

Final Project Report

- The term of the grant agreement.

10-23-06 to 12-31-07

- Complete financial ledger for the term of the grant agreement.

See Attachment

- Provide financial accountability to demonstrate Watershed Improvement Funds were spent as planned.

Financial Accountability

Summary: Watershed Improvement Funds			
Grant Agreement Budget Line Item	Total Funds Approved (\$)	Total Funds Expended (\$)	Available Funds (\$)
Infiltration Cell	73,000	73,000	0
Totals	73,000	73,000	0
Difference			0

Explain significant differences between the approved application budget and actual amounts expended of Watershed Improvement Funds and any unspent balance.

The budget that was submitted with the original grant application was followed as a guide for the bidding process. All funds were allocated as soon as grant agreements were signed; follow through construction spend allocated funds.

Total Project Funding

Funding Source	Cash		In-Kind Contributions		Total	
	Approved Application Budget (\$)	Actual (\$)	Approved Application Budget (\$)	Actual (\$)	Approved Application Budget (\$)	Actual (\$)
WIRB	73,000.00	73,000.00	0	0	73,000.00	73,000.00
319/WPF			2,800.00	2,800.00	2,800.00	2,800.00
City of Alta	30,000.00	91,566.39	48,200.00	48,200.00	78,200.00	139,766.39
Mortensen	18,393.00	23,324.35	3,650.00	3,650.00	22,043.00	26,974.35
Ag Partners	6,178.00	6,178.00	18,216.00	18,216.00	24,394.00	24,394.00
Totals					200,437.00	266,934.74

Watershed Improvement Fund contribution: Approved application budget: 36 %
 Actual: 27 %

Differences between the approved application budget and actual amounts contributed by the various funding sources.

The differences in the approved application budget and actual dollars spent are in favor of the WIRB board. It must be said that without the contribution of the board, our budgets would have been tight. The overage from the original estimate and the actual spent, increased the percentage cost shared by the City of Alta and Mortensen landowners. The bids came in under the original estimate, but change orders based on site conditions increased final cost. Overages were divided equally between the City of Alta and the Mortensen Family based on the drainage use agreement signed before construction began.

- Provide environmental accountability to demonstrate that state funds expended achieved the planned desired water quality improvements. These water quality improvements could be quantitative or qualitative. Please refer to the Environmental Accountability section for additional information.

Environmental Accountability

Summarize water quality monitoring completed relevant to this project. Analyze the data and interpret the results. What conclusions can be made? Is additional monitoring recommended?

The construction of this project took place during the optimal sampling months. Continued monitoring is required and scheduled as long as the 319 project continues. Unfortunately no concrete changes were measured this year because no rain after construction was measurable. The 319 final report will contain sampling information with trend analysis from start to finish. Note: Report is attached.

Reduction Results for the Infiltration Basins:

Source: **Estimating Load Reductions For Agricultural and Urban BMP's**

"Pollutants Controlled Calculation and Documentation for Section 319 Watersheds Training Manual"
(Michigan Department of Environmental Quality, June 1999)

Basin 1 is the main basin filtering the run-off Alta streets

Reduction of Total Suspended Solids = 15 T/yr

Reduction of Total Nitrogen = 408 lb/yr

Reduction of Total Phosphorus = 34 lbs/yr

Reduction of Zinc = 41 lb/yr

Reduction of Lead = 23 lb/yr

Basin 2 is the secondary basin filtering the run-off from City of the sub-division, eventually industrial park completion.

Reduction of Total Suspended Solids = 4.8 T/yr

Reduction of Total Nitrogen = 130 lb/yr

Reduction of Total Phosphorus = 10 lbs/yr

Reduction of Zinc = 10 lb/yr

Reduction of Lead = 6 lb/yr

** Sufficient monitoring data on Urban BMP's is not currently available for Iowa for modeling. This resource was found through the Center for Watershed Protection website. To my knowledge, this model is the effect of a watershed to the practice. These values relate to the effectiveness of the practice.

