

Application Summary Awarded Projects – 2013

1301-001 Yellow River Headwaters

The District and the advisory board have unanimously favored to peruse a WIRB grant to increase the available dollars to effectively leverage partner funds on hand. We've experienced extraordinary support from our producers/partners thru investment into land stewardship; over 6,000 tons of sediment loading reductions (with associated nutrients) have been achieved from BMP construction since the inception of this watershed project. Extensive water sampling has revealed high bacteria levels that pose as a significant human health risk to watershed and bolsters the necessity for increased water quality. This RFA allows the project to enhance our conservation toolkit by infusing Iowa Nutrient Reduction Strategy practices which coincide currently with utilized stewardship practices and encourages pioneering producers science based practices that are economically and environmentally rewarding. Reference materials such as a Watershed Management Plan and a detailed TMDL on this portion of the Yellow River have been deployed into implementation since the last successful WIRB application. When surveyed (94%) of landowners indicated that they believed the water quality in the YRHW was in need of improvement and felt that changes in agricultural practices and rural land use were the biggest factors contributing to water quality impairments. The Yellow River is a highly utilized water body for recreational activities, including canoeing, kayaking and fishing (Iowa's largest trout waters) that greatly enhances eco-tourism that makes northeast Iowa a recreational destination and infusing local economies with crucial funds.

1302-002 Clear Creek Watershed

The City of Coralville is reconstructing a major arterial road that connects the City of Coralville to the City of North Liberty. The total cost of the road project is 4.7 million dollars. The City of Coralville intends to redesign this road to act as a pilot project to showcase how roadways can be constructed with green stormwater management versus traditional stormwater infrastructure. The biocells and bioswales will be designed to improve the quality of stormwater that is generated off the roadway and also reduce flash flooding caused by larger rain events. The construction of biocells and bioswales will be documented through the creation of a film by City of Coralville's Public Broadcast Station, CoralVision. This film will be used to educate the public along with contractors who are unfamiliar with the installation of green infrastructure. The City of Coralville will also hire a consultant to create a Green Infrastructure Cost Feasibility Analysis using this project as a model. The cost feasibility analysis will document the costs of using traditional stormwater practices versus green infrastructure costs. The project will serve as a model project showcasing how green infrastructure can be incorporated into any roadway project.

1304-003 Honey-Lindsey-Allison Creeks Watersheds

This project area is 65,125 acres and includes 3 watersheds within the Maquoketa River basin: Honey Creek, Lindsey Creek, and Allison Creek. Historically these watersheds have been intensively farmed areas, including row crop and extensive livestock agriculture. The water quality concerns in these watersheds are nitrogen, phosphorus, bacteria, and sediment. Water quality sampling has been conducted beginning in 2009 to the present. Nutrients and bacteria are elevated in the surface water. This project area is currently being managed under the Mississippi River Basin Initiative (MRBI) for upland treatment. Staff has seen a need and demand for streambank stabilization in these watersheds as well; however, the MRBI does not include funding these projects. Stabilizing eroding banks in conjunction with the MRBI upland treatment would improve the water quality and reduce soil erosion in the project area. This focused management should have a positive impact on the water quality and be a cost effective partnership.

1311-004 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 the construction of two sediment and nutrient retention basins in the most critical drainages in the watershed affecting Central Park Lake. The two retention basins will treat and filter runoff from 218.1 acres, or 56% of the lake's watershed. They are estimated to reduce sediment flow into the lake by 479.6 tons per year, reducing the annual sediment flow by 84%. By reducing the sediment loading by 84%, nutrient loading from

particulate phosphorus will also be significantly reduced, leading to a reduction in algae concentrations and de-listing of the lake as an impaired water. This project is part of a \$1.7 million lake restoration effort to reclaim the 47 year old lake. The lake has a positive economic impact of more than \$7.3 million annually and supports an average annual visitation of 58,145, according to the Iowa Lakes Valuation Project, conducted by Iowa State University.

1312-005 West Fork Middle Nodaway River Watershed

Our targeted watershed is the 23,327 acre Middle HUC12 sub-watershed of the West Fork of the Middle Nodaway River. The majority of the watershed is located in Adair County (21,200 acre) and a portion in Cass County (2,127 acre). Through a Watershed Development and Planning Assistance Grant funded by the Division of Soil Conservation a careful resource assessment of the entire West Fork of the Middle Nodaway River was conducted. The assessment focused on watershed conditions, water quality concerns, soil erosion rates, land use, and streambed instability. Through an extensive inventory of the frequency and severity of these resource concerns in all four HUC12 sub-watersheds that comprise the West Fork of the Middle Nodaway River drainage basin, the partners were able to identify the Middle HUC12 Sub-watershed as the highest priority for an implementation project.

