Watershed Improvement Fund Final Project Report

8009_005_LPA for Storm Lake

Project Name: Storm Lake Watershed
Project Sponsor: Lake Preservation Association for Storm Lake, Inc.
Length of Project: February 1, 2009 – January 31, 2013

Counties included in the project area: Buena Vista County

Total Watershed Improvement Funds awarded for this project: **$200,000**
Total Watershed Improvement Funds spent: **$200,000**
Total Watershed Improvement Funds obligated: **$0**
Watershed Improvement Fund unobligated balance as of 12/31/2011: **$0**

Project objectives:
This project involved construction of structures to allow Little Storm Lake to function as a sediment trap and nutrient removal area prior to water flowing into Storm Lake. The project includes the following objectives:

- Administer and implement all activities and objectives of the Little Storm Lake Watershed Improvement Project.
- Reduce the sediment transport by 75% and phosphorous transport by 58% from Little Storm Lake watershed (via Little Storm Lake) into Storm Lake.
- Conduct water quality monitoring and sediment analysis.
- Conduct educational and informational activities to keep the project partners and the public informed.

Financial Accountability

Table 1. Budget Items – Approved application amounts and actual expenses

Expense Category	Total Funds Approved	Total Funds Amended	Total Funds Expended	Available Funds	Total WIRB Funds Expended
Pump, Building, Controls	$235,000	$239,480	$239,480	$0	$117,500
Fish Barrier Structure	$90,000	$135,000	$135,000	$0	$45,540
Water Monitoring	$15,000	$12,722	$12,722	$0	$7,500
Engineering	$60,000	$58,920	$58,920	$0	$29,460
Totals	**$400,000**	**$446,122**	**$446,122**	**$0**	**$200,000**
Difference		$46,122			

Table 2. Total project funding

Funding Source	Cash		In-Kind Contributions		Total	
Approved Application Budget	Actual	Approved	Actual	Approved	Actual	Approved
WIRB	$200,000	$200,000	$0	$0	$200,000	$200,000
Iowa DNR	$246,122	$200,000	$0	$0	$246,122	$200,000
LIC	$0	$0	$25,935	$15,000	$25,935	$15,000
Totals	**$446,122**	**$400,000**	**$25,935**	**$15,000**	**$472,057**	**$415,000**

Funding Contribution:
WIRB approved application percent of budget: 50%
WIRB actual percent of budget: 45%

All WIRB funds ($200,000) were spent on construction of the fish barrier structure, pump and water monitoring

Environmental Accountability
The project application included construction of a fish barrier and water control structures between Little Storm Lake and Storm Lake. Due to topography and land uses surrounding and upstream of the Little Storm Lake area, it was determined that a fish barrier could not be utilized because it would not allow adequate flow of water during high flow periods.

Through an engineering contract with Ducks Unlimited an alternative plan including a serpentine channel, 3 water control structures, a permanent berm, a pump station, and a settling basin was developed that allowed the objectives to be met with no impact on water flows or water level on adjacent land owners. The construction of these features will provide water level management to improve the quality of the water flowing from Little Storm Lake in to Storm Lake. Rough fish are kept out of the basin by the berm and by the grating on the water control structures. Rough fish that enter the basin during high flow events will be eliminated during dewatering.

There were several construction challenges due to the weather conditions at the beginning of the project. The construction began and was halted due to wet conditions. Due to the dry conditions in the fall and winter of 2011 into 2012, construction was successfully completed. Due to the 2012 drought, the Little Storm pool remained dry and is now vegetated.

Samples were collected at 3 locations every two weeks from April through October and after significant storm events. Monitoring was conducted in 2010 and 2011 to be used as the baseline monitoring. These samples were analyzed by the State Hygienic Lab (SHL) for the nitrogen series, phosphorous and total suspended solids. The results showed significant nutrient and sediment movement from Little Storm Lake into Storm Lake. Monitoring was conducted as

possible in 2012, however, the post construction monitoring was very limited due to the dry conditions and no flow from Powell Creek into Little Storm and no flow from Little Storm into Storm Lake. Additional monitoring is recommended for the post construction pollutant loading reduction determination. The project is expected to have a positive impact on sediment movement as the entire Little Storm area is now vegetated.

Program Accountability

Information has been provided to the two local newspapers and both have done articles at a regular frequency to inform the local residents of the project and the progress. Information on the project was provided to Lake Preservation Association members in the annual newsletters and at their annual meetings. Updates were provided on a regular basis to the Lake Improvement Commission. Presentations have been made about the project to the local Kiwanis and Rotary groups. An open house was held in June 2012 for the public.

A separate project, the Little Storm Discovery Center, was completed in May 2012, and includes a trail, observation tower, boardwalk, and educational displays. One of the educational kiosks is information on the Little Storm Lake restoration project. It includes the explanations of each of the features and provides a location to view the features.

The weather conditions provided the biggest challenges for this project. The cooperation and flexibility of all of the partners allowed the project to be modified as needed to accommodate the conditions and allowed the completion of the project.

Aerial view of the Little Storm Lake area in May 2011. The serpentine channel had been constructed but the berm and the water control structures had not been constructed. This shows the open pool area of Little Storm Lake.

View of area in June 2012 showing the start of the revegetation. This was taken prior to the testing of the pump structure so there is water in the Little Storm basin.

View of the area in January 2013 showing the revegetation.