



# 319/Clean Water Partnership (CWP)/ Total Maximum Daily Loads

Semi-Annual Report for Reporting Year 2013

*Doc Type: Semi-Annual Report*

- Reporting Period:  January 1 through June 30 (Due August 1)  
 July 1 through December 31 (Due February 1)

All information is required by U.S. Environmental Protection Agency (EPA). Do not leave blanks. This report form can be typed using your computer. Use the "tab" key to move through the fields of this form. Enter responses using text and check boxes as indicated. Keep a copy for your records.

## I. General Report Information

1. Project title: Fulda Phosphorus Reduction Initiative
2. Project sponsor: Heron Lake Watershed District
3. Project representative: Jan Voit, District Administrator
4. E-mail address: jan.voit@mysmbs.com
5. Funding:  319  CWP  Clean Water Legacy/Clean Water Fund  Other: \_\_\_\_\_
6. Contract number: 36250 PRJ number: PRJ07838
7. MPCA Project Manager: Katherine Pekarek-Scott
8. Contract start date (mm/dd/yyyy): 1/1/2011 Contract end date (mm/dd/yyyy): 8/30/2015

**The following six questions refer to the lists on the Minnesota Pollution Control Agency (MPCA) website following this report form:**

9. Best Management Practices (BMPs): Raingarden/bioretenion basin

10. Primary and Secondary Categories of Pollution:

	Primary	Secondary	Others
<b>Category</b> (name only)	Urban Runoff/Stormwater	Residential	NA

11. Nonpoint Source (NPS) Functional Category:

	Primary	Secondary	Others
<b>Category</b> (name only)	BMP Design/Implementation	Local Education/Information Programs	NA

12. Waterbody type: Lakes

13. Type of pollutant(s) (use name, not code #s): Phosphorus

14. Ecoregion: Western Corn Belt Plains

15. Hydrologic unit code (12 digits): 071000010604 Latitude-longitude: 43°46'39"N, 95°27'44"W

16. Basin name (check all that apply):  Statewide

- Lake Superior
- Lower Mississippi/Cedar
- Upper Mississippi
- Minnesota
- Rainy
- Red River
- Des Moines
- Missouri
- St. Croix

## II. Project Description

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### 1. Project Description Summary (taken from work plan summary) – Include at least two paragraphs that briefly summarize the project scope, the processes and the events that occurred before this reporting period.

The City of Fulda is located at the north end of the Heron Lake Watershed District (HLWD) and includes two lakes, First Fulda Lake and Second Fulda Lake. Land use within the Fulda Lakes subwatershed is primarily agricultural in nature. In addition, the majority of the City of Fulda contains impervious surfaces such as streets, parking lots, roof tops, and compacted lawns, which contribute to stormwater runoff. The water from Fulda Lakes' outlets to a major tributary and eventually drains to Heron Lake.

Through this effort, project sponsors will conduct a rain garden demonstration project to work with the community to address pollution concerns. This will be done by providing educational opportunities for students and the community to learn about native vegetation, water quality improvement, pollution reduction, and environmentally-friendly landscaping. This project will provide opportunities for students to learn about the importance of water quality improvement and how they can play a part in pollution reduction efforts. There are several reasons why this project is occurring and will be successful.

First, the community is concerned about their lake system and has requested assistance from the HLWD. One successful effort that was implemented involved high school students taking soil samples and providing the landowners with nutrient information.

Secondly, the majority of landowners and operators in this subwatershed are concerned about soil health and water quality. These residents have been involved in a redetermination of benefits for Murray County Judicial Ditch #13, filter strip installation, and other conservation efforts. Landowners were receptive to conservation practices along the ditch system. The success of this effort led the HLWD apply for 319 funding to provide landowners within this subwatershed with funding for conservation tillage incentives and shoreline restoration demonstration projects. That grant project complements Department of Natural Resources (DNR) efforts for in-lake management (replace fixed-crest dam with a variable-crest structure, manipulate water levels, fish eradication, and fish stocking).

