



IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

Bill Northey, Secretary of Agriculture

January 30, 2009

Governor Chester Culver
State Capitol
LOCAL

Dear Governor Culver:

Pursuant to Iowa Code Chapter 466A Section 3, Item 3e, the Watershed Improvement Review Board is submitting its annual report. Copies of this report are being provided to the President of the Senate and the Speaker of the House. An electronic copy of the report is also being provided to your office and the President of the Senate and Speaker of the House per the requirements of Chapter 466A.

The Board, codified in Chapter 466A, is an independent, self-governing body directed to improve the quality of water in the state. The Board is authorized to request water quality improvement applications from soil and water conservation districts, local watershed improvement committees, cities, public water supply utilities, and county conservation boards and award grants to these entities. These grants are issued from the Watershed Improvement Fund.

In 2008, the Fund was allocated \$5 million for state fiscal year 2009 for water quality improvements from the general fund. On February 22, 2008, the Board awarded grants from the SFY 2008 allocation from the Tobacco Settlement Trust Fund to seven applicants. Total amount allocated to these projects is \$2,115,694. A Request For Applications was issued Last spring for the SFY 2009 appropriations. On September 12, the Board awarded grants to nine applicants. Total amount allocated to these projects is \$3,513,531. A second Request for Applications is underway for the SFY 2009 allocation and will close January 30, 2009.

The Board extends its gratitude to the Governor and the General Assembly for supporting this visionary effort to improve water quality and is looking forward to continuing and expanding upon this initiative.

Sincerely,


Jolee Belzung, Chair
Watershed Improvement Review Board

Cc: Bill Northey
Karey Claghorn
Members, Watershed Improvement Review Board

JB:jgn



IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

Bill Northey, Secretary of Agriculture

January 30, 2009

John P. Kibbie
President of the Senate
State Capitol
LOCAL

Pat J. Murphy
Speaker of the House
State Capitol
LOCAL

Dear Senator Kibbie and Representative Murphy:

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Karey Claghorn
Members, Watershed Improvement Review Board

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Watershed Improvement Review Board Calendar Year 2008 Annual Report

Submitted January 30, 2009

The Iowa Watershed Improvement Review Board (WIRB) was created by the Iowa Legislature and signed into law by the Governor in 2005 as Senate File 200. This statute is now codified in Iowa Code Chapter 466A.

The fifteen-member Board conducted eight meetings throughout the year in-person or via teleconference. Meetings were held January 18, March 27, May 16, July 27, August 8, September 12, October 31, and December 19. Attachment 3 lists the board members and their organization affiliation.

The Board completed two Request For Applications (RFAs) for the Watershed Improvement Fund. The first RFA was announced November 7, 2007 and closed February 22, 2008. The second RFA was announced June 6, 2008 and closed August 1, 2008.

February 22, 2008 Closing Date Request For Applications: The Board received 19 applications in response to this RFA. These applications requested \$6.5 million in Watershed Improvement Funds and leveraged an additional \$5.5 million for a total of \$12.0 million of watershed project activity proposed.

On March 27, after reviewing and ranking the applications individually from this RFA, the Board met and selected seven applications for funding. The seven projects were approved for \$2,115,694 of Watershed Improvement Funds. Data on the seven selected projects in this RFA include the following:

- These projects included portions of eight counties
- The \$2.1 million requested of Watershed Improvement Funds leveraged an additional \$1.7 million for a total of \$3.8 million
- Selected individual projects ranged from \$64,260 to \$500,000

Attachment 1a lists the approved projects name, applicant name, county or counties where located, and funding amount for the February 22, 2008 Closing Date RFA.

August 1, 2008 Closing Date Request For Applications: The Board received 17 applications in response to this RFA. These applications requested \$6.4 million in Watershed Improvement Funds and leveraged an additional \$16.2 million for a total of \$22.6 million of watershed project activity proposed.

On September 12, after reviewing and ranking the applications individually from this RFA, the Board met and selected nine applications for funding. The nine projects were approved for \$3,513,531 of Watershed Improvement Funds. Data on the nine selected projects in this RFA include the following:

- These projects included portions of sixteen counties
- The \$3.5 million requested of Watershed Improvement Funds leveraged an additional \$12.3 million for a total of \$15.8 million
- Selected individual projects ranged from \$200,000 to \$500,000

Attachment 1b lists the approved projects name, applicant name, county or counties where located, and funding amount for the August 1, 2008 Closing Date RFA.

With funds remaining unobligated from the August 1, 2008 Closing Date RFA, another RFA was announced October 8, 2008. This RFA will close January 30, 2009.

In cooperation with the Treasurer of State, submitted the Fiscal Year 2008 report for the Tobacco Settlement Trust Fund to the Joint Transportation, Infrastructure and Capitals Appropriation Subcommittee, the Legislative Services Agency, the Department of Management and the Legislative Capital Projects Committee of the Legislative Council.

Attachment 2 showing the locations of applications received during the RFAs in 2005 through 2008 and the applications selected for funding. After five RFAs, 59 projects have been funded of 143 applications.

Attachment 4 contains the annual progress reports from the thirty-seven projects in-progress or finished in 2008.

Attachment 1a. Watershed Improvement Fund Grants Awarded From February 2008 RFA

Watershed Name	Organization	Counties Where Located	Funding Amount
Brushy Creek Watershed	Des Moines Water Works	Carroll	\$206,500
Dry Run Creek Sub-watershed	Floyd SWCD	Floyd	\$75,000
Kettle Creek Watershed	City of Ottumwa	Wapello	\$387,996
Lake Macbride	Johnson SWCD	Johnson	\$64,260
Miners Creek	City of Guttenberg	Clayton	\$500,000
North Fork Maquoketa River Headwaters	Coffee Creek Watershed Improvement Association	Dubuque, Delaware	\$406,138
Saylor Creek Sub-watershed	City of Ankeny	Polk	\$475,800

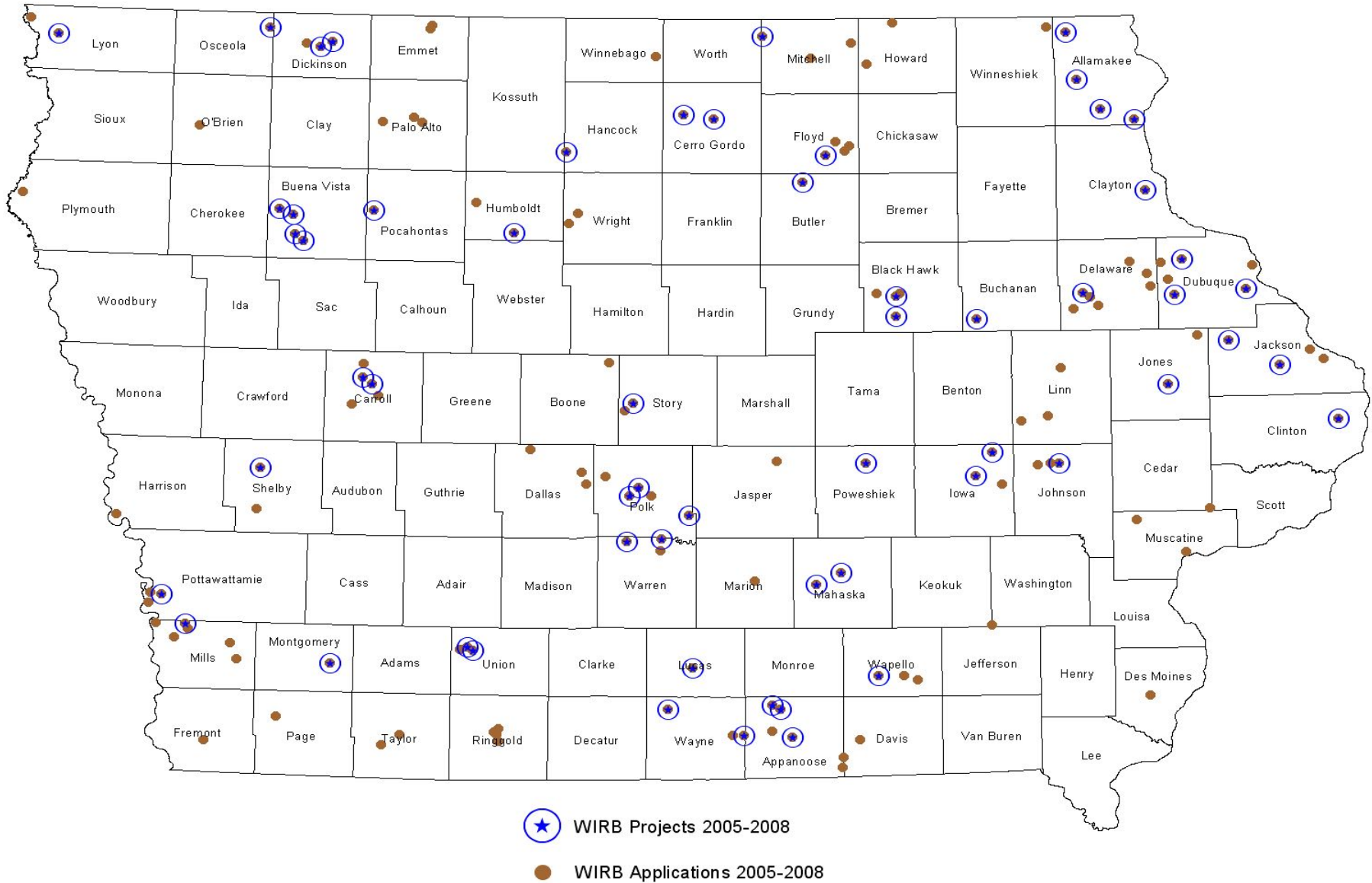
Total Funding Approved by the Watershed Improvement Review Board **\$2,115,694**

Attachment 1b. Watershed Improvement Fund Grants Awarded From August 2008 RFA

Watershed Name	Organization	Counties Where Located	Funding Amount
Camp Creek Watershed	Polk County Conservation Board	Polk	\$246,920
East Okoboji Lake	Dickinson SWCD	Dickinson	\$386,000
Lake Morris Watershed	Lucas SWCD	Lucas	\$462,375
Ludlow Creek	Allamakee SWCD	Allamakee, Winneshiek	\$496,300
Muchakinock Creek Watershed	Mahaska SWCD	Mahaska	\$500,000
Rathbun Lake Watershed	Rathbun Land and Water Alliance	Appanoose, Clarke, Decatur, Lucas, Monroe, Wayne	\$254,279
Silver Lake Watershed	Osceola SWCD	Osceola, Dickinson	\$474,540
Storm Lake Watershed	Lake Preservation Association for Storm Lake, Inc.	Buena Vista	\$200,000
Summit Lake Watershed	City of Creston	Union	\$493,117

Total Funding Approved by the Watershed Improvement Review Board **\$3,513,531**

Attachment 2. Location of applications received and projects funded by WIRB, 2005-2008



**Attachment 3. Appointed Members of the Watershed Improvement Review Board
January 1 - December 31, 2008, Iowa Code Chapter 466A**

Name	City	Term Ending	Sponsoring Organization
Mark Rosenbury	West Des Moines	2009	Agribusiness Assn of Iowa
Jolee Belzung	Ankeny	2010	Iowa Assn of Water Agencies
Tom Hadden	Altoona	2009	Iowa Environmental Council
Leah Maass	Ellsworth	2009	Iowa Farm Bureau
Marcia Dudden (January—April)	Dike	2008	Iowa Pork Producers
Debra Karwal (May—December)	Elliott	2011	Iowa Pork Producers
Kevin Jacobson	Story City	2010	Iowa Rural Water Assn
Robert Ballou	Monticello	2010	Iowa Soybean Assn
Deb Ryun	Chariton	2009	Soil and Water Conservation Districts of Iowa
Jeff Bergman (January—June)	Burlington	2009	Iowa Assn of County Conservation Boards
Keri Van Zante (October—December)	Newton	2009	Iowa Assn of County Conservation Boards
Jim Gillespie	Earlham	2008	Representative of IDALS
Bernie Hoyer	Des Moines	2008	Representative of DNR
Rob Hogg	Cedar Rapids	2010	State Senator
David Johnson	Ocheyedan	2010	State Senator
Betty De Boef	What Cheer	2009	State Representative
Dolores Mertz	Ottosen	2009	State Representative

