Application Summary
Awarded Projects – 2012

1201-001 Sands Timber Watershed

Sands Timber Lake is a 60 acre man-made impoundment near Blockton, Iowa. The lake is the centerpiece of a 235 acre park, which is owned and managed by the Taylor County Conservation Board. The park is equipped with modern campsites, hiking trails, picnic areas, and a playground. Bordering the western shoreline of the lake is a beautiful hardwood timber which inspired the parks name.

Sands Timber Lake has a 4,100 acre drainage area comprised of timber, grassland, and row crop. The lake is fed by four large classic gullies which branch off into many smaller gullies dissecting the drainage area. Since construction in 1993, Sands Timber Lake has been an extremely poor fishery. In 2006 Sands Timber Lake was added to the EPA's 303d list of impaired water bodies. Turbid water was identified as the primary stressor.

Local interest in preserving and enhancing the lake led to the completion of a thorough watershed assessment and treatment plan. Included in the plan are several elements, the first being upland treatment. In 2009 the Taylor SWCD applied for and was granted a $499,000 Watershed Improvement Review Board grant. This grant enabled much of the planned upland treatment practices to be installed plus some shoreline stabilization. Three of the four tributaries feeding the lake now have structures just above shoreline filtering remaining sediment and nutrients not caught by other conservation practices. A rock chute wetland is now being planned for the fourth tributary feeding the lake. Private landowners have granted the Taylor County Conservation Board permission to install the practice. Installing this practice would solidify what has been a very successful watershed treatment campaign.

1202-002 Upper Otter Creek Watershed

The Upper Otter Creek Watershed, located in Fayette County, consists of 16,740 acres of mostly rural agricultural land along with the City of West Union (population 2,486). This class B(CW) HQ trout stream has significant recreational and economic value to northeast Iowa. West Union is currently involved in a sustainable re-design of their downtown, including installation of porous pavers and bioretention basins that will cool and cleanse urban run-off before it reaches Otter Creek. The Fayette SWCD is concerned that rapidly changing crop rotations and tillage practices will have a detrimental effect on water quality.

The long-term goal of the District is to protect a high quality stream and establish a sustainable population of trout in Otter Creek. This will be accomplished through a long-term watershed project, with Phase 1 consisting of a two-year project designed to protect and improve water quality by completing detailed conservation planning with producers, implementing BMPs in priority areas, conducting an information and education campaign to increase public awareness and maintain a locally led water monitoring campaign. The Fayette SWCD has a long history with water quality projects and deeply believes in their effectiveness. WIRB funding will be used to match District funds for salary and EQIP and IFIP funds will be extensively leveraged for priority BMPs.

1204-003 North Fork Maquoketa Watershed

The Headwaters North Fork Maquoketa River Project encompasses the Hewitt Creek, Bear Creek, and the Coffee Creek-North Fork Maquoketa subwatersheds. These three subwatersheds have intensive livestock agriculture production with manures applied generously on the landscape. Approximately 85% of the watershed area is cropland. Although livestock operations are not permitted to discharge waste directly into surface waters, the mishandling and over application of animal waste and fertilizer have impacted water quality. Each of the subwatersheds has a strong locally led effort, concentrating significant efforts on monitoring, education, and conservation practice adoption. The original MRBI application was accepted by USDA with funding being extended to producers through FY14. A large component of this effort was the IJOBS funds awarded by IDALS to support the Project Coordinator for the first two years of this project. As previous funding for the support of the Project Coordinator has been exhausted, the local partners identified WIRB as a potential replacement funding source. The goal of the existing MRBI effort, in being consistent with this WIRB application, will help landowners and operators in the three selected watersheds voluntarily implement conservation systems that reduce nutrient loss; protect, restore, and enhance wetlands; maintain agricultural productivity; improve wildlife habitat; and achieve other objectives, such as flood reduction.