Thirdly, Fulda Lakes 1 and 2 were placed on the Total Maximum Daily Load (TMDL) list in 2008 for nutrient and eutrophication biological indicators. Stormwater runoff contributes to these impairments. Water quality data shows that small rain gardens save one pound of phosphorus per one-inch rain event or 50 to 80 percent and 90 to 100 percent of the heavy metals, petroleum, and bacteria found in stormwater. Rain gardens also have been found to reduce stormwater flows by 80 to 90 percent.

Lastly, City of Fulda residents were invited to participate in a Social Indicators Pilot Project in 2009 by completing a survey. This was an effort to gauge public opinion regarding water quality efforts conducted in the Fulda Lakes' project area. Rain gardens were identified as something about which the landowners wanted to learn.

Not unlike other rural watersheds, there are several pollution issues that have been well documented in various reports. In 1992, a diagnostic study reported that in-lake loading of nutrients is a problem in the Heron Lake watershed. The report stated the major problems in this watershed:

- Drainage and the speed of water as it travels through the watershed. Flooding causes erosion, dramatically impacting water quality.
- Urban sources of pollution from point sources and stormwater runoff are a major problem in this system, particularly in the Okabena subwatershed.
- Tillage practices and lack of vegetative cover, riparian and field buffer strips, and windbreaks is another concern for the watershed.
- Compliance with feedlot rules (MN Rules 7020), ordinances and nutrient management requirements (including manure spreading), and septic waste rules (MN Rules 7080).

The Heron Lake watershed, of which the Fulda Lakes are a subwatershed, drains to the West Fork Des Moines River (WFDMR) in Cottonwood County. The results of a WFDMR Clean Water Partnership diagnostic study, funded by the Minnesota Pollution Control Agency (MPCA), showed that approximately 58,000 tons of total suspended solids, 10 million pounds of nitrogen, and 485,000 pounds of phosphorus passed through Jackson, Minnesota in 2001.

### 2. Specific Project Goals – Include numeric, quantifiable goals for environmental improvement, the number of Best Management Practices to be installed, pollutant reductions as well as programmatic and social goals.

*Overall Goal:* Instill a sense of personal responsibility for the two lakes in the Fulda area by engaging local organizations and the general public in the awareness of effect of water pollution to the Fulda Lakes through unique educational displays, hands-on opportunities, and various printed media.

*Project Goal 1:* Provide educational materials and information to approximately 50 individuals.

*Project Goal 2:* Hire landscaper(s) to install five rain gardens within the City of Fulda.

*Project Goal 3:* Coordinate the planting of five rain gardens within the City of Fulda.

*Project Goal 4:* Increase community awareness through an open house, newsletter, and by other news

media.

### 3. Methods to achieve Goals:

#### Objective 1: Classroom teaching

##### *Task A: Develop educational materials and presentations*

- HLWD staff will develop educational materials, fact sheets, and presentations based on publications by the University of Wisconsin Extension and by the Capitol Region Watershed District. HLWD staff will be responsible for conducting presentations and distributing educational materials to local organizations showing interest in the project such as, but not limited to, 4-H clubs, the Fulda City Council, Fulda Heritage Society, Fulda Game and Fish, and Prairie Ecology Bus Center (PEBC) education event participants.
- Pre- and post-tests will be taken by the youth participants of the local organizations involved in the rain garden installation projects to determine if the project resulted in increased awareness of water pollution, rain gardens, and Fulda Lake.

#### Objective 2: Rain Garden Demonstration Sites

##### *Task A: Design and development of five rain gardens*

- HLWD staff will contact landowners within the City of Fulda and locate sites for rain garden installation. Landowners would be required to sign a cooperators agreement that would provide detailed information about project maintenance, length, and funding, as well as sign installation.
- The HLWD, under the supervision of the HLWD Watershed Technician, will be responsible for rain garden design and development.
- The HLWD technician and summer interns will be responsible for designing the rain gardens. The primary obstacle in rain garden installation is lack of aesthetic appeal. Having HLWD staff design the rain gardens provides guidelines for installation. These guidelines will offer an opportunity for staff to learn about the benefits and practicality of rain gardens.
- At the end of the grant, landowners will complete a questionnaire regarding the effectiveness of the partnership and whether this project increased interest in rain garden installations and a better understanding of the importance of water quality.
- A contact list will also be developed for landowners who are interested in experienced rain garden installers.

