

**Storm Lake Water Quality Project Annual Report: October 2005-September
2006**

Project Name: Storm Lake Water Quality Project

Project Number: 011 – 2.06

Soil and Water Conservation District: Buena Vista

Reporting Period: 10-1-05 to 9-30-06

Date Report Prepared: 10-10-06

Reporting Individual: Kimberly Proctor

Preparer's Signature:

Commissioner's Signature:

Fiscal Year 2006 Annual Report Narrative Summary

Fiscal year 2006 was a very productive year. The goals set in the project work plan were right on target for having a successful year. This report will describe the projects best management practices implemented and planned. Through continued work with the land owners in the watershed, we are increasing conservation practices on the ground, and protecting the water quality of Storm Lake. Once again there has been a number of outreach into the community, and public awareness of the project is high.

Best Management Practice Implementation:

100 acres wellhead protection was to be installed in the watershed. Wellhead Protection as administered by FSA is not a valuable program for land owners. The value of land we are asking them to enter into the program is exponentially higher than soil rental rates. The land owner is asked to seed down an area in the field up to a 2000 foot radius of a well in the wellhead protection plan. In the Storm Lake Watershed, this has left many land owners looking at farming on an arc. There is no option to the land owner to square the CRP acres in the field, except to take available feet off. The program does not offer a sign-up incentive payment, and only has 10% additional incentive. The producers can not see the value vs. loss of acres. I do not feel the producers or land owners in the Storm Lake Watershed will enroll during this farm bill.

One grazing system was to be installed this year. Don Jackson came into the office to inquire about an Animal Waste Storage Facility utilizing the Environmental Quality Incentive Program. I explained how the program works, and Dan Grabe, area engineer discussed the survey and design process. The following week, we surveyed the cattle lots, and Dan designed the facility. We met with Don about the design, discuss contractors, and give a cost estimate. Don completed the construction of the facility this summer, we made several visits to check rebar and ties, the pouring of a few floors, the forms and corners of the walls, and we are currently staking the filter strip. We had to wait for the harvest of the corn to get this laid out. Don will also utilize a nutrient management plan for the acres he farms using the manure from the cattle lot.



These photos show the completed Animal Waste Storage Facility after completion.

100 acres buffer were to be enrolled into CRP. Once again the buffering proved to be the hard sell this year. The interested land owners already have filter strips. The ones that need it the most are not interested in the program. This will be my number one priority this year. Some of the more critical areas were seeded down. Dar Nickolisen seeded 3% of the field acres to be eligible for the next tier in Conservation Security Program. He seeded a field border of 10 acres, and used a native mix including 4 grasses and 1 forb. Rich Langner seeded 8 acres for the same program, one spot being adjacent to the lake. Keith Minard seeded a wetland area to native grasses; a portion of the wetland is also acting as a filterstrip to

Powell Creek. The WIRB grant the district was awarded also offered a program for buffering intakes in the watershed. We buffered four intakes that are associated with terraces.

3000 feet of waterways were to be installed this year. The most difficult part of the job is waiting. It seems that every contractor has a full list, and all the land owners in the watershed want to use the same contractor. This particular contractor is a farmer and insurance salesman that thinks contractor work can be a hobby. So the deadlines are not getting met. I think the land owner understands this, and has hired a new contractor for the remaining projects. We successfully contracted over 7,000 feet of waterway. We also have 2600 feet of waterway to survey this fall for the 2007 construction year.

1 wetland or basin was to be installed by this year. Three wetlands were enhanced this year. First Keith Minard was interested in an area that is an oxbow of Powell Creek. It is easily seen on the maps that the direction of the creek was moved off this area. There are a number of cuts that were formed by the movement of water to get into Powell Creek. We were about to seed down three acres to native grasses to reduce soil loss in this area. The area was not a good location for excavating, so seeding down was better than nothing. There are three gullies this practice will stabilize that are currently cutting and depositing soil into Powell Creek. The wetland restoration receives only 50% cost-share for seeding through CRP, so I matched up to 75% with local funds from the LPA.

