



Overview

2023 Nutrient Sensing Technology Evaluation Pilot

900 Washington St NW Preston, MN 55965 www.fillmoreswcd.org

I. Overview:

The Fillmore Soil & Water Conservation District (SWCD) is cooperating with: Minnesota Department of Agriculture (MDA), University of Minnesota Extension (UMN-Ext), & Minnesota Pollution Control Agency (MPCA) to coordinate this program funded by The Nature Conservancy (TNC) to encourage proper manure application rates and techniques.

This pilot project will help to evaluate the effectiveness and feasibility of commercially available manure nutrient sensing technology on liquid manure application systems. It will work to increase the adoption of this technology and lower the cost barrier for early adopters of this technology.

II. Eligible Applicants

Applicators of liquid manure in the following Active Karst counties: Dakota, Fillmore, Goodhue, Houston, Mower, Olmsted, Wabasha, & Winona.

- Priority will be awarded to applicators in the Root River Watershed Plan Area, Level 2 Drinking Water Supply Management Areas (DWSMA's), or townships with 10% or more wells that tested >10 mg/L in the MDA testing.
 - *Arendahl, Bennington, Black Hammer, Bloomfield, Caledonia, Castle Rock, Coates, Douglas, Empire, Farmington, Fremont, Goodhue, Hampton, Hyde Park, Marshan, Mayville, Mount Pleasant, Nevada, Nininger, Norway, Oakwood, Plainview, Preble, Ravenna, Spring Grove, St. Charles, Utica, Vasa, Vermillion, Warren, West Albany, Wilmington*

III. Eligible Activities

Purchase of hardware, software, & equipment that enables operators to perform real-time analysis of nutrients in liquid manure and variable rate nutrient applications based on the crop needs

IV. Eligible Costs

This is a cost-share grant, with maximum funding of \$10,000 (or 50%, whichever is less) towards the hardware and installation of nutrient sensing technology on liquid manure handling systems. Grantees are responsible for encumbering funds for the initial cost of the project. 75% of reimbursement will occur after initial purchase & installation, with the remaining 25% of cost-share amount paid upon completion of project participation.

- If additional financial assistance is required to complete installation, please contact Fillmore SWCD.

V. Grant Timeline

August 1st, 2023: Applications due to Fillmore SWCD
August 17th, 2023: Winning applicants approved at August 2023 Fillmore SWCD Regular Board Meeting
Fall 2023-Fall 2024: Cooperation/follow up with MDA, MPCA, U of MN-Ext, & SWCD employees for implementing and incorporating user proposed case study & experimental fields
Spr.-Summer 2024: Participate in field days to demonstrate equipment/technology
Fall 2024: Gather yield data, finalize case studies, final payments

*Timeline subject to change at the discretion of TNC and/or the Fillmore SWCD or based on equipment availability.

VI. Applicant Ranking

All applications will be ranked based on the following categories:

- A. Case Study/Research Plot Comparison Proposal (50%) (explained further in “VII Selection Criteria”)
- B. Proximity to priority watersheds, DWSMAs, and townships with 10% or more wells that tested > 10 mg/L (20%)
- C. Acres covered annually by equipment (15%)
- D. Existing technology/equipment that this new equipment will compliment (15%)

Applications received by the deadline will be scored by a panel of individuals representing the Fillmore SWCD, MDA, UMN-Ext, and/or partnering agencies. The Fillmore SWCD Board of Directors will review the ranked applications and make final grant decisions.

VII. Selection Criteria

50% of the application is based on a case study/in-field comparison that the applicant will have the opportunity to design how they see fit. The purpose of this case study is to evaluate the effectiveness and feasibility of the equipment purchased. Since each applicant has different equipment, facilities, and terrain, each proposal will be different and not a “one-size-fits-all” scenario. The purpose of this case study is to evaluate the effectiveness and feasibility of the equipment purchased in terms of improved precision nutrient/manure application and how well it can integrate into real world systems.

Applicants should be able to describe/show how they would use the technology, how it may benefit/hinder the land operator, or any other additional information that they feel would benefit their application. Applicants can work with local crop advisors or state employees to come up with maps or diagrams to explain their proposed plots/fields.

Successful Applications will need to include:

Soil Sampling Results	Yield Maps	Manure Application Rates
U of MN Recommendations	Fertilizer Rates	Manure Lab Analysis Results
As-Applied Manure Maps		

VIII. Application Materials:

Application materials can be obtained through

- Download: www.fillmoreswcd.org
- Email: aaren.mathison@fillmoreswcd.org or sara.west@fillmoreswcd.org
- In person: 900 Washington St. NW Preston, MN 55965

Mail your completed application to: Fillmore SWCD
900 Washington St NW
Preston, MN 55965

Or email completed forms to Aaren or Sara at the emails listed above.