##### *Task B: Install five rain gardens*

- HLWD staff will be responsible for working with local organizations interested in the project to install five rain gardens in highly visible locations within the City of Fulda. The rain gardens will be installed during four sessions approximately one hour in length. It is anticipated that one would be installed in 2012, two would be installed in 2013, and two would be installed in 2014.
- HLWD soils are composed of too much clay to allow for adequate filtration. Landscapers would excavate the rain garden area and replace with a mixture of 70 percent sand and 30 percent organic compost.
- Master Gardeners will assist with installation and provide some maintenance by weeding the gardens during the first year.
- HLWD staff, summer interns, and landowners/volunteers will assist with establishment and preservation of the rain gardens throughout the grant period.
- Through photos and a spreadsheet, those involved with the rain garden installation will be documented.

#### Objective 3: Increase community awareness

##### *Task A: Organize and host open house*

- HLWD staff will organize and host a rain garden open house. An advertisement for the open house will be published in the *Fulda Free Press*. A self-guided tour of the rain garden sites will be held. Cookies, water, and lemonade will be served.
- A sign in sheet and photos will be used to document attendees.

##### *Task B: Newsletter*

- The open house will be advertised through a newsletter. This newsletter would be distributed to 3,400 Heron Lake watershed residents, agency personnel, and legislators.

##### *Task C: Promotion*

- The open house will be promoted through an advertisement in the *Fulda Free Press* news releases submitted to local media outlets, other organization's newsletters, flyers in local governmental offices, businesses, and the HLWD website.
- HLWD staff will assure that project results are available through newspaper columns, fact sheets, research reports, newsletters, websites, and speaking engagements.

##### *Task D: Signs*

- A sign identifying the types of plants established at each of the sites will be installed at Seven

Mile Park to increase community awareness.

- Signs identifying project locations and cooperators will be installed at each of the five sites.

*Task E: Website*

- Photos and video footage from classroom presentations, rain garden installation, and the rain garden open house will be posted on the HLWD website.

**Objective 4: Administration**

*Task A: Complete reporting requirements*

- The District Administrator will be responsible for grant administration according to grant agreement guidelines. All aspects of the rain garden installation and community awareness would be completed by HLWD staff and project partners. Research results will be made available through the reporting process. The District Administrator will ensure that a Quality Assurance Project Plan (QAPP), semi-annual, annual, and final reports are submitted in a timely manner.

### III. Semi-annual Report Information

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**1. Project activities completed during last six (6) months according to the program elements or tasks:**

Objective 1. Task A: A presentation regarding pollution prevention and rain gardens was given to the Slayton Kiwanis Club on September 11, 2013.

Objective 1. Task A: A presentation regarding pollution prevention and rain gardens was given to Fulda High School students on October 9, 2013.

Objective 2. Task A. Ross Behrends met with Nick Bancks and Amanda Schultz regarding rain garden plans on July 1, 2013.

Objective 2. Task A. Nick Bancks and Amanda Schultz developed design templates for rain gardens, developed a contractor form, and made flower selections on July 2, 2013.

Objective 2. Task A. Jan Voit and Ross Behrends reviewed the contractor form on July 2, 2013.

Objective 2. Task A. Ross Behrends developed project packets for the contractor on July 8, 2013.

Objective 2. Task A. Amanda Schultz made phone calls about signs and plants on July 9, 2013.

Objective 2. Task A. Ross Behrends met with the contractor to go over the project and get the bid on July 9, 2013.

Objective 2. Task A. Amanda Schultz worked on the plant order and plant research on July 11, 2013.

