Grant Progress Report

Cover Crop Demonstration Program 2020

Grant Title: Cover Crop Demonstration - Houston County
Grant ID: C20-8214
Grantee: Root River SWCD
Fiscal Agent: Root River SWCD
Grant Day-to-Day Contact: Dave Walter

Grant Award ($): $226,000.00
Required Match (%): 10
Required Match ($): $22,600.00

Grant Execution Date: 01/15/2020
Grant End Date: 12/31/2023

	Total Budgeted	**Total Spent**	Balance Remaining*
Grant Funds	$226,000.00	**$226,000.00**	$0.00
Match Funds	$23,042.73	**$26,626.96**	($3,584.23)
Other Funds	$0.00	**$0.00**	$0.00
Total	$249,042.73	**$252,626.96**	($3,584.23)

***Grant balance remaining is the difference between the Awarded Amount and the Spent Amount. Other values compare budgeted and spent amounts.**

Budget Details

Activity Name	*Category*	*Source Type*	*Source Description*	*Budgeted*	*Spent*	*Balance Remaining*	*Match Fund?*
Administrative Activities	Administration/Coordination	Local Fund	County Levy Match	$2,000.00	$3,258.80	($1,258.80)	Y
Administrative Activities	Administration/Coordination	Current State Grant	Cover Crop Demonstration - Houston County	$1,000.00	$1,000.00	$0.00	N
Field Days and Events	Education/Information	Current State Grant	Cover Crop Demonstration - Houston	$3,000.00	$3,000.00	$0.00	N

Activity Name	*Category*	*Source Type*	*Source Description*	*Budgeted*	*Spent*	*Balance Remaining*	*Match Fund?*
			County				
Cover crop seeding using no-till methods	Non-Structural Management Practices	Current State Grant	Cover Crop Demonstration - Houston County	$38,213.66	$38,213.66	$0.00	N
Cover Crop cost share	Non-Structural Management Practices	Current State Grant	Cover Crop Demonstration - Houston County	$152,854.62	$152,854.62	$0.00	N
Cover Crop cost share	Non-Structural Management Practices	Landowner Fund	landowner match for cost share	$5,442.73	$7,642.71	($2,199.98)	Y
Soil Health Testing	Planning and Assessment	Current State Grant	Cover Crop Demonstration - Houston County	$12,000.00	$12,000.00	$0.00	N
Purchase cover crop inter-seeder	Supplies/Equipment	Current State Grant	Cover Crop Demonstration - Houston County	$8,931.72	$8,931.72	$0.00	N
Cover Crop Technical	Technical/Engineering Assistance	Local Fund	Technical Assistance	$15,600.00	$15,725.45	($125.45)	Y
Cover Crop Technical	Technical/Engineering Assistance	Current State Grant	Cover Crop Demonstration - Houston County	$10,000.00	$10,000.00	$0.00	N

Indicator Summary

Indicator Category	*Proposed Indicator*	*Total Value*	*Unit*
Water Pollution (Reduction Estimates)	Soil (Est. Savings)	1680	Tons/Yr
Water Pollution (Reduction Estimates)	Soil (Est. Savings)	960	Tons/Yr
Water Pollution (Reduction Estimates)	Sediment (Tss)	231	Tons/Yr
Water Pollution (Reduction Estimates)	Sediment (Tss)	405	Tons/Yr
Water Pollution (Reduction Estimates)	Phosphorus (Est. Reduction)	498	Lbs/Yr
Water Pollution (Reduction Estimates)	Phosphorus (Est. Reduction)	294	Lbs/Yr

Indicator Category	*Final Indicator*	*Total Value*	*Unit*
Water Pollution (Reduction Estimates)	Nitrogen	13900.69	Lbs/Yr
Water Pollution (Reduction Estimates)	Phosphorus (Est. Reduction)	142.896	Lbs/Yr
Water Pollution (Reduction Estimates)	Sediment (Tss)	111.344	Tons/Yr
Water Pollution (Reduction Estimates)	Soil (Est. Savings)	560.218	Tons/Yr

Grant Activities

Activity Name: Administrative Activities

Activity Category: Administration/Coordination | **Staff time?:** Yes

Description: Staff time to put together end of the year numbers and accounting data and input yearly data into elink, etc.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Local Fund	County Levy Match	$2,000.00	$3,258.80	($1,258.80)	06/19/2021	Y
Current State Grant	Cover Crop Demonstration - Houston County	$1,000.00	$1,000.00	$0.00	09/12/2020	N

