

Final Report

Rathbun Lake Special Project: BMPs for Priority Land in Targeted Sub-Watersheds 2009 IJOBS

9018-0111J

2013 – 2014

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FINANCIAL ACCOUNTABILITY

Expenditure of watershed improvement funds and total project funds

Iowa Watershed Improvement Review Board (WIRB) financial support enabled the Rathbun Land and Water Alliance and partners to make considerable progress toward the accomplishment of planned objectives for the *Rathbun Lake Special Project: BMPs for Priority Land in Targeted Sub-Watersheds 2009 IJOBS*. Specifically, WIRB funding helped the Alliance and its partners, including cooperating landowners, install best management practices (BMPs) in three targeted sub-watersheds of the Rathbun Lake watershed. These targeted sub-watersheds are Lower Chariton Creek, Hamilton Creek, and Sandy Branch. These BMP installation efforts will treat 153 acres (43% of the project's land treatment objective). The installed BMPs will reduce the estimated sediment and phosphorus delivery from this land to the lake and its tributaries by 326 tons and 1,676 pounds per year respectively (62% and 94% of project objectives respectively). The Environmental Accountability section of this report presents more information regarding BMP installation and water quality benefits.

The Alliance expended Watershed Improvement Funds for project activities in accordance with the WIRB grant agreement 9018-0111J. Please refer to the Summary of Watershed Improvement Funds Approved, Expended, and Balance in Table 1. A financial ledger that presents information for project activities conducted during the term of the grant agreement accompanies this report.

Grant Agreement Budget Line Item	Total Funds Approved (\$)	Total Funds Expended (\$)	Available Funds (\$) ^a
Terraces	36,900.00	29,814.25	7,085.75
Totals	36,900.00	29,814.25	7,085.75
Difference			7,085.75

^a The Alliance, partners, and landowners did not expend all available Watershed Improvement Funds. Factors which contributed to the expenditure of less funds than available were the relatively short length of the project period, federal government shutdown in the fall of 2013, and early onset of winter in 2013.

ENVIRONMENTAL ACCOUNTABILITY

Water quality improvement practices applied and results achieved

The Alliance and its partners, with financial support from the Iowa WIRB, assisted landowners to apply BMPs for land in the Lower Chariton Creek, Hamilton Creek, and Sandy Branch targeted sub-watersheds of the Rathbun Lake watershed. The project land treatment objective was to assist landowners to install BMPs for 355 acres. The BMPs installed would achieve the associated project objectives of reducing the annual amounts of sediment and phosphorus that are carried in runoff from this land and impair water quality in Rathbun Lake and its tributaries by 530 tons and 1,775 pounds respectively. Table 3 presents a summary of BMP installation during the project period.

Practice Units	Project Goal	Completed Practices	Percent Completion ^a
Water and Sediment Control Basins (no.)	0	1	^b
Terraces (ft.)	35,500	11,620	33

^a As described above, the relatively short length of the project period, federal government shutdown in the fall of 2013, and early onset of winter in 2013 resulted in the installation of fewer units of BMPs than planned. However, it should be noted that a number of landowners who had planned to install BMPs in the fall of 2013 but were unable to do so have rescheduled the installation of these practices for the summer of 2014. Also, as mentioned, partners other than WIRB, will continue to provide financial assistance to help landowners install BMPs in the targeted sub-watersheds beyond the end of this grant agreement's project period. An additional important factor that affected the units of BMPs installed with the funds expended was the relatively high cost of practice installation. Specifically, the cost to install terraces during this project period averaged close to \$11 per foot compared with the longer term cost to install terraces on land in the watershed which now averages close to \$8 per foot.

^b One water and sediment control basin was installed. This practice was not specifically identified as a project goal.

ENVIRONMENTAL ACCOUNTABILITY contd.

The BMPs installed resulted in the treatment of more than 150 acres in three targeted sub-watersheds of the Rathbun Lake watershed. These practices will reduce the delivery of sediment and phosphorus to Rathbun Lake and the lake’s tributaries by an estimated 326 tons and 1,676 pounds per year respectively. Table 4 presents a summary of planned and achieved land treatment and water quality benefits.