1206-004 Dry Run Creek Watershed

The Dry Run Creek Watershed received a biological impairment in 2002 after sampling conducted by the Department of Natural Resources revealed a lack in the diversity and abundance of aquatic life along a 2.8 mile reach of stream along the Southwest Branch. Among the primary stressors identified were hydrologic change, increased storm sewer inputs, lack of available habitat, and sedimentation. Goals put forth by the Watershed Management Plan and the preliminary Total Maximum Daily Load (TMDL) study center around the reduction in storm sewer inputs. The goal set forth by the TMDL is the reduction of connected impervious surface (CIS) to 10% in each of the creek's subwatersheds as a surrogate for other stressors. Grant funding is being sought for the construction of one 3,100 ft^2 bioretention cell to treat the first flush of runoff from a parking lot totaling 1.26 acres. The practice proposed would treat 90% of annual rainfall from 1.26 acres, or roughly 94,854 cubic feet of stormwater (2.17 acre feet) and reduce the annual runoff by 81, 217 cubic feet of stormwater. In addition, a monitoring program will continue to be coordinated through a partnership with the Department of Natural Resources IOWATER program and locally led volunteer efforts which will allow progress to be tracked. Funding for administration, outreach and assessment will be provided through existing 319 grants. Implementation of these practices will occur in phases over the course of a two-year period.

1208-005 North Raccoon Watershed

The Buena Vista SWCD is submitting this WIRB request on behalf of both Buena Vista and Pocahontas SWCDs. The two SWCDs are working jointly on a project that includes three existing Mississippi River Basin Imitative (MRBI) project areas in the North Raccoon River Watershed. The total project area is 280,654 crop acres. The MRBI project involves installing conservation practices through the EQIP program. Funding from MRBI will support costs of practice design, layout and checkout, however, there is no funding to market and sell the program and practices to landowners and producers in the project area. Both soil and water districts are financially supporting work currently being done to encourage signup for the approved practices. To effectively implement the MRBI project, it is imperative that marketing and promotion through group meetings and one-on- one contacts is completed. Funding from WIRB will allow the existing employee to spend the needed time on these promotional activities in both Buena Vista and Pocahontas Counties. Through this WIRB request these two SWCDs districts plan to apply over $800,000 worth of conservation practices that is funded through the MRBI program. The return from this investment of WIRB dollars is large. This is an opportunity to support a large amount of conservation work in the North Raccoon River Watershed, which is also an important water source for the City of Des Moines and provides recreational activities from Des Moines up to BV and Pocahontas Counties.

1209-006 Waterloo Creek Watershed

Waterloo Creek Watershed is a 30,610 acre area that straddles the Iowa and Minnesota border. The lower 43% of the watershed is in Iowa. Bee and Duck Creeks in Minnesota flow into Waterloo Creek in Iowa. Designated as a primary contact recreational stream as well as a high-quality, cold water stream in Iowa, Waterloo Creek is a popular destination for anglers and other nature enthusiasts. The stream was on the Iowa DNR's "Impaired Waters List" in 2008 and 2010 for *Escherichia coli* (*E. coli*) bacteria. Samples collected in 2010 and 2011 showed higher levels of *E. coli* at sites with cattle in close proximity to the stream and were generally greater after high rainfall events. Other factors affecting water quality are high turbidity levels and frequent flooding. There is a deficiency in upland land treatment and an abundance of conventional tillage which increases the amount of erosion and potential for surface runoff to carry sediment to the stream. A comprehensive watershed assessment and management plan have been completed for the watershed which identify the causes of and solutions to water quality impairments. The goals of this project are to 1) develop a formal working relationship between technical staff in Iowa and Minnesota, 2) identify specific locations for Best Management Practice (BMP) implementation, 3) reduce sediment loading to Waterloo Creek to improve aquatic habitat and decrease bacteria delivery, and 4) reduce flooding potential in the watershed. The following BMPs will be implemented to reach these goals: terraces, grade stabilization structures, pasture management, stream buffers, stream bank stabilization, and agricultural waste structures.