Attachment 4. 2008 Annual Project Reports Table of Contents			
Watershed Name	Organization	Counties Where Located	Page Number
Big Bear Creek	Jones SWCD	Jones	8
City of Carpenter--Cedar River	Mitchell SWCD	Mitchell	9
Clear Creek	Iowa County SWCD	Iowa	10
Clear Lake	Hancock County SWCD	Hancock, Cerro Gordo	11
Clear Lake	Hancock SWCD	Hancock, Cerro Gordo	12
Coldwater-Palmer Creek	Coldwater-Palmer Watershed Improvement Association, Inc.	Butler, Floyd	13
College Creek	City of Ames	Story	14
Dry Run Creek (report not received at time of filing)	Black Hawk County SWCD	Black Hawk	
Dry Run Creek Sub-Watershed	Floyd SWCD	Floyd	15
Elk River	Clinton County SWCD	Clinton, Jackson	16
Farmers Creek	Jackson County SWCD	Jackson	17
Fox River	Fox River Ecosystem Development Board	Appanoose, Davis	18
Hewitt Creek	Hewitt Creek Watershed Improvement Association, Inc.	Dubuque	19
Holiday Lake	Poweshiek County SWCD	Poweshiek	20
Hurley Creek Watershed/McKinley Lake	City of Creston	Union	21
Joint Drainage District No. 1-10 (report not received at time of filing)	Humboldt County SWCD	Humboldt, Webster	
Joint Drainage District No. 93 & 100 (report not received at time of filing)	LuVerne Magor Drainage Conservation Association, Inc.	Kossuth, Hancock	
Keg Creek (report not received at time of filing)	Regional Water Association	Mills	
Lake Colchester/Middle Creek	Lakewood Village Association	Warren	22
Lake Macbride	Johnson SWCD	Johnson	23
Lake Storm Lake	Lake Preservation Association for Storm Lake, Inc.	Buena Vista	24
Leisure Lake	Limestone Bluffs RC&D Inc.	Jackson	25
Lime Creek NPS Project	Lime Creek Watershed Improvement Association, Inc.	Buchanan, Benton	26
Little Clear Lake	Pocahontas SWCD	Pocahontas	27
Little Pony Creek	West Pottawattamie SWCD	Pottawattamie	28
Lyon County Clean Water Project	Lyon County SWCD	Lyon	29

Watershed Name	Organization	Counties Where Located	Page Number
Miners Creek	City of Guttenberg	Clayton	30
Muchakinock Creek (report not received at time of filing)	Mahaska SWCD	Mahaska	
Norfolk Creek	Allamakee SWCD	Allamakee	31
North Fork Maquoketa River Headwaters	Coffee Creek Watershed Improvement Association	Dubuque, Delaware	32
Price Creek	Benton & Iowa County SWCD	Benton, Iowa	33
Rathbun Lake	Rathbun Land and Water Alliance	Appanoose, Clarke, Decatur, Lucas, Monroe, Wayne	34
Rathbun Lake	Rathbun Land and Water Alliance	Appanoose, Clarke, Decatur, Lucas, Monroe, Wayne	35
Rathbun Lake	Rathbun Land Water Alliance	Appanoose, Clarke, Decatur, Lucas, Monroe, Wayne	36
Sand Creek	Delaware SWCD	Delaware	37
Saylor Creek	Iowa Heartland RC&D	Polk	38
Saylor Creek Sub-Watershed	City of Ankeny	Polk	39
South Raccoon/Maple River Junction (report not received at time of filing)	Carroll SWCD	Carroll	
Upper Catfish Creek	Dubuque SWCD	Dubuque	40
Upper Miller Creek	Black Hawk County SWCD	Black Hawk	41
Urban Watersheds of Dickinson Lakes (report not received at time of filing)	Dickinson County SWCD	Dickinson	
Viking Lake (report not received at time of filing)	Page 1 Rural Water District	Montgomery	
Volunteer Creek	City of Carlisle	Warren	42
Yellow River	Allamakee County SWCD	Allamakee, Clayton, Winneshiek	43
Yellow River Watershed/Direct Drain Project	Allamakee SWCD	Allamakee	44

Project Name: Big Bear Creek
Project Sponsor: Jones SWCD
Length of Project: January 1, 2007-December 31, 2009

Counties included in the project area: Jones

Total Watershed Improvement Funds awarded for this project:	\$455,313.00
Total Watershed Improvement Funds spent:	\$196,253.00
Total Watershed Improvement Funds obligated:	\$ 86,107.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$172,953.00

Project objectives:

- Administer the Big Bear Creek Watershed Improvement Project to ensure all objectives and activities planned are implemented.
- Construct Best Management Practices in the identified high priority areas.
- Reduce overall sediment delivery and phosphorous loading by 30%
- Conduct an information and education program to increase awareness and knowledge of Big Bear Creek water quality issues to watershed residents .
- Monitor the stream using the IOWATER Program.

Summary of activities and accomplishments for calendar year 2008

We experienced major setbacks on implementing BMP's this year, due to the worst flooding in modern times last spring and an extremely late harvest of crops last fall! We have a number of approved applications waiting to be completed if we can catch a break in 2009. They are as follows: waterways-6, critical area seeding-12.8 acres, streambank stabilization using the Red Cedar Revetment Method-150 feet, terraces-1 small system & one large system, water & sediment control basins-10, grade stabilization structures-2. We did manage to get 4 waterways & 1 grade stabilization structure completed for the year. They had a total sediment loading reduction of 133 t/y and a total reduction of phosphorus delivered to the stream of 173 lbs./y. The Sediment Delivery Calculator was used to arrive at these figures. An approved EQIP contract for 65 acres was also approved during the year. All implemented or approved BMP's lie in the priority areas. We are still attracting new cooperators to implement BMP's. This tells me the project is advancing and reaching out to a wider audience.

The Project Coordinator met three times this year with the Watershed Council (5-15 landowners) to discuss project activities and monitor progress. The Council decided that we would list the completed projects in the local paper and have folks contact the landowners with completed projects. The city of Wyoming decided to wait until spring arrives to complete the storm water drain stencil program. The PC has been working with Lynn Betts to upgrade our information/education component of the watershed project. Wayne Petersen (IDALS Urban Specialist) was to give a presentation on urban BMP's to the Wyoming city dwellers on 12/18/08, but was cancelled due to bad weather. Wayne will be asked to give his talk again in March 2009. The Midland Times wrote an article on urban issues and BMP's to solve these issues. The PC developed an article on accomplishments in the watershed and this was included in the District's Annual Newsletter. This Newsletter was sent to all the landowners in Jones Co. The IOWATER Program is used to monitor the stream and data entered into the database.

2008 Watershed Improvement Fund Annual Project Progress Report

City of Carpenter Sewage Treatment System Project Mitchell County Soil & Water Conservation District Length of Project November 1, 2006 to October 31, 2009

Counties included in project area: Mitchell

Total Watershed Improvement Funds awarded for this project:	\$500,000.00
Total Watershed Improvement Funds spent:	\$ 99,000.00
Total Watershed Improvement Funds obligated:	\$351,000.00
Watershed Improvement Fund Unobligated balance as of 12/31/08	\$ 50,000.00

Project Objectives:

- Stop the illegal discharge of a point source of wastewater into Deer Creek.
- Provide the residents of Carpenter with an environmentally sound system of treating wastewater.
- Provide an affordable treatment of the wastewater for the residents and businesses located in Carpenter, Iowa.
- Improve the water quality of the Cedar River and Deer Creek by eliminating a point source of water quality pollution.

Summary of activities and accomplishments for calendar year 2008

Overall in 2008, the City of Carpenter Sewage Treatment Water Quality Improvement Project moved forward with the plan development/approval and permit phase of the project. This phase incorporates the Iowa Department of Natural Resources 52 step process for the wastewater construction permitting process and the USDA- Rural Development Iowa Guide 10 requirements.

Highlights from our completed activities in 2008 are:

- Lagoon site was approved by IDNR and purchased from a cooperating private landowner. All environmental studies were completed with no major concerns that could not be easily overcome.
- The engineering firm of Veenstra & Kimm completed final plans for the project and all permits were obtained. (NPDES, construction, etc.)
- A public open house was held for businesses and residences in Carpenter to view the final plans and waste treatment system to be installed.
- USDA-Rural Development approved Federal Funding in the form of a grant/loan.

City of Carpenter, County of Mitchell and Engineer are ready to proceed with bid process this winter with the construction phase to be completed by October 30th.

Clear Creek Watershed Project
Iowa County SWCD
Length of Project: March 1, 2006 to December 31, 2008

Counties included in the project area: Iowa County

Total Watershed Improvement Funds awarded for this project:	\$500,000.00
Total Watershed Improvement Funds spent:	\$450,000.00
Total Watershed Improvement Funds obligated:	\$ 50,000.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 0.00

Project objectives:

- Provide residents of Conroy and the surrounding area with environmentally sound, affordable treatment of waste water.
- Improve the water quality of the Clear Creek Watershed by eliminating the discharge of waste water from septic systems.
- Improve the water quality of the Clear Creek Watershed by treating collected waste water prior to discharge into the watershed.

Summary of activities and accomplishments for calendar year 2008

- Septic waste collection system was installed by 6/17/2008. This included 1180 feet of 6”and 8”collection sewer lines and 6823 feet of 4” service line to hook up houses. 83 homes and businesses were unhooked from current septic tank systems and connected to the new system by December 5, 2008. Existing septic tanks were deactivated and filled according to DNR specification. The new system was online by December 5, 2008.
- 2 Lagoons were constructed as part of this system. Lagoon 1, 2.08 ac. holding 2.51 million gallons, was started in fall of 2007 and completed on 6/17/2008. Lagoon 2, 1.0 ac. holding 1.24 million gal., was completed on 11/24/2008. Lagoon 1 has 121 days storage and Lagoon 2 has 60 days storage. The management plan will include total containment and settlement for 181 days. Treated release will be made twice a year and will take approximately 72 hours.
- The project initiated the Water Quality Monitoring during 2008. As part of the Clear Creek Watershed Project, the Clear Creek Watershed IOWATER program established additional sample points to test water in the tributary below the town of Conroy and the new lagoons. The Sample points include CC-0B (at the location of tile lines that outlet below town carrying effluent from town septic systems) and point CC- 1 located approximately 1 mile east downstream in the main tributary channel). These sites will allow monitoring of the existing tile drainage outlet and in the main channel. Three tests were conducted during 2008 to establish a baseline for N02NO3-nitrogen, E. Coli Bacteria, Total Phosphorus, and Chloride. The main focus being the E Coli bacteria level. The tests were taken on 5/10/08, 7/12/08 and 10/11/08. The results of the testing are summarized in the Quarter 4 report. The tests for 10/11/08 indicate a significant reduction in E. Coli at site CC-1 from the 7/12/08 test. This may account for partial collections from hookups completed at that point. Tests will be needed in Spring 2009 to evaluate the water quality improvement of the completed project.

Clear Lake Storm Water Improvement Project
Hancock Soil & Water Conservation District
Length of Project: March 1, 2006 to February 28, 2009

Counties included in the project area: Cerro Gordo and Hancock

Total Watershed Improvement Funds awarded for this project:	\$ 225,000
Total Watershed Improvement Funds spent:	\$ 148,622
Total Watershed Improvement Funds obligated:	\$ 76,378
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 0

Project objectives:

- Perform information and education activities to increase public awareness about storm water improvements.
- Investigate 10 storm water outlets in the Clear Lake watershed to determine most cost effective Best Management Practice (BMP) to reduce storm water contaminants.
- Install storm water BMPs at 5 of the outlets investigated to reduce storm water contaminants.
- Evaluate the effectiveness of any new type of BMP that is installed for which no local data currently exists.

Summary of activities and accomplishments for calendar year 2008

The investigation of 12 storm water outlet sites for improvements was completed in February of 2007. Each site was ranked for cost effectiveness based on the amount of total suspended solids and phosphorus that would be removed at each outlet. It was determined that 11 of the 12 sites showed feasibility of implementing a cost effective structural BMP. Construction of 7 of the 11 sites began in the fall of 2007 and was completed in the spring of 2008. The City of Clear Lake also decided to pursue 3 additional storm water outlet sites for installation of BMPs in 2008. Bid letting took place in October and two bids were received. Presentations were provided to the Clear Lake City Council and they approved the low bid of \$164,946.22 for the planned improvements.

Construction on the 3 BMPs began in November, 2008 and was scheduled to be completed by the end of December, 2008. However, the manufacturer was unable to deliver the grit collection chambers until early December, and by that time weather conditions precluded construction from being completed. An extension until February 28th, 2009 was requested and granted.

The project has already exceeded the goals of investigating 10 sites and installing 5 BMPs as a total of 12 sites were investigations and 7 BMPs have been installed to date. An additional 3 stormwater BMPs will be installed in the spring 2009. The effectiveness of the BMPs installed was determined by using previous monitoring data and book values. The cumulative annual pollutant loading reduction of the 7 sites completed in 2008 and the 3 sites scheduled for completion in 2009 totals 29,800 lbs. of total suspended solids and 48.4 lbs. of total phosphorus.

Several PowerPoint presentations were provided to local service groups to explain the importance of the storm water quality improvements.

**Clear Lake Storm Water Improvement Project
Hancock Soil & Water Conservation District
Length of Project: January 1, 2008 to December 31, 2010**

Counties included in the project area: Cerro Gordo and Hancock

Total Watershed Improvement Funds awarded for this project:	\$ 154,000
Total Watershed Improvement Funds spent:	\$ 14,000
Total Watershed Improvement Funds obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 140,000

Project objectives:

- Investigate 7 storm water outlets in the Clear Lake watershed to determine most cost effective Best Management Practice (BMP) to reduce storm water contaminants.
- Install storm water BMPs at 4 of the outlets investigated to reduce storm water contaminants.
- Perform information and education activities to increase public awareness about storm water improvements.
- Evaluate the effectiveness of any new type of BMP that is installed for which no local data currently exists.

Summary of activities and accomplishments for calendar year 2008

The City of Clear Lake and City of Ventura entered into an agreement with Veenstra & Kimm to investigate seven storm water outlet sites for improvements at a total cost of \$29,500.00. A kickoff meeting was held with all the project stakeholders to finalize which storm water outlet sites would be investigated. The selected sites consisted of six locations in the City of Clear Lake and one location in the City of Ventura. The sites represent the final remaining outlets in the Clear Lake watershed that have a drainage area of five acres or more and where no improvements have yet been made.

The investigation field work began in spring and a summary of the initial findings was prepared in the summer. Meetings with project partners continued to take place to refine the investigation and preliminary BMP design. In the fall the investigation was completed and all seven sites had feasible BMP installation options. A grit collection chamber was the preferred BMP at all seven sites. The engineer's estimate of probable cost of the seven improvements totaled \$559,145.00.

Meetings with the city councils of Clear Lake and Ventura took place to update them on the results of the investigation. Both councils were interested in moving forward and scheduled meetings to award contracts for final design work in early 2009. It is currently anticipated that final design of all seven sites will take place in the spring of 2009 and the projects will be bid in late summer for a fall 2009 construction start. This would exceed the goal of installing BMPs at four of the outlets.

Several information and education activities such as PowerPoint presentations were provided to local service groups to explain the importance of the storm water quality improvements.

**Coldwater/Palmer Creek Watershed Incentive Program for Performance-based
Environmental Management**
Project Sponsor: Coldwater/Palmer Creek Watershed Improvement Association, Inc.
Length of Project: January 1, 2007 through December 31, 2009

Counties Included in Project Area: Butler County

Total Watershed Improvement Funds Awarded to this project:	\$311,594
Total Watershed Improvement Funds Spent:	\$136,460
Total Watershed Improvement Funds Obligated:	\$ 13,500
Watershed Improvement Fund unobligated balance as of 12/31/2008	\$161,634

Project Objectives:

- Develop water quality awareness, knowledge, sustainable change and leadership within the watershed community.
- Connect farm management decision-making and environmental outcomes by demonstrating the use of science-based environmental indexes that integrate soil, crop and livestock management practices into progressively improving performance scores.
- Quantify the effectiveness of this approach, document lessons learned and develop critical success factors for the use of performance-based incentives in other watersheds.

Summary of activities and accomplishments for 2008

Coldwater/Palmer watershed ranked in the 95th percentile for nitrate delivery in pre-project assessments of tributaries to the Cedar River, a water source for 125,000 residents of Cedar Rapids. The Coldwater/Palmer watershed council has focused watershed improvement efforts on reducing nitrate delivery by offering incentives such as cornstalk nitrate testing (CNT), side-dress nitrogen (N) application, and moving N applications from fall to spring. Seventy-six percent of 41 project cooperators enrolled in the CNT program during 2008. Watershed average CNT results of 2,137 ppm (2008) were just above the optimal range (700 – 2000 ppm) and below the baseline results of 3,231 ppm (2006). This is the second year that CNT results were more than 30% below the baseline year. Seven cooperators with 2,327 enrolled acres tried early-summer, side-dress N applications on a portion of their acres, to receive a \$500 incentive, and reported positive results when compared to fields that had fall or pre-plant N applications.

A tile line bioreactor demonstration installed in 2006 continued to provide disappointing results due to lack of water flow through the nitrate removal filter. Realizing the importance of testing new technologies, the watershed council designated \$15,000 of Iowa Corn Grower Association sponsored funds for a second bioreactor to be installed at a site with different soil qualities than the first site. The bioreactor will be fully equipped to monitor water flow and nitrate concentration before and after the filter. The resulting data will be used by project cooperators and others to install future on-farm bioreactors to remove nitrate from field tile.

The average Phosphorus Index (PI) score on 321 fields covering 14,600 acres is 1.06, low environmental risk, while the Soil Conditioning Index (SCI) is a reasonable 0.39. Project cooperators have benefited from performance incentives by installing waterways and vegetative buffers, changing to no-till planting and reducing tillage passes. Three-year cooperators that changed to no-till and strip-till planting improved their average SCI scores by 134%, increasing the opportunity to build essential soil organic matter long-term. On average, all 3-year participants increased SCI by 31%. Project total Sediment Delivery Calculator estimates are 210 T/yr reduction in sediment loss and 273 Lbs/yr reduction in delivery of phosphorus.

Project Name: College Creek Watershed Improvement Project

Project Sponsor: City of Ames

Length of Project: January 1, 2008 to December 31, 2010

Counties included in the project area: Story County

Total Watershed Improvement Funds awarded for this project:	\$304,335
Total Watershed Improvement Funds spent:	\$ 37,147
Total Watershed Improvement Funds obligated:	0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 67,188

Project objectives:

- Administer project and implement all activities and objectives in the project
- Integrate residents and recreational users with project technical staff in the process of design, planning, and construction of stream, riparian and upland water quality enhancement practices
- Engineer/design water quality enhancement practices; practices included are engineering-sound, biologically-friendly, and sensitive to the public's sense of aesthetics and interest in native plant communities
- Construct stream channel and stream bank stabilization and riparian enhancement
- Monitor and evaluate outcomes; changes in storm water runoff quantity and quality and stream bank stability will be measured

Summary of activities and accomplishments for calendar year 2008

Presentations were given to several interested groups, which resulted in newspaper articles being published. Homeowners committed participation in constructing storm water BMP's to control runoff on their properties as well as participated in learning circles designed to teach stream restoration and water quality basics. Residents, technical experts, and city staff met to shape a vision for this portion of College Creek. This vision includes defining the most acceptable type of stream bank stabilization practices, specific wildlife species to create riparian habitat for within this urban area, and the goals to set for water quality and aquatic habitat quality conditions in this headwaters reach of the stream.

Topographic survey and wetland delineation has been completed for the project area. This information is the critical first step in designing the stream channel and bank stabilization measures. Nearly 26 upland storm water management practices have been designed. Six practices have been constructed to date. Wet weather and soil conditions impeded further progress. Sediment delivery calculations for baseline stream bank conditions were completed.

This first year was designed to conduct thorough water quality (pre-project) and biological monitoring. These analyses yielded interesting and unexpected results. We identified a general lack of biological life, low dissolved oxygen, and higher than desired bacteria levels in approximately 50 percent of College Creek, which is included in this project. We were previously aware this reach included unstable stream banks and a widening channel which would be expected to reduce habitat quality. Considering these water chemistry conditions, we have stepped up public education and field work to further investigate possible cause(s) and we have added another pet waste bag disposal site within the greenway of the project site.

**Dry Run Creek Sub-Watershed Improvement Project
Floyd County Soil & Water Conservation District
May 1, 2008 to January 31, 2010**

Counties included in the project area: Floyd

Total Watershed Improvement Funds awarded for this project:	\$75,000.00
Total Watershed Improvement Funds spent:	\$66,663.75
Total Watershed Improvement Funds obligated:	\$ 650.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 7,686.25

Project objectives:

- Administer the Dry Run Creek Sub-Watershed Improvement Project to ensure all objectives and activities planned are implemented.
- Construct alternative outlets for three ag drainage wells.
- Reduce nutrient delivery to surface water and aquifer through application of nutrient and pest management plans on 400 acres
- Conduct an information and education program to increase awareness and knowledge of Dry Run Creek Sub-Watershed

Summary of activities and accomplishments for calendar year 2008

The late summer construction season was utilized to install 6715 feet of an alternative outlet through four landowners land. The alternative outlet will provided an outlet for tile drainage on 387 acres of cropland. The project consisted of:

ITEM	SIZE	AMOUNT INSTALLED
Ditch Improvements		1300 Feet
Tile	24 inch	800 feet
Tile	18 inch	2245 feet
Tile	12 inch	2770 feet
Tile	10 inch	100 feet

Three Agricultural Drainage wells were abandoned and sealed according to state requirements to allow the farmers to meet the IDNR 2009 Sunset Clause for providing an alternative outlet for tile water draining into drainage wells. Based on information from Calvin Wolter, Iowa DNR Geological Survey staff in Iowa City, we can expect that by closing these drainage wells we should see a groundwater Nitrate-N loading reduction of 20 lb/acre/year or a total of 7740 lb/year for the project area.

The local staff gathered preliminary farm data on the landowners in the watershed to begin the process of developing nutrient and pest management plans on 400 acres of cropland.

An article was published in the Globe Gazette on Floyd SWCD receiving a WIRB grant to assist landowners in Dry Run Creek.

Elk River Water Quality Project
Clinton County Soil & Water Conservation District
Length of Project: March 1, 2006 to December 31, 2008

Counties included in the project area: Clinton, Jackson

Total Watershed Improvement Funds awarded for this project:	\$292,045.00
Total Watershed Improvement Funds spent:	\$116,398.71
Total Watershed Improvement Funds obligated:	\$0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$175,646.29

Project objectives:

- Eliminate toxic ammonia peaks in Elk River by reducing agriculture waste runoff and implementing proper nutrient utilization on 50% of the small and medium livestock operations in the priority sub-watersheds.
- Achieve a 30% sediment delivery reduction in the watershed.

Summary of accomplishments and water quality outcomes

Through cooperation with the 319/WSPF Elk River Water Quality Project following the completion of two ag waste sediment basins in 2007 effort was made this year on public outreach of these projects. In March, a large two page article was published in a special edition called Rural Reflections in The Observer. The article highlighted the completed projects and the two producers reasoning behind getting involved with the project and their outlook on water quality. In June, a Conservation Showcase article was written by an USDA-NRCS Public Affairs Specialist on one of the completed projects. This article was also published in the Wallaces Farmer in June.

Two additional ag waste sediment basins were completed in 2008. A sediment basin open house was held in September at one of the new project sites and the project site highlighted in the Wallaces Farmer. Approximately 15 producers attended each open house.

Over the course of the project four ag waste sediment basins were constructed as a result of project efforts. These projects will reduce open feedlot runoff and protect water quality. Efforts are still in progress with one new landowner in the watershed for this practice.

Four grade stabilization structures and two acres of grass waterways were constructed in the watershed in 2008.

During the project time span WIRB funding was utilized on 2 grade stabilization structures that will provide an estimated sediment loading reduction of 459 tons per year and 12.3 acres of grass waterways that will provide an estimated sediment loading reduction of 229 tons per year.

Adequate resources were available for practice implementation. Somewhat meager progress and the use of other funding sources to best fund an application based on the individual practice and application timeframe resulted in the remaining Watershed Improvement Fund unobligated balance.

**Farmer Creek Watershed Project
Jackson Soil and Water Conservation District
March 1, 2006 to December 31, 2008**

Counties included in the project area: Jackson

Total Watershed Improvement Funds awarded for this project: \$28,738.00

Total Watershed Improvement Funds spent: \$11,584.67

Total Watershed Improvement Funds obligated: \$ 0.00

Watershed Improvement Fund unobligated balance as of 12/31/2008: \$17,153.33

Project objectives:

- Reduce streambank erosion by excluding or limiting livestock access to the stream by implementing fencing, cattle approaches, and alternative watering sources.
- Install at least three acres of filter strips or riparian tree plantings to reduce sediment delivery and streambank erosion.
- Stabilize eroding streambanks by constructing 500 feet of cedar revetments and at least one in-stream structure to protect 500 feet of bank.

Summary of accomplishments and water quality outcomes

The Farmers Creek WIRB project began with a comprehensive media campaign that included direct mailings, newspaper articles and radio announcements designed to inform the watershed residents of the projects goals and objectives. Throughout the two year project, WIRB details and activities were included in the project's quarterly newsletter. There are 25 landowners along the main branch of the creek that were eligible for assistance through the WIRB project.

