



# Grant All-Detail Report Projects and Practices 2016

**Grant Title** - Crystal Lake Watershed Phosphorus Reduction Project

**Grant ID** - C16-4082

**Organization** - Blue Earth County SWCD

<b>Grant Awarded Amount</b>	<b>\$374,500.00</b>	<b>Grant Execution Date</b>	<b>3/3/2016</b>
<b>Required Match Amount</b>	\$93,625.00	<b>Grant End Date</b>	12/31/2018
<b>Required Match %</b>	25%	<b>Grant Day To Day Contact</b>	Jerad Bach

### Budget Summary

	Budgeted	Spent	Balance Remaining*
Total Grant Amount	\$374,500.00	\$66,774.71	\$307,725.29
Total Match Amount	\$100,000.00	\$14,302.83	\$85,697.17
Total Other Funds	\$0.00	\$0.00	\$0.00
<b>Total</b>	<b>\$474,500.00</b>	<b>\$81,077.54</b>	<b>\$393,422.46</b>

*\*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	Activity Category	Source Type	Source Description	Budgeted	Spent	Last Transaction Date	Matching Fund
Cover Crops	Agricultural Practices	Current State Grant	Crystal Lake Watershed Phosphorus Reduction Project	\$125,500.00	\$57,240.45	10/27/2017	N
Cover Crops	Agricultural Practices	Landowner Fund	Landowner Cash Match	\$31,375.00	\$14,302.83	10/27/2017	Y
Nutrient Removal Structures	Conservation Drainage	Current State Grant	Crystal Lake Watershed Phosphorus Reduction Project	\$60,000.00			N
Nutrient Removal Structures	Conservation Drainage	Landowner Fund	Landowner Cash Match	\$20,000.00			Y

Activity Name	Activity Category	Source Type	Source Description	Budgeted	Spent	Last Transaction Date	Matching Fund
Technical/Engineering Assistance	Technical/Engineering Assistance	Current State Grant	Crystal Lake Watershed Phosphorus Reduction Project	\$41,500.00	\$9,534.26	12/31/2017	N
Technical/Engineering Assistance	Technical/Engineering Assistance	Local Fund	Local Match	\$11,750.00			Y
Tillage/Nutrient Management	Non-Structural Management Practices	Current State Grant	Crystal Lake Watershed Phosphorus Reduction Project	\$147,500.00			N
Tillage/Nutrient Management	Non-Structural Management Practices	Landowner Fund	Landowner Cash Match	\$36,875.00			Y

### Activity Details Summary

Activity Details	Total Action Count	Total Activity Mapped	Proposed Size / Unit	Actual Size / Unit
340 - Cover Crop	2	2	182.5 AC	182.5 AC
340 - Cover Crop	1	1	136 AC	136 AC
590 - Nutrient Management	3	3	147 AC	0 AC
340 - Cover Crop	3	3	147 AC	147 AC
340 - Cover Crop	1	1	20 AC	20 AC

### Proposed Activity Indicators

Activity Name	Indicator Name	Value & Units	Waterbody	Calculation Tool	Comments
<b>Cover Crops</b>	PHOSPHORUS (EST. REDUCTION)	1436 LBS/YR	Crystal Lake	BWSR CALC (SHEET AND RILL)	
<b>Tillage/Nutrient Management</b>	PHOSPHORUS (EST. REDUCTION)	773 LBS/YR	Crystal Lake	BWSR CALC (SHEET AND RILL)	Strip Till/No Till Acres
<b>Cover Crops</b>	SOIL (EST. SAVINGS)	2160 TONS/YR	Crystal Lake	BWSR CALC (SHEET AND RILL)	