1210-007 Central Park Lake Watershed

The Central Park Lake Watershed Assessment and Management Plan identified four categories where improvements are needed to remove the 23 acre lake from the impaired waters list. These include the wastewater system, runoff from surrounding lands, in-lake nutrient re-suspension and runoff from hard surfaces within the park. The lake is currently impaired for bacteria, algae and pH. Through outcomes of the Watershed Assessment and Management Plan, this proposal includes for abandonment and reclamation of the single cell wastewater lagoon site, replacement with three conventional septic systems and construction of two wetlands. One of the wetlands is located on the same site as the reclaimed lagoon and the other is located to intercept sediment and trap nutrients transported by tile lines. The prescribed wastewater system improvements are based on assessment by grab samples test by the State Hygienic Lab, development of a Preliminary Engineering Report, soil analysis and communication with IDNR wastewater officials. The two wetland sites were assessed by officials from IDALS and the Jones County SWCD. This project is part of $1.7 million lake restoration effort to reclaim the 47 year old lake. The lake has a positive economic impact of more than $7.6 million annually and supports an average annual visitation of 58,145, according to the Iowa Lakes Valuation Project, conducted by Iowa State University.

1214-008 Clear Lake Watershed

Clear Lake, Iowa's third largest natural lake, is a premier natural resource and popular recreational destination in north central Iowa. Despite the lake's already strong recreational use, water quality concerns have not allowed the lake to reach its full potential. Clear Lake is listed on Iowa's Draft 2010 303(d) Impaired Waters List for algae, bacteria, and turbidity. Many restoration practices have been implemented to treat the algae and turbidity impairment, but few practices have been installed to treat bacteria. Reducing beach bacteria levels is a priority of the lake restoration partners. Federal, State, and local partners have invested more than $20 million in lake and watershed restoration efforts to improve water clarity and quality. These partners have a strong desire to ensure high bacteria levels at public swim beaches do not undermine the other water quality improvements. Recent bacteria source tracking completed by the State Hygienic Laboratory indicates that Canada Geese are a major contributor of bacteria loading to the Clear Lake swim beaches. Other potential sources include unpermitted septic systems in the watershed. The grant request proposes to reduce bacteria levels at Clear Lake's three public swim beaches by utilizing beach cleaner machines to remove goose waste, installing goose deterrents at the swim beaches, and continuing a septic system update grant program. These practices began to be implemented in 2011 and recent bacteria samples in 2012 are showing they can be effective if the effort is continued.

1215-009 Muchakinock Creek Watershed

The Mahaska County SWCD is requesting WIRB funding to partner with IDALS-DSC funding and USDA NRCS EQIP funding to treat priority areas in the Muchakinock Creek Watershed. Since 2005 the Muchakinock Creek watershed project, and its partners, have completed 172,065 ft. of terraces, 5 grade stabilization structures and 218 ac. of abandon coal mine reclamation have been completed in the watershed. This has resulted in a 9,709 ton/yr sediment delivery reduction and 10,102 acres protected.

The goal of the current Muchakinock Creek Watershed project for the next 1.5 years is to reduce soil erosion and sediment delivery and acid mine drainage to the stream in order to improve water quality and reduce flooding. This will be accomplished by implementation of BMPs within priority areas resulting in a sediment delivery reduction of over 3,700 tons/year. The critical areas being targeted with BMPs are defined as fields that contribute 1.1 tons/ac/yr of soil or greater to Muchakinock Creek and make up 7,273 acres or 14% of the watershed. The terraces, water and sediment control basins, and grade stabilization structures will treat approximately 390 acres or 5% of the priority areas from sheet, rill erosion, and gully erosion.