Our assessment concluded that the priority resource concern in the watershed was streambed instability resulting in a high number of actively eroding gullies that annually contribute approximately 66% of the sediment entering the Middle West Fork of the Middle Nodaway River, followed by sheet and rill erosion producing approximately 34% of the sediment entering the river from the uplands.

The objective of this watershed project is to: 1) to reduce the amount of sediment produced by gully erosion using grade control structures, 2) to reduce the amount of sediment produced by sheet and rill erosion using terraces, waterways, no-till hay establishment, cover crops, contour grass strips and filter strips.

1315-006 Gere Creek Watershed

The Cherokee SWCD is seeking additional funds for implementation of practices to improve water quality in Mill Creek, a major tributary of the Little Sioux River. This application seeks support for conservation practices in the Mill Creek - Gere Creek sub-watershed, approximately 17,590 acres in size. Water quality is considered impaired due to low biotic index, determined by biological survey. Recent assessment of the watershed has identified cropping practices, riparian grazing, and drainage practices as contributors to reduced stream quality due to sediment delivery and flash flooding causing significant stream bank erosion and damage to agricultural lands and rural road infrastructure.

This proposed project begins with outreach and education of individuals and groups in the watershed, continued partnership development, prioritization of project sites, and promotion and implementation of practices including terraces, waterways, reduced tillage, cover crops, livestock management improvements, and grade stabilization structures. This 3-year phase of watershed improvement will seek to reduce sediment delivery by a minimum of 15%.

1318-007 Lake Rathbun 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 two 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 1,000 acres that will reduce the annual delivery of sediment by 1,500 tons and phosphorus by 5,000 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.

1319-008 Silver Creek Watershed

The Silver Creek Watershed is a complex and diversified watershed consisting of urban and rural. Land cover is both cultivated and natural with abundant livestock production throughout the watershed. Open lot and confinement livestock production produces manure runoff and nutrient application issues. The urban development has produced habitat alteration and a drastic increase in the rate and volume of stormwater discharge.

The Silver Creek Watershed is on the Iowa Department of Natural Resources 303(d) impaired water bodies list due to bacteria levels at five and a half times the state criterion and therefore can no longer support primary contact recreation. The Silver Creek Water Quality Project has received funding as part of the FY2014 319/WSPF grant application cycle to begin implementation of an EPA approved Watershed Management Plan.

Goal 1: Reduce the bacteria levels by 40% within Silver Creek. The implementation of best management practices (BMPs) that address sources of bacteria are expected to result in attainment of this goal over the course of implementation. Goal 2: Reduce sediment delivery to Silver Creek by 4,500 tons per year. Goal 3: Reduce nitrate loading from the Silver Creek to the Upper Iowa River by 45% with better management of stormwater runoff, nutrient management, septic system education, handling and application of manure will help us reach these goals.

The District believes an additional source of funding in response to the high interest in this watershed project is needed. The additional funding from the Watershed Improvement Review Board, leveraged with funding from 319/WSPF, will help meet the high demand for ag waste practices and make significant improvements to the water quality of Silver Creek.

1320-009 Mosquito Creek Watershed

Mosquito Creek is the receiving water of the Neola and Henschal Watersheds. Water from Mosquito Creek is diverted, as needed, to maintain the water levels of Lake Manawa State Park. Lake Manawa is one of southwest Iowa's largest lakes averaging 1.2 million visitors annually. This is a natural and economic resource the conservation district has put a fair amount of effort into trying to improve and protect, both from the uplands and lakeside. Lake Manawa has problems with turbidity and algae. A study of the water quality problems in 2008 found that 55% of the phosphorous load was coming from Mosquito Creek.

The Neola-Henschal Watersheds Project continues the undertaking to accelerate the application of BMP's in tributary watersheds of Mosquito Creek. This project brings together landowners, local units of government, community groups and residents in this effort to continue improving the water quality in the project area. The Neola-Henschal Creek Watersheds Project is focused on reducing sediment delivery and thus phosphorous loading to receiving waters. The project also will be reducing the volume of runoff from both agricultural and urban watersheds thus reducing nitrogen losses.