Activity Name	Indicator Name	Value & Units	Waterbody	Calculation Tool	Comments
<b>Tillage/Nutrient Management</b>	SOIL (EST. SAVINGS)	1263 TONS/YR	Crystal Lake	BWSR CALC (SHEET AND RILL)	Strip Till/No Till Acres
<b>Cover Crops</b>	SEDIMENT (TSS)	1034 TONS/YR	Crystal Lake	BWSR CALC (SHEET AND RILL)	
<b>Tillage/Nutrient Management</b>	SEDIMENT (TSS)	604 TONS/YR	Crystal Lake	BWSR CALC (SHEET AND RILL)	Strip Till/No Till Acres
<b>Nutrient Removal Structures</b>	PREVENTION	8 COUNT	Crystal Lake	Literature Value	Bioreactors reduce nitrates by 60%. Phosphorus Removal Structures reduce Phosphorus by 75-95%.
<b>Tillage/Nutrient Management</b>	PREVENTION	1200 COUNT	Crystal Lake	Other	Nutrient Management Acres: Actual applied Nitrogen and Phosphorus reduction will be used

### Final Indicators Summary

Indicator Name	Total Value	Unit
<b>SEDIMENT (TSS)</b>	214.37	TONS/YR
<b>PHOSPHORUS (EST. REDUCTION)</b>	295.13	LBS/YR
<b>SOIL (EST. SAVINGS)</b>	873.90	TONS/YR
<b>NUTRIENTS (NITRATE)</b>	3,204.30	LBS/YR

## Grant Activity

Grant Activity - Cover Crops	
<b>Description</b>	<p>First priority of this fund will be to apply for NRCS EQIP funding for Cover Crops (NRCS practice code 340). If projects that are marked as high local priority in the Crystal Lake Watershed are not funded by NRCS EQIP this fund will pick up those contracts. Projects will follow NRCS practice standards as guidelines.</p> <p>Goal is to get 1,065 acres of cover crops going in the watershed. The intent is to allow many landowners to try smaller acres with grant funds. From there the goal is landowner adoption on all acres.</p> <p>\$49.12 FY15 EQIP rate for 3 species cover crop mix We will pay 80% of the EQIP rate and landowner will match 20% This will generate 25% match for this category</p> <p><math>\\$49.12 \times 80\% = \\$39.30</math></p> <p>Grant Paid - \$125,500.00 <math>1,065 \text{ acres} \times \\$39.30 = \\$41,854.50 \times 3 \text{ yrs} = \\$125,563.50</math> (We will cap the last payment at \$125,500.00)</p> <p>Landowner Match - \$31,375.00 (The Capped amount above will be added in as match) <math>1,065 \text{ acres} \times \\$9.82 = \\$10,458.30 \times 3 \text{ yrs} = \\$31,374.90</math> Also include EQIP match for any contracts funded</p>
<b>Category</b>	AGRICULTURAL PRACTICES
<b>Start Date</b>	7-Mar-16
<b>Has Rates and Hours?</b>	No
<b>Actual Results</b>	<p>The SWCD Staff has been collecting data and preparing maps with locations for the best possible cover crop implementation. We have been meeting with landowners one on one to give information and setup contracts for cover crops. More contracts are in the works but the following contracts have been installed:</p> <p>4 Cover Crop contracts totaling 485.5 acres. Grant Funds Spent - \$57,240.45 Match Funds - \$14,302.83</p>

Activity Action - CL-CC-1FY16			
Practice	340 - Cover Crop	Count of Activities	2
Description	182.5 acre cover crop planting will be managed with a crop rotation on the same acres for 3 years.		
Proposed Size / Units	182.50 AC	Lifespan	3 Years
Actual Size/Units	182.50 AC	Installed Date	31-Aug-17
Mapped Activities	2 Polygon(s)		

Final Indicator for CL-CC-1FY16

Indicator Name	NUTRIENTS (NITRATE)	Value	1204.5
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	Calculation Tool	Literature Value
Waterbody	Crystal Lake		

Final Indicator for CL-CC-1FY16

Indicator Name	SEDIMENT (TSS)	Value	90.81
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	Calculation Tool	BWSR CALC (SHEET AND RILL)
Waterbody	Crystal Lake		

Final Indicator for CL-CC-1FY16

Indicator Name	PHOSPHORUS (EST. REDUCTION)	Value	122.54
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	Calculation Tool	BWSR CALC (SHEET AND RILL)
Waterbody	Crystal Lake		

