Application Summary
Awarded Projects – 2009

9002-001 Indian Springs Pond Watershed

The Indian Springs Pond Watershed consists of 1,280 acres that drain into Indian Springs Pond. This pond is located in the Waukon City Park which has approximately 120,000 visitors/year. The pond was constructed approximately 20 years ago. It intercepts the headwaters of Big Paint Creek, and then outlets back into the stream. An assessment of land use shows approximately 77% to be agricultural, 23% in a partially developed commercial area and other urban uses, including the park. This project will implement urban and rural water quality practices to prevent further degradation of the pond and the stream. A ranking system, determined by the degree a practice will influence water quality and the distance to the stream or sinkholes, will be used to evaluate where project funds will be allocated.

9005-002 Silver Creek Watershed

Silver Creek is a warm water stream resource located in one of the most intensely cropped portions of Clayton County. The stream has been included on Iowa's 303(d) list of impaired waters since 2002. Aquatic life, which should be present in Silver Creek, isn't there. According to the Draft Total Maximum Daily Load (TMDL) for Silver Creek, the primary nonpoint pollution sources are soil erosion from agricultural land uses and direct deposition of ammonia by livestock with access to the stream.

The Clayton Soil & Water Conservation District has begun efforts to remove Silver Creek from the impaired waters list. The District has promoted stream corridor and sinkhole protection, and the installation of buffer practices along Silver Creek and its tributaries. Conservation practices have been targeted to crop fields to reduce sediment delivery to the stream. A series of news articles, newsletters, and field days have been utilized to increase public understanding of water quality issues. Landowner interest has outweighed available cost share resources. Additional financial support will allow the project to build upon its early successes, to further address the identified impairments, and to respond to a long list of landowners that are interested in conservation work on their farms.

9006-003 Bear Creek Watershed

Bear Creek is an impaired warm water fishery designated as class B(LR) by the Iowa DNR and is on 303 impaired waters list for fish kills and ammonia. Bear Creek is located in eastern Delaware County. This project is designed to improve the water quality of Bear Creek by educating the landowners, operators and watershed community about the importance of this water resource. The goal of the Bear Creek Watershed Project is to improve the water quality of Bear Creek by reducing the amounts of ammoniated manure discharge, fecal coli form bacteria, sediment, nitrogen, and phosphorous.

The Bear Creek Watershed Project has been a watershed project since July 2004, first as a Demo project FY 2004-2005 and then full time WSPF/319 project FY06-09. Fish kills have not occurred in 2008-2009. Sediment delivery has decreased in the Bear Creek Watershed by 5,328 tons per year.

The objectives of this watershed project will be to improve Livestock Waste Storage, to improve Livestock Waste Usage, to decrease Sediment Losses, and to improve Education & Area Outreach. This project will install 2 manure storage structures (EQIP/project funded), 19 ac of CRP waterways, 12 ac of project waterways, 17 ac of CRP filter strips along stream, 12 water and sediment control basins, 18,000 ft of terraces, 350 ac of new no till planting, and 3,700 ft of stream bank protection.

9007-004 Upper Buffalo Creek

The main channel of Upper Buffalo Creek has been identified on Iowa's 303(d) List of Impaired 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 Buchanan County SWCD has identified this as a priority watershed because mussel population decreases have been well documented to be directly associated with decreases in ecological value, recreational value, and overall water quality.

The presence of a diverse and reproducing mussel population indicates that a healthy aquatic ecosystem is intact, which means good fishing, good water quality for wildlife, and assurance that water is safe for recreation. Dan Cohen, Buchanan Conservation Board Director, stated that "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". This watershed contains two "threatened" species of mussel and five "sensitive" species of fish. The District feels that a watershed project will assist in implementing conservation practices that will greatly improve water quality and enhance biological and recreational venues.

9008-005 Hewitt Creek

The primary goal of the Hewitt Creek Watershed Council is to have Hewitt-Hickory Creek removed from the Iowa impaired waters (303d) list. Hewitt Creek watershed, a livestock dense 23, 005 acre sub-watershed of the Maquoketa River Basin, is 91.2% agricultural and 7.5% woodland. Since 2005, 67% of 84 watershed farm operations participated in an organized watershed improvement effort using a performance-based watershed management approach, reducing annual sediment delivery to the stream by 4,000 tons. Watershed residents realize that water quality improvement efforts require a long-term commitment in order to meet their watershed improvement goals and seek funding for an additional five years to continue their successful watershed improvement project. Cooperators will be provided incentive for improved environmental performance, along with incentives and technical support to address feedlot runoff issues and sub-surface nitrate-nitrogen loss. The Phosphorus Index, Soil Conditioning Index and cornstalk nitrate test will be used by producers as measures of performance to refine nutrient and soil loss management and to determine effective alternatives to reduce nutrient and sediment delivery. Twenty-five livestock operations will improve feedlot runoff control systems and five sub-surface bioreactors will be installed to reduce nitrate delivery from priority tile-drained fields. The Hewitt Creek Council will seek additional cost-share funding for high-cost feedlot runoff control structures, sediment control basins and stream bank stabilization projects.

