

## **Application Summary Awarded Projects – 2010**

### **1003-001 Williamson Pond Watershed**

Williamson Pond is a 26 acre publicly owned lake located about 2 miles east of the town of Williamson, in Lucas County. It has a watershed area of 1,499 acres. It has been managed since 1976 by the Lucas County Conservation Board (while still under state ownership) for fishing, boating, hunting, picnicking and other passive uses. Its designated uses are Class A1, primary contact, and Class B (LW), aquatic life. Williamson Pond is on the 2004 EPA 303(d) List of Impaired Waters. A total Maximum Daily Load (TMDL) for turbidity and nutrients at Williamson Pond was prepared by IDNR in 2005 and approved by EPA in 2006. The TMDL set reduction targets for both suspended sediment and phosphorus. The Williamson Pond Watershed Management Plan has provided the local work group and partners with information to develop and implement strategies to improve and protect water quality. These strategies are based on a 3 phase approach that will ultimately lead the removal of Williamson Pond from the Impaired Waters List. The goals identified in this proposal (phase 1) will reduce sediment and phosphorus delivery by 453 tons and 589 pounds annually. The Lucas County SWCD has and will continue to provide leadership on the Williamson Pond Project and has secured the partnerships necessary to address water quality problems and hired a part-time project coordinator to manage, implement, and oversee all activities pertaining to this proposal.

### **1004-002 Rathbun Lake 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 application proposes to assist landowners to construct five large sediment retention basins that will reduce sediment and phosphorus delivery from priority land in targeted sub-watersheds. The Alliance, with previous WIRB support, demonstrated that construction of these basins at strategically selected sites in one of the most cost effective measures to reduce sediment and phosphorus delivery to Rathbun Lake. Features of this project are: (1) use of geographic information system (GIS) analysis to identify potential basin sites; (2) assistance for landowners to construct five basins that will reduce the annual delivery of sediment by 1,500 tons and phosphorus by 5,000 pounds; (3) evaluation of the benefits from basin construction using GIS analysis and water quality monitoring; and (4) watershed outreach activities that encourage landowners to apply BMPs including sediment basins to protect water quality.

### **1008-003 White Oak Lake**

White Oak Lake was listed on the 2008 Section 303(d) List if impaired waters in four categories. The first phase of the project has already helped to affect approximately 60% of the watershed. There has been an estimated sediment reduction of 609 tons per year with phase one. The structure being planned for the South end of the lake, (phase two) will affect nearly all of the remaining 40%. If we can accomplish similar results, we can expect a sediment reduction of approximately 273 tons additional per year. We have been working with the Mahaska County NRCS office, Snyder & Associates (engineers), and private landowners in the watershed to make this project a reality.

## **1009-004 Lost Island Lake Watershed Enhancement Project**

The Lost Island Lake watershed is located in the prairie pothole region, a region dotted with glacial wetlands and shallow lakes. At 1,180 acres, Lost Island Lake is the state's fifth largest natural lake and its watershed is comprised of nearly 1,000 acres of wetland habitat, including Iowa's largest natural wetland – Barringer Slough. Unfortunately, Lost Island and its associated wetlands are not functioning to their fullest ecological and water quality potential. In 2002 and 2004, Lost Island Lake was categorized as “impaired” on Iowa's Impaired Waters List. Frequent algal blooms and suspended solids drastically increase turbidity levels resulting in its impairment. To investigate these concerns, a two-year study and resulting Water Quality Improvement Plan were completed. The water quality study identified an overabundance of non-native common carp (*Cyprinus carpio*) in the lake and its surrounding wetlands as a primary cause of impairment.

The goal of the Lost Island Watershed Enhancement Project is to restore ecological health to Lost Island Lake and its intricate watershed resulting in improved water quality and a diverse native plant and wildlife community. The purpose of this grant is to obtain funding for the construction of two combination fish barriers and water control structures placed at key locations in the watershed within the Blue Wing Marsh complex. Construction of the fish barriers and water control structures would aid restoration efforts by preventing spawning common carp from entering wetlands in the watershed and establishing the ability to manage water levels in large wetland areas. Water level management is crucial in wetland health and exotic fish control. These two structures are part of a larger construction project that involves a total of four combination fish barriers and water control structures and one additional fish barrier. The entire Lost Island Lake Watershed Enhancement Project is a multi-year project, but the construction phase for the fish barriers and water control structures will be completed before December 31, 2011.

## **1010-005 Bloody Run Creek Watershed**

The City of Marquette lies in the 65,000 acre Mississippi River watershed, and is surrounded by steep bluffs. Though scenic, controlling water runoff during storm events presents significant challenges. Flash-flooding from the local watershed has plagued the city for decades. The people of Marquette have committed to preserve the water quality of key natural resources in the area including the Bloody Run Creek and associated wetlands by undertaking projects to control the spread of debris and sediment caused by excess runoff during area storm events. Following a July 2007 storm (over 8” of rain in 24 hours) which caused unprecedented flood damage, the City retained an engineering firm to study the area and provide recommendations to eliminate or greatly reduce uncontrolled runoff into the Bloody Run Creek wetland, infrastructure damage and personal property loss.