1221-010 Rathbun Lake Watershed Watershed

The Rathbun Land and Water Alliance and partners have undertaken a highly effective approach to water quality protection through the Rathbun Lake Special Project. This approach is achieving a significant reduction in the sediment and phosphorus that impair water quality in Rathbun Lake and its tributaries as a result of the targeted application of best management practices (BMPs) for priority land in the watershed. This project application proposes to assist landowners to apply BMPs that will reduce sediment and phosphorus delivery from priority land in three targeted sub-watersheds as part of the Rathbun Lake Special Project. Features of this project are: (1) use of geographic information system (GIS) analysis to identify

priority land that requires BMPs; (2) assistance for landowners to apply BMPs for 1,200 acres that will reduce the annual delivery of sediment by 1,800 tons and phosphorus by 6,000 pounds; (3) evaluation of the benefits from BMP application using GIS analysis and water quality monitoring; and (4) watershed outreach activities that encourage landowners to apply BMPs for priority land to protect water quality.

1223-011 South Chequest Creek Watershed

The Chequest Creek Watershed project was started in 2011. The Davis and Van Buren Soil and Water Conservation District's (SWCD) were awarded a development and planning assistance grant from the Iowa Department of Agriculture and Land Stewardship (IDALS). The objective of the SWCD's was to develop a comprehensive assessment of the watershed identifying primary resource concerns and Best Management Practices to treat those concerns; and take the information gathered from the assessment and develop an application for WSPF, 319 and WIRB funding.

From the completed assessment of the watershed, the following information was gathered with the help of IDNR; the 2011 observed land use, sheet and rill erosion, sediment delivery rates as well as a completed streambank and gully assessment. The districts continue to use their existing conservation program funds and funds received through other programs such as EQIP and IFIP to establish the level of treatment needed to properly treat the identified resource concems.

The current WSPF contact is scheduled to end on July 31, 2012. The Davis SWCD wishes to utilize WIRB funding in conjunction with EQIP and landowner funding to address watershed issues. It is vital to the future of this watershed that WIRB funding is secured. With Chequest receiving WIRB funding, it allows for additional points in EQIP, making it competitive with other watersheds in the county. As well as providing leveraging for future WSPF funding.

1224-012 Competine Creek Watershed

The Competine Creek Partnership project was started in 2010 to address excessive sediment delivery and frequent flash flooding. To date we have utilized $422,800 of WIRB, WSPF, EQIP, and IFIP funds to reduce sediment to Competine Creek by 2018 t/y. We have 21 projects currently obligated and 19 more applications waiting for funding. Our current WSPF contract is scheduled to end on June 30, 2015. Our current WIRB contract is scheduled to end on December 31, 2012. We wish to continue utilizing WIRB funding in conjunction with WSPF and EQIP funding to address our watershed issues. In particular, we would like to use WIRB dollars to help fund salary for our watershed coordinator, construct two grade stabilization structures, and to contract an outside party to design our largest structure. These two projects would reduce sediment load by an estimated 420 t/y and peak flood discharge by treating 338 acres of land in our watershed. Construction of the larger structure would prevent the road and crops below the structure from washing out during flood events and save the county an estimated $38,500 by eliminating the need to raise the road by two feet. We would also continue to utilize WSPF and EQIP funding for Best Management Practices (BMPs) within the watershed. Our goal for the project is to reduce sediment delivery to Competine Creek by an additional 2,016 t/y on 901 acres of land, and to reduce flood water by controlling 500 acres of runoff water.

1228-013 Center Lake Watershed

A targeted approach is being used in the Iowa Great Lakes Watershed with a keystone project featured within this project application in the heavily urbanized Center Lake Watershed. As identified in the Iowa Great Lakes Watershed Management Plan, urban runoff is the only remaining watershed concern in the Center Lake Watershed as the map in the attachments clearly shows.