The following two wetlands were installing this spring. They are on a pasture that was used by cattle. The cattle were able to stand and cross the creek running through the pasture. This is a tributary to Powell Creek, and has 1100 acres of watershed through including run off from the City of Alta. The Petersons were interested in a community park and liked the idea of wetlands. I developed a plan that encompassed trails, two wetlands, signs, native grasses and forbs, and the title of Outdoor Classroom for all the schools in the area to utilize for learning. They took to the idea, and hired a contractor to install the wetlands. I went to the local Pheasants Forever meeting, and they donating the seed for the wetlands. I am now working on the follow up. We are designing signs, trails, and seeding the wetlands this November. I also plan to utilize the wetland for education, and plan to get sample curriculum together for teacher wanting to use the classroom. Roger has agreed to complete the maintenance of the area.

Installation of 1 urban demonstration site was to be completed this year. Graham Tire needed to fix an area that had poor drainage, and asked about the rain gardens. I put together a design and cost estimate. The area is 94 ft by 23 ft, and will need to be excavated of existing clay/gravel mix 38 inches. It will be replaced with 10 inches of gravel, 20 inches of sand, compost, topsoil mix, and 8 inches of holding for the grass. We are planting buffalo grass. The land owner liked this seed choice because it was easy to maintain, and the plant height was low. We were able to offer WIRB dollars for up to 75% cost-share.





These photos show the installation of the bio-retention cell at Graham Tire. This is located up the watershed from the City of Storm Lake's WIRB project. Above on the left shows the excavation and 10 inches of pea gravel. Above on the right is a photo of the bio-retention cell with the fill (50% sand, 25% top soil, and 25% compost). To the left shows the area before construction after 4/10th inch of rain.

2 boulder weirs were to be installed this year. I met with Dick Schultz and Don Roseboom regarding the boulder weir location surveyed last year. They conducted a site visit and assessment. It was decided we would look further up Powell Creek to install the boulder weirs. This would increase the water quality benefits, and lower the cost of the weir installation. I committed to surveying the new location and getting all the drainage area information needed to them for design. One of the land owners that has other practices in programs agreed to us installing weirs on his property. I contracted Paul Christian with Christian Brothers Excavating to move field stone and install the boulder weirs. I took him to the sites where the rock was available, and to the construction site. At the construction site we discussed the job, where to dump rock, and how long the job would take. Only one weir was completed by the end of the day because of the weather. The field was too wet to move any more field stone in, so there was only enough rock on site for one weir. Don Roseboom was on site to oversee the installation of the first weir. He felt comfortable to leave the other two in our hands to complete and check out. Once the weather changed, we were able to finish the project, and there was just enough rock to finish the last weir. Once completed, we surveyed and took photos. Don signed off on the installation of the practices.



These photos are of the boulder weirs installed on Powell Creek. They improve water quality by slowing the down cutting of the stream, stabilizing a head cut, and stopping the nick points in the stream. The first photo shows the construction of the weirs, and the installation of the crest-stones. The second photo shows the finished weir.

Public Awareness and Perception:

Water monitoring was to be continued in the Storm Lake Watershed. 12 sites are currently being monitored monthly. Seven sites are monitored by a student from BVU that is doing the monitoring through a contract with the district. He is paid through WIRB funding. Four local volunteers are sampling the remaining five sites. It is helping get baseline data, and the necessary data for the Army Corp. of Engineers.

In order to raise public awareness of the project, I was to develop a variety of media correspondence. I wrote a number of press releases, newsletters, and postcards on the topics of buffering tile intakes, projects and progress in the watershed, the City of Alta's urban project, education programs given about the watershed, and specific projects of interest.