The first full year of the project was spent searching for cedar revetment specifications. Although this WIRB project was written with innovation in mind, the agreement between the SWCD and NRCS states that all projects must meet approved specifications. The state engineer approved the specs for implementation on a trial basis. Since revetments are best constructed in spring, early 2008 was the only opportune time to construct them. We had a site lined up, and intended to use it as a training field day. Unfortunately, heavy rains and flooding precluded this activity. This was also the case with in-stream structures.

The most successful portion of this project revolved around the alternative watering methods and exclusion fencing. After one producer installed three cattle approaches and 1700 ft of exclusion fencing, a field day was held at his farm. This directly led to the installation of two approaches by one producer and the implementation of a rotational grazing system with a solar pump to provide water by another neighboring producer. The nose pump that was purchased for demonstration purposes has been utilized at multiple field days and continues to be an interesting public relations tool to spark interest in alternative watering sources. Additional funding would probably be utilized by other neighbors interested in alternative watering sources.

The goal to install riparian and filter strips was not met, primarily because of the highly productive nature of the streamside fields. Given the value of corn at the time, producers were unwilling to idle this land, especially if they weren't offered rental rates, as in the CRP program.

Although difficult to quantify, water quality improvements can be assumed where the cattle were excluded or limited to stream access.

Project Name: Fox River Water Improvement Project
Project Sponsor: Fox River Ecosystem Development Board
Length of Project: January 1, 2007 to December 31, 2009

Counties included in the project area: Appanoose and Davis.

Total Watershed Improvement Funds awarded for this project:	\$ 414,376.00
Total Watershed Improvement Funds spent:	\$ 152,516.00
Total Watershed Improvement Funds obligated:	\$ 116,821.82
Watershed Improvement Fund unobligated balance as of 2/31/2008:	\$ 145,038.18

Project objectives for calendar year 2008:

- Administer the Fox River Ecosystem Improvement Project to ensure all objectives and activities planned are implemented.
- Administer six sites for water quality monitoring with USGS.
- Install 1,100 ft. of fence protecting 5,500 feet of stream and subtributaries and excluding livestock.
- Install one stream bank stabilization site utilizing non-traditional bio-engineering techniques to reduce cost.
- Establish one site to enhance wildlife habitat.
- Construct 25 water and sediment control basins reducing livestock runoff and sediment to Fox River.
- Construct 4,500 feet of terraces to control and direct cropland runoff into grass filters.
- Construct 16 grade stabilization structures providing livestock watering source and reducing sediment delivery from active gully erosion.

Summary of activities and accomplishments for calendar year 2008:

- Project coordinator, Craig Foster, administered all projects to ensure all objectives and activities planned were implemented.
- Administered four sites for water quality monitoring and have been working with USGS.
- 24,800 feet of fencing has had funding obligated to protect stream and subtributaries while excluding livestock.
- One stream bank stabilization project has had funding obligated to stabilize 650 feet of stream bank.
- An eleven acre wildlife habitat seeding project has had funding obligated.
- Six water and sediment control basins have been installed on priority sites, reducing sediment delivery by an estimated 85 tons per year to the Fox River. Twenty three additional water and sediment control basins have had funds obligated.
- 7,250 ft of terraces to control and direct cropland runoff into grass filters has had funding obligated.
- Four grade stabilization structures have been completed by landowners on sites meeting the high priority land. These four sites have reduced sediment delivery by an estimated 592 tons per year to the Fox River, as calculated by using the sediment delivery calculator. All four sites provide watering source to livestock.
- Eight additional grade stabilization structure sites have obligated funds. Two of these have pond construction done but not yet fenced.

The heavy rain fall in this area has been a difficult challenge for contractors to build all these projects this year.

Hewitt Creek Watershed Incentive Program for Performance-based Environmental Management

Project Sponsor: Hewitt Creek Watershed Improvement Association, Inc.

Length of Project: March 1, 2006 through December 31, 2008

Counties Included in Project Area: Dubuque County

Total Watershed Improvement Funds Awarded to this project:	\$159,294
Total Watershed Improvement Funds Spent:	\$158,739
Total Watershed Improvement Funds Obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008	\$ 555

Project Objectives:

- Implement a program of performance-based incentives for agricultural pollution control that connect farm management decisions with environmental outcomes.
- Assist cooperators to calculate science-based environmental performance indexes and develop effective management responses to improve their scores.
- Document lessons learned and determine critical success factors.
- Provide information, education and outreach to develop water quality awareness and knowledge in the Hewitt Creek Watershed community.

Summary of activities and accomplishments for 2008

Project participation grew to 56 cooperators in 2008 (67% of watershed farm operators) due to increased watershed and stream quality awareness and continued neighbor-to-neighbor recruiting. Changes in field, farm and watershed management have shown up in water monitoring data as a general trend of improved nutrient and suspended solids analyses and improved late summer dissolved oxygen levels. Recolonization of and improved diversity and quantity of macro-invertebrates found during semi-annual evaluations may be a result of improved oxygen levels and improved water quality conditions in Hewitt Creek.

Agronomic and environmental indexes that account for changes to land and nutrient management were calculated on 396 fields totaling 9,893 acres on 47 farms. High environmental risk fields with P Index values greater than 5 received the most attention by cooperators resulting in 39% improvement in P Index scores. Soil Conditioning Index (SCI) values on these priority fields improved 91%. Watershed-wide P Index values on three-year cooperator farms improved 14% and SCI scores improved 10%. Index scores improved most dramatically through the implementation of no-till planting, new waterways, contouring and cover crops. Using the Sediment Delivery Calculator, sediment delivery to Hewitt Creek was reduced by 1,366 T/yr and P delivery by 1,776 Lbs/yr during 2008, bringing the project to-date annual sediment reduction to 4,033 T sediment/yr. Cornstalk nitrate samples were analyzed for 36 farms, showing a residual nitrate reduction of 51%. Due to cornstalk nitrate results, project cooperators have reduce nitrogen applications by an average of 44 pounds per acre, a 22% reduction that impacts 8,537 acres and would save 220 tons of nitrogen annually, if extended to all watershed acres.

100% of project cooperators completing a mid-project survey view the performance project as rewarding a conservation systems approach, all believe the program is having a positive effect on the environment and the project encourages changes in management.

Holiday Lake Watershed Improvement Project
Project Sponsor: Poweshiek County SWCD
Length of Project: January 1, 2007 – September 30, 2008
Counties included in the project area: Poweshiek

Total Watershed Improvement Funds awarded for this project:	\$ 64,447
Total Watershed Improvement Funds spent:	\$ 53,910
Total Watershed Improvement Funds still obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 9/30/2008:	\$ 10,537

- Project objectives:
- Construct Best Management Practices in high soil loss areas
 - Reduce sediment delivery by 50%, or 75 tons per year
 - Implement an Information and Education Program

Three basins, four rain gardens, one terrace, and one grade stabilization structure have been installed by five landowners on sites that met the high priority soil-loss criteria. Together, these conservation structures have reduced sediment delivery by an estimated 82 tons per year to Holiday Lake.

All eleven landowners in the Holiday Lake watershed have been contacted to determine interest in conservation practices. Of the four remaining landowners that did not install any conservation practices: one landowner has all of his property as a tree farm, another wanted to just keep his land in CRP, and the last two were simply not interested in installing more conservation practices on their property at this time.

Two of the top three priority basins of the Holiday Lake Owners Association were completed last year. These were priority basins because of the amount of sediment that was repeatedly cleaned out of silt basins that are located near the lake. This year, the landowner of the neighboring property agreed to install a basin to protect part of the priority area that was left unprotected last year. The Holiday Lake Owners Association hosted an IOWATER training workshop, and updated their water monitoring program by meeting with IA DNR water monitoring staff.

The grade stabilization structure, terrace, and two basins were installed on two farm properties that were identified as high soil loss areas using the sediment delivery calculator. The remaining basin was on a farmland area that was highlighted on the GIS sediment delivery map.

A public watershed promotional event was held on June 3rd with a presentation on soil conservation given by the Iowa Learning Farm, to about 30 people. Informational brochures were distributed on agricultural conservation practices, urban conservation, rain gardens, bio-swales, lake management, and environmental education. These led to good community contact with interactive discussion. Three news articles were submitted to three local newspapers as well as the Holiday Lake Owners Association Newsletter. The articles informed residents of the water quality improvement project and water quality issues. One of the articles provided photographs of the public promotional event of June 3rd. Two of the articles promoted the benefits of a rain garden for lot owners around the lake. This resulted in several inquiries and two watershed lot owners installing four rain gardens. The Holiday Lake Owners Association distributed two newsletters, advertised on their outdoor bulletin board, and also used their web site, to educate the lot owners about lake conservation and water quality.

If additional resources were provided, an education and information program with cost share money would be intensified toward the urban lot owners directly around the lake, and maintained with the other watershed landowners. The Poweshiek SWCD will continue to provide limited education and information support to all of the Holiday Lake watershed landowners as it is able.

Hurley Creek/McKinley Lake Watershed Improvement Project

City of Creston

Length of Project: March 1, 2008 to February 28, 2011

Counties included in the project area: Union

Total Watershed Improvement Funds awarded for this project:	\$ 117,500
Total Watershed Improvement Funds spent:	\$ 7,739
Total Watershed Improvement Funds obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 109,762

Project objectives:

Objective 1. Administer the Hurley Creek/McKinley Lake Watershed Improvement Project and work with all stakeholders to ensure all project objectives are implemented as scheduled.

Objective 2. Reduce by at least 50% the amount of annual erosion, which will help reduce sediment load, loss of property, and may improve water quality.

Objective 3. Reduce *E. Coli* levels to meet the designated use of McKinley Lake by controlling direct animal access, reducing animal waste runoff, and improving sanitary sewer systems.

Objective 4. More effectively manage the storm water flow rate, which may reduce erosion and flooding and may improve water quality. Reduce stormwater flow into Hurley Creek by at least 35%.

Objective 5. Educate the public, including civic groups, homeowners, farmers, and business owners in the Hurley Creek Watershed about Best Management Practices and establish comprehensive education and communications strategies to promote environmental awareness.

Summary of activities and accomplishments for calendar year 2008

The Hurley Creek/McKinley Lake Watershed Improvement Project has received enthusiastic support from many area stakeholders including public agencies, residents and members of the press. Organizations participating in Project meetings include City of Creston, Union County Soil Conservation District, Natural Resources Conservation Service (NRCS) Union County Extension, Creston Chamber of Commerce, Prairie Solid Waste Agency, Southern Iowa Rural Water Association (SIRWA) and the Creston Park Board. Early in 2008, people attending Project meetings nominated and elected board members. Members also formed an Education Committee.

The whole membership and the Education Committee met several times each to discuss carrying out objectives. Much of the winter and early spring was spent preparing and planning for spring activities. The Project sponsored a booth and a speaker at the Home and Garden Show to tout the benefits of rain gardens, and reducing runoff. The Park Board did a Hurley Creek Cleanup in April, along with help from students at Creston High School and Southwestern Community College along with area residents. NRCS worked with landowners to install conservation practices in the watershed. Extension assisted in a number of rain garden projects. Creston officials worked with NRCS and SIRWA on issues along the creek inside city limits.

**Lake Colchester Middle Creek
Lakewood Village Association
July 2, 2007 – July 5, 2010**

Counties included in the project area: Warren

Total Watershed Improvement Funds awarded for this project:	\$ 247,500.00
Total Watershed Improvement Funds spent:	\$ 161,798.42
Total Watershed Improvement Funds obligated:	\$ 00.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 85,701.58

Project objectives:

- Manage fish population for biomanipulation principles for water quality.
- Create habitat alterations based on biomanipulation principles for water quality.
- Improve inlet sediment and nutrient control practices to benefit lake water quality.
- Monitor the lake water quality and augment algae control with lake circulation technology.

Summary of activities and accomplishments for calendar year 2008

In June, 2008, Lake Colchester sustained heavy silt-deposit and very significant shoreline damage in a record-volume flood which deposited excess of 180,000 CY silt deposits.

LVA continued efforts with a part-time employee (and 5-6 volunteers) to manage fish population by removal of rough fish population. Additional equipment, including a boat and motor, feeder, nets, traps and seines were purchased. Five fishing tournaments (35-40 total participants) were held. Rough fish removal efforts resulted in a total of 3,325 pounds of catfish, 2,800 pounds of carp, and 625 pounds of shad. A 'Catch and Release Only' Fishing Regulation for game fish was implemented. A fish-tagging system for identification was implemented. In May, 2008, Farmer's National conducted a formal fish study of Lake Colchester which indicated healthy quantities and sizes of various game fish; as well as large quantities of shad, carp and catfish.

Three lake circulators (SolarBees) were purchased and installed in the lake in August, 2008 and are currently, successfully operational. Approximately 30 habitat structures been placed and GPS mapped around the lake. Notably, three significant areas of growth of arrowhead and other grasses and cattails have been documented on the West End, Beardsley & North Shore.

LVA approved Corell Contractors and pre-excavation of work on Finger Pond began in December to remove 2,500-3,000 CY of silt deposits; to be completed in mid-January, 2009. Foth Infrastructure & Engineering was selected and approved as the engineering firm for project management of West End & Beardsley Bay WIRB Grant Matching Funding projects for inlet excavation.

On-going, monthly water quality monitoring show Secchi depths improvements to 24-36”.

Project Name: Lake Macbride
Project Sponsor: Johnson County Soil and Water Conservation District
Length of Project: June 1, 2008 to June 30, 2009

Counties included in the project area: Johnson

Total Watershed Improvement Funds awarded for this project:	\$64,260
Total Watershed Improvement Funds spent:	\$ 0
Total Watershed Improvement Funds obligated:	\$62,100
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 2,160

Project objectives:

- Stabilize 1,400 feet of severely eroding shoreline adjacent to Lake Macbride along Cottage Reserve Road. This is one of the last remaining priority areas that were identified by the comprehensive watershed assessment.

Summary of activities and accomplishments for calendar year 2008

The Johnson County Soil and Water Conservation District (Johnson County SWCD) facilitated communication and the development of a 28E agreement between the Iowa Department of Natural Resources, Johnson County Secondary Roads Department, and the Johnson County Soil and Water Conservation District to ensure a timely starting of the project.

The Johnson County Secondary Roads Department surveyed, designed, and developed cost estimates for the project. The Secondary Roads Department also conducted the bidding, acquired permits, and supervised project construction. The shoreline stabilization is seventy-five percent complete. Winter weather has delayed project completion until spring.

The Johnson County SWCD submitted a press release to the local media which resulted in two printed articles by the Iowa City Press Citizen and the Gazette. An additional article was printed in the Iowa City Press Citizen. Sediment delivery reductions of the project were calculated and printed in the news articles. The Johnson County SWCD also prepared a news article that will be printed in their February newsletter. Planning efforts began for the post completion tour that will be held later in the spring.

**Lake Storm Lake Watershed
Lake Preservation Association for Storm Lake, Inc.
Length of Project March 1, 2006 to February 28, 2009**

Counties included in the project area: Buena Vista

Total Watershed Improvement Funds awarded for this project:	\$477,000.00
Total Watershed Improvement Funds spent:	\$477,000.00
Total Watershed Improvement Funds obligated:	\$477,000.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$0.00

Project objectives:

- Administer Project & Implement all activities and objects in the Lake Storm Lake Watershed – Lake Preservation Association Project
- Construct the desired elements by the end of the calendar year 2006

Summary of accomplishments and water quality outcomes

All projects outlined in the initial scope of work for this grant have been completed and in working order providing environmental benefits to the Lake Storm Lake watershed and the lake itself.

Accomplishments for this project include:

- Construction of eight (8) mini rain gardens along East Lakeshore Drive/HWY 7/71. These rain gardens were constructed around the storm water intakes to help filter the initial storm run off along the highway during rain events.
- Construction of two (2) large rain gardens along the north edge of parking lots as part of the AWAYSIS Project. These two rain gardens filter storm water from large parking lots as well as the AWAYSIS Family Playground and surrounding trails before the water enters the lake.
- Construction of two (2) large detention ponds in Radio Park to filter a major storm water truck line that receives storm water from a major portion of the community's commercial and industrial areas.

All of these developments have provided visible reductions in the amount of pollution that has in the past entered the lake from these storm water systems. In addition, they are essential in being a first line of defense for any spills and other potential disasters that could occur in heavy commercial and industrial areas.

An example of the success of these projects is with a major sewer spill from an industrial citizen that infiltrated the storm water system in late fall 2008. A failure of a valve in their sewer system caused raw sewage to get into the storm water system. The two large detention ponds in Radio Park constructed under this grant captured 99% of the spill and contained it allowing the city and the industry time to clean up the spill prior to it entering the lake.

**Leisure Lake Wastewater Treatment System Project
Limestone Bluffs RC&D
Length of Project: January 1, 2007 – December 31, 2009**

Counties included in the project area: Jackson

Total Watershed Improvement Funds awarded for this project:	\$500,000.00
Total Watershed Improvement Funds spent:	\$ 52,092.15
Total Watershed Improvement Funds obligated:	\$ <u>0</u>
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$447,907.85

Project objectives:

- Administer the Leisure Lake Watershed Improvement Project to ensure all objectives and activities planned are implemented.
- Secure necessary agreements, contracts, and administrative services to move project forward to construction.
- Construct a Wastewater collection and treatment system for the un-incorporated community of Leisure Lake to reduce nutrient and bacteria impairments to Lytles Creek, the Maquoketa River and local groundwater sources.

Summary of activities and accomplishments for calendar year 2008

The Limestone Bluffs RC&D contracted with the Eastern Iowa Rural Utility Service System (EIRUSS) to plan and implement the wastewater treatment system for Leisure Lake. EIRUSS contracted IIW Engineering to complete the engineering plans for the project. Additional financing has been secured for the project through a Community Development Block Grant with Jackson County and a USDA Rural Development grant and loan.

IIW Engineering is finishing the design of the collection system for the project. A preferred site for the controlled discharge lagoon has been identified and the project team is working with the Jackson County Bd. of Supervisors and the County Attorney to negotiate access in order to obtain the soils information necessary to complete the lagoon design.

In 2009, the engineering design will be completed and bids let to complete construction.

Lime Creek Watershed Incentive Program for Performance-based Environmental Management

Project Sponsor: Lime Creek Watershed Improvement Association, Inc.

Length of Project: January 1, 2007 through December 31, 2009

Counties Included in Project Area: Buchanan County

Total Watershed Improvement Funds Awarded to this project:	\$290,011
Total Watershed Improvement Funds Spent:	\$125,933
Total Watershed Improvement Funds Obligated:	\$ 6,980
Watershed Improvement Fund unobligated balance as of 12/31/2008	\$157,098

Project Objectives:

- Develop water quality awareness, knowledge, sustainable change and leadership within the watershed community.
- Connect farm management decision-making and environmental outcomes by demonstrating the use of science-based environmental indexes that integrate soil, crop and livestock management practices into progressively improving performance scores.
- Quantify the effectiveness of this approach, document lessons learned and develop critical success factors for the use of performance-based incentives in other watersheds.

Summary of activities and accomplishments for 2008

The Lime Creek watershed improvement project was initiated in 2006 with a \$90,000 three-year grant from the Iowa Corn Growers Association (ICGA). Twenty-eight project cooperators have enrolled 12,068 acres into the performance-based project. The Iowa Phosphorus Index (IPI), Soil Conditioning Index (SCI) and cornstalk nitrate test (CNT) are performance measures used by project cooperators to evaluate conservation management changes. Cooperators have received \$49,437 in incentives for high baseline performance and for improving scores.

The watershed-average IPI score, 0.87 (very low), is impressive given the fragile soils across much of the watershed. Average SCI score is also high, 0.58, due to a high level of no-till planting adoption. Forty-eight percent of participating farms use no-till planting for at least one crop in their rotation. Through group discussions of conservation scenarios, project cooperators have found SCI scores improved more than 200% when no-till planting soybeans on environmentally sensitive fields. During the course of the project, participants have reduced sediment delivery to Lime Creek by 633 tons/year and phosphorus delivery by 823 pounds/year by reducing tillage, altering crop rotations, no-till planting, installing waterways and planting vegetative filters.

Sixty-one percent of cooperators enrolled in the CNT program. Fifty-three samples averaged 2,570 ppm NO₃-N. Results were higher than anticipated by cooperators which led to extensive discussion by participants to determine potential reasons. CNT results for 2008 were higher than the baseline year of 2,145 ppm (2006). The optimum range is 700 to 2,000ppm.

The tile line bioreactor demonstration installed in November 2006 was monitored regularly throughout the growing season. Results were disappointing in 2008 with little NO₃-N removal due to the bioreactor site being inundated with water for much of the early growing season and the bioreactor never recovering. Prior year results showed late season NO₃-N removal peaking near 90%. Multiple years of monitoring are planned for this nitrate management demonstration. The watershed council plans to use ICGA funds equip the bioreactor site with flow monitoring technology to yield a more complete data set for use by watershed residents and others.

Little Clear Lake
Pocahontas Soil and Water Conservation District
Length of Project: January 1, 2007 to December 31, 2009

Counties included in the project area: Pocahontas

Total Watershed Improvement Funds awarded for this project:	\$ 42,000.00
Total Watershed Improvement Funds spent:	\$ 678.87
Total Watershed Improvement Funds obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 41,321.13

Project objectives:

- Sample tile outlets to monitor nutrient inputs to Little Clear Lake
- Develop conservation plans on ag land in watershed to reduce erosion to 4 T/A and increase residue levels to >30%
- Install 3 sediment basins and 1 tile catch basin to reduce sediment by 26.5 tons/year and phosphorous by 106 lbs./year
- Install 40 acres of buffers

Summary of activities and accomplishments for calendar year 2008

The district has submitted 2 newspaper releases to the Pocahontas paper while doing a one page interview about the WIRB project associated with Little Clear Lake. We also have an advisory committee made up of agency personnel as well as involved citizens. The district held a watershed clean-up on June 25th, although it was not a huge turnout it was very gratifying to work with some of the Little Clear Lake volunteers.

Over the second 6 months of the Little Clear Lake WIRB project weather has hampered implementation of BMPs and field days. The advisory committee met from February through August to discuss issues, plan events and submit I & E information to the public. There will be a shallow water management presentation in January at Gilmore City by Mark Gulick of the IDNR. This is a management option for Little Clear Lake that the public needs to learn more about as it is a new management tool for Iowa's shallow lake improvement. The district has been in contact with Ducks Unlimited for possible funding to move forward with this management type if it is a feasible option. We also continue to work with landowners marketing CRP, EQIP, and State programs through personal contacts as well as newsletter articles.

The Pocahontas SWCD also applied for a county foundation grant to upgrade the Little Clear Lake roadside park. The overall plan is to establish an ecosystem education area that includes; a warm season tall grass prairie, a restored savannah, and a managed woodlot with native hardwoods. There will be separate informational stations located on a trail throughout the area along with an informational kiosk for visitors. The grant award was \$3000 towards the materials for the kiosk and informational centers. The Pocahontas County Conservation Board will be supplying labor and materials for trails and also supplying native seed and trees. This will be an advisory committee and community effort for information and education this spring.

The majority of on ground practices will be implemented this spring with any follow-up necessary finished in the fall of 2009. At the time of this report we have surveyed 2 head cut areas delivering sediment to the lake. We will be working on the design this winter for contracting and implementation this spring. These structures will treat approximately 30 acres of surface runoff. We are also in the process of designing a retention and filtration area to daylight subsurface tile. This will reduce the nutrient loading to the lake and treat approximately 85 acres of tile drained agricultural ground. Working with landowner on the southeast side of the lake we have enrolled a 4.0 acre buffer and 1.3 wetland with tile out letting into the wetland to treat it before entering the lake. This is designed but will not be implemented until fall 2009. We have also completed conservation plans on 110.4 acres in the watershed documenting reduced tillage and nutrient management. We will continue to press conservation plans until all the acres have been documented.

**Little Pony Creek Watershed Improvement Project
West Pottawattamie County Soil & Water Conservation
District Length of Project March 1, 2006 – January 31, 2009**

Counties included in the project area: West Pottawattamie

Total Watershed Improvement Funds awarded for this project:	\$215,673.00
Total Watershed Improvement Funds spent:	\$141,702.18
Total Watershed Improvement Funds obligated:	\$ 43,058.82
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 30,912.00

Project objectives:

- Implement and demonstrate Best Management Practices..
- Create public awareness of the project & water quality issues.
- Develop an educational program with Iowa School for the Deaf & ISU.
- Improve & monitor water quality in the Little Pony Creek Watershed

Summary of activities and accomplishments for calendar year 2008

Urban Best management Practices (BMP's) have been installed throughout the watershed. Targeted development areas were assessed. Landowners were educated and assisted with the implementation of the practices. In the Hills of Cedar Creek Subdivision five residential rain gardens and a side by side sod vs. compost seeding site were installed, green spaces in the development were improved using soil restoration and bioswales. With a changed mindset on the use and design of practices the developer has instituted change within his development and is promoting Low Impact Development to others. The retirement community Risen Son is installing a rain garden, bioswale, pervious paving public space. The area will be a recreational area for residence and serve to treat one acre of urban storm water runoff from several apartment buildings and a portion of the street. A request to WIRB was made and granted to add the line item of pervious concrete to the budget to allow for this project. The Council Bluffs Airport Authority is installing a 638 structure and a large bioswale. The project will treat 13 acres of farm land and airport facilities including an area of planned expansion of the airport hangars and parking lots.