Fully one-third of the watershed concerns of Center Lake will be treated through the installation of 7 keystone urban practices and will remove 63 pounds of phosphorous from entering the lake annually. Due to the interconnectedness of the Iowa Great Lakes, the watershed has been broken down into sub units called Resource Management Areas (RMAs) for priority practice implementation. This project will mesh with the existing Iowa Great Lakes Watershed Management Plan by reducing pollutant loads from the highest priority RMAs which are resulting in impaired water bodies. The majority of the funding needed for the specific practices specified in this proposal has already been secured through the Iowa DNR Section 319 and Lake Restoration Programs, the Water Quality Commission and the City of Spirit Lake. This funding request will simply bring the overall cost of these keystone practices into the range of affordability for the committed funders and the City of Spirit Lake

1231-014 Twelve Mile Creek Lake Watershed

Twelve Mile Creek Lake is a 660 acre, significant publicly owned lake, with a watershed of 14,820 acres for a ratio of 21:3. The watershed is predominately privately owned agricultural land that originates in Adair County and drains into the lake which serves as the primary source water for the City of Creston, Union County and the seven counties served by the Southern Iowa Rural Water Association.

In recent years, frequent algae blooms and recurrent spikes in suspended solid concentrations have been inflating water treatment expenses for the Creston Municipal Utilities (CMU). Declining trends in water quality spurred CMU to enlist the Union Soil and Water Conservation District to assist in evaluating watershed conditions for potential upland improvements. Significant gully erosion issues that had been previously underestimated were discovered during this watershed assessment process. Newly acquired LiDAR elevation data readily revealed this concern which was previously obscured from view by the dense tree canopy.

A Watershed Development and Planning Assistance Grant Application was approved and funded by the Iowa Department of Ag and Land Stewardship, Division of Soil Conservation. Throughout the planning process, project partners innovatively evaluated and prioritized a number of resource concerns throughout the watershed. The implementation plan presented will thwart these threats which left unaided will continue to diminish the overall health of the system, reduce the appeal of the lake to recreational users, and contribute to higher water treatment costs.

1233-015IJ Miller Creek Watershed

Miller Creek, a 19,926 acre watershed, is listed on the 2008 Section 303d Impaired Waters List. All indicators, as reported in the Miller Creek assessment, show that the impairment is due to nutrient and sediment delivery from upland runoff which contributes to elevated water temperatures, excessive algae, and low dissolved oxygen levels within the stream. The WIRB board provided implementation grant funds in 2010 for a 3 year project to treat targeted areas of 5 tons per acre or greater soil loss with an estimated reduction of 2,547 tons. As of December 1, 2012, with 95% of the funds allocated, the final results are estimated to provide a sediment delivery reduction of 4,500 tons and an estimated phosphorus reduction of 5,700 lbs per year. These accomplishments and the completion of the three year Miller Creek WIRB project represent "Phase I" of the SWCD's goals to treat the Miller Creek watershed. This application represents "Phase II" or the final phase of the Miller Creek water quality project. The Monroe SWCD plans to reduce sediment delivery by 70% on an additional 245 acres of priority land. This goal will be accomplished through installation of strategically placed structural practices, BMPs, and grazing systems. These practices will reduce soil loss, nutrient runoff, and sediment delivery as well as improve water quality and wildlife habitat in the watershed. Utilization of partnerships with NRCS and IDALS-DSC will continue to be an important part of this project's success. Project goals will be achieved by utilizing matching funds from EQIP, and the Monroe SWCD has approved the use of District IFIP cost share funds specifically for use in the Miller Creek Watershed.

1234-016 Honey Creek-Lindley Creek-Dry Run Creek

Delaware SWCD has recently received NRCS-MRBI funding for the Honey-Lindsey-Dry Run Creek project area from 7/1/2012 through 10/1/2015, culminating years of efforts to address this area. The MRBI funds are strictly for the implementation of a wide range of best management practices; nothing has been allotted for staff personnel to bring these practices from concept to contract. This project needs a coordinator to spearhead implementation of the many eligible practices to reduce nutrient and sediment/bacteria delivery in these watersheds from high levels that have been documented in these streams.

The City of Manchester has been directly impacted by degrading water quality, forcing them to install costly treatment systems. We hope to reduce nitrogen delivery enough to reach the 10 mg/ml nitrate standard for drinking water, improving Manchester's water supply and enhancing its recreational plans for the downtown area. Personal contacts and large group outreach will be done to apply these practices to priority areas that will impact the watershed. Improvement on a local level is a first step toward meeting the MRBI goal of reducing nutrient delivery to the Gulf.