Objective 2. Task A. Amanda Schultz worked on the signs, plant list, and contacted landowners on July 15, 2013.

Objective 2. Task A. Ross Behrends reviewed the plant list and sign on July 15, 2013.

Objective 2. Task A. Amanda Schultz determined plant allocations on July 16, 2013.

Objective 2. Task A. Amanda Schultz worked on the plant order and sign design on July 22, 2013.

Objective 2. Task A. Amanda Schultz submitted the plant order on July 24, 2013.

Objective 2. Task A. Nick Bancks worked on rain garden planting plans on July 24, 2013.

Objective 2. Task B. Jan Voit developed a news release and flyer on July 10, 2013 to promote the Rain Garden Field Trip at which rain garden installation will be conducted.

Objective 2. Task B. Jan Voit distributed the flyer and news release on July 17, 2013.

Objective 2. Task B. Jan Voit called Hy-Vee and Subway to get quotes for sack lunches for the Rain Garden Field Trip on July 24, 2013.

Objective 2. Task B. Nick Bancks and Amanda Schultz picked up and delivered the rain garden plants on July 25, 2013.

Objective 2. Task B. Jan Voit discussed the Rain Garden Field Trip with Chrystal Dunker, Prairie Ecology Bus Center on July 25, 2013.

Objective 2. Task B. Nick Bancks and Amanda Schultz conducted rain garden preservation at the Brown's on July 29, 2013.

Objective 2. Task B. Nick Bancks and Amanda Schultz delineated rain gardens on July 30, 2013.

Objective 2. Task B. Ross Behrends met with the contractor on August 1, 2013.

Objective 2. Task B. Amanda Schultz submitted GopherOne digging tickets on August 3, 2013.

Objective 2. Task B. Amanda Schultz prepared and purchased tools for the Rain Garden Field Trip on August 5, 2013.

Objective 2. Task B. Amanda Schultz and Nick Bancks conducted rain garden preservation on August 6, 2013.

Objective 2. Task B. Nick Bancks and Amanda Schultz prepared for the Rain Garden Field Trip on August 7, 2013.

Objective 2. Task B. Ross Behrends prepared for the Rain Garden Field Trip on August 7, 2013.

Objective 2. Task B. Amanda Schultz prepared for the Rain Garden Field Trip on August 8, 2013.

Objective 2. Task B. Due to inclement weather, the Rain Garden Field Trip was postponed. Jan Voit and Ross Behrends contacted registrants regarding the postponement on August 8, 2013.

Objective 2. Task B. On August 15, 2013, the HLWD hosted a rain garden field trip in partnership with the Prairie Ecology Bus Center (PEBC). The purpose of the tour was to provide an educational and hands-on rain garden experience for children and adults. Stops were made at two existing rain garden and shoreline restorations during the morning. Following lunch participants assisted HLWD with planting the rain gardens while learning more about the significance of rain gardens and water quality. Two rain gardens were planted. There were 23 people in attendance.

Objective 2. Task B. Jan Voit got lunches at Subway in Windom and delivered them to tour attendees on August 15, 2013.

Objective 2. Task B. Amanda Schultz and Nick Bancks planted two rain gardens on August 19, 2013.

Objective 2. Task B. Amanda Schultz and Nick Bancks planted one rain garden on August 20, 2013.

Objective 2. Task B. Ross Behrends met with the contractor to discuss project issues and checkout on August 20, 2013.

Objective 2. Task B. Jan Voit drafted a Rain Garden Field Trip attendees spreadsheet on August 22, 2013.

Objective 2. Task B. Amanda Schultz and Nick Bancks mulched rain gardens on August 26, 2013.

Objective 2. Task B. Amanda Schultz and Nick Bancks mulched rain gardens on August 27, 2013.

Objective 2. Task B. Nick Bancks conducted rain garden preservation on September 4, 2013.  
 Objective 2. Task B. Ross Behrends conducted rain garden site checks on September 10, 2013.  
 Objective 3. Task C. Jan Voit proofread the newspaper article on August 20, 2013.  
 Objective 3. Task C. The newspaper article was published in the *Tri County News* and *Fulda Free Press* on August 28, 2013.  
 Objective 3. Task D. Nick Bancks and Amanda Schultz worked on the rain garden sign design on July 23, 2013.  
 Objective 3. Task D. Nick Bancks and Amanda Schultz prepared the site for sign installation on August 7, 2013.  
 Objective 3. Task D. Nick Bancks and Amanda Schultz installed the sign at Seven Mile Park on August 14, 2013.  
 Objective 3. Task D. Chrystal Dunker, PEBC contacted Jan Voit on September 5, 2013 to request payment for laminating the poster that was put in the Seven Mile Park sign.

Objective 3. Task E. Jan Voit updated the webpage on July 17, 2013.  
 Objective 3. Task E. Jan Voit updated the webpage on August 27, 2013.

Objective 4. Task A. Jan Voit submitted the semi-annual report on July 10, 2013.  
 Objective 4. Task A. Jan Voit met with Katherine Pekarek-Scott about the grant work plan on July 22, 2013  
 Objective 4. Task A. Jan Voit compiled expenses on August 14, 2013.  
 Objective 4. Task A. Jan Voit submitted the annual report on September 29, 2013.

**2. Challenges faced (optional):**

Even though several rain gardens have been installed throughout the HLWD, finding a landscaper willing to complete the projects proves difficult.

**3. Summary of monitoring data collected:**

n/a

- 4. Have all monitoring stations been established in STORET?**  Yes  No  N/A  
**5. Is the data being routinely submitted for storage into STORET?**  Yes  No Last submittal date: \_\_\_\_\_  
**6. Is the data being annually entered into E-Link?**  Yes  No  N/A Date last entered: \_\_\_\_\_

**7. Identify any significant findings and results of the project to date, as well as any unanticipated findings:**

none

**8. Describe specific (quantifiable, if possible) results achieved during this period:**

n/a

Phosphorus Load Reduction:       n/a       lbs./year  
 Nitrogen Load Reduction:       n/a       lbs./year  
 Sediment Load Reduction:       n/a       lbs./year

**9. Summarize any work plan changes:**

n/a

**10. List anticipated activities for next six (6) months:**

Objective 1. Task A. Present educational information to Fulda City Council.  
 Objective 2. Task B: Conduct rain garden preservation.  
 Objective 3. Task E: Update website as needed.  
 Objective 4. Task A. Complete and submit annual report.  
 Objective 4. Task A. Begin drafting semi-annual report.

**11. List all products (documents, pamphlets, videos, maps, etc.) produced in this reporting period.**

- a) Info for planting
- b) Photo: Anderson before
- c) Photo: Anderson After
- d) Photo: Johnson before
- e) Photo: Johnson after
- f) Photo: Lursen before
- g) Photo: Lursen during
- h) Photo: Lursen after
- i) Photo: Stainer before
- j) Photo: Stainer during
- k) Photo: Stainer after
- l) Photo: Tomford before
- m) Photo: Tomford after
- n) Photo: Planting rain garden
- o) Photo: Planting rain garden 2
- p) Photo: Rain Garden Field Trip 1
- q) Photo: Rain Garden Field Trip 2
- r) Rain Garden Field Trip attendees spreadsheet
- s) Tri County News article

#### IV. Expenditure Information for this Period

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Provide a copy of your work plan budget showing cumulative expenditures and budget balances by work plan objective and task.

Expenditure Report attached

<b>Complete the table below:</b>	<b>Amount</b>
Total Grant Amount:	\$12,600.00
Total Match Amount (if applicable)	\$10,904.00
<b>Total Project Amount:</b>	<b>\$23,504.00</b>
Cumulative Grant Expenditures through this period:	\$11,250.00
Cumulative Match Expenditures through this period:	\$10,308.37
<b>Total Cumulative Expenditures through this period:</b>	<b>\$21,558.37</b>

Date form completed: October 9, 2013

**Please submit to:** Your project manager