Final Indicator for CL-CC-1FY16

Indicator Name	SOIL (EST. SAVINGS)	Value	328.5
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	Calculation Tool	BWSR CALC (SHEET AND RILL)
Waterbody	Crystal Lake		

Activity Action - CL-CC-2FY16			
Practice	340 - Cover Crop	Count of Activities	3
Description	147 acre cover crop planting will be managed with a crop rotation on the same acres for 3 years.		
Proposed Size / Units	147.00 AC	Lifespan	3 Years
Actual Size/Units	147.00 AC	Installed Date	30-Aug-17
Mapped Activities	3 Polygon(s)		

Final Indicator for CL-CC-2FY16

Indicator Name	NUTRIENTS (NITRATE)	Value	970.2
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	Calculation Tool	Literature Value
Waterbody	Crystal Lake		

Final Indicator for CL-CC-2FY16

Indicator Name	SOIL (EST. SAVINGS)	Value	264.60
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<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	<b>Calculation Tool</b>	BWSR CALC (SHEET AND RILL)
<b>Waterbody</b>	Crystal Lake		
<b>Final Indicator for CL-CC-2FY16</b>			
<b>Indicator Name</b>	PHOSPHORUS (EST. REDUCTION)	<b>Value</b>	98.71
<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	<b>Calculation Tool</b>	BWSR CALC (SHEET AND RILL)
<b>Waterbody</b>	Crystal Lake		
<b>Final Indicator for CL-CC-2FY16</b>			
<b>Indicator Name</b>	SEDIMENT (TSS)	<b>Value</b>	73.14
<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	<b>Calculation Tool</b>	BWSR CALC (SHEET AND RILL)
<b>Waterbody</b>	Crystal Lake		

<b>Activity Action - CL-CC-3FY16</b>			
<b>Practice</b>	340 - Cover Crop	<b>Count of Activities</b>	1
<b>Description</b>	20 acre cover crop planting will be managed with a crop rotation on the same acres for 3 years.		
<b>Proposed Size / Units</b>	20.00 AC	<b>Lifespan</b>	3 Years
<b>Actual Size/Units</b>	20.00 AC	<b>Installed Date</b>	30-Aug-17
<b>Mapped Activities</b>	1 Polygon(s)		

<b>Final Indicator for CL-CC-3FY16</b>			
<b>Indicator Name</b>	NUTRIENTS (NITRATE)	<b>Value</b>	132
<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	<b>Calculation Tool</b>	Literature Value
<b>Waterbody</b>	Crystal Lake		
<b>Final Indicator for CL-CC-3FY16</b>			
<b>Indicator Name</b>	SOIL (EST. SAVINGS)	<b>Value</b>	36
<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	<b>Calculation Tool</b>	BWSR CALC (SHEET AND RILL)
<b>Waterbody</b>	Crystal Lake		
<b>Final Indicator for CL-CC-3FY16</b>			
<b>Indicator Name</b>	PHOSPHORUS (EST. REDUCTION)	<b>Value</b>	13.43
<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	<b>Calculation Tool</b>	BWSR CALC (SHEET AND RILL)
<b>Waterbody</b>	Crystal Lake		
<b>Final Indicator for CL-CC-3FY16</b>			
<b>Indicator Name</b>	SEDIMENT (TSS)	<b>Value</b>	9.95
<b>Indicator Subcategory/Units</b>	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	<b>Calculation Tool</b>	BWSR CALC (SHEET AND RILL)
<b>Waterbody</b>	Crystal Lake		

Activity Action - CL-CC-4FY16			
Practice	340 - Cover Crop	Count of Activities	1
Description	136 acre cover crop planting will be managed with a crop rotation on the same acres for 3 years.		
Proposed Size / Units	136.00 AC	Lifespan	3 Years
Actual Size/Units	136.00 AC	Installed Date	31-Aug-17
Mapped Activities	1 Polygon(s)		