We are requesting a total of $100,000 over 2013 and 2014, which would allow us to leverage the EQIP-MRBI funds that are committed to Delaware and Clayton County by USDA-NRCS, so that we can make a major impact on nutrient delivery in these watersheds.

1240-017 Little Bear Creek Watershed

Little Bear Creek is a 21.79 mile Class A1 and B (WW2) warm water stream that encompasses approximately 29,202 acres in northern Poweshiek County. The lower 8.4 mile segment is listed as biologically impaired on both the IDNR 2008 303(d) list and 2010 303(d) draft list. A RASCAL assessment and landowner survey was completed through a development grant in 2011, and these assessments indicate that erosion and sediment delivery from cropland, lack of adequate buffers along the stream channel, and streambank conditions contribute significant sediment delivery to the stream, likely resulting in the impairment. An estimated 36,544 tons of sediment are delivered to the stream annually. A total of 11,075 acres (38%) of the watershed are high priority areas or land with sediment delivery rates greater than one.

Our goal over 15 years is to install Best Management Practices (BMPs) and increase public education in order to reduce sediment and phosphorus delivery by 25% and decrease priority areas by 15%. More specific objectives for this WIRB project are to 1) Reduce annual sediment delivery by roughly 16.3% or 1,058 tons and associated phosphorus delivery by 1,375 pounds and 2) Develop an information and education program aimed at producers and residents within the headwaters of Grant and Chester townships, which account for 18% of the watershed's priority areas. The SWCD proposes to utilize 50% EQIP funds and 25% WIRB funds toward rural BMPs, and 75% WIRB funds toward urban BMPs received through this application.

1241-018IJ Swan Lake Watershed

This project would construct a sediment basin on the main inlet stream to Swan Lake, an impaired waterbody currently on the 303(d) list. This project is one of the highest priorities in our Watershed Management Plan. According to STEPL modeling, it would sequester over 1/3 of the total phosphorus (the pollutant of main concern) coming into the lake.

1242-019 Lake Meyer Watershed

Lake Meyer is located in southwest Winneshiek County. The 33 acre lake has a 1,590 acre drainage area. Primary land use is agriculture; however, 150 acres of the watershed are located within the city limits of Calmar. The lake is primarily used for fishing and is considered a regional recreation destination. The Winneshiek County Conservation Board manages the area, including a nature center which provides environmental education programs to a variety of groups.

Lake Meyer was added to Iowa's 303(d) List of Impaired Waters in 1998 for excessive sediment and nutrients. The declining water quality threatened to move the lake towards hypertrophic conditions, adversely affecting aquatic populations. A Watershed Improvement Plan (aka TMDL) was developed for the lake in 2005. The Winneshiek SWCD has partnered with landowners within this lakes watershed since its construction in 1968 to install a variety of BMP's, such as grade stabilization structures, water sediment structures, wetland (control urban runoff) and terraces. The vast majority of the critical areas within this watershed have been successfully addressed, with one significant exception. A rock chute wetland and grade stabilization structure on county property near the lake is considered the highest priority in the progression of the watershed project. Unfortunately, the funding sources used to install the bulk of our practices can't be used for cost share on county-owned property.

1243-020 Fox River Watershed

Fox River Watershed was started in 1999 to help support grass roots conservation and water quality protection efforts within the watershed. In 2010 the watershed received the Outstanding Watershed Award from the Conservation Districts of Iowa and the Division of Soil Conservation. To date over $3,500,000 has been spent in the watershed to improve the quality. There continues to be tremendous landowner support and interest in the 17 highest priority subwatersheds of this 3 county project, with a back log of applications for cost share assistance.