Land Treatment, Water Quality Benefits, and Units	Approved Goal	Based on Completed Practices	Percent Based on Completed Practices
Total Land Treated with BMPs (ac.)	355	153	43
Reduced Annual Sediment Delivery (tn.)	530	326	62
Reduced Annual Phosphorus Delivery (lb.)	1,775	1,676	94

As presented in Table 4, BMP installation activities carried out during the project period made considerable progress toward achieving planned objectives for land treatment and reduced sediment and phosphorus delivery. The approach implemented by the Alliance and its partners in this project targets land in sub-watersheds of the Rathbun Lake watershed with the greatest potential for sediment and phosphorus delivery to the lake and its tributaries, identified as priority land, for the installation of BMPs. The effectiveness of this approach is demonstrated by the relatively high percentages of land treatment and water quality benefit objectives achieved compared with the actual number of practice units applied.

The Alliance utilized geographic information system (GIS) analysis to identify priority land in need of BMPs, track planned and installed BMPs, and estimate the impact of these BMPs in terms of reduced sediment and phosphorus delivery to Rathbun Lake and its tributaries. Maps of the three targeted sub-watersheds that illustrate the results of this GIS analysis are being developed and will be submitted as soon as completed.

The Alliance and partners conducted water quality monitoring in Rathbun Lake and the lake’s tributaries during the project period. Monitoring consisted of monthly and event sample collection from 20 sites and analyses for sediment, nutrients, bacteria, and pesticides. Results were used to evaluate water bodies in the watershed for Iowa’s Section 303(d) List of Impaired Waters and Iowa’s 305(b) Water Quality Report. The Alliance and partners will continue to conduct monitoring and use the results to assess conditions in the lake and its tributaries as well as to plan BMPs and evaluate, to the extent possible, the effectiveness of practices to protect and improve water quality. A copy of the Rathbun Lake and Watershed 2013 Monitoring Summary, which includes an analysis of long-term monitoring data, is available on request.

PROGRAM ACCOUNTABILITY

Activities to support the application of water quality improvement practices

Alliance members and partners consider the following activities completed during the project period to be essential in terms of supporting the application of BMPs for priority land in the three targeted sub-watersheds and achieving associated reductions in annual sediment and phosphorus delivery to Rathbun Lake and the lake's tributaries:

- Assembled a team of expert advisors and field staff with Alliance members and partner organizations who contributed to and were responsible for planning, implementing, and assessing the completion and impact of project activities;
- Developed and utilized a GIS-based methodology to identify the location of priority land in the targeted sub-watersheds, plan and track the application of BMPs, and estimate the water quality benefits associated with these practices;
- Provided one-on-one, on-farm, technical assistance to landowners who own and/or farm priority land in the targeted sub-watersheds which helped them evaluate the need for, plan, and apply BMPs for this land;
- Conducted water quality monitoring in Rathbun Lake and its tributaries, the results of which were used to assess the condition of these water bodies as well as to plan BMPs and evaluate, to the extent possible, the effectiveness of practices to protect and improve water quality;
- Completed activities of the *Rathbun Lake Protectors* watershed outreach program which included: (a) recognition of landowners for their BMP application efforts as *Rathbun Lake Protectors* at the Alliance's annual *Protect Rathbun Lake* meetings; (b) coordinated interviews with landowners recognized as *Rathbun Lake Protectors* on WHO radio's daily farm show; (c) wrote feature articles that were published in *Wallaces Farmer* about landowners selected as *Rathbun Lake Protectors*; (d) installed and maintained *Rathbun Lake Protectors* on-farm signs and *Protect Rathbun Lake* roadside signs; (e) developed, exhibited, and presented project related displays and information at local and state events; (f) prepared and distributed a quarterly newsletter to Alliance members and partners; and (g) maintained the Alliance's Internet site at <http://www.rlwa.org/>; and
- Alliance's board of directors, partner representatives, and project team members reviewed the progress made to implement project activities and accomplish project objectives. The Alliance prepared and submitted the project plan of work, narrative reports, and financial ledgers.