9009-006 Lost Creek Watershed

Lost Creek is an 18 mile-long warm water stream located in northeastern Lee County. The 27,910 acre watershed exists within two very distinct landform regions. The upper

reach**,** which encompasses 95% of the watershed, lies within the rolling hills of the **southern Iowa drift plain,** and continues into the lower reach, an **alluvial floodplain** of the Mississippi River where the stream has been straightened and channelized for drainage purposes.

In 2008 a comprehensive assessment for Lost Creek was completed using the IDALS, IDNR, and NRCS watershed planning protocol and associated tools (GIS, RASCAL). The results of this assessment confirmed that the primary nonpoint source pollution concern for the watershed is **sedimentation**. The data indicates that 12,500 tons of sediment is being delivered to Lost Creek on an annual basis. Additionally it is estimated that with the sediment, 16,250 lbs. of phosphorus is delivered to the stream annually. The primary impacts of sedimentation and excess phosphorous contamination to the watershed include: **1)** destruction of critical aquatic habitat for game fish populations and other macro invertebrates; **2)** an increased maintenance workload for the Green Bay Drainage District; and **3)** sediment and nutrient loading to the impaired segment of the Mississippi River as designated on the 303(d) list for Iowa.

9010-007 Hawthorn Lake

Hawthorn Lake is a 168-acre publicly owned impoundment constructed in 1979 and is located in Mahaska County approximately two miles south of Barnes City, Iowa. Hawthorn Lake is currently on Iowa's 2008 303(d) Impaired Waters List with the cause or stressor listed as turbidity. Hawthorn Lake has typically been highly utilized by anglers but lake usage in recent years has declined significantly due to water quality problems stemming from sediment and phosphorus delivery from the watershed and in-lake problems. A comprehensive watershed assessment has been completed for Hawthorn Lake that identifies the causes and solutions to the problems. The goal of this proposal is to once again make Hawthorn Lake a recreational destination for Iowan's and to remove it from the Impaired Waters List. This goal will be achieved by (1) targeting best management practices within the watershed to reduce the delivery of sediment and phosphorus from sheet, rill, and gully erosion, (2) implement in-lake management strategies that will reduce shoreline erosion, control invasive species such as carp and shad, and improve fish habitat, and (3) implement public outreach activities designed to build public support and increase their understanding and influence on water quality. This project will reduce sediment loading by an estimated 1,974 tons and phosphorus loading to Lake Hawthorn by an estimated 2,567 pounds. This project will leverage $616,100 from the partners and is requesting $360,000 from the WIRB Board (37% of total budget expenditure).

9011-008 Walnut Creek Watershed

Walnut Creek is a Class B warm water stream located in northern Poweshiek County. The creek is sixteen miles in length with 26,223 acres of watershed area. Walnut Creek is listed on the 2008 impaired waters list as biologically impaired. Based on results of biological monitoring, no specific causes of the impairment have been identified. This watershed is of particular significance to the Poweshiek SWCD and the state of Iowa because water quality protection efforts can be implemented that will address the impairment. The Poweshiek SWCD received a watershed development grant in 2005, to complete a watershed assessment for the Walnut Creek Watershed. The results of the assessments showed an estimated 23,224 tons of sediment are delivered annually to Walnut Creek, and, about 34% of land in the watershed is delivering nearly 66% of the sediment. Therefore, the acres with more than 1 ton/ac/yr sediment delivery have been

prioritized. In January 2008, an implementation grant began. The 1st year's EQIP matching funds were obligated by July 2008. Specific objectives are to: 1) Reduce sediment delivery by 3,205 tons, by installing conservation practices on the sediment delivery areas of more that 1 ton/ac/yr, and, 2) Develop an information and education program for landowners. The District has prioritized the Walnut Creek watershed for 50% EQIP funding to be combined with 25% WSPF funds. This application is for additional practice funds, utilized as 50% cost-share, to be used with 25% WSPF funds, for eligible soil loss projects (>1 ton/ac), when EQIP funds are not available.