1321-010 Hurley Creek and McKinley Lake Watershed

Hurley Creek is a primarily urban watershed of 2,211 acres in Creston and Union County watershed. It is an impaired waterway that feeds into the Platte River. Since 2004, under the guidance of an active planning team, the watershed has been under assessment and many projects have occurred to bring about improved water quality, but issues remain due to continued development of the area and the lack of funding in some sections of the waterway. The main impairment is sedimentation, but nutrient loading is also a problem. The result is that Lake McKinley, a local recreational lake the City has prioritized for greater use, has very poor water quality. The most recent assessment efforts have spawned a multi-faceted proposal that includes BMPs in both urban and rural areas. The most significant BMP is the restoration of the 7-plus acre wetland at the entrance to McKinley Lake. This wetland will include a constructed multi-cell treatment system that will settle sediment for periodic cleaning and wetland plantings to remove loadings of phosphorus, nitrogen, E. coli, and chemicals that collect on local streets and parking areas, such as oil, grease, and fuel. The project is designed for maximum visual impact and ease of cleaning and maintenance. Other BMPs will involve public and private land upstream from the wetland. Continued city-wide storm water management efforts and incentives, aggressive education programs, water monitoring, implementation of lake renovations (in partnership with the IDNR as a future phase). and other planning efforts will ensure the cleanest water for McKinley Lake to enhance this valuable community resource and foster a healthy environment.

1323-011 Little Lick Creek Watershed

Little Lick Creeks is a 14,600 acre priority sub watershed located in Van Buren County. It is one of three Subwatersheds that make up the greater 51,810 acre Lick Creek Watershed (Attachment 8). It is not a 303(d) listed waterbody. However land use activities in this sub-watershed contribute to the deteriorated condition of the Des Moines River and Gulf of Mexico. Little Lick Creek watershed is intensively row-cropped with a predominate rotation of corn and soybeans. Significant soil erosion from these acres causes non-point source pollution in the Creek. Excessive soil loss and sedimentation chokes vital spawning habitat and feeding areas, impacting fish and other aquatic wildlife. The nutrients that are lost to the Des Moines River and contributing to the Gulf Hypoxic impairment stem from the phosphorous that is bound to the eroded soil as well as nitrogen loss which is inherent in the lack of active roots during the fall and spring seasons. The Van Buren SWCD is making this request to partner with the WIRB to achieve 39% of its long-term goals for Grade Stabilization, 20% for Sediment Basins and 14% Cover Crops. The SWCD will prioritize State Cost Share (IFIP) dollars for Terraces which will help achieve 75% of its goal over this three year project. Additional funding partners include landowners, NRCS-EQIP, SIDCA, Van Buren Co., and Pheasants Forever. A total of 830 priority acres will be treated and 6,112 tons of sediment and 7,945 lbs. of phosphorous will be trapped by this project.

1325-012 Lake Miami Watershed

This project will improve the water quality in the 122-acre Lake Miami. Lake Miami is located on Miami Wildlife Area which is owned by the Iowa DNR and cooperatively managed by the Iowa DNR and Monroe County Conservation Board. The lake is a significant publically owned lake and vital recreational resource in Monroe County. As the water quality and fishing deteriorated over the years, there were significant decreases in the recreational uses and associated economic return to the region. The primary pollutant in the lake is sediment and associated phosphorus from non-point sources. Current sediment delivery is 3,325 tons/year and current phosphorus delivery is 4,655 pounds/year. The watershed assessment determined that 73% of the current pollutant loading is originating from DNR land. Therefore, this project will focus efforts on installing BMPs on DNR land to reduce sediment delivery by 1,495 tons/year (45% decrease) and phosphorus delivery by 1,261 pounds/year (27% decrease). Achieving these goals will also meet 68% of the required reduction to meet the established TMDL limits. This will be accomplished by installing grade stabilization structures and shoreline armor in priority areas. Furthermore, this project will be done simultaneously with Iowa DNR's lake renovation efforts which will make this the ideal time to implement this project and restore a healthy fishery population.

1328-013 Miller Creek Watershed

Miller Creek is a 19,926 acre watershed, originally listed on the 2008 Section 303d Impaired Waters List and currently remains. Indicators, reported in the Miller Creek assessment, show the impairment was due to nutrient and sediment delivery from upland runoff. These factors can contribute to elevated water temperatures, excessive algae, and low dissolved oxygen levels within the stream.

WIRB funds were awarded in 2010 to implement Phase I, a three year project to treat sediment and nutrient runoff in priority areas. In 2013 an additional 1-year project, Phase II, was approved to continue installation of Best Management Practices reducing sediment. In Phase I and II our goal was to reduce sediment by 4,404 tons/year benefiting 2,363 acres, in which we have successfully exceeded by 15%.