A record of current issues and progress in the watershed and surrounding areas is kept. I cut articles from the local newspaper and archive these to CD. I also send copies of articles in with the monthly reports. The website for the project was updated. Copies of press releases and newsletters were put on the website. The web provider I chose offers a statistical page that tallies site visits and what information visitors were looking at. The website is getting a lot of traffic, and I am pleased with the numbers each quarter. The website address is slwaterquality.com

Field days were to be planned in the watershed to highlight conservation in the area. We held a field day at the Turnquist riparian buffer. The field day was sponsored by Trees Forever and BSWCD. The field day focused on two different conservation practices. We first discussed tree maintenance and buffer management. I have been doing a lot of work on this project trying to get the maintenance started on the buffer; it was featured at the field day. Often land owners install riparian buffers without keeping up on maintenance; we showed how to do this maintenance from the beginning. In preparation for the field day, I met with Brad Riphagen of Trees Forever to create a plan for the Buffers and Beyond grant money. We have decided to plant new trees where the boulder weirs are being installed, do much needed maintenance on the older trees, and discuss grass maintenance as well. Brad had only great ideas, one of which was have pork producers serve a meal to the visitors to encourage attendance. My parents came down to the office to help do maintenance on the riparian buffer to get it ready for the field day. We trimmed and pruned trees to eye level, and used the chainsaw to make single trunk trees. The silver maples were not managed as they grew, so they had as many as four trunks. By trimming the trees, we are making the energy focus on one trunk, and they will eventually be larger trees. Dick Schultz and I also talked about burning the grass filter of the riparian, which will also keep the shrubs managed. One of the producers in the watershed had extra mulch from his tree planting, and he offered some free to the project. Chris and I moved three loads of mulch to the tree planting site. Four students from Iowa State University came to help with tree maintenance on the Turnquist Riparian. Two cleared limbs and trimmed, and two ran chainsaws. Chris and I also helped by clearing limbs. Colleen, three high school boys from Alta, and I finished planting the forty trees remaining from the Earth Day event. We also re-mulched all the trees and watered as many as we could. This was done to give the visitors a visual of the maintenance needed. Boulder weirs were the other practice highlighted at the field day. We took the visitors over to the boulder weirs on a hayrack as it was a half mile walk one way. On the trip down, I talked about the design, cost, and sediment loss reduction.



These photos show the Trees Forever/Buena Vista Soil and Water Conservation District riparian maintenance and boulder weir field day. I spoke about the boulder weir installation, and Dick Schultz of ISU spoke of the tree maintenance.

A large portion of public relations is spent giving presentations to local organizations and education institutions. I was able to visit 19 different organizations to share information on the Storm Lake

Watershed. Depending on the age and nature of the group, I chose from urban conservation, water quality and conservation, and hands-on learning activities to present at the meetings. All groups have had a lot of questions on the different projects being done in the watershed. If the meeting includes a tour of the watershed, a local representative of the DNR Environmental Services Div. is always available to share information regarding high profile projects such as dredging and Little Storm Lake restoration. This part of the job is a highlight because I get to talk with residents. I sometimes think I learn more from them when all is done. Since Storm Lake is so progressive and focused on economic development through natural resources, they are very interested in the projects success. Working in the schools and sharing information about watersheds and the importance of water quality is my favorite part of the job. I was able to include the Alta 6th graders in an Earth Day project this year. They planted over 200 trees and shrubs, and learned how to plant and care for a tree. They were given a Rubrum Maple to plant in their own yards.



These photos show the Alta 6th grade students at the Earth Day Celebration planting and mulching the trees. They were very excited to get out of the classroom on this spring day.

To highlight excellent conservation efforts, the Lake Preservation Association gave four producers awards for excellence in conservation in the Storm Lake watershed. They were honored at the LPA annual picnic, and given a plaque and dinner. We also gave awards to all the IOWATER volunteers for their hard work and time. Special recognition went to Gordy Miller, as he missed only one month of sampling in January.



These photos show other activities I do in the community. On the left is a school program modeling how watersheds work. On the right is a tour of the native grass plantings in the watershed for the Storm Lake Garden Club. We are at the lake shore rain garden.

