implemented from **Activity 1** and report the outcomes to project partners.

ENRTF BUDGET: \$66,000

Outcome	Completion Date
1. Evaluation of watershed-scale water quality and quantity benefits	07-30-2023
2. Evaluation of field-scale demonstration sites	11-30-2023

Activity 3 Title: Conduct Education and Outreach

Description: Education and outreach activities will be conducted with focus around the two demonstration sites listed in **Activity 2**. These activities will be a coordinated effort on behalf of MFCRWD, HEI, and Discovery Farms. Activities will include four events: two for the in-field practice and two for the structural practice. Events will include at least one field day for each demonstration site. Case study video stories will be developed based on the results of this project, providing an opportunity for broader public outreach on the environmental benefits of farmer-led conservation practices.

ENRTF BUDGET: \$47,120

Outcome	Completion Date
1. Four education and outreach events: two events for in-field management practices	11-30-2023
and two events for structural practices	
2. Video recordings that provide stories around the environmental benefits of famer-led	11-30-2023
conservation efforts for the broader public	

III. PROJECT PARTNERS AND COLLABORATORS:

Middle Fork Crow River Watershed District (MFCRWD) will lead in collaboration with Houston Engineering, Inc. (HEI) and Discovery Farms. Project partners will also include local stakeholders within the Middle Fork Crow River Watershed where conservation projects will be implemented.

IV. LONG-TERM IMPLEMENTATION AND FUNDING:

This project is consistent with water quality and quantity goals and objectives found in the North Fork Crow River 1W1P, with specific connections to the Rural Stewardship criterion of the plan. In addition to the use of MFCRWD general operating funds, continual efforts will be made to seek grant funds to provide educational opportunities and financial assistance for methods for sustainable agricultural practices that would help to address the high nutrient and sediment loads reaching the Mississippi River.

In addition, this partnership may open doors to private sector and/or non-governmental organizations (NGO) investments that would reduce the demand on public sector grant funds. However, to get this project off the ground, we do require LCCMR funds. Without LCCMR funds, the implementation of farmer-led conservation practices, the environmental assessments, the demonstration and outreach events, and public communication videos described in this proposal, will not take place.

Attachment A: Project Budget Spreadsheet Environment and Natural Resources Trust Fund M.L. 2020 Budget Spreadsheet Legal Citation: Project Manager: Margaret Johnson Project Title: Local Agriculture Steward Partnership: Science to Sustainable Action Organization: Middle Fork Crow River Watershed District



Project Length and Completion Date: 3.5 years, 11/30/2023

Today's Date: 4/11/19

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages)				
Personnel: Middle Fork Crow River Watershed District Project Manager wages to plan, promote & facilitate events (360 hours to Project Manager at \$28/hr); consult farmers on regenerative farming practice implementation (240 hours to Project Manager at \$28/hr); to facilitate local farmer group meetings two per year (360 hours to Project manager at \$28/hr), document all project activities (events, group meetings, interviews, field walkovers & cover crop implementation, using technology such as video and voice recordings) (680 hours to Project manager at \$28/hr). 1,440 hours over three years. Total - 9%FTE		\$ 45,920		\$ -
Structural practice: engineering design and environmental assessment of practice h	enefits to	\$ 65.000		Ś.
<i>Structural practice:</i> Engineering design and environmental assessment of practice benefits to Houston Engineering, Inc. (20 hrs to Project Manager at \$184/hr for project management; 113 hours to GIS Analyst at \$90/hr for BMP placement, mapping and PTMApp analysis; 53 hours to Scientist at \$134/hr for PTMApp analysis and practice design; 330 hours to Engineer at \$134/hr for practice design)		\$ 05,000		Ŷ
Non-structural plan development and implementation and environmental assessment of practice benefits to Houston Engineering, Inc. (16 hours to Project Manager at \$184/hr for project management; 67 hours to GIS Analyst at \$90/hour for BMP placement, mapping and PTMApp analysis; 17 hours to Scientist at \$134/hr for PTMApp analysis and plan development; 10 hours to Engineer at \$134/hr for plan development)		\$ 13,000		\$ -
Implementation of field-scale demonstration sites (2) for conservation practices (installation, monitoring, maintenance) to Discovery Farms (320 hours to Technician at \$65/hr for installation, monitoring, maintenance; 60 hours to Lab Tech at \$60/hr for monitoring and data analysis; and 160 hours to Coordinator at \$85/hr for data analysis)		\$ 66,000		
Four local education and outreach events utilizing conservation practice demonstration sites (HEI: 24 hours to Project Manager at \$184/hr for assisting in events, 30 hours to Scientist at \$134/hr for assisting in events; and Discovery Farms: 30 hours to Coordinator at \$85/hr for assisting in events)		\$ 18,000		\$ -
Equipment/Tools/Supplies				
Structural practice: Bioreactors (\$9,600 per bioreactor, 2 bioreactors; media, piping, water control and partitioning structures, construction services/equipment rental; treats ~40 ac each or ~80 ac total); Grassed waterways (1,700 ft waterway = \$4,700; 4 waterways; treats ~80 ac or 200 ac total; design, construction, and seed); Sediment control basins (15 basins; treats ~40 ac each or 600 ac total; \$7,500 each; design, earthfill, tillage, fertilizer and application, seed mix, seeding); Wetlands (\$2,000/ac of wetland; 10 ac/wetland; 2 wetlands; treats ~120 ac, 240 ac total; seed and seeding, construction services, weir plate, control structure, land acquisition)		\$ 190,500		\$ -
Non-structural: Nutrient Management (\$93/acre for 1,000 ac at reduced rate of 125 lbs/ac; field plans, fertilizer application, gas, fertilizer cost); Cover crop establishment (\$43/acre for 3,000 acre; field plans, seed, planting drill, gas, herbicide, spraying)		\$ 222,000		\$-
COLUMN TOTAL		\$ 620,420		
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget		
Non-State: Watershed District Funding: In-kind Services To Be Applied To Project During Project Period: Administrative costs, office and program management cost (8% of total request: administrative total estimated amount \$49,185); Travel (500miles/year @ 58 cents/mile X 3 years: mileage total estimated amount \$870.00); food cost for events (\$300/event X 3: food total estimated amount \$900.00); food costs for local meetings (\$30/meeting X 6: food total estimated amount \$180.00)	secured	\$ 51,135		ş -
State: Clean Water Fund - Watershed Based Funding	pending	\$ 20,000		\$-







Project Manager Qualifications and Organization Description

Margaret Johnson, Middle Fork Crow River Watershed District, Administrator

The Middle Fork Crow River Watershed District is a special purpose unit of government that was established by citizen's petition in April 2005. The District exists for the protection and preservation of water quality in the Middle Fork Crow River Watershed. The District consists of a board of five Managers. Board members are appointed by County Commissioners and serve three-year terms.

The Middle Fork Crow River Watershed drains a 271 square mile area. The river begins in Stearns County in the Belgrade area and flows southward through northeast Kandiyohi County. As the river flows south it passes through the City of New London and enters Green Lake in Spicer. After the river outlets from Green Lake, it flows eastward. Water runoff from the City of Atwater and Diamond Lake enter the Middle Fork Crow River just before it crosses the Meeker County line. The river joins the North Fork Crow River east of Manannah. The North Fork Crow River eventually enters the Mississippi near Dayton.

Base funding for the Middle Fork Crow River Watershed District (MFCRWD) comes from an annual levy of \$250,000 assessed among each property owners in the watershed, roughly 4,000 parcels. The District expands local efforts without increasing costs to the property owners in the District in the form of state and federal grants.

Margaret Johnson has been with the Middle Fork Crow River Watershed District since 2012, serving as the Administrator since 2013. Since then she has administered 23 grants, three loan programs, and four Capital Improvement Projects. Since 2005, the MFCRWD has secured \$2,882,820 in grant funds requiring \$1,550,512 in match from the District.

Drew Kessler, PhD, Project Manager / Principal, Houston Engineering, Inc.

Founded in 1968 by George Houston, HEI is a full-service civil engineering firm that excels in projects related to water management in rural agricultural environments. With more than 200 staff across Minnesota, North Dakota, South Dakota, and Iowa, HEI has the capacity and commitment to contribute the success of this project.

Dr. Drew Kessler serves as Project Manager at Houston Engineering, Inc. with over 14 years of experience. Drew specializes in the areas of water resources management, surface water quality, wildlife ecology in aquatic systems, sediment source assessment, and the total maximum daily load (TMDL) process. His expertise is specifically related to the use of geographic information systems (GIS) for analyzing water resources and developing modeling systems that bring science into decision-making processes. Drew earned his doctorate in water resources science from the University of Minnesota. His doctoral work involved investigating the causes, sources, and management of excess sediment in the Minnesota River with an emphasis on riverbank erosion.