Marquette has received Iowa Great Places designation, and has demonstrated its commitment to wetland preservation with the construction of Phase I of this water quality project. The Bench Area Storm Water Management Plan prepared by the City in 2008 made a number of recommendations to mitigate flash flooding by improving storm water conveyance paths, detention, and infrastructure within the Bench area. Due to steep slopes and rocky geography, infiltration based systems, though desirable, would not be an option over surface based systems. Runoff from the 240 acre watershed comes primarily from large, steep drainage areas to the south and west, flowing to the Bench area down three hillside routes; designated as South East, South Central and South West. Completion of Phase I, which included an increased storage capacity of the upper pond, addressed the South East and South Central areas. The increased upper pond capacity will now allow Phase II to proceed. Phase II will address runoff from the

South West drainage area; which engineers have estimated to produce as much water volume as the South Central and South East areas combined.

Total costs for Phase I are \$1.45 million, of which Marquette has invested \$775,000, and IJOBS funding contributed \$677,000. Phase II costs are estimated at \$617,000. WIRB funding support of \$200,000 would expedite project completion, lessen the long term debt impact to the community and aid in the preservation of the Bloody Run Creek and adjoining wetlands more quickly than Marquette could accomplish on its own.

### **1011-006 Competine Creek**

The Competine Creek watershed is a 24, 956 acre sub-watershed of Cedar Creek. The creek traverses portions of three counties, slicing through rich and highly productive Southern Iowa Drift Plain soils. The watershed is suffering from excessive sediment delivery and frequent flash floods that have been exacerbated by recent high rainfall events. Assessment data reveals soil erosion estimated to be 38,435 tons/year and sediment delivery to the creek at 15,847 tons/year. The Competine Creek Partnership Project is seeking WIRB funds to merge with IDALS-DSC funds and local funds, all targeted for structural Best Management Practices (BMPs) within the 2,760 acres of High Priority Acres (HPAs) identified by the assessment process. The BMPs will include grade stabilization structures, water and sediment basins, tile-outlet terraces, CRP, and urban storm water conservation practices. In addition, Iowa State University Extension-Iowa Learning Farm is investing in the project by facilitating a crop sampling program utilizing fall stalk nitrate, phosphorous index, and soil conditioning index testing. These tests will be used by producers as measures of performance to refine nutrient and soil loss management and to determine effective alternatives to reduce sediment and nutrient delivery to Competine Creek.

### **1012-007 Yellow River Headwaters**

The Yellow River Headwaters Watershed (YRHW) drains 26,730 of rural land within Winneshiek and Allamake Counties. While portions of the river have been designated as a High Quality Resource by the State of Iowa, other portions appear on the State's 303(d) List of Impaired Waters due to excessive nutrients, sediment and other water quality issues.

The Winneshiek SWCD was fortunate to secure WSPF/WPF funds for FY2009 to begin addressing many of the sources of the identified problems, especially along the all-to-critical stream corridor. Initial landowner / producer interest has exceeded expectations and several key BMPs have been installed within the identified critical areas. Yet due to the current budget constraints in the WSPF/WPF programs, we currently have greater landowner / producer interest than we do funds, which is why the District is applying for WIRB funding to provide supplemental incentives to continue the installation of needed Grade Stabilization Structures, Terraces and Manure Management Systems in identified critical areas. Other funding, currently available to the District, will cover the remaining portions of the projects budget, including staff and our outreach efforts.

### **1014-008 Walnut Creek**

In 2004, Walnut Creek was placed on the 303d list of Impaired Waters due to a low biotic index (lack of aquatic life) during IDNR stream sampling events. Sediment originating from agriculture, streambank erosion, and channelization were listed as the most likely sources impacting aquatic life. In an effort to address these concerns, a preliminary study was completed of the multi-county watershed to identify priority areas.

A Watershed Development & Planning Assistance Grant was then funded by the IDALS-DSC to conduct a detailed assessment of these prioritized sub-watersheds. The impending assessment of the watershed and the stream corridor revealed ample opportunities to address gully, sheet and rill erosion while addressing in-stream water velocity issues that plagued the riparian corridor. A comprehensive plan was developed comprised of a variety of best management practices to address the identified concerns.

In 2009, this plan was submitted to the WIRB Board by the East Pottawattamie and Montgomery SWCDs' and \$489,455 was awarded to address concerns identified during watershed assessment inquiries. Despite adverse weather conditions, which has hampered conservation construction recently, this project has held fast to pre-project goals due to the fortitude of the project sponsors and the overwhelming participation by the watershed landowners. Unfortunately, state budget shortfalls are bringing project progress to a halt. As specified in the original WIRB funding request, practice funding for Year 3 was to come from the Division of Soil Conservation's Watershed Protection Fund (WSPF). Due to Iowa's budgetary restraints, the Walnut Creek WSPF application, which was submitted this spring, was not funded since no new applications in the state were funded. If funded again, this grant will serve as the critical step in continuing what is destined to be a true watershed success story.

### **1015-009 Indian Creek**

The focus of this project is "Indian Creek", a tributary to Cedar Creek which eventually empties into the Lower Skunk River. Indian Creek suffers from deteriorated water quality resulting from high volumes of urban stormwater runoff resulting in streambank erosion, combined sewer overflows and chemical and floatable litter pollution from roadways. The "*Creative Solution for Indian Creek Water Quality*" project will work with a local commercial business to create a model urban project. The project will reduce the volume of urban stormwater by 930,000 gallons annually entering Indian Creek as well as reduce the volume of discharge water by 500,000 gallons annually. The local business will develop a system to divert stormwater from 1 acre of their roof as well as collant discharge water from their factory into an existing retention pond. In addition, the project will reduce demand on the municipal water supply by 500,000 gallons annually by harvesting water from the retention pond for cooling operations.

### **1016-010 Iowa Great Lakes Targeted Watershed Project**

Part of a phased approach, an intensive information and education program, construction of erosion control practices, and sediment control on construction sites is proposed. These proposed practices will manage sediment runoff and nutrient runoff on agricultural and urban areas. Sediment control "structures" such as waterways, wetlands, modified terraces, grade stabilization structures, sediment basins, and rain gardens is proposed and will be combined with nutrient and pesticide management and reduced tillage to reduce non-point source pollution. A reduction of 15% of the sediment and phosphorus delivered to a water body from priority areas will be looked at as a success in this short-term project focused primarily at education within the project area which is also, for the most part, the top 25% sediment load producing sub-watersheds. In addition, four urban areas have been identified as part of this project as needing immediate assistance. A combination of urban and agricultural conservation practices, shoreline revegetation, and education of landowners will be used to achieve these results on both the urban and the agricultural arena.

### **1017-011 Tuttle Lake Watershed**

The Tuttle Lake Watershed is approximately 125,000 acres and Tuttle Lake itself is 2,270 acres; 5,609 acres of the watershed lies in Iowa territory within Emmet County. It is a sub-watershed of the larger East Fork Des Moines River Watershed, also referred to as Hydrologic Unit Code 07100003. For the purpose of this document, grant money is only being applied for the project implementation in the Iowa portion of the Tuttle Lake Watershed.

Tuttle Lake was placed on the 2002 EPA 303(d) Impaired Waters List due to a “very large population of suspended algae and very high levels of inorganic turbidity.” In 2004, the Iowa Department of Natural Resources (IDNR) completed a Total Maximum Daily Load (TMDL) study on Tuttle Lake and found excess sediment and phosphorus levels being the primary pollutants causing the algae and turbidity impairment. Although two point sources were located in Minnesota, IDNR determined that the influx of nutrients is likely from agricultural runoff and re-suspension of lake sediment. The condition of Tuttle Lake is such that the reduction of sediment, nutrients [phosphorus and nitrogen] and pathogens is the primary objective. To achieve that objective, wetlands will be constructed in this first phase to reduce the delivery of nitrogen, phosphorus, and sediment to Tuttle Lake.

### **1019-012 Des Moines Middle**

The City of Luther is an incorporated city which is part of the Des Moines Middle Watershed located in Boone County, Iowa. Residential homes within the city currently use onsite wastewater treatment systems, septic tanks, for treatment of sewage. Some of these onsite systems are very old and inadequate. The majority of these systems discharge into undersized disposal fields or directly into the county drainage system, without proper subsurface treatment. This means that untreated domestic sewage is being introduced into the county drainage system and the local watershed. This untreated sewage has caused exceeding high levels of *coli form* bacteria, along with other contaminants, within the local watershed. Property lot sizes within the city are insufficient for upgrading to property functioning septic systems so the city is being required to implement a community wide wastewater collection and treatment system.

This application is for the consideration of a sanitary sewer collection and treatment system to service the residential homes within the City of Luther. Total costs for the project is estimated to be \$2.1 million, of which the city has obtained IJOBS funding which is contributing \$370,000, the city will be funding the rest of the project with State Revolving Loan funds and further grants. WIRB funding support of \$200,000 would expedite project completion, lessen the long-term debt to the community and greatly increase water quality throughout the watershed.

## **1022-013 Dry Run Creek**

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 stormsewer 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 two bioretention cells and a green roof to treat the first flush of runoff from a new 400 unit student housing structure and connected parking surfaces totaling 5.16 acres. 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 us to track the progress of the watershed. 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.