Local Partnerships and Funding

The Storm Lake Watershed Project is energized by local support and funding. Originally a team of local leaders saw a need to focus on BMP installation in the Storm Lake Watershed. Current dredging of Storm Lake, restoration of Little Storm Lake with the Army Corp of Engineers, and the economic development behind Project AWAYSIS, has led to many opportunities to work with the local community. I attend the monthly Lake Preservation Association and Lake Improvement Commission meetings to give updates on progress in the watershed. These groups also support the project by donating \$1000.00 each to be used on projects and supplies not covered by the grant. With this money, I can offer incentives or match money to land owners to plant native grasses or buy supplies for a meeting. Every year the LPA holds an annual meeting to update the members and other community members about the dredging progress. I gave a watershed update at this picnic, and helped choose recipients of the conservation awards.

The City of Storm Lake has been working toward goals for the NPDES Phase II permit, which I am a part of the Storm Water Committee. They are installing a series of bio-retention cells in the Project Awaysis area. One will filter all the stormwater from the industrial watershed to keep it from entering the lake right at the beach.

Other local organizations that have become partners through the year are Kiwanis, Rotary, Izaak Walton League, Buena Vista County Farm Bureau, Lake Creek Country Club, Buena Vista University, Storm Lake Kiwanis, St. Mary's Catholic School, CommUNITY Education, Pheasants Forever, Army Corp. of Engineers, and the Storm Lake Girl Scouts. I was asked by these groups to come to a meeting and give a workshop or presentation on water quality and what the project means for Storm Lake. With each meeting, I reached a large variety of individuals from producers to bankers who were interested in what was happening in the community and watershed. With two local newspapers and a lot of projects happening in the area, it is vital that I keep up to date on local news. Staying current allows me to be as knowledgeable as I can be while attending these meetings.

Watershed Improvement Review Board (WIRB) was established in 2005 by the Iowa Legislature to provide grants to watershed and water quality projects. The Board is comprised of representatives from agriculture, drinking water and wastewater utilities, environmental organizations, agribusiness, the conservation community along with two state senators and two state representatives. Jeff Kestel and I wrote a grant for the BVSWCD. It requested money to increase cost share abilities for the boulder weirs, buffering intakes, rain gardens, and contracting an Iowater Coordinator. We were awarded \$23,000 of the requested amount for these practices. I listed goals and developed a final budget with the partners to finalize and sign an agreement between WIRB and the BVSWCD. This funding will be matching support to WPF and 319. Jeff Kestel, Wayne Peterson, and I wrote a grant for a second WIRB grant. We just received word that the SWCD was awarded the requested amount of \$73,000 of the \$200,000 project north of Alta treating the stormwater as it enters Powell Creek. The locals involved from the City of Alta and the landowner are currently awaiting the signed grant agreement before any more work is completed.

Water for Iowans has been a vital to partner for the Storm Lake Watershed Project. This group has representatives from organizations in both the environmental and agricultural arenas. They wrote a letter of support for both WIRB grant applications. This letter was important, because representatives of the Water for Iowans group also have members on the WIRB board.

A new partnership is being developed between the Agricultural businesses in the Storm Lake watershed and the project. Our goal is to develop a nutrient management plan that can sustain itself after the project is over, and be carried out by the business that reaches the producers. The idea is to let the business develop the plan, this way they will own the project.

My biggest supporters are the agencies behind the scenes of the project. These individuals are the glue that holds it all together. The Buena Vista Soil and Water Conservation District is responsible for the project's day to day progress. I give a monthly report at each meeting to keep them informed of the projects and trainings of the coming month. They are also the first group I go to for advice and help with any problems that may arise. One commissioner has taken on the leading role as supervisor; he is always available for signatures, help with projects, or support.

The Department of Natural Resources also provides many services. There is a satellite office for a local Environmental Services staff member, who is the main contact on many projects in the City of Storm Lake. She keeps me up to date as needed on issues of lake dredging and the Little Storm Lake Restoration Project. A Private Lands Biologist puts the project as priority if need be, and is usually in attendance at local meetings. She offers help with training needs and ideas for projects. She assists with the land owner contacts that need native seed, and offers new suggestions that I may not have thought of. She is also helping with the Purple Loosetrife problem in the watershed and county. They are both members of the Advisory Committee and are an important part of the project.