**Final Indicator for CL-CC-4FY16**

Indicator Name	NUTRIENTS (NITRATE)	Value	897.6
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	Calculation Tool	Literature Value
Waterbody	Crystal Lake		

**Final Indicator for CL-CC-4FY16**

Indicator Name	PHOSPHORUS (EST. REDUCTION)	Value	60.45
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) LBS/YR	Calculation Tool	BWSR CALC (SHEET AND RILL)
Waterbody	Crystal Lake		

**Final Indicator for CL-CC-4FY16**

Indicator Name	SOIL (EST. SAVINGS)	Value	244.80
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	Calculation Tool	BWSR CALC (SHEET AND RILL)
Waterbody	Crystal Lake		

**Final Indicator for CL-CC-4FY16**

Indicator Name	SEDIMENT (TSS)	Value	40.47
Indicator Subcategory/Units	WATER POLLUTION (REDUCTION ESTIMATES) TONS/YR	Calculation Tool	BWSR CALC (SHEET AND RILL)
Waterbody	Crystal Lake		

**Grant Activity - Nutrient Removal Structures**

<p><b>Description</b></p>	<p>First priority of this fund will be to apply for NRCS EQIP funding for Denitrifying Bioreactors (NRCS practice code 747) and Phosphorus Removal Structures (NRCS practice code 782 – Vermont). If projects that are marked as high local priority in the Crystal Lake Watershed are not funded by NRCS EQIP this fund will pick up those contracts. Projects will follow NRCS practice standards.</p> <p>Goal is to get 4 of each structure installed in key areas of the watershed. The intent is to allow local landowners to receive cost share to try these practices which to date have not been implemented in the watershed. Phosphorus Removal structure practice code 782 is currently not available in Minnesota. This funding will allow us to try this NRCS practice in Minnesota.</p> <p>Install 4 Phosphorus Removal Systems at an estimated \$10,000 each = \$40,000 covering 75% cost share. Estimated grant paid \$30,000</p> <p>Install 4 Denitrifying Bioreactors at an estimated \$10,000 each = \$40,000 covering 75% cost share. Estimated grant paid \$30,000</p> <p>Total item budget \$60,000 Landowner match \$20,000</p>	
<p><b>Category</b></p>	<p>CONSERVATION DRAINAGE</p>	
<p><b>Start Date</b></p>	<p>7-Mar-16</p>	<p><b>End Date</b></p>
<p><b>Has Rates and Hours?</b></p>	<p>No</p>	
<p><b>Actual Results</b></p>	<p>SWCD Staff are working with landowners and the drainage authority to get the best locations for installation of structures.</p>	



**Grant Activity - Technical/Engineering Assistance**

<p><b>Description</b></p>	<p>This fund will help pay for the cost of designing the phosphorus removal structures and the denitrifying bioreactors. The local TSA will oversee these designs. The TSA Engineer will be providing the technical approval authority.</p> <p>This fund will also help pay for staff time to set up the nutrient management plans, the strip till and no till plans, and cover crop designs and guidance for landowners. Actual rates for each staff person will be used and those rates will change yearly.</p> <p>Grant Paid - \$41,500.00</p> <p>Local Match - \$11,750.00</p> <p>Some staff time for contacting landowners and setting up projects will also be counted as local match.</p>	
<p><b>Category</b></p>	<p>TECHNICAL/ENGINEERING ASSISTANCE</p>	
<p><b>Start Date</b></p>	<p>7-Mar-16</p>	<p><b>End Date</b></p>
<p><b>Has Rates and Hours?</b></p>	<p>Yes</p>	
<p><b>Actual Results</b></p>	<p>The SWCD Staff have been collecting data and preparing maps for the best possible project locations. We have been meeting with landowners one on one to give information and setup contracts for strip till, no till, cover crops and nutrient management. Actual hours worked are as follows:</p> <p>7/1/17 – 9/30/17</p> <p>Jerad 66 hrs @ \$47.90/hr = \$3,161.40</p> <p>John 4 hrs @ \$44.93/hr = \$179.72</p> <p>Holly 203 hrs @ \$23.22/hr = \$4,713.66</p> <p>10/1/17 – 12-31-17</p> <p>Jerad 5.5 hrs @ \$47.90/hr = \$263.45</p> <p>John 2 hrs @ \$44.93/hr = \$89.86</p> <p>Holly 48.5 hrs @ \$23.22/hr = \$1,126.17</p> <p>Category Total Spent = \$9,534.26</p>	