Current funding from a WIRB project that is winding down and a DNR319 grant that has ended has been utilized to address the ammonia nitrogen impairment. Since 2009, the IDALS-DSC WSPF/WPF grant program has been utilized to address sediment delivery from sheet and rill and gully erosion within a separate but somewhat overlapping subset of targeted subwatersheds *(Attachment 7);* however, additional

funding is needed to continue addressing water resource concerns, further our water quality protection efforts and reach project goals within the Fox River watershed.

Project work items include grade stabilization structures, water and sediment control basins, terraces, and cover crops. Cover crops are emerging as an accessory to many landowners as a way to improve soil productivity and reduce erosion as well as increase forage available for livestock needs. The FRED Board sees this as a cost effective opportunity to reach a new audience within Fox River priority area.

1245-021IJ West Tarkio Watershed

Initiated in 2001, the West Tarkio Creek Watershed Project has a proven track record of implementing an enormous amount of structural conservation practices. To date, over $925,000 has been spent to build 69 miles of terraces on 63 cooperators' land. The success of the project was due in large part to the conservation ethic of the landowners to improve their farms, preserve the productivity of the land, and protect West Tarkio Creek. This has been made possible through funding from DSC Watershed Protection Funds which has provided $1,362,592 in cost share funds since 2001 but is has been severely limited in recent years due to shortages within the State's budget.

The original project goals called for the construction of 750,000 feet (142 miles) of terraces to effectively treat the watershed. In order to meet these goals and bring the project to a successful endpoint, another 153,000 feet (29 miles) remain to be constructed by the landowners with the help of the SWCD staff. Severe rain events in recent years have caused an enormous amount of damage throughout the region, these storms were helpful in identifying where watershed work remains to be completed. Scars on the landscape in the aftermath of the storms clearly etched out the specific location where additional practices are needed in addition to those proposed in the original project work plan. Project supporters are confident that the WIRB Program can unlock this potential and pave the way for what can become known as one of the most effective land treatment projects in Iowa.

1246-022 Middle Buffalo Creek Watershed

The main channel of Middle Buffalo Creek has been identified on Iowa's 303(d) List of lmpaired Waters as having a biological impairment (*i.e.*, greater than 50% decrease in mussel species) due to habitat modification, stream alteration, nutrients, and/or siltation. The District identified this as a priority watershed because the presence of a diverse and reproducing mussel population indicates a healthy aquatic ecosystem, resulting in good fishing, good water quality for wildlife, and assurance water is safe for recreation. Dan Cohen, Buchanan Conservation Board, stated "should water quality conditions improve, and fishing holes and habitat be enhanced, there is no doubt that many people would take advantage of the renewed recreational opportunities."

The District believes this project will replicate the success of the WIRE-sponsored. Upper Buffalo Creek project which has implemented 76 BMPs within identified priority areas. The District believes this is possible since the first effort already created a positive watershed identity and forged relationships with producers and landowners in the watershed. The objectives and goals of this effort are similar to the current effort by focusing on reducing sediment derived from ephemeral gully erosion and corridor protection by 30%, and reducing nutrients derived from manure and fertilizer runoff by 30%, improving aquatic habitat, and water monitoring.

1248-023 Dry Run Creek Watershed

In 2010, a group of farmers in the Dry Run Creek Watershed, an Iowa High Quality Water Resource, formed the Dry Run Creek Watershed Improvement Association to learn more about and implement solutions to remedy a bacteria impairment in their stream. Through a partnership with Luther College, Iowa DNR Watershed Monitoring and Assessment and Iowa State University Extension the farmers were able to conduct an assessment of their stream and watershed. The assessment showed multiple potential sources of bacteria, dependent on whether water samples were collected following rain events or during dry conditions. This project will allow watershed farmers to implement solutions to reduce bacteria delivery during both wet and dry weather. Funding will be targeted to feedlot runoff control improvements, cover crops and vegetative filters, manure management strategies and livestock stream access. The council intends to continue intensive water monitoring to determine whether the strategies are successful. Research shows the bacteria reduction in water bodies can be seen relatively quickly, within one to two years, compared to other types of impairments.