Actual Results

CY2020 Admin Janice 22.2619 hrs @ 44.92 = 1,000.00. No admin grant funds remain. CY20 Admin Match Admin Janice 43.9881 hrs @ $44.92 = 1975.95; Asst Man Bob 10 hrs @ $55.70 = 557.00. Match has been met.
CY2021 Admin Match Admin Janice 15 hrs @ 48.39 = 725.85

Time was dedicated to creating a Cover Crop Cost Share Policy, a Soil Health Test Program Policy, an Equipment lease policy for the Kuhn Model 20.2 Broadcast Seeder, exploring and proposing custom seeding along with an agreement, preparing cost share contracts and payments, grant reconciliations and eLink reporting.

Activity Name: Cover Crop Technical

Activity Category: Technical/Engineering Assistance | **Staff time?:** Yes

Description: Staff time for technical work involving cover crop designs, field checks, soil sampling and guidance for soil health tests, consulting for inter-seeding and cover crop mixes. Root River SWCD has 2 technicians who have job approval authority for development of projects following NRCS Cover Crop (340) practice standard. Both technicians (Bob Scanlan and Dan Wermager) have been involved with projects from start to finish. Those practices have been applied to resource concerns that reduce erosion, support soil health and organic matter content, sequester excessive soil nutrients, suppress weed pressure, break pest cycles, improve soil moisture efficiency, and minimize soil compaction. In addition, Gary Larson, DC with Houston County NRCS has a high level of JAA and can sign off on projects, as needed.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Local Fund	Technical Assistance	$15,600.00	$15,725.45	($125.45)	07/02/2022	Y
Current State Grant	Cover Crop Demonstration - Houston County	$10,000.00	$10,000.00	$0.00	09/12/2020	N

Actual Results

CY20 - Dist Man Dave 2 hrs @ 60.19 = 120.38; Asst Man Bob 173.6796 hrs @ 55.70 = 9673.95. Mileage Ford 154 mi @ 0.575 = 88.55 & GMC 384 mi @ 0.305 = 117.13. All grant funds have been expended.
CY20 Match Asst Man Bob 105.5704 hrs @ $55.70 = 5880.27. Mileage 1391 @ $0.575 = 799.83 & 19 @ $0.305 = $5.80. Remaining fund balance is $8,914.10
CY21Match Asst Man Bob 111 hrs @ $60.77 = 6745.47; Admin Janice 3.25 hrs @ 48.39 = 157.27 Mileage 171 @ $0.56 = 95.76 Remaining balance $1915.60
CY2022 Match Asst Man Bob 33 hrs @ $61.85 = $2,041.05.

Under this portion of the grant, Bob spent time doing outreach to farmers, writing cover crop plans, going over plans with farmers, getting signatures, checking projects in the field, etc. He administered 22 cover crop plans/contracts, which led to 1,273.8 acres of cover crops and no-till implemented per year for three years. He also completed Before & After Surveys with each farmer who participated in the grant. Comparing the Before and After survey results, 16 of 22 farmers said they were more familiar with managing cover crops after the 3-year project, and 18 of 22 farmers said they think it has made a positive change on their farm (some said it was too early to tell).

Activity Name: Cover Crop cost share

Activity Category: Non-Structural Management Practices | **Staff time?:** No

Description: Provide flat rate cost share dollars to producers who have not implemented cover crops on a field in the last 5 years. The cost share budget would look like this:
400ac x $40/ac x 3yrs. = $48,000 for 2020, $48,000 for 2021, and $48,000 for 2022 = $144,000

This would be a one-time payment per operator and would be paid at the time of seeding the 1st year of a minimum 3 years of cover crops. Targeted producers will be those who are located within 2 miles of a DWSMA or the 6 townships where MDA nitrate testing showed higher levels of N. Initially, we will focus implementation efforts on those producers who are chopping corn silage for beef or dairy feed near a DWSMA and who have not implemented cover crops in recent years. Inter-seeding will also be offered to those producers who are interested.

