



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
Category (name only)	Urban Runoff/Stormwater	Residential	NA

11. Nonpoint Source (NPS) Functional Category:

	Primary	Secondary	Others
Category (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

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

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

Objective 1. Task A. On April 2, 2013, Chrystal Dunker, Prairie Ecology Bus Center (PEBC), and Jan Voit discussed the education experience that will be held in August. This will be an event for children and will include rain garden education and rain garden planting.

Objective 1. Task A: Presentations regarding pollution prevention and rain gardens were given to the Fulda Game and Fish on May 1, 2013, Fulda Heritage Society on May 2, 2013, and the Fulda City Council on May 6, 2013.

Objective 2. Task A. Ross Behrends contacted each landowner to give an update on progress on April 18, 2013.

Objective 2. Task A. Summer Intern Nick Bancks worked on a brochure for the rain garden projects on May 23, 2013.

Objective 2. Task A. Summer Intern Amanda Schultz began plant identification for rain gardens on May 28, 2013.

Objective 2. Task A. Ross Behrends, Amanda Schultz, and Nick Bancks met with Fulda homeowners on May 29 and 30, 2013.

Objective 2. Task A: Ross Behrends provided training and information for rain garden design to summer interns on May 29, 2013.

Objective 2. Task A. Amanda Schultz and Nick Bancks worked on rain garden design on June 3, 2013.

Objective 2. Task A. Amanda Schultz and Nick Bancks met with a Fulda homeowner on June 4, 2013.

Objective 2. Task A. Nick Bancks worked on rain garden design on June 4, 2013.

Objective 2. Task A. Amanda Schultz and Nick Bancks met with Fulda homeowners on June 11, 2013.

Objective 2. Task A. Amanda Schultz and Nick Bancks met with a Fulda homeowner on June 12, 2013.

Objective 2. Task A. Nick Bancks worked on rain garden design on June 12, 2013.

Objective 2. Task A. Amanda Schultz worked on rain garden design on June 19 and June 20, 2013.

Objective 2. Task A. Amanda Schultz worked on rain garden design on June 27, 2013.

Objective 3. Task C. A PowerPoint presentation was created to aid the annual update process. The presentation included an overview of 2012 activities and a short summary of proposed 2013 activities. Updates were given to the Jackson County Commissioners on March 26, 2013, Cottonwood County Commissioners on April 9, 2013, Murray County Commissioners on April 16, 2013, and Nobles County Commissioners on April 23, 2013.

Objective 3. Task C. Jan Voit contacted Julie Buntjer, staff writer for the *Worthington Daily Globe* on June 11, 2013. The purpose for contacting her was to inquire about the possibility of writing a story about the Brown rain garden project. Julie met with Jim and Rona Brown in June 12, 2013. The article was published on June 13, 2013.

Objective 3. Task C. Ross Behrends met with Julie Buntjer, *Worthington Daily Globe*, to discuss details of Jim and Rona Brown's project on June 12, 2013

Objective 3. Task D. Jan Voit provided the summer interns with information needed to develop the signs for the rain gardens.

Objective 3. Task E. Jan Voit uploaded the annual report to the website on February 5, 2013.

Objective 4. Task A. The Bondin-Belfast and Seward Trail Blazers 4-H Clubs no longer want to participate in the grant and the St. Paul Lutheran School has been unresponsive to requests. Jan Voit made a request to MPCA for a change order to include other organizations in the education and implementation effort. The Fulda City Council, Fulda Heritage Society, and the Fulda Game and Fish agreed to receive education presentations. Their assistance in planting the rain gardens was requested. She also sought the assistance of the PEBC for an education event for children and obtaining their help with planting.

Objective 4. Task A. Jan Voit reviewed the Quality Assurance Project Plan (QAPP) and submitted the document to MPCA on March 5, 2013. The QAPP was approved by MPCA on April 8, 2013.

Objective 4. Task A. The change order to include additional organizations was approved by MPCA on March 26, 2013.