This application supports a Phase III project incorporating a Water Quality Initiative for the Nutrient Reduction Strategy for Iowa. Phase III, will provide continued support to practices while improving soil health. Nutrient management solutions will be implemented supporting further reductions in sediment by an additional 1,805 tons/year and phosphorus by 2,346 lbs/year benefiting 896 acres to Miller Creek. Offering cost share incentives will encourage implementation of best management practices to control sediment and nutrient delivery to the stream. Partnerships with NRCS and IDALS-DSC will be an important part of this project's success. Goals will be achieved by matching funds from EQIP, and District IFIP cost share funds along with in-kind contributions.

1330-014

In this application, Johnson County SWCD (JCSWCD) seeks to use WIRB funding to address Rapid Creek watershed issues by implementing best management practices (BMPs), funding a coordinator and providing education and outreach to landowners. Special emphasis will focus on nutrient reduction BMPs. JCSWCD will leverage WIRB funds by also utilizing EQIP, IFIP, and REAP funding for this project. Our

goals are to install nutrient reduction BMPs, reduce sediment delivery by 2,103 tons/year and reduce phosphorus by 2,734 lbs/year on 3,546 acres in the watershed. The Rapid Creek Watershed Project began in 2008 with an IDALS Watershed Development and Planning Assistance grant. In 2008, a detailed assessment of the watershed was completed: Field data was collected on current land use and land cover as well as existing BMPs, and priority areas were identified. In-stream data was collected using RASCAL software, and bi-weekly water monitoring was collected by SWCD staff and volunteers. Assessment data estimated nearly 51,000 tons/year of sheet and rill erosion and over 10,000 tons/year of sediment was delivered to Rapid Creek. In 2009-2010 with the help of the IDNR Watershed Improvement section, SWCD funded the Rapid Creek Watershed Board, continued water monitoring, provided education and outreach, and IDNR completed further analysis using the Soil and Water Assessment Tool (SWAT). In 2011, SWCD staff developed a Watershed Management Plan (WMP) for Rapid Creek. This application addresses phase 1A in the WMP.

1331-015

Since the implementation phase of the Walnut Creek Project began in 2010, over 10,426 tons of sediment and 13,554 pounds of phosphorus have been reduced per year from reaching the stream. Founded upon sound watershed assessments, the highly skilled technical staff has been effective at meeting the workload demand created by the cooperative landowners. As this highly successful project enters a new era of encouraging adoption of practices geared toward nutrient reduction, it is important to continue with the surge of Best Management Practice implementation which has traditionally addressed local resource concerns. The intent of this application is to introduce Nutrient Reduction Strategy practices to the watershed and continue with the surge of traditional BMPs in a more comprehensive effort to treat all environmental concerns in the watershed. If funded, 82,000 feet of terraces will be installed along with 1 grade stabilization structure and 1,500 acres of cover crops, nitrogen inhibitor, and deep P&K placement. Along with practices a major information and education effort will take place with the establishment of a cover crop plot, six demonstrations, and multiple newsletters.

1335-016

Hickory Grove Park, a 400 acre park with a 98 acre lake located in eastern Story County, is a favorite of campers, anglers, and swimmers. According to the Iowa Lakes Valuation Project, the park averaged over 71,000 visitors annually (2002-2005) who spent an average of \$6.46 million, supporting 79 jobs and bringing \$1.61 million in labor income to the region.

The lake has a watershed of 4,035 acres and is on the Iowa 2012 303(d) Impaired Waters List due to bacteria. A Watershed Management Plan (WMP) developed by Iowa State University was approved in March 2013. The Plan identified geese as the primary contributor to the bacteria impairment, and Story County Conservation has begun to address this problem.

This grant focuses on projects the plan recommends to reduce bacteria and sediment loading. These are: replacement of 9 unpermitted septic systems in the watershed through a cost-share program; exclusion of cattle currently given unlimited access to over 1,600 feet of streambank; stabilization of that streambank through reshaping, re-vegetation, and creation of a grasses buffer; and construction of a pond to reduce erosion from the major gullies identified in the WMP. These practices, when combined, will reduce sedimentation into the lake by 285.97 tons per year, reduce phosphorus by 28 pounds per year, eliminate bacterial loading from septic systems and livestock, and reduce nitrogen into the lake through installation of bioreactor and riparian buffer.