Secondary targets will be soybean producers within the initial target area who implement fall cover crops and finally, after exhausting the initial target areas, producers in other areas of Houston County will have an opportunity to participate in the cover crop cost share program.

We plan to follow NRCS standards and continue to utilize the “Minnesota Cover Crop Design Worksheet” to develop projects for producers just as we have in the past. It provides good information on seeding rates, species, project objectives, etc.

We will welcome feedback from active program participants and/or use surveys during field days in order to further enhance the program going forward.

For grant match, producer time will be tracked while implementing cover crop seeding through this program. Producers may track time spent while drilling, inter-seeding, or broadcast seeding cover crops over the three year program.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Current State Grant	Cover Crop Demonstration - Houston County	$152,854.62	$152,854.62	$0.00	11/18/2021	N
Landowner Fund	landowner match for cost share	$5,442.73	$7,642.71	($2,199.98)	11/18/2021	Y

Actual Results

CY2020 Cover Crop Grant Funds in the amount of $138,000 were expended. Cover crops were installed on 1150 acres at the rate of $40.00/acre for a three year period. Remaining fund balance is $6,000.00.
CY2020 Landowner Match all matching funds requirements have been met.
2/16/21 Amended funds totaling $8,854.62 are being added from the Purchase cover crop inter-seeder Activity. Landowner Match Activity is being increased from $5,000 to $5,442.73 reflecting added cost share funds. The added cost share funds covers an additional 73.788533 acres @ $6.00/acre (Landowner contribution).
CY2021 Cover Crop Grant Funds in the amount of $14,854.62 were expended. Cover crops were installed on 123.7885 acres at the rate of $40.00/acre for a three year period. All funds are expended.
Landowner contribution @ $6/acre = $742.73 which exceeds the requirement by $2,199.98.

In total, 22 cover crop contracts were executed. Most of them were for winter rye cover crops, yet several were for diverse cover crops mixes. Most were drilled after corn silage or soybean harvest, but some were inter-seeded into standing corn or soybeans. In total, 1,273.8 acres of cover crops were seeded each year for three years with this grant. Of the 22 projects, 5 were located within 2 miles of a DWSMA, and 13 were located in one of the 6 townships that MDA targeted in their Township Nitrate Testing program. These were the priority areas for the grant. Four projects were located outside of the priority areas. See Figure 1 showing all project locations.
Attachment labeled Final Report - Cover Crop Demo Grant.

Final Indicators

Indicator	Total Value	Unit
Sediment (Tss)	111.344	Tons/Yr
Soil (Est. Savings)	560.218	Tons/Yr
Nitrogen	13900.69	Lbs/Yr
Phosphorus (Est. Reduction)	142.896	Lbs/Yr

Activity Action Name:	Solum, Jay	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 64 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The land occupier would like to reduce erosion and improve soil health on row crop acres.	Install Date: 10/23/2021
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	28.8	Bwsr Calc (Sheet And Rill)	Waterloo Creek
Sediment (Tss)	Tons/Yr	6.074	Bwsr Calc (Sheet And Rill)	Waterloo Creek
Phosphorus (Est. Reduction)	Lbs/Yr	6.986	Bwsr Calc (Sheet And Rill)	Waterloo Creek
Nitrogen	Lbs/Yr	716.7	HSPF SAM - 12 Digit HUC	Waterloo Creek

Activity Action Name:	Von Arx, Tim	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 59.788664 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health on crop acres while reducing soil erosion.	Install Date: 10/18/2021
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	6.43	Bwsr Calc (Sheet And Rill)	Thompson Creek
Sediment (Tss)	Tons/Yr	4.88	Bwsr Calc (Sheet And Rill)	Thompson Creek
Soil (Est. Savings)	Tons/Yr	90	Bwsr Calc (Sheet And Rill)	Thompson Creek
Nitrogen	Lbs/Yr	567.9	HSPF SAM - 12 Digit HUC	Thompson Creek

Activity Action Name:	King, Troy	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 15 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to provide ground cover to reduce erosion during times of the year when a feed crop or cash crop isn't growing and improve soil health.	Install Date: 09/10/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	50.1	Bwsr Calc (Sheet And Rill)	Crooked Creek
Phosphorus (Est. Reduction)	Lbs/Yr	26.44	Bwsr Calc (Sheet And Rill)	Crooked Creek
Nitrogen	Lbs/Yr	222	HSPF SAM - 12 Digit HUC	Crooked Creek
Sediment (Tss)	Tons/Yr	24.84	Bwsr Calc (Sheet And Rill)	Crooked Creek