Objective 4. Task A. In order to move funds from one objective to another, a contract amendment was done. The amendment requested the ability to move funds originally allocated for rain garden design to rain garden installation. The inkind budget was also adjusted to accurately reflect the time spent on the project. Katherine Pekarek-Scott, MPCA, submitted the amendment request to the contracting division in St. Paul on April 9, 2013. The amendment was also submitted to the Environmental Protection Agency for review and approval.

Objective 4. Task A. The annual report was approved by MPCA on January 8, 2013.

2. Challenges faced (optional):

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:	<u> n/a </u>	lbs./year
Nitrogen Load Reduction:	<u> n/a </u>	lbs./year
Sediment Load Reduction:	<u> n/a </u>	lbs./year

9. Summarize any work plan changes:

A change order was approved on March 28, 2013. Changes requested:

The Heron Lake Watershed District would like to expand their educational capability. It is requested to include other local organizations in the project for education in Objective 1 and rain garden installation in Objective 2 Task B.

An amendment was approved on May 21, 2013. Amendments included:

Objective 1. Task A: Develop Educational materials and presentations – inkind was decreased from \$2,334.00 to \$2,164.00.

Objective 2. Task A: Design and development of five rain gardens – inkind was increased from \$2,725.00 to \$3,599.00.

Objective 2. Task A: rain garden design was decreased from \$5,000.00 to \$0.00. Funds were moved to Objective 2. Task B. site preparation.

Objective 2. Task B: Install five rain gardens – inkind was decreased by \$2,590.00.

Objective 2. Task B: site preparation was increased \$5,000.00 to \$8,250.00.

Objective 2. Task B: plans were increased from \$750.00 to \$2,500.00.

Objective 3. Task A: Organize and host open house – inkind was decreased from \$674.00 to \$356.00.

Objective 3. Task B: Newsletters – inkind was decreased from \$200.00 to \$108.00.

Objective 3. Task C. Promotion – inkind was decreased from \$73.00 to \$44.00.

Objective 3. Task D. Signs – inkind was decreased from \$350.00 to \$310.00.

Objective 3. Task E. Website – inkind was decreased from \$425.00 to \$336.00.

Objective 4. Task A. Administration – inkind was decreased from \$2,592.00 to \$977.00.

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

Objective 1. Task A. Present educational information to attendees of the PEBC tour.

Objective 2. Task B: Work with contractor to schedule rain garden installation.

Objective 2. Task B: Contact project partners regarding rain garden installation.

Objective 2. Task B: Install rain gardens.

Objective 2. Task B: Take photos and video footage during rain garden installation.

Objective 3. Task D: Design signs.

Objective 3. Task E: Update website as needed.

Objective 4. Task A. Complete and submit semi-annual report.

Objective 4. Task A. Begin drafting annual report.

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

- a) Forbes Plant Info
- b) Full Sun Forbes
- c) Full Sun List of Shrubs-Grasses-Ferns-Rushes-Sedges
- d) Part Shade Forbes
- e) Partial Sun List of Shrubs-Grasses-Ferns-Rushes-Sedges
- f) Plant Inventory
- g) Homeowner Plant Selection
- h) Rain Garden Options
- i) Rain Garden Inventory and ID
- j) Anderson Design
- k) Lursen Design
- l) Lursen 300
- m) Lursen 373
- n) Lursen Comparison
- o) Stainer Design
- p) Tomford Design
- q) Anderson before photo
- r) Anderson before photo
- s) Infiltration test

- t) Infiltration
- u) Johnson before
- v) Johnson before
- w) Lursen before
- x) Stainer before
- y) Tomford before
- z) Tomford before

IV. Expenditure Information for this Period

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

Expenditure Report attached

Complete the table below:	Amount
Total Grant Amount:	\$12,600.00
Total Match Amount (if applicable)	\$10,904.00
Total Project Amount:	\$23,504.00
Cumulative Grant Expenditures through this period:	\$1,926.60
Cumulative Match Expenditures through this period:	\$8,258.93
Total Cumulative Expenditures through this period:	\$10,185.53

Date form completed: July 8, 2013, revised July 10, 2013

Please submit to: Your project manager