<b>Description</b>	<p>First priority of this fund will be to apply for NRCS EQIP funding for Nutrient Management (NRCS practice code 590) and Strip Till/No Till practices (NRCS practice code 329). If projects that are marked as high local priority in the Crystal Lake Watershed are not funded by NRCS EQIP this fund will pick up those contracts. Projects will follow NRCS practice standards as guidelines.</p> <p>Goal is to get 1,200 acres of nutrient management and 800 acres of Strip Till/No Till going. The intent is to allow many landowners to try smaller acres with grant funds. From there the goal is landowner adoption on all acres. These contracts will be for 3 years.</p> <p>FY15 EQIP Rates (80%/20%)        \$8.17 Nutrient Management Basic (\$6.54/\$1.63)        \$21.39 Nutrient Management Enhanced (\$17.11/\$4.28)        \$40.85 Nutrient Management Enhanced with VRT (\$32.68/\$8.17)        \$11.71 Strip Till/No Till (\$9.37/\$2.34)</p> <p>We will pay 80% of the EQIP rate and landowner will match 20%. This will generate 25% match for this category.</p> <p>Grant Paid - \$147,500.00</p> <p>Landowner Match - \$36,875.00        Also include EQIP match for any contracts funded</p>
<b>Category</b>	NON-STRUCTURAL MANAGEMENT PRACTICES
<b>Start Date</b>	7-Mar-16 <b>End Date</b>
<b>Has Rates and Hours?</b>	No
<b>Actual Results</b>	<p>The SWCD Staff has been collecting data and preparing maps with locations for the best possible no till/nutrient management implementation. We have been meeting with landowners one on one to give information and setup contracts for no till/nutrient management plans. We are working with landowners to finalize their no till and nutrient management plans before encumbering contracts. Currently we have the following encumbered:</p> <p>1 Nutrient Management Contract for 147.0 acres.        \$0.00 has been paid out.</p>

Activity Action - CL-NM-2FY16			
Practice	590 - Nutrient Management	Count of Activities	3
Description			
Proposed Size / Units	147.00 AC	Lifespan	3 Years
Actual Size/Units	AC	Installed Date	
Mapped Activities	3 Polygon(s)		

### Grant Attachments

Document Name	Document Type	Description
<b>2016 Competitive Grant</b>	Grant Agreement	2016 Competitive Grant - Blue Earth County SWCD
<b>2016 Competitive Grant executed</b>	Grant Agreement	2016 Competitive Grant - Blue Earth County SWCD
<b>All Details Report</b>	Workflow Generated	Workflow Generated - All Details Report - 01/12/2018
<b>All Details Report</b>	Workflow Generated	Workflow Generated - All Details Report - 03/23/2017
<b>All Details Report</b>	Workflow Generated	Workflow Generated - All Details Report - 02/13/2018
<b>All Details Report</b>	Workflow Generated	Workflow Generated - All Details Report - 01/26/2017
<b>Application</b>	Workflow Generated	Workflow Generated - Application - 08/28/2015
<b>Crystal Lake Watershed Sandy Soils</b>	Grant	Crystal Lake Watershed Phosphorus Reduction Project
<b>NRCS 782 Practice Standard</b>	Grant	Crystal Lake Watershed Phosphorus Reduction Project
<b>Work Plan</b>	Workflow Generated	Workflow Generated - Work Plan - 12/16/2015
<b>Work Plan</b>	Workflow Generated	Workflow Generated - Work Plan - 02/22/2016
<b>grantmap_14699_2015-08-27_03-24-19-PM.jpg</b>	Grant	Crystal Lake Watershed Phosphorus Reduction Project