Pollutant removal of BMP's treating stormwater from Schueler, et.al at the Center for Watershed Protection

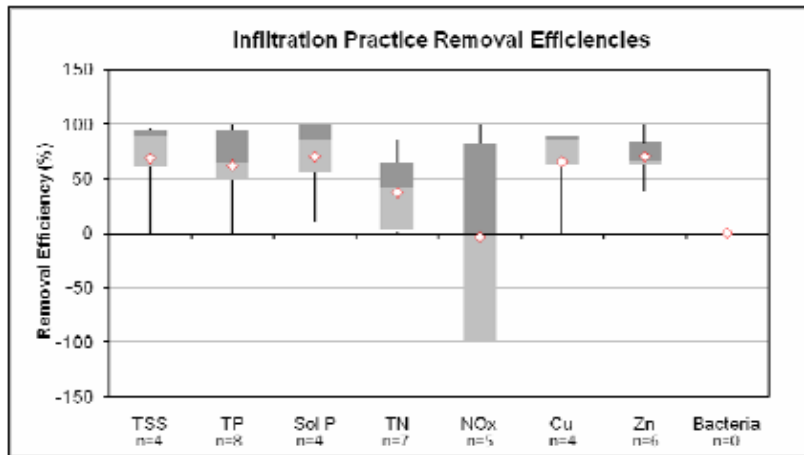


Figure 6. Infiltration Practice Removal Efficiencies

Table 6. Infiltration Practice Removal Efficiency Statistics								
	TSS	TP	Sol P	TN	NO _x	Cu	Zn	Bacteria
Median	89	65	85	42	0	86	66	N/A
Min	0	0	10	0	-100	0	39	N/A
Max	97	100	100	85	100	89	99	N/A
Q1	62	50	55	2	-100	62	63	N/A
Q3	96	96	100	65	82	89	83	N/A
Number	4	8	4	7	5	4	6	0

The plots and tables summarize the following features from the data:

- Median Efficiency = where light grey and dark grey bars meet
- Average Efficiency = small diamond
- 25th Percentile = bottom of light grey bar
- 75th Percentile = top of dark grey bar
- Highest value = top of line
- Lowest value = bottom of line
- Number of studies analyzed for each pollutant = n (located below the pollutant label)

The plots and tables show removal efficiencies for the following pollutants:

- TSS = Total Suspended Solids
- TP = Total Phosphorus
- Sol P = Soluble Phosphorus (ortho-phosphorus and dissolved phosphorus)
- TN = Total Nitrogen
- NO_x = Nitrogen as Nitrate (NO₂) & Nitrite (NO₃)
- Cu = Copper
- Zn = Zinc
- Bacteria = Bacteriological indicators (fecal streptococci, enterococci, fecal coliform, *E. coli* and total coliform)

Summarize the practices installed (i.e. structures built, septic systems renovated, etc) and activities (meetings, workshops, news releases) completed vs. what was planned to be completed as listed in the approved application budget. This summarization should include activities completed by project partners listed in and part of the approved application.

Summary: Practices and Activities

Practice or Activity	Unit	Approved Application Goal	Accomplishments	Percent Completion
Infiltration Cell	No.	2	3	100%

Summarize in-field pollutant reductions and targeted water resource loading reductions documented in the project area. Were the environmental goals stated in the application attained? Explain. What other environmental outcomes can be documented (i.e. changes in human behavior, changes in benthic macroinvertebrate ratings, etc.)?

The infiltration portion of the project allows the stormwater from Alta to filter into the tile system. The basins hold the sand, gravel, rock, trash, etc. that is transported in the stormwater. This debris is collected in the basins to be “cleaned out” at a later date. The water velocity has also been controlled through detention, timed filtration, and even discharge. Gully erosion will be eliminated and soil loss will be reduced. Once proper establishment of native grasses in the basin occur, nutrients and other pollutants will be filtered as well. This is bottom line water quality improvement in the upper reaches of the watershed.

- Provide program accountability to demonstrate that activities planned as part of an overall watershed improvement project were implemented or completed. Please refer to the Program Accountability section for additional details.

Program Accountability

What activities were completed to expand the impact of the project? How were challenges overcome and resolved to allow the project to move forward? What lessons were learned that may be helpful to other project program managers? Submit recommendations for improvement and what limitations exist for replication.

This project started with a soil loss complaint. The downstream landowner has been fighting the water quality and quantity of Alta’s stormwater for years. This WIRB application was able to mend a few fences and get all the parties sitting together at the table to come up with real solutions. Some residents from the city did not understand the benefit of spending money on a project to help “one guy”, but education and information aided in spreading the message. It was the right thing to do. No stormwater improvements were made during the years of increased development, and it improves the water quality of the Storm Lake Watershed.

Once seeded and green, the City of Alta plans to highlight the project to local press and groups. It was a sensitive issue to spend the City’s tax payer dollars on such a project, so we want to ensure it is complete and functioning. Fall 2007 the basins were working. We are confident that water quality monitoring in future years will continue to show improvements.

Helpful tips to other projects: The agreement between the City of Alta and the Mortensen Family before construction was essential. This document stated the percent of drainage used for each party. The overruns in cost were divided based on this agreement. Important when the final bill comes and no one can look at the other to say this is your bill.