



# 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        | \$0.00        | \$374,500.00        |
| Total Match Amount | \$100,000.00        | \$0.00        | \$100,000.00        |
| Total Other Funds  | \$0.00              | \$0.00        | \$0.00              |
| <b>Total</b>       | <b>\$474,500.00</b> | <b>\$0.00</b> | <b>\$474,500.00</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 | Match |
|---------------|------------------------|---------------------|---|--------------|-------|-----------------------|-------|
| Cover Crops   | Agricultural Practices | Current State Grant | Crystal Lake Watershed Phosphorus Reduction Project | \$125,500.00 |       |                       | N     |
| Cover Crops   | Agricultural Practices | Landowner Fund      | Landowner Cash Match                                | \$31,375.00  |       |                       | Y     |

| Activity Name                    | Activity Category                   | Source Type         | Source Description                                  | Budgeted     | Spent | Last Transaction Date | Match |
|----------------------------------|-------------------------------------|---------------------|---|--------------|-------|-----------------------|-------|
| 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     |
| Technical/Engineering Assistance | Technical/Engineering Assistance    | Current State Grant | Crystal Lake Watershed Phosphorus Reduction Project | \$41,500.00  |       |                       | 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 |
|------------------|--------------------|-----------------------|----------------------|--------------------|
|------------------|--------------------|-----------------------|----------------------|--------------------|

### 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 |

| Activity Name                      | Indicator Name      | Value & Units | Waterbody    | Calculation Tool           | Comments   |
|------------------------------------|---------------------|---------------|--------------|----------------------------|--|
| <b>Cover Crops</b>                 | SOIL (EST. SAVINGS) | 2160 TONS/YR  | Crystal Lake | BWSR CALC (SHEET AND RILL) |  |
| <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 |
|----------------|-------------|------|
|----------------|-------------|------|

## 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<br/>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<br/><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)<br/><math>1,065 \text{ acres} \times \\$9.82 = \\$10,458.30 \times 3 \text{ yrs} = \\$31,374.90</math><br/>Also include EQIP match for any contracts funded</p> |
| <b>Category</b>             | AGRICULTURAL PRACTICES  |
| <b>Start Date</b>           | 7-Mar-16 <b>End Date</b>  |
| <b>Has Rates and Hours?</b> | No  |
| <b>Actual Results</b>       | <p>2016 – No Funds Spent</p> <p>The SWCD Staff have been collecting data and preparing maps with locations for the best possible cover crop implementation. We have started preparing forms and reports as well as setting up landowner meetings. Almost all contracts will be encumbered in 2017 as we start making final plans with landowners.</p>   |

**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<br/>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>2016 - No Funds Spent</p>   |                        |

**Grant Activity - Technical/Engineering Assistance**

**Description**

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.

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.

Grant Paid - \$41,500.00

Local Match - \$11,750.00

Some staff time for contacting landowners and setting up projects will also be counted as local match.

**Category**

TECHNICAL/ENGINEERING ASSISTANCE

**Start Date**

7-Mar-16

**End Date**

**Has Rates and Hours?**

Yes

**Actual Results**

2016 – No Funds Spent

The SWCD Staff have been collecting data and preparing maps for the best possible project locations. We have started preparing forms and reports as well as setting up landowner meetings. Almost all contracts will be encumbered in 2017 as we start making final plans with landowners.

**Grant Activity - Tillage/Nutrient Management**

**Description**

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.

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.

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)

We will pay 80% of the EQIP rate and landowner will match 20%. This will generate 25% match for this category.

Grant Paid - \$147,500.00

Landowner Match - \$36,875.00  
 Also include EQIP match for any contracts funded

**Category**

NON-STRUCTURAL MANAGEMENT PRACTICES

**Start Date**

7-Mar-16

**End Date**

**Has Rates and Hours?**

No

**Actual Results**

2016 – No Funds Spent  
 The SWCD Staff have been collecting data and preparing maps with locations for the best possible tillage/nutrient management implementation. We have started preparing forms and reports as well as setting up landowner meetings. Almost all contracts will be encumbered in 2017 as we start making final plans with landowners.

## 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>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 |