Activity Action Name:	Mierau, Karsen	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 44.4 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to provide ground cover during times of the year when a row crop isn't grown, improve soil health.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	3.13	Bwsr Calc (Sheet And Rill)	Wildcat Creek
Soil (Est. Savings)	Tons/Yr	10.56	Bwsr Calc (Sheet And Rill)	Wildcat Creek
Sediment (Tss)	Tons/Yr	2.11	Bwsr Calc (Sheet And Rill)	Wildcat Creek
Nitrogen	Lbs/Yr	673.2	HSPF SAM - 12 Digit HUC	Wildcat Creek

Activity Action Name:	Mireau, Bob	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 36 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health while providing ground cover to reduce erosion.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Nitrogen	Lbs/Yr	126.7	HSPF SAM - 12 Digit HUC	Beaver Creek
Soil (Est. Savings)	Tons/Yr	27	Bwsr Calc (Sheet And Rill)	Beaver Creek
Phosphorus (Est. Reduction)	Lbs/Yr	5.69	Bwsr Calc (Sheet And Rill)	Beaver Creek
Sediment (Tss)	Tons/Yr	4.46	Bwsr Calc (Sheet And Rill)	Beaver Creek

Activity Action Name:	Gerard, Jeff	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 100 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health, increase water infiltration and increase organic matter while keeping soil covered more months of the year.	Install Date: 11/12/2020 Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	45	Bwsr Calc (Sheet And Rill)	Waterloo Creek
Phosphorus (Est. Reduction)	Lbs/Yr	19.33	Bwsr Calc (Sheet And Rill)	Waterloo Creek
Sediment (Tss)	Tons/Yr	14.02	Bwsr Calc (Sheet And Rill)	Waterloo Creek
Nitrogen	Lbs/Yr	1120	HSPF SAM - 12 Digit HUC	Waterloo Creek

Activity Action Name:	Meyer, Jordan	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 68 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	Improve soil health while providing erosion protection.	Install Date: 08/13/2020 Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	7.73	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Sediment (Tss)	Tons/Yr	5.66	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Nitrogen	Lbs/Yr	882.9	HSPF SAM - 12 Digit HUC	Winnebago Creek
Soil (Est. Savings)	Tons/Yr	7.48	Bwsr Calc (Sheet And Rill)	Winnebago Creek

Activity Action Name:	King, Cory	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 9 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health and provide alternative grazing/forage for beef cow herd.	Install Date: 09/10/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	5.59	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Soil (Est. Savings)	Tons/Yr	4.32	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Sediment (Tss)	Tons/Yr	4.12	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Nitrogen	Lbs/Yr	116.9	HSPF SAM - 12 Digit HUC	Winnebago Creek

Activity Action Name:	Koch, Robert	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 100 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce erosion while improving soil health.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	81	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Phosphorus (Est. Reduction)	Lbs/Yr	7.54	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Sediment (Tss)	Tons/Yr	6.02	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Nitrogen	Lbs/Yr	1298.4	HSPF SAM - 12 Digit HUC	Winnebago Creek

Activity Action Name:	McCormick, Kevin	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 33 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce erosion and improve soil health on crop land.	Install Date: 09/10/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Nitrogen	Lbs/Yr	316.3	HSPF SAM - 12 Digit HUC	Crooked Creek
Soil (Est. Savings)	Tons/Yr	29.7	Bwsr Calc (Sheet And Rill)	Crooked Creek
Phosphorus (Est. Reduction)	Lbs/Yr	18.87	Bwsr Calc (Sheet And Rill)	Crooked Creek
Sediment (Tss)	Tons/Yr	13.39	Bwsr Calc (Sheet And Rill)	Crooked Creek

Activity Action Name:	Hendel, Karl & Matt	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 61 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to increase soil health while reducing erosion.	Install Date: 09/10/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Sediment (Tss)	Tons/Yr	0.3	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Phosphorus (Est. Reduction)	Lbs/Yr	0.51	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Soil (Est. Savings)	Tons/Yr	2.44	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Nitrogen	Lbs/Yr	792	HSPF SAM - 12 Digit HUC	Winnebago Creek