Water quality monitoring continued throughout the year. IOWATER and USGS data was collected and submitted to the IOWATER database at the DNR IOWATER and USGS web sites. Findings are the water quality concerns stem from the flashiness of the watershed following storm events. With increases in development and the addition of impervious surfaces this flashiness will continue to have a great impact on the quantity and quality of the water in the Little Pony Creek.

A Stormwater BMP Guidance Manual and LID Model Ordinances have been developed. The documents will be presented to the Pottawattamie County Board of Supervisors. The Supervisors will use these as a tool as they consider adopting LID Ordinances in the county. The documents are designed to be used in conjunction with the Iowa SUDAS Manual to aid in the planning and design of urban BMPs with specific detail to the Loess Soils. These documents created in Partnership with the Golden Hills RC&D will also be presented to the counties throughout the Loess Hills Corridor and used by the Golden Hills RC&D to update the Loess Hills Corridor Management Plan. News stories, tours, presentations and educational events have been done. In coordination with local groups and partner agencies a great awareness of the watershed project and water quality has been created.

Project Name: Lyon County Clean Water Project
Project Sponsor: Lyon SWCD
Length of Project: January 1, 2007 – December 31, 2009

Counties included in the project area: Lyon

Total Watershed Improvement Funds awarded for this project:	\$267,800.00
Total Watershed Improvement Funds spent:	\$0.00
Total Watershed Improvement Funds obligated:	\$139,365.45
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$128,434.55

Project objectives:

- Administer the Lyon Clean Water Project to ensure all objectives and activities planned are implemented.
- Reduce pollutant delivery to water resources by constructing six cost-effective alternative treatment systems for controlling open feedlot runoff that meet or exceed the environmental regulations for pollution control.
- Utilize monitoring processes to measure effectiveness of alternative treatment to meet water quality standards.
- Conduct an information and education program to increase awareness and knowledge of Lyon County water quality problems, impact of open feedlots on water quality, alternative treatments, and relative cost and environmental performance to livestock producers, watershed residents, and the local community.

Summary of activities and accomplishments for calendar year 2008:

Held TAC meetings to get input for this project. TAC choose which sites from the original study would be contacted for voluntary participation in this study. I meet with those owner/operators and reported back to the TAC, which then selected the final six for this study.

News releases were sent to various local newspapers about the study and objectives. A news release was also issued to invite the public to an informational meeting on 2-12-08 to discuss the project. Handouts were provided and discussion period was held.

A pre-construction tour of 4 of the chosen sites was held on 7-8-08. Discussed existing solid settling and treatment. The owner of each site talked about their plans and objectives. The design engineer for one of the sites presented her preliminary plans.

Have received final plans and cost estimate information for 3 sites. Have met with owner and engineer on a fourth site. One site was built and am waiting for as-builts and final bills.

Held Annual Review meeting on 6-24-08.

Met with SWCD Board at various times to give updated progress reports.

Project Name: Miners Creek Watershed Improvement Project

Project Sponsor: City of Guttenberg

Length of Project: May 1, 2008 to April 30, 2011

Counties included in the project area: Clayton

Total Watershed Improvement Funds awarded for this project:	\$500,000
Total Watershed Improvement Funds spent:	\$343,530
Total Watershed Improvement Funds obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$156,470

Project objectives:

- Eliminate the sewage and stormwater runoff from the City of Guttenberg into Miners Creek
- Develop, enhance and preserve 13 acres of wetlands in the Miners Creek riparian zone
- Reduce direct livestock access to Miners Creek by 33%
- Reduce erosion and sediment loading by 25% to Miners Creek using bank stabilization and upland treatment practices

Summary of activities and accomplishments for calendar year 2008

The large-scale sewage outfall redirection and improvement project in the City of Guttenberg is 90% completed at this time. The two-phase project has eliminated sewage and stormwater runoff from the City of Guttenberg from entering into Miners Creek and negatively impacting water quality in the stream. The sewage outfall and urban stormwater runoff in this small watershed had been previously identified as potential sources of water quality impairments in Miners Creek. Eliminating these sources of impairments will have a positive impact on stream conditions, water quality and aquatic life conditions in Miners Creek. This project also provides an excellent example of ways to effectively reduce urban contributions to water quality impairments.

Bids were let and a contract was awarded for the development and enhancement of 13 acres of wetlands in the Miners Creek riparian zone. The contractor hired to complete the task has begun work on the wetlands and is expected to complete the work in spring 2009. The creation of 3 acres of wetlands, enhancement of an additional 2 acres and preservation of 9 acres of wetlands in the Miners Creek riparian area will serve to improve water quality through filtering of chemical and biological contaminants. The wetland complex also allows native vegetation to uptake nutrients from the water to reduce the delivery of nitrogen and phosphorus from Miners Creek to the Mississippi River that ultimately contribute to the Zone of Hypoxia in the Gulf of Mexico. As an added benefit, wetlands help to restore the natural hydrology of watersheds and increase water holding times that can significantly reduce damage caused by flooding.

Complete in-stream and streambank assessments were conducted on Miners Creek to help target landowners and specific stream areas for water quality improvement practices, such as; streambank stabilization, prescribed grazing systems, controlled livestock access and filter strips.

Project Name: Norfolk Creek Subwatershed Watershed Improvement Project
Project Sponsor: Allamakee Soil and Water Conservation District
Length of Project: January 1, 2007 to December 31, 2009

Counties included in the project area: Allamakee

Total Watershed Improvement Funds awarded for this project:	\$351,150
Total Watershed Improvement Funds spent:	\$186,798
Total Watershed Improvement Funds obligated:	\$ 11,325
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$153,027

Project objectives:

- Construct three grade stabilization structures that would trap sediment from approximately 300 acres. Construct 20,000 feet of terraces impacting approximately 100 acres in high priority areas. Construct 4 sediment control basins that would trap sediment from approximately 200 acres
- Reduce pollutant delivery to Norfolk Creek by approximately 3,300 tons of sediment per year
- Conduct an information and education program to increase awareness and knowledge of Norfolk Creek water quality issues to watershed residents and the local community
- Conduct water quality sampling and record all data for comparison with sampling data collected since 2003

Summary of activities and accomplishments for calendar year 2008

All potential sites had the necessary GIS data generated such as soils maps, topographic maps, distance to stream, distance to sinkholes, etc. One grade stabilization structures has been installed by a landowner on a site meeting the criteria. This site reduced sediment delivery by an estimated 270 tons per year (t/y). One additional grade stabilization site has obligated funds and is scheduled for spring, 2008 construction. One sediment control basin has been installed by a landowner on a site meeting the criteria. This site reduced sediment delivery by an estimated 105 t/y. A total of 22,575 feet of terraces were constructed reducing sediment by a total of 473 t/y. These practices treated approximately 167 acres.

A news article appeared in the Waukon Standard newspaper and in the Allamakee County Soil and Water Conservation District annual report covering WIRB opportunities and accomplishments. The District's newsletter also had coverage of the Norfolk WIRB project. A brochure detailing year one WIRB accomplishments will be sent out to all landowners within Norfolk subwatershed in February 2008 and is being compiled at this time. Monthly reports were presented to commissioners at each meeting of the Allamakee SWCD. Quarterly reports were submitted to the WIRB at the appropriate times.

Weekly water quality samples were collected in Norfolk Creek as well as 11 other sites throughout Yellow River Watershed and sent to the State Hygienic Lab for analysis. Monthly samples are collected through the winter months. All data is recorded and will be used to evaluate any water quality improvements

North Fork Maquoketa River Headwaters Watershed Project
Project Sponsor: Coffee Creek Watershed Improvement Association, Inc.
Length of Project: July 1, 2008 through June 30, 2011

Counties Included in Project Area: Dubuque and Delaware Counties

Total Watershed Improvement Funds Awarded to this project:	\$406,138
Total Watershed Improvement Funds Spent:	\$ 53,997
Total Watershed Improvement Funds Obligated:	\$ 18,100
Watershed Improvement Fund unobligated balance as of 12/31/2008	\$334,041

Project Objectives:

- Involve 60% of watershed farm operators in a performance-based incentive program.
- Improve Phosphorus Index and Soil Conditioning Index levels by 15%, reduce cornstalk nitrate test results by 40% and reduce sediment delivery by 7,500 tons per year.
- Reduce nutrient delivery from livestock feedlots within the watershed.
- Provide critical, decision-making information to watershed residents and document the effectiveness of a performance-based approach to benefit the implementation of performance-based incentives in other watersheds.

Summary of activities and accomplishments for 2008

Thirteen farm operators involved in the Coffee Creek Watershed Improvement Association, Inc. initiated Phase 1 of a watershed improvement project to address identified impairments (nutrients, episodic slugs of ammonia and sediment) in the North Fork Maquoketa River Headwaters by expanding a performance-based incentive program to the broader Headwaters watershed. The initial 13 participants are participating in a multi-state, NRCS-sponsored Conservation Innovation Grant project to demonstrate and evaluate the environmental and economic effectiveness of locally implemented performance-based incentives.

During the first 6 months, project enrollment, 29 of 85 potential cooperators or 34%, exceeded the year 1 goal of 33% participation. First year enrollment will continue during the spring of 2009. Eighty-three percent of participants enrolled in the cornstalk nitrate testing (CNT) program and evaluated results from 75 samples. Baseline CNT results were 2,793 ppm NO₃-N. Cooperators involved in the Coffee Creek project had second-year CNT results of 2,855 ppm, 11% lower than their baseline level of 3,190 ppm NO₃-N (2007).

Fifteen cooperators focused on installing and repairing grassed waterways damaged during heavy rains in the spring of 2008. With significant cooperator expense, 8.7 miles of waterways were improved, reducing sediment delivery by 1,052 tons/year. Project incentives for waterways were \$7,670 or \$0.17 per linear foot. Total sediment delivery calculations for conservation management initiatives implemented in 2008 are 2,501 T/yr. Planting vegetative filters at the field edge accounted for 903 T/yr of sediment delivery reduction, while reducing tillage, contour farming and no-till planting provided 519 T/yr of sediment savings. Total phosphorus delivery reduction was 3,251 pounds/yr. Total incentives paid to cooperators during 2008 were \$38,614 for baseline performance and improved performance following conservation management changes. WIRB supported 46% of the incentives while the balance of the payments was supported through the NRCS-CIG program.

Project leaders and cooperators met four times during the last half of the year to learn about current and past water monitoring data, develop an initial performance program structure, discuss conservation management options, recruit participants and review initial project results.

Project Name: Price Creek Water Quality and Erosion Control Project
Project Sponsor: Iowa and Benton County Soil and Water Conservation Districts
Length of Project: January 1, 2007 – December 31, 2009

Counties included in the project area: Iowa and Benton counties

Total Watershed Improvement Funds awarded for this project: \$71,075.00

Total Watershed Improvement Funds spent: \$ 1,651.39

Total Watershed Improvement Funds obligated: \$21,393.62

Watershed Improvement Fund unobligated balance as of 12/31/2008: \$48,029.99

Project objectives:

- Construct 4 grade stabilization structures, 13 acres of grassed waterways and 10 water/sediment control basins, 2,000 feet of terraces on drainage areas containing high priority erodible land.
- Reduce sediment delivery of 1,500 acres of high priority erodible land in the Price Creek Watershed and 200 feet of streambank.
- Conduct an information and education program to increase awareness and knowledge of the Price Creek water quality issues to watershed residents and the local community.

Summary of activities and accomplishments for calendar year 2008

Despite record rainfall, the Price Creek Watershed Project had a successful year working to achieve the objectives outlined in the 2008 work plan. It should also be noted that the Price Creek Watershed Project has leveraged funding from the IDALS-DSC's WPF/WSPF program, EPA Section 319 program, and the USDA-NRCS's EQIP program to support staff as well as provide cost share for practices aimed at reducing bacteria in Price Creek. A new project coordinator was hired mid-way through the second quarter.

