Environment and Natural Resources Trust Fund
2010 Request for Proposals (RFP)

LCCMR ID: 044-A3

Project Title:

Sibley County Filter Strips and Tile Alternatives

LCCMR 2010 Funding Priority:

A. Water Resources

Total Project Budget: $ $57,500

Proposed Project Time Period for the Funding Requested: 3 years, 2010 - 2013

Other Non-State Funds: $ $0

Summary:

The Sibley County Filter Strip and Tile Alternatives Project will decrease soil loss, sediment and phosphorus entering the Minnesota River. Pollutants can be reduced by nearly 50% when installed.

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Location:

Region: Central

County Name: Sibley

City / Township:

_____ Knowledge Base _____ Broad App. _____ Innovation

_____ Leverage _____ Outcomes

_____ Partnerships _____ Urgency _____ TOTAL

MAIN PROPOSAL

PROJECT TITLE: Sibley County Filter Strips and Tile Alternatives

I. PROJECT STATEMENT

The most important element of this project will be the long term adoption and installation of Best Management Practices (BMPs). The state of water quality in the lower and middle Minnesota River Watershed has been suffering from high levels of bacteria, total phosphorus, nitrate + nitrite nitrogen and total suspended solids. The implementation of these alternatives would begin to reduce the pollutants that are reaching the Minnesota River from Sibley County. The implementation of this project would give landowners who are not a part of the High Island Creek, Rush River or Buffalo Creek Implementation Projects an opportunity to improve the quality of the water in Sibley County. There are 83,820 acres in this project area and it covers 22% of Sibley County. Studies that have been completed show a 50% reduction of solids entering a tile when these practices were put into place. Reducing the solids entering the tile will reduce the other pollutants that are affecting our water bodies.

Bacteria, total phosphorus and nitrate nitrogen adhere to sediment. When the amount of sediment entering the water channel is reduced bacteria will be less and water quality will improve.

Rock inlet alternatives replace an open tile intake with an inlet that is not open to the ground surface. Rock inlets have a 15'-20' trench with 4" muck pipe covered with 11/2"-2" river rock to the top of the trench. These inlets cause the water to slow, which lets the sediment settle out of the water, before entering the tile.

Slotted risers are attached to the top of existing tile intakes. The slotted riser has 3/4" or 1" holes that slowly let the water into the tile outlet. There is more maintenance with this type of structure and they cannot be driven across. Debris that accumulates around the riser has to be removed after heavy rains. Again these inlets slow the water giving the sediment and nutrients time to settle out before the water enters the tile.

The last alternative is to remove the intake and let the water percolate down to the tile. Using this method stops close to 100% of the sediment from entering the water stream. To use this alternative requires more tile in the ground.

Filter strips are strips of grass and trees and/or shrubs that slow water flow and cause contaminants like sediment, chemicals and nutrients to collect in vegetation. The nutrients and chemicals are then used by the vegetated filter strips, rather than entering water supplies and water bodies. Filter strips are often constructed along ditches, thus moving row crop operations farther from the stream. Filter strips will be an important step in reducing sediment and nutrient contamination of ditches.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Install Rock Tile Inlets and Intake Removal	Budget: $45,000.00
Result 2: Install Slotted Risers	Budget: $5,000.00
Result 3: Install Filter Strips	Budget: $7,500.00

Deliverable Completion Date June 2013

1. Installing rock tile inlets will result in a 50% reduction in solids reaching the lower and middle Minnesota River. The removal of an intake results in a 100% reduction of solids entering the watershed. When solids are reduced measurable reductions in sediment, nitrate-nitrogen, phosphorus and bacteria will also be reduced.

2. Installing slotted risers give the same results as a rock tile inlet installation.

3. Installing filter strips will filter and slow the water before reaching the ditches or streams. As the water slows the sediment will drop out. The nutrients that are in the sediment will be used by the plants in the filter strip creating cleaner water when entering our streams and rivers. When installing the filter strips, the plan is to place these in areas that will give the watershed the best chance to reduce pollutants.

III. PROJECT STRATEGY

A. Project Partners

Sibley SWCD is planning to partner with USDA Farm Service Agency (FSA) to install the 50 acres of filter strips. FSA would sign landowners to 10 or 15 year CRP contract and the project would pay an incentive of $150.00/acre when the area is planted. There would be no partners for installing the alternative tile inlets.

B. Time

It is planned to spend the $57,500.00 to upgrade 250 tile inlets and install 50 acres of filter strips over a three year period ending in June 2013. Sibley SWCD is planning to hold two open house meetings and mailings to educate landowners about this project.

C. Long-Term Strategy (if applicable)

This is a beginning for the project area. There are a lot of practices that need attention in the future. Water and sediment basins, terraces, diversions, wetland restorations, filter and buffer strips are some of the practices that will be looked at in the future as well as getting 100% of the tile inlets upgraded. Sibley SWCD will continue to look for funding opportunities in the future to further improve the water entering the lower and middle Minnesota River Watersheds.

Project Budget

IV. TOTAL PROJECT REQUEST BUDGET (*[Insert # of years for project]* years)

BUDGET ITEM	AMOUNT
Personnel:	$ -
	$ -
	$ -
Contracts:	$ -
	$ -
Equipment/Tools/Supplies:	$ -
Acquisition (Fee Title or Permanent Easements):	$ -
Travel:	$ -
Additional Budget Items:	$ 57,500
TOTAL PROJECT BUDGET REQUEST TO LCCMR	$ 57,500

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period: CRP Rental Rates are deteremined by the rate assigned to each soil type. The average rental rate in Sibley county is $160.00/ acre. The filter strips may be signed up for either 10 or 15 years. The 3 year cost for this project would be $160.00/acre X 50 acres X 3 years. CRP payments would continue another 7- 12 years.	$ 24,000	*Pending landowner elligibility.*
Other State $ Being Applied to Project During Project Period:	$ -	
In-kind Services During Project Period: Sibley SWCD Technical Assistance 10,400.00. Install 100 slotted risers X $15.00/hour X 1 hour = $1,500.00. Install rock or close inlets x $400.00/inlet x 25% cash match = $15,000.00	$ 26,900	
Remaining $ from Current Trust Fund Appropriation (if applicable):		
Funding History:	$ -	

Project Manager Qualifications

The project manager was involved in farming operations for thirty years. The past 2 1/2 years I have been promoting best management practices, including tile inlet alternatives and filter strips, for the High Island Creek and Rush River Watershed Implementation Projects. I have helped landowners plan and install over 100 intake alternatives in the last 1 ½ years. I have been partnering with FSA and NRCS to get filter strips established along ditches in the county. My educational background was engineering.

Organization Description

Sibley Soil and Water Conservation District is a legal subdivision of the state that promotes the conservation of land and water within its jurisdictional boundaries. Sibley SWCD receives its operational funding from the Board of Water and Soil Resources and Sibley County. It distributes funds and grants that will improve conservation practices in our county.