Activity Action Name:	McCormick, Connor	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 28 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health and reduce erosion.	Install Date: 09/10/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Sediment (Tss)	Tons/Yr	1.04	Bwsr Calc (Sheet And Rill)	Root River
Nitrogen	Lbs/Yr	265	HSPF SAM - 12 Digit HUC	Root River
Phosphorus (Est. Reduction)	Lbs/Yr	1.59	Bwsr Calc (Sheet And Rill)	Root River
Soil (Est. Savings)	Tons/Yr	3.92	Bwsr Calc (Sheet And Rill)	Root River

Activity Action Name:	McCormick, Connor	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 36 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner and land occupier would like to improve soil health while reducing soil erosion.	Install Date: 09/10/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	1.368	Bwsr Calc (Sheet And Rill)	Crooked Creek
Sediment (Tss)	Tons/Yr	0.28	Bwsr Calc (Sheet And Rill)	Crooked Creek
Phosphorus (Est. Reduction)	Lbs/Yr	0.54	Bwsr Calc (Sheet And Rill)	Crooked Creek
Nitrogen	Lbs/Yr	345.1	HSPF SAM - 12 Digit HUC	Crooked Creek

Activity Action Name:	Hendel, Karl & Matt	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 28 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health and reduce sheet and rill erosion.	Install Date: 10/08/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	0.51	Bwsr Calc (Sheet And Rill)	Crooked Creek
Soil (Est. Savings)	Tons/Yr	1.12	Bwsr Calc (Sheet And Rill)	Crooked Creek
Sediment (Tss)	Tons/Yr	0.3	Bwsr Calc (Sheet And Rill)	Crooked Creek
Nitrogen	Lbs/Yr	297.3	HSPF SAM - 12 Digit HUC	Crooked Creek

Activity Action Name:	Green, Valiree	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 6.4 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to provide ground cover to reduce erosion while improving soil health.	Install Date: 10/08/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	0.13	Bwsr Calc (Sheet And Rill)	Thompson Creek
Sediment (Tss)	Tons/Yr	0.01	Bwsr Calc (Sheet And Rill)	Thompson Creek
Nitrogen	Lbs/Yr	56.79	HSPF SAM - 12 Digit HUC	Thompson Creek
Phosphorus (Est. Reduction)	Lbs/Yr	0.01	Bwsr Calc (Sheet And Rill)	Thompson Creek

Activity Action Name:	Schroeder, Todd	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 6 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to improve soil health while breaking up pest cycles and reducing erosion.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	0.3	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Sediment (Tss)	Tons/Yr	0.19	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Nitrogen	Lbs/Yr	77.9	HSPF SAM - 12 Digit HUC	Winnebago Creek
Soil (Est. Savings)	Tons/Yr	7.8	Bwsr Calc (Sheet And Rill)	Winnebago Creek

Activity Action Name:	Schroeder, Dean	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 150 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to implement cover crops to break up pest cycles, reduce erosion and improve soil health.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Nitrogen	Lbs/Yr	1947.5	HSPF SAM - 12 Digit HUC	Winnebago Creek
Sediment (Tss)	Tons/Yr	14.36	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Phosphorus (Est. Reduction)	Lbs/Yr	19.44	Bwsr Calc (Sheet And Rill)	Winnebago Creek
Soil (Est. Savings)	Tons/Yr	40.5	Bwsr Calc (Sheet And Rill)	Winnebago Creek

Activity Action Name:	Schroeder, Todd	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 41 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce erosion potential while improving soil health parameters.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	18.86	Bwsr Calc (Sheet And Rill)	Crooked Creek
Sediment (Tss)	Tons/Yr	4.74	Bwsr Calc (Sheet And Rill)	Crooked Creek
Phosphorus (Est. Reduction)	Lbs/Yr	6.04	Bwsr Calc (Sheet And Rill)	Crooked Creek
Nitrogen	Lbs/Yr	606.8	HSPF SAM - 12 Digit HUC	Crooked Creek

Activity Action Name:	Johnson, Eric	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 150 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce erosion potential while increasing soil health.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	12	Bwsr Calc (Sheet And Rill)	Root River
Phosphorus (Est. Reduction)	Lbs/Yr	1.16	Bwsr Calc (Sheet And Rill)	Root River
Sediment (Tss)	Tons/Yr	0.83	Bwsr Calc (Sheet And Rill)	Root River
Nitrogen	Lbs/Yr	1310	HSPF SAM - 12 Digit HUC	Root River