In terms of the original WIRB objectives, the project has completed:

- 2 of the 4 grade stabilization structures (achieved CY08 objective)
- 18 of 13 acres of grassed waterways (10.7 less than CY08 objective, however, another 8.1 acres is currently obligated). 19 acres are planned in CY09.
- 7 of 10 water/sediment control basins (achieved CY08 objective) and 9 more are planned in CY09.
- 300 of 2,000 feet of terraces with 700 additional feet obligated and 2,500 feet planned in CY09.
- 864 of 1,500 acres of high priority land received sediment delivery reductions (achieved CY08 objective).
- Information and educational objectives were met for CY08 including 2 presentations to public officials, 2 field days, 1 workshop, 2 feature stories in the local newspapers, 1 newsletter, and 3 IOWATER watershed snapshot events.

The project looks forward to completing the remaining obligated projects in CY09, and obligating the remaining two-thirds of WIRB project dollars. Points of emphasis will be in achieving the remaining BMP goals and when exceeded such as in the case of grassed waterways, a funding request allowing the district to continue to provide funding on high priority erodible land will be requested.

**Rathbun Lake Special Project:
Strategic Placement of BMPs for Water Quality Protection
Rathbun Land and Water Alliance
Length of Project: March 1, 2006 to December 31, 2008**

Counties included in project area: Appanoose, Clarke, Decatur, Lucas, Monroe, and Wayne

Total Watershed Improvement Funds awarded for this project:	\$500,000.00
Total Watershed Improvement Funds spent:	\$465,567.20
Total Watershed Improvement Funds obligated:	\$ 0.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 34,432.80

Project objectives:

- Develop and perform geographic information system analysis to identify and evaluate potential locations for placement of debris basins to protect water quality in Rathbun Lake
- Construct at least ten debris basins in the Rathbun Lake watershed that will reduce annual sediment and phosphorus delivery by 3,000 tons and 12,000 pounds respectively
- Perform all administrative requirements as per grant agreement and approved application

Summary of accomplishments and water quality outcomes

Rathbun Land and Water Alliance members and partners developed and utilized a geographic information system (GIS) -based methodology to identify and evaluate potential locations in the Rathbun Lake watershed to place debris basins for water quality protection. Alliance members and partners used this GIS-based methodology to identify, evaluate, and prioritize more than 40 potential sites for the construction of these basins. Potential basin sites are located below areas of priority land in the watershed on which in-field best management practices will not be applied. The principal criterion used to rank potential sites for basin construction was the estimated average annual cost per ton of reduced sediment delivery to Rathbun Lake.

Alliance members and partners assisted twenty-two landowners to evaluate the construction of debris basins at potential sites in the watershed. As a result, eleven landowners worked with the Alliance to construct debris basins at twelve of these sites. The Alliance estimates that these twelve basins will reduce annual sediment and phosphorus delivery to Rathbun Lake by 5,936 tons and 20,674 pounds respectively. This water quality outcome is almost double the project objective for reduced sediment and phosphorus delivery to the lake. The project also confirmed the relative cost effectiveness of constructing debris basins at strategic locations to reduce water quality impairment caused by sediment and associated phosphorus. The estimated average annual cost per ton of reduced sediment delivery for the twelve debris basins was \$2.83. This compares with an estimated average annual cost of \$16.30 and \$12.30 per ton of reduced sediment delivery from installing terraces and water and sediment control basins respectively.

Alliance members and partners assembled a team of expert advisors and field staff to plan, carry out, and assess project activities. The Alliance's board of directors and team members regularly reviewed progress in project implementation. The Alliance submitted the required project annual plans of work, narrative reports, and financial ledgers.

**Rathbun Lake Special Project:
BMPs for Priority Land in Targeted Sub-Watersheds 2006
Rathbun Land and Water Alliance
Length of Project: January 1, 2007 to December 31, 2009**

Counties included in the project area: Clarke, Decatur, Lucas, and Wayne

Total Watershed Improvement Funds awarded for this project:	\$497,100.00
Total Watershed Improvement Funds spent:	\$129,208.79
Total Watershed Improvement Funds obligated:	\$299,618.12
Watershed Improvement Funds unobligated balance as of 12/31/2008:	\$ 68,273.09

Project objectives:

- Apply best management practices for priority land that will reduce annual sediment and phosphorus delivery to Rathbun Lake by 3,300 tons and 13,300 pounds respectively
- Conduct geographic information system analysis, water quality monitoring, and watershed outreach activities to support the application of best management practices for priority land
- Perform all administrative requirements as per grant agreement and approved application

Summary of activities and accomplishments for calendar year 2008

Rathbun Land and Water Alliance members and partners continued to update the geographic information system and data from field evaluations used to identify 2,700 acres of priority land owned and/or farmed by 56 landowners in the targeted sub-watersheds of Lower Chariton Creek and Chariton River #3. The Alliance has assisted 27 of these landowners to plan and apply best management practices for 1,480 acres, over 700 acres of which is priority land. These practices will reduce sediment and phosphorus delivery to Rathbun Lake by an estimated 2,230 tons and 8,940 pounds per year respectively. Practices commonly planned and applied by landowners include terraces, grade stabilization structures, and water and sediment control basins. The Alliance continued to contact landowners in the targeted sub-watersheds to help them evaluate the need for, and benefits of, applying practices for the priority land that they own and/or farm.

The Alliance's outreach efforts focused on one-on-one contacts by project staff with landowners who own and/or farm priority land in the targeted sub-watersheds. Outreach activities also included: Alliance's 2008 annual meeting, during which eight landowners were recognized as "Rathbun Lake Protectors" for their efforts to apply practices in the watershed; Alliance's 2008 annual report; exhibits at the Farm Progress Show and Conservation Districts of Iowa Annual Conference; fabricated and installed "Protect Rathbun Lake" and "Rathbun Lake Protector" signs; secured print, television, and radio media coverage for project activities; and maintained the Alliance's Internet site. Alliance partners also completed activities associated with the water quality monitoring program for Rathbun Lake and tributaries in the lake's watershed.

Alliance members and partners continued to work with the project's team of experts to plan, carry out, and assess activities. The Alliance's board of directors and team members regularly reviewed progress in project implementation. The Alliance submitted the required project plans of work, progress reports, and financial ledgers.

**Rathbun Lake Special Project:
BMPs for Priority Land in Targeted Sub-Watersheds 2007
Rathbun Land and Water Alliance
Length of Project: January 1, 2008 to December 31, 2010**

Counties included in the project area: Clarke, Lucas, and Wayne

Total Watershed Improvement Funds awarded for this project:	\$495,720.00
Total Watershed Improvement Funds spent:	\$114,258.16
Total Watershed Improvement Funds obligated:	\$220,172.98
Watershed Improvement Funds unobligated balance as of 12/31/2008:	\$161,288.86

Project objectives:

- Apply best management practices for priority land that will reduce annual sediment and phosphorus delivery to Rathbun Lake by 8,130 tons and 35,980 pounds respectively
- Conduct geographic information system analysis, water quality monitoring, and watershed outreach activities to support the application of best management practices for priority land
- Perform all administrative requirements as per grant agreement and approved application

Summary of activities and accomplishments for calendar year 2008

Rathbun Land and Water Alliance members and partners used geographic information system analysis and field evaluations to identify 5,100 acres of priority land that is owned and/or farmed by 65 landowners in Upper and Lower Dick Creek and Chariton River #4 and #8 targeted sub-watersheds. The Alliance assisted 24 of these landowners to plan and apply best management practices for 860 acres, over 400 acres of which is priority land. These practices will reduce sediment and phosphorus delivery to Rathbun Lake by an estimated 1,290 tons and 5,150 pounds per year respectively. Practices commonly planned and applied by landowners include terraces, grade stabilization structures, and water and sediment control basins. The Alliance continued to contact landowners in the targeted sub-watersheds to help them evaluate the need for, and benefits of, applying practices for the priority land that they own and/or farm.

The Alliance's outreach efforts focused on one-on-one contacts by project staff with landowners who own and/or farm priority land in the targeted sub-watersheds. Outreach activities also included: Alliance's 2008 annual meeting, during which eight landowners were recognized as "Rathbun Lake Protectors" for their efforts to apply practices in the watershed; Alliance's 2008 annual report; exhibits at the Farm Progress Show and Conservation Districts of Iowa Annual Conference; fabricated and installed "Protect Rathbun Lake" and "Rathbun Lake Protector" signs; secured print, television, and radio media coverage for project activities; and maintained the Alliance's Internet site. Alliance partners also completed activities associated with the water quality monitoring program for Rathbun Lake and tributaries in the lake's watershed.

Alliance members and partners assembled and worked with a team of experts to plan, carry out, and assess project activities. The Alliance's board of directors and team members regularly reviewed progress in project implementation. The Alliance submitted the required project plan of work, progress reports, and financial ledgers.

Sand Creek Watershed Project
Delaware Soil & Water Conservation District
Length of Project: January 1, 2008 to December 31, 2010

Counties included in the project area: Delaware

Total Watershed Improvement Funds awarded for this project:	\$387,787.00
Total Watershed Improvement Funds spent:	\$ 63,699.37
Total Watershed Improvement Funds obligated:	\$ 55,998.59
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$268,089.04

Project objectives:

- To improve the fisheries aspect of Sand Creek so that it can better serve as a nursery stream for the Maquoketa River, thus improving local recreational opportunities
- To apply streambank protection to 40% of critical areas on Sand Creek (3200' est.)
- To apply grassed waterways, no-till planting, terraces, sediment control basins, and improved nutrient management in the watershed to reduce delivery of sediment and nitrogen by 40%, as well as phosphorous and bacteria, to the stream.

Summary of activities and accomplishments for calendar year 2008

Streambank protection has been installed by three landowners on the priority stretch of lower Sand Creek. This 1245 feet of construction has repaired and protected 5 sites, reducing sediment delivery to the stream by **157 tons annually**, as calculated by the Sediment Delivery Calculator, while also adding habitat to the stream. An additional four landowners have been approved for streambank protection on 15 sites, many of these already surveyed for potential application over the winter, with another 4 applications pending. DNR Fisheries has visited most of these sites, and has been encouraged by the cobble stream bottom and deep pools that have been observed. Two short reaches of the priority portion of Sand Creek have yet to be inventoried.

Waterway planning and construction have kept the coordinator very busy through this summer and fall. Five landowners have repaired old waterways to remedy ditches and severe erosion adjacent to them, using WIRB funds to supplement federal ECP funds awarded to landowners because of storm damage. According to the Soil Loss Calculator, these waterways near the stream corridor will decrease sediment delivery to Sand Creek by **1,037 tons** per year. In addition, 3,300 feet of CRP waterways were completely rebuilt and another 3,915 feet of new CRP waterways built under coordinator supervision. Another eight landowners have 8,750 feet of waterway designs in hand that would have been constructed with project funds and ECP money had the weather allowed. In addition, 3,420 feet of CRP waterways are in the planning stage, and one family has 1530 feet of project waterways and 6,400 feet of CRP waterways planned, subject to family estate issues.

One hundred fifty acres of new no-till was implemented, yielding **161 tons** of calculated sediment savings. More emphasis will be placed on promoting no-till over the winter months, including farm visits and a large scale meeting being planned with local ISU Extension. Several articles were also printed in the local paper promoting conservation for the watershed and general public, and informing watershed landowners and operators of the incentives available to them.

**Saylor Creek Watershed Improvements
Iowa Heartland Resource Conservation and Development
Length of Project – January 1, 2007 to December 31, 2009**

Counties included in the project area: Polk County

Total Watershed Improvement Funds awarded for this project:	\$ 500,000
Total Watershed Improvement Funds spent:	\$ 343,500
Total Watershed Improvement Funds obligated:	\$ 156,500
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 0

Project objectives:

Objective 1. Submit all administrative reports and budget to WIRB according to grant requirements.

Objective 2. Develop final design of Saylor Creek Watershed improvements for the entirety of the WIRB project consisting of: 1) upper channel improvements and, 2) retention pond improvements.

Objective 3. Construct Saylor Creek Watershed improvements for the entirety of the WIRB project consisting of: 1) upper channel improvements and, 2) retention pond improvements with the exception of native seeding and plantings.

Summary of activities and accomplishments for calendar year 2008

The majority of construction operations associated with this project have been completed, including the retention ponds, channel improvements, grade stabilization structures, aquatic habitat improvements, shoreline protection, and constructed wetlands. The contract for the fine grading, native seeding and the prairie planting/plugs is 100% complete. The construction contract for the remaining improvements is nearing completion. The remaining work, primarily cleanup and restoration will be completed as soon as weather permits in the spring.

An informational/educational sign explaining the benefits of wetlands has been erected adjacent to a walking trail between the constructed wetland and the north lake/retention pond. The Saylor Creek Watershed Improvements were featured in a tour sponsored by the City of Ankeny's Parks and Recreation Department that showcased conservation efforts in City parks. Tours were also hosted by Iowa Heartland Resource Conservation and Development for a group of their stakeholders, and for the Watershed Improvement Review Board. The project was still under construction at the time of the tours, which allowed the attendees to view the underwater features prior to being submerged by the normal pool of the lakes.