The Natural Resource Conservation Service provides office space, vehicles, and office staff support. Much of my training has been made possible by the Area 1 office for NRCS. They also support the project by offering technical support and personnel. Local staff has a lot of projects in the county to complete, but they have put my watershed as a priority area. Since the project is funded for such a short time, this is important for project progress and to reach goals.

The local Farm Service Agency office has also provided support unseen in a lot of offices. They are easy to work with, and support the project by prioritizing watershed projects.

The project Advisory Committee is comprised of sixteen individuals that belong to these many organizations and agencies, or own/operate land in the watershed. Their input is how the Plan of Operations is developed and priorities are set throughout the year. Many of them also attend additional meetings, field days, and tours I have in the watershed to show support for the project.

Planned Practices 2006

Don Jackson's cattle lot actually drains to both sides of the property. There are two exit points at which it crosses the road. We are containing and filtering the east side run-off with the animal waste storage facility. The west side however also has a lot of drainage from the buildings and concrete. This has caused an erosion problem in the pasture nearest the road. I have talked with Don about how we can fix this, and he is still considering it. I will approach him about it again as we continue to work on the EQIP application.

I attended the City of Alta's council meeting, and described the options the city had for the urban runoff project. They decided to apply for the WIRB grant for the infiltration/detention basins. The purpose of this project is to develop a management plan to address the City of Alta's stormwater runoff. Currently, there is no management plan and the city is growing, so there are increased runoff problems from both residential and industrial sources. A large assortment of pollutants flow from these areas, examples include various forms of sediment, paper, plastic, gravel and metal as well as less visible potentially toxic pollution from lawns, streets, gas stations and other commercial and industrial areas. The goal for this project is to construct two infiltration/detention basins to protect water quality and reduce the peak volume of the City of Alta's urban runoff. Each basin is designed with two functions: Control gully erosion and surface erosion with detention, while incorporating water quality through infiltration. The downstream erosion control provided by detaining runoff will reduce sediment delivery to Powell Creek and protect downstream agricultural land from urban runoff. The infiltration features designed into the basins will capture pollutants commonly associated with urban stormwater runoff such as: sediment, sand, gravel hydrocarbons, particulate matter, heavy metals, and nutrients. The decision by local officials to collaborate on this project and tailor it to their needs makes this project special. As more and more work is done addressing urban runoff, people and communities will embrace this sort of resource management approach. This will be the first "infiltration basin" installed in the State of Iowa, combining new infiltration strategies for water quality protection with traditional detention strategies for flood control. The Alta project will be a good example of how urban runoff can be planned and managed. We just received word that the BVSWCD was awarded a WIRB grant for our \$200,000 project north of Alta treating the stormwater as it enters Powell Creek. We received \$73,000 to use toward the project. We are waiting for contracts to be drawn up for signing before continuing on with work. As soon as corn is out of the field, we will be conducting a survey of the field to determine new waterway design and tile outlet options.

The Peterson family is installing filter strips on the tributary to Powell Creek. This is upstream from the wetlands installed this spring. I told them they needed to be installed to protect the life of the wetlands from siltation.

Peters are interested in installing a riparian buffer on Powell Creek. I have met with him, and plan to design a buffer that can be installed in phases. He is doing fall prep work to be ready for spring planting.

We have 2600 feet of waterway planned for survey this fall. There are other areas that may come through as well, but currently these are the areas that need the most work.

I would still like to see Don Steinke enroll in a wetland program on the land adjacent to Powell Creek. I will be working with him during the time with Alta's project, so maybe we will get to know each other better.

A new land owner has acquired land adjacent to Powell Creek, and he is thinking about removing the filter strips from the current CRP contract. I will hopefully be able to contact him, and work on keeping the land enrolled.

This is just a few of the things that are planned for this year. I will continue to target high priority areas, and ensure the project has another successful year. This year I am also required to write a final report.