Activity Action Name:	Schroeder, Jason	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 150 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce erosion on hillsides while improving soil health.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Sediment (Tss)	Tons/Yr	2.36	Bwsr Calc (Sheet And Rill)	Winnebago Creek; Lower South Fork Root River; Root River
Phosphorus (Est. Reduction)	Lbs/Yr	2.85	Bwsr Calc (Sheet And Rill)	Winnebago Creek; Lower South Fork Root River; Root River
Nitrogen	Lbs/Yr	1319.9	HSPF SAM - 12 Digit HUC	Winnebago Creek; Lower South Fork Root River; Root River
Soil (Est. Savings)	Tons/Yr	90	Bwsr Calc (Sheet And Rill)	Winnebago Creek; Lower South Fork Root River; Root River

Activity Action Name:	Tessmer, Dave	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 70.2 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce soil erosion and increase soil health of crop acres.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Soil (Est. Savings)	Tons/Yr	5.6	Bwsr Calc (Sheet And Rill)	Crooked Creek
Sediment (Tss)	Tons/Yr	0.59	Bwsr Calc (Sheet And Rill)	Crooked Creek
Phosphorus (Est. Reduction)	Lbs/Yr	0.94	Bwsr Calc (Sheet And Rill)	Crooked Creek
Nitrogen	Lbs/Yr	671	HSPF SAM - 12 Digit HUC	Crooked Creek

Activity Action Name:	Kochie, Jon	Activity Count: 1
Practice Type:	340 - Cover Crop	Size/Units: 18 - Acres
TA Provider/JAA:	SWCD	Lifespan: 3 Years
Practice Description:	The landowner would like to reduce erosion while increasing soil health.	Install Date: 11/12/2020
		Mapped: Yes

Indicator Name	Units	Value	Calculation Tool	Waterbody
Phosphorus (Est. Reduction)	Lbs/Yr	1.27	Bwsr Calc (Sheet And Rill)	Thompson Creek
Nitrogen	Lbs/Yr	170.4	HSPF SAM - 12 Digit HUC	Thompson Creek
Soil (Est. Savings)	Tons/Yr	2.52	Bwsr Calc (Sheet And Rill)	Thompson Creek
Sediment (Tss)	Tons/Yr	0.77	Bwsr Calc (Sheet And Rill)	Thompson Creek

Activity Name: Cover crop seeding using no-till methods

Activity Category: Non-Structural Management Practices | **Staff time?:** No

Description: An additional $10/acre incentive payment will be made to those producers who chose to use no-till methods when establishing their cover crop. This may include no-till drilling fall cover crops, inter-seeding cover crop into standing corn, or broadcast seeding cover crop all following NRCS standards.

400 acres per year x 3 years x $10/acre = $12,000 acres in 2020, 400 acres per year x 3 years x $10/acre = $12,000 acres in 2021, and 400 acres x 3 years x $10/acre = $12,000 acres in 2022 = $36,000 to be paid at establishment of the first year of cover crop and will only be paid to producers who are enrolled in the "Cover Crop Cost Share" program.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Current State Grant	Cover Crop Demonstration - Houston County	$38,213.66	$38,213.66	$0.00	11/18/2021	N

Actual Results

CY2020 $34,500.00 was expended. 1150 acres of no till were installed at a rate of $10/acre for a three year period. Remaining fund balance is $2,500.00.
2/16/21 Amended funds totaling $2,213.66 are being added from the Purchase cover crop inter-seeder Activity.
CY2021 $3,713.66 was expended. 123.7885 acres of no till were installed at a rate of $10/acre for a three year period. All funds are expended.

All of the 22 farmers who planted cover crops through this grant also planted them using no-till methods. 1,273.8 acres of no-till planting was executed each year with this grant. See Figure 1 showing all project locations. Attachment labeled Final Report - Cover Crop Demo Grant.

Activity Name: Field Days and Events

Activity Category: Education/Information | **Staff time?:** Yes

Description: Staff time to hold educational events and field days. Send out informational mailings, etc. Bob Scanlan will be the lead from Root River SWCD for developing and holding educational field days. We plan to hold at least one event over the three year program but may hold more events as money and time permits. Scanlan and other SWCD staff will also provide informational material to local producers and work with the county extension educator to partner on additional educational opportunities as they present themselves. Field day events may include side-by-side comparisons of cover crop varieties, timing, placement, and seeding rate variables, soil health improvements over time, etc. In the past we have partnered with the Houston County Cattlemen and the University of MN. Similar partnerships are a goal with this program. Typical field day attendance in the past has resulted in 10-50 people in attendance. Our goal is to get as many people out on a farm to take in the information as possible. We also plan to include soil health information as a topic at other local workshops and/or field days sponsored by other local partners. We will educate the public as the opportunities present themselves. Surveys will be utilized as a means to evaluate outreach efforts.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Current State Grant	Cover Crop Demonstration - Houston County	$3,000.00	$3,000.00	$0.00	10/12/2023	N

Actual Results
CY2020 & 2021 No funds were expended. CY2022 Event expenses (2/8/22) $2,391 Speaker $500, Meal $1891. Remaining fund balance is $609.00.
CY2023 1st Qtr. No funds were expended.
CY2023 2nd Qtr. No funds were expended.
CY2023 3rd Qtr. Event speaker expense of $500.00 pd. on 2/15/23 was added to the expenditures. This was for the I-90 Soil Health Tour on 2/9/23. Remaining balance $109.00.
CY2023 4th Qtr - Funds ($109.00) assisted with the speaker fee for a soil health event, To Till or Not To Till, held September 16, 2023
Bob used funding from this grant to help with 3 field days/events. First was the Hokah stop of the 2022 I-90 Soil Health Tour, hosted by Root River SWCD, NRCS, Land Stewardship Project, and the MN Soil Health Coalition. Funding went towards speaker fees and food. The main presenter was Mitch Hora, who talked about soil health, cover crops, and no-till. 25-30 people were in attendance. Second was the Hokah stop of the 2023 I-90 Soil Health Tour, hosted by Root River SWCD, Land Stewardship Project, and the MN Soil Health Coalition. Funding went towards speaker fees. The main presenter was Dean Sponheim, who talked about cover crops and soil health. 25 people were in attendance. The third field day was “To Till, or Not to Till” at Connor McCormick’s farm, hosted by Connor McCormick, MDA, and Root River SWCD. Funding went towards speaker fees and food. The main presenters were Connor McCormick and Dean Sponheim, who talked about no-till, soil health, and no-till vs. conventionally established alfalfa. 30-35 people were in attendance.

Activity Name: Grant Match

Activity Category: Non-Structural Management Practices	**Staff time?:** Yes
Description: Match will be met through the use of local county levy to match state funds used for technical and/or administrative expenses tied to the grant. In addition, producer time may be tracked while implementing cover crop seeding through this program. Producers may track time spent while drilling, inter-seeding, or broadcast seeding cover crops over the three year program.	
Actual Results	

Activity Name: Purchase cover crop inter-seeder

Activity Category: Supplies/Equipment | **Staff time?:** No

Description: Through this proposal Root River SWCD will either purchase an inter-seeder or have a local machine shop build a unit. This unit would be made available to producers to either (1) lease the inter-seeder or (2) the producer could enter into contract with the District to hire the inter-seeding work done by District staff.

A policy for rental of inter-seeding equipment or the hiring of SWCD staff to operate inter-seeding equipment shall be put into place prior to program implementation. Such a policy will discuss liability insurance, payment rates, and a no-fault clause if the cover crop does not germinate at planned rates based on weather crop residue or other site conditions. Potential multi-specie seed mixes will be discussed and a single, locally approved mix may be required for simplicity. A contract will be signed similar to one we currently use to lease a mulch crimper from the SWCD.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Current State Grant	Cover Crop Demonstration - Houston County	$8,931.72	$8,931.72	$0.00	12/19/2020	N

Actual Results

CY2020 Kuhn MDS 20.2 Twin Disc Spreader =7000.00; Utility trailer $1721.72 Reg/Lic Utility Trailer = $84.00; Storage Rent = $126.00. Remaining balance $11,068.28.
The Kuhn spreader was demonstrated on three farms this past summer. One producer leased the seeder to interseed cover crop into standing corn. Other landowners have expressed interest in using the seeder on other conservation projects.
2/16/21 The Purchase cover crop inter-seeder Activity has been amended from $20,000 to $8,931.72. The amended amount of $11,068.28 is being directed to Cover Crop cost share Activity = $8,854.63 and Cover Crop seeding using no-till methods Activity = $2,213.66. Remaining fund balance is $0.

Through this grant, Bob was able to buy a broadcast inter-seeder, to be used by farmers to inter-seed cover crops into standing row crops, or so seed cover crops after row crop harvest. The seeder that was purchased is a Kuhn Model 20.2 broadcaster seeder. It was purchased for $7,000.00. A trailer was also purchased for $1,721.72 to easily transport the seeder to the renter's farm. Registration and licensing of the trailer, as well as one year of storage for the seeder and trailer was also paid for by this grant, for $210.00. The broadcast seeder was to be rented-out to farmers for $5/ac, for planting cover crops. An Inter-seeder Lease Agreement was developed. The idea was to make cover crops and inter-seeding more accessible to farmers who did not have access to a no-till seeder. Zero farmers have rented it. Ads were put in newspapers and newsletters. See Figure 4. Attachment labeled Final Report - Cover Crop Demo Grant.

Activity Name: Soil Health Testing

Activity Category: Planning and Assessment | **Staff time?:** No

Description: Soil Health Testing will be offered to participants of the “Cover Crop Demonstration Program” as a means to track improvements to soil health parameters including increases to microbial soil life. Root River SWCD will be working with Ward Lab from Kearney, Nebraska to do the analysis while SWCD staff will handle the bulk of the field sampling. Initial testing during the fall of 2020 will set a basis of existing soil health. Follow-up testing in 2023 will allow landowners to see any improvements to soil health indicators after implementing cover crops with no till methods over a three year time frame.

Grant funds will cover the SWCD technical staff costs, lab fees, postage, and equipment associated with the soil health sampling.

Budget Details

Source Type	Source Description	Budgeted	Spent	Balance Remaining	Last Transaction Date	Match Fund?
Current State Grant	Cover Crop Demonstration - Houston County	$12,000.00	$12,000.00	$0.00	12/28/2023	N

Actual Results
CY2020 Asst Man Bob 52 hrs @ 55.70 = 2896.40; Supply & Postage = 152.79; Lab Fees = 1386.00. Remaining balance $7,564.81 Ten producers authorized SWCD staff to collect soil samples for this study. Twenty-six soil samples were taken over an area of 621 acres. This averages one sample per 23 acres. The soil sample results are either emailed or mailed to the SWCD then forward to the producer. CY21 no funds were expended. CY2022 Asst Man Bob 9 hrs @ 61.85 = 556.65; Postage = 9.45; Lab Fee = 49.50; Mileage 8 @.585 = $4.68 Time was dedicated to infiltration testing. Remaining fund balance is $6,944.53.
CY2023 1st Qtr. Tech Dan 7 hrs @ $53.66 = 375.62. Remaining balance $6,568.91.
CY2023 2nd Qtr. No funds were expended.
CY2023 3rd Qtr. No funds were expended. Remaining balance $6,568.91.
CY2023 4th Qtr. Tech Dan 53.5 hrs @ $53.66 = $2,870.81 & 26.3638 hrs @ $54.88 = $1,446.84; Tech Jean 4 hrs @ $50.09 = $200.36; Admin Janice 2 hrs @ $58.74 = $117.48. Mileage 64 miles @ $0.655 = $41.92 & 67 miles @ $0.375 (State funded IRS vehicle rate) = $25.13; Storage expense $76.77; Postage = $131.10. Haney testing $1,658.50.
Ten farmers decided to enroll in voluntary Haney soil health testing. The idea was to take soil samples before and after implementing 3 years of no-till and cover crops, and see if there were any improvements to be seen in soil health parameters. As you can see in Figure 2 and Figure 3 (Attachment labeled Final Report - Cover Crop Demo Grant), almost all fields saw improvements. The Haney Soil Health Tests results show dozens of parameters. I chose to make the chart and graph to show the Soil Health Calculation parameter, because this parameter is meant to show a broad overview of soil health and quantify it. Other parameters such as soil organic matter and soil respiration also almost always improved.