Project Name: Saylor Creek Sub-Watershed
Project Sponsor: City of Ankeny
Length of Project: October 1, 2008 to September 30, 2010

Counties included in the project area: Polk

Total Watershed Improvement Funds awarded for this project:	\$475,800
Total Watershed Improvement Funds spent:	\$ 0
Total Watershed Improvement Funds obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$475,800

Project objectives:

- Administer the Saylor Creek Sub-watershed Improvement Project Phase 2 to ensure all objectives and activities planned are implemented.
- Restore and protect the stream channel using a variety of practices including 900 lineal feet of creek toe armoring, 40,000 cubic yards of slope grading, 1,600 square yards of geotextile matting, 6 riffle/pool structures, 1 constructed wetland, and revegetation with 5 acres of native seeding, 3 acres of lawn seeding and 84 flats of prairie plantings/plugs.
- Develop an educational program featuring educational signage along a multipurpose trail to increase awareness and knowledge of Saylor Creek Sub-watershed water quality issues to watershed residents, trail users, and the local community.

Summary of activities and accomplishments for calendar year 2008

The City of Ankeny staff person, who is serving as the Project Manager, received training from the WIRB staff on developing a Plan of Work and the financial ledger. The City of Ankeny entered into a contract with Nilles Associates, Inc., an engineering consultant with experience in this type of project, for design, preparation of plans, specifications and bid documents, and including construction administration and observation. The consultant has completed the field visits and topographic survey. The design work is in process.

The City contracted with Snyder & Associates, Inc. for wetland delineation in the project area. The wetland delineation was completed, and the report received on December 4, 2008. Wetland mitigation will be done in conjunction with the construction of the watershed improvements.

Project Name: Upper Catfish Creek Watershed Improvement Project
Project Sponsor: Dubuque Soil & Water Conservation District
Length of Project: January 1, 2007 to December 31, 2009

Counties included in the project area: Dubuque

Total Watershed Improvement Funds awarded for this project:	\$48,850.00
Total Watershed Improvement Funds spent:	\$23,837.46
Total Watershed Improvement Funds obligated:	\$ 300.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$24,712.54

Project objectives:

- Continue assisting Dubuque County and MSA Professional Services in developing a jurisdictional Stormwater Policy and regulations for the Upper Catfish Creek Watershed and Dubuque County
- Continue developing urban Best Management Practices to protect the cold-water characteristics of the stream by reducing thermal impacts due to anticipated urban development within the watershed
- Provide information and education to stakeholders within the watershed to increase awareness of Upper Catfish Creek's water quality issues

Summary of activities and accomplishments for calendar year 2008

In 2008, a major focus in the Upper Catfish Creek Watershed was developing a Stormwater/Erosion and Sediment Control Policy for Dubuque County. MSA Professional Services was awarded the contract and presented a final document to the Upper Catfish Creek Council in July. After receiving this document, the council voted to pass the policy as an ordinance for all of Dubuque County. Originally, the document was intended to address the 9300 acre Upper Catfish Creek Watershed only, but the district and the council agreed the entire County needs to be included. The Board of Supervisors are still trying to implement a successful enforcement action to follow the ordinance. Once this is completed, we hope the Board of Supervisors pass the policy as a county-wide ordinance.

This past year we also installed several different urban BMPs in the watershed. Included in these practices were pervious asphalt, bio-swales, rain gardens, bio-retention cells, and native landscaping. The Swiss Valley Nature (County Conservation Board) installed a pervious asphalt parking lot, rain garden, and rain barrel to show their 150,000+ annual visitors how a home or facility can infiltrate all of the water coming off their roofs or driveways. Swiss Valley has done just that. Along with these BMPs, we installed monitoring equipment to measure the effectiveness of each BMP.

Another septic system workshop was held this past year, with another solid attendance of 40 people. There was not a great deal of landowners, but a lot of contractors this past year. \$100 dollar septic system vouchers were applied for and distributed to landowners within the watershed. A failing septic system in the watershed (tank was dumping directly into Catfish Creek) was replaced this past year with a brand new mound system. The Upper Catfish Creek has gained a great deal of support this past year and has a lot of momentum heading into 2009.

**Upper Miller Creek Watershed
Black Hawk Soil & Water Conservation District
March 1, 2006- January 31, 2009**

Counties included in the project area: Black Hawk Soil & Water Conservation District

Total Watershed Improvement Funds awarded for this project:	\$ 68,900.00
Total Watershed Improvement Funds spent:	\$ 20,312.95
Total Watershed Improvement Funds obligated:	\$37,700.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$17,387.05

Project objectives:

- Effectively administer the Upper Miller Creek Watershed Project
 - Report progress to project partners
 - Obtain needed training for watershed coordinator and project partners
 - Manage the project to maintain quality control and to maximize communication with, and involve local advisors and state and local staff of participating agencies.
 - Develop plans of operation

- Conduct conservation information/ education activities in the Upper Miller Creek Watershed
 - Develop conservation plans and assist implementation of structural best management practices in the UMC watershed. Practices include roadside buffers, grassed waterways, and conservation tillage practices.

Summary of accomplishments and water quality outcomes

In the Upper Miller Creek Watershed, sediment delivery was a factor that affected the stream by nutrient loading caused from agriculture practices and other activities from human involvement. Within Upper Miller Creek, we had a total sediment delivery reduction of 223 tons/year from implementing 14.6 ac. of roadside buffers, waterways, and 247 ac. of no-till. The amount of sediment delivery reduction within UMC will improve habitat within the streams. In addition, with both federal and state funds, a total of 40.2 acres of re-enrolled filterstrips and waterways were implemented. Federal funding (EQIP) also provided Upper Miller Creek Watershed with 986.2 ac of no-till and nutrient management plans.

The implementation of the practices listed above, have had impact on soil reduction within UMC watershed. Unfortunately we were unable to work on the cover crop project due to situations with the planting method. However, with informative letters sent to landowners, we were able to encourage them to evaluate their farms by implementing conservation plans and working with partnered agencies to install conservation practices. Through partnering with agencies, meetings with landowners, implementing projects, and mailing newsletters, the outcome of Upper Miller Creek was to bring awareness to the watershed and understanding the importance of combining all of these efforts to have a successful watershed development.

Volunteer Creek Watershed Improvement Project
City Of Carlisle
Length of Project: January 2008 to December 31, 2009

Counties included in the project area: Warren County

Total Watershed Improvement Funds awarded for this project:	\$ 367,500.00
Total Watershed Improvement Funds spent:	\$ 69,362.55
Total Watershed Improvement Funds obligated:	\$ 298,137.45
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 0.00

Project objectives:

1. Administer the Volunteer Creek Watershed Improvement Project to ensure all objectives and activities planned are implemented.
2. Design and construction of a sedimentation basin west of Irwin Drive with associated vegetative buffer.
3. Convert the one existing storm water detention basin within the Volunteer Creek Watershed into a bio-swale.
4. Utilize storm water flow models to develop and implement standards, ordinances, and physical structures that will assist the City with the implementation of innovative watershed-based storm water control discharge measures before, during, and after development.
5. Develop a comprehensive tool-kit that includes modeling approaches, conservation sensitive design strategies, and watershed-based regulations and ordinances that were utilized for or developed as part of this project.

Summary of activities and accomplishments for calendar year 2008

- Topographic survey of Volunteer Creek watershed, and associated stormwater structures.
 - 04/24/08 Survey completed.
- Detention Basin Design
 - 06/10/08 Preliminary basin design at Irwin Drive complete.
 - 08/28/08 City council requested additional design options.
 - 11/13/08 City council meeting to present additional design options.
 - 12/22/08 City chose original sustainable design located at Irwin Drive.
- Existing basin conversion to bio-swale
 - 08/20/08 Preliminary design complete.
 - 08/25/08 Preliminary design presented to city council.
- Develop storm water flow model
 - 03/08 Used Hydraflow software to simulate watershed, and size detention basin.
 - 08/29/08 Simulated watershed to size other basin options.
- Evaluate stormwater flow model
 - 09/08/08 Completed model evaluation for future sustainable design for impacts at the Irwin Drive basin.
- 401/404 Joint application submittal
 - 10/21/08 Application submitted to Army Corps of Engineers and Iowa DNR.
 - 11/10/08 Response from the Corps stating further information required.
- Archeological Assessment
 - 10/07/08 Sent out request for proposal to consultants.
 - 11/21/08 Awarded assessment to Consulting Archeological Services.

Yellow River Watershed Improvement Project
Allamakee SWCD
Length of Project – March 1, 2006 to December 31, 2008

Counties included in the project area: Allamakee, Winneshiek, Clayton

Total Watershed Improvement Funds awarded for this project:	\$ 229,000
Total Watershed Improvement Funds spent:	\$ 215,190
Total Watershed Improvement Funds obligated:	\$ 0
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 13,810

Project objectives:

- Reduce sediment from entering the Yellow River by stabilizing 9,000 feet of stream bank.
- Reduce bacteria and nutrients from entering the Yellow River by constructing five manure management structures.

Summary of Accomplishments and Water Quality Outcomes

A total of 6,485 feet of Yellow River stream bank was stabilized during the three year duration of this project. Within these stabilized banks, 71 fish-hides were installed, creating 568 linear feet of shoreline habitat for trout and smallmouth bass. These stabilized stream banks will prevent approximately 2,283 tons of sediment from entering the Yellow River every year. These streambank projects garnered a total of \$175,799.74 of federal funding and \$65,254.19 in landowner dollars.

A total of five manure management structures were constructed during this project. These structures will provide an area for the producers to store and manage livestock manure. According to researchers at Iowa State University, these manure management structures will prevent an estimated 90 to 95 percent of bacteria and nutrients in the animal waste run-off from reaching the Yellow River. Certified Nutrient Management Plans (CNMPs) have been written for three of the completed structures thus far. The remaining CNMPs are scheduled to be completed in January of 2009. These CNMPs will offer the producers proper rates for manure application on their crop fields and will identify any manure application setbacks such as streams and sinkholes. A total of \$93,000 in federal funds and \$77,005.13 landowner dollars were attained to fund the construction of these five structures.

Time and available funding are two limitations that prevented additional projects from being completed. There was further interest from landowners but because this project was nearing completion, there would not have been sufficient time to complete any additional projects. Also, stream bank stabilization funding from this project became limited which prevented one additional landowner from receiving funding from this project.

**Yellow River Watershed Project/Direct Drain
Allamakee County Soil and Water Conservation District
Length of Project: January 1, 2008 – September 30, 2009**

Counties included in the project area: Allamakee

Total Watershed Improvement Funds awarded for this project:	\$ 138,000.00
Total Watershed Improvement Funds spent:	\$ 9,042.33
Total Watershed Improvement Funds obligated:	\$ 0.00
Watershed Improvement Fund unobligated balance as of 12/31/2008:	\$ 128,957.67

Project objectives:

- Administer the Yellow River Watershed – Direct Drain Project to ensure all objectives and activities planned are implemented
- Construct 15 grade stabilization structures that would trap sediment from approximately 1,500 acres.
- Structures would be targeted to highest priority areas, defined as those experiencing severe erosion and subsequently delivering high sediment load to the stream. These structures would reduce pollutant deliver to the stream by approximately 10,800 tons if sediment per year.
- Conduct monthly water quality sampling and record all data for comparison with sampling data collected since 2003.

Summary of activities and accomplishments for calendar year 2008

All potential sites had the necessary GIS data generated such as soils maps topog maps, distance to stream, distance to sinkholes, etc.

Contacts were made with eighteen landowners interested in constructing a grade stabilization project. Of these, three decided not to go ahead with the project. After field checks and soil probes conducted by the area soils scientist it was determined that seven of the sites were not suitable sites due to rocky conditions, or too many sinkholes within the drainage area. Six landowners are undecided at this time whether to proceed, citing economic conditions and rising construction costs as factors in their decision.

Two landowners completed projects this fall, meeting all the necessary criteria. The first grade stabilization structure completed reduced sediment delivery by an estimated 162 t/y. The second structure reduced sediment delivery by an estimated 175t/y. These practices treated approximately 82 acres.

A news article appeared in the Waukon Standard Newspaper covering WIRB opportunities and accomplishments. A brochure/newsletter will be sent out in January, 2009 to all landowners within the direct drain area of Yellow River Watershed detailing year one accomplishments. Monthly reports were presented to the Allamakee SWCD. Water quality sampling was completed January through September, but then temporarily halted due to funding problems.