9012-009 Little River Lake

Little River Lake watershed is a 13,305 acre subwatershed of Little River. The 788 acre lake was listed as a 303d impaired water body in 2008 due to elevated turbidity and algae levels. The Decatur SWCD has prioritized water quality protection efforts within the Little River Lake watershed because 1) portions of this watershed has been identified as the primary contributor of sediment and nutrients to Little River Lake, which provides an essential source of drinking water for Decatur County and the Southern Iowa Rural Water Association; 2) the watershed provides exemplary education and project interpretation opportunities due to its proximity to Little River Lake Recreation Area, and 3) by using targeted and proven soil conservation practices to address water quality deficiencies the probability of successfully attenuating soil erosion and ameliorating water quality impairments is enhanced. The specific goals of this proposal are to: 1. reduce annual sediment, and phosphorous delivery to the lake by 11,280 tons and 14,664 lbs., respectively, via applications of conservation practices on targeted agricultural land; 2. **delist the lake as an EPA 303d impaired water body** via water quality enhancement; 3. obtain a "Full Support" status for the lake's aquatic life and recreational use; 4. reduce potable water treatment costs (minimum 50% cost reduction) associated with high suspended solid levels; and 5. restore a viable sport-fish population, thereby bolstering tourism and the economy. To achieve timely project implementation the Decatur SWCD has cooperated with the IDNR Watershed Improvement Section, Fisheries Bureau, and IDALS-DSC to assess extant water quality and watershed conditions, coalesced a diverse team of committed partners and secured matching funding from multiple sources.

9014-010 Lytle Creek

Leisure Lake is a 20-acre water body located in northwest Jackson County with a 2,581 acre drainage area. This portion of the Maquoketa Watershed including the lake is a tributary to Lytle Creek which drains into the North Fork Maquoketa River and into the Maquoketa Watershed. Portions of the Lytle Creek and North Fork Maquoketa River are on the 303(d) impaired waterbodies list. The project area includes a community of 370 residential properties and one business that currently has no central waste water collection and treatment system. The County Sanitarian estimates at least 225 of these properties do not have properly operating septic systems and ultimately drain their wastewater into the lake. The purpose of this project is to construct a wastewater collection and treatment facility to improve water quality in the creek and river. The project will eliminate the non-permitted septic systems and construct a new wastewater system to properly treat wastewater prior to its discharge into the waterways.

9018-011 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 apply BMPs that will reduce sediment and phosphorus delivery from priority land in 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 4,000 acres that will reduce the annual delivery of sediment by 6,000 tons and phosphorus by 20,000 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.

9020-012 Fox River

With WIRB funding the Fox River Ecosystem Development board will continue to install prioritized practices identified by assessments within the impaired segment of Fox River. The FRED board is also asking to continue funding for a new 5 year position for assessment, planning and technical assistance. With new assessments and water quality monitoring already being done on the impaired segment of the Fox River, a lot of valuable information is at hand. Ecosystem Development board is requesting funding from WIRB to install grade stabilization structures, water sediment basins, and terraces to reduce sediment delivery to Fox River. The FRED board in both Iowa and Missouri are committed not only to seek funding to continue water quality efforts for more practices but also to enhance and protect existing practices and investments that protect our water quality and economic viability in both states. We are off to a good start and want to continue our progress on the Fox River.

9025-013 Beaver Creek Watershed

The City of Johnston's Green Meadows Bioretention project will focus on water quality and quantity in the watershed, as well as corridor rehabilitation. Located south of NW 62nd Avenue, west of Merle Hay Road, and east of Pioneer Parkway, Green Meadows was one of the first planned communities in Central Iowa.

The drainage channels within Green Meadows were constructed approximately 30 years ago with a network of 9,450 feet of concrete flumes, at a time when storm water was considered to be a nuisance or a waste product. The flumes are used to drain city streets and storm sewers directly to Beaver Creek. Best Management Practices (BMPs) do not currently exist to help treat or reduce the existing runoff or manage the rate at which it flows. Impervious surfaces such as roadways, parking lots, and rooftops as well as adjacent park and residential lawns convey significant amounts of pollutants and sediment to the fumes. Erosion near pipe outlets and along the edges of flumes is also occurring, and there is concern during heavy rains about high velocity flows. The existing flumes also impair the quality of storm water runoff by eliminating the possibility of infiltration into the soil. Opportunities for water treatment and pollutant capture are also reduced.

The City of Johnson does not wish to replace this flume system in the watershed with a storm "sewer", suggesting that storm water is still considered a nuisance. Rather, this watershed project proposes multiple BMPs to address problems, produce results and provide public education.

Green Meadows was a "green neighborhood" many years before the current interest in conservation. With this watershed project, it will be a demonstration site again, as a place where storm water is treated as one of Iowa's resources. We are excited to be a part of this effort.

9028-014 Tributary B to Fourmile Creek

The city of Ankeny is submitting this WIRB application for development of green urban stormwater practices on city and private property in the Fourmile Creek watershed. The stormwater project proposed includes stream restoration of the SE Tributary to Fourmile Creek (Tributary B), including weirs, bank shaping, toe protection, trees, and native plantings. The project also includes the creation of a native buffer along the stream channel in the city's Summerbrook Park, installing four native planting beds, installing a pervious surface trail, installing a series of rain gardens/biorentention cells, and installing educational signage. Polk County Soil and Water Conservation District has committed $17,000 towards the native buffer and rain garden/biorentention cell. The city of Ankeny was also awarded a $100,000 I-JOBS grant from IDNR to complete the stormwater retrofit practices. The largest component of this project is public education. Our vision for this project is to take the entire 281 acre watershed and address it as a whole. We want to make a collaborative watershed that not only addresses the water entering the stream channel through adjacent properties, but takes each individual parcel within the watershed and strives to reduce contributions to the stormwater system. The stormwater issues of concern for Tributary B include stormwater volume, sediment, and nutrients. The stream restoration, best management practices (BMP) at Summerbrook Park, and BMPs on private property should help decrease the volume of stormwater and reduce the amount of sediment and nutrients that enter Tributary B and ultimately Fourmile Creek.

9029-015 Otter Creek

The City of West Union has been selected by Iowa Department of Economic Development as a Green Pilot Community. A major part within this designation is the reconstruction of the downtown business district public infrastructure in a sustainable, innovative, and replicable way. A key component of this project is replacement of the impermeable street and sidewalk surfacing with a porous paver system. This system, along with bio-retention cells in intersection bumpouts and sidewalk planters, will infiltrate, then cleanse and cool the storm water prior to a very slow discharge rate to Otter Creek. The project area will see a 95% reduction in peak discharge rate for a 100 year storm and a 20% reduction in runoff volume. West Union is located within the Otter Creek watershed, a designated cold water trout stream just below the city. Fayette County Soil and Water Conservation District and IDNR consider improvement of the water quality of Otter Creek to be very important. This reconstruction of downtown West Union in a sustainable manner will be the start of an overall Otter Creek watershed improvement project.

9031-016 Duck Creek

The Duck Creek Watershed, the recipient of a 2009 DNR Watershed Management Planning Grant and focus of an upcoming City of Davenport master plan, is characterized by relatively flat grades and highly impervious areas. Plagued by issues such as high bacteria loads, stream bank erosion and flooding, solving these problems may take generations. The City of Davenport has taken a microwatershed approach to identify the

significant contributors to water quality and flooding issues that affect Duck Creek, its tributaries and the surrounding landscape to make inroads into the larger issues. This project is the next phase of a multi-phased project that addresses the microwatershed that includes St. Ambrose University. Work here will improve water quality within Duck Creek and address major flooding issues on campus while also reducing downstream flooding.

This project will convert an existing parking lot into a green parking area by removing the hard surface and installing below ground facilities for storm water infiltration, detention, and reuse. Permeable pavement, bio-swales and infiltration areas will be constructed on top of the infiltration facilities. ***We estimate that this project will capture and treat 1,110,000 gallons (3.5 acre feet) of storm water runoff which accounts to the runoff volume from a 10-year storm event while reducing pollutants by 30%-110%.***

9032-017 Miller Creek

Miller Creek is on the 2006 Section 303d Impaired Waters List and has a 19,926 acre watershed. All indicators, as reported in the Miller Creek assessment, show that the impairment is due to sediment and nutrient delivery from upland runoff which contributes to elevated water temperatures, excessive algae, and low dissolved oxygen levels within the stream. In an effort to control these problems, the Miller Creek Water Quality Project will target areas of 5 tones per acre or greater soil loss or with 0.5 tons per acre or greater sediment delivery rates. The assessment revealed these targeted priority lands make up 32% or 6,395 acres of the Miller Creek watershed. Priority lands include cropland, pasture land, timber, and sensitive riparian areas. It is the goal of this project to reduce sediment delivery by 70% on 60% or 3,837 acres of these priority lands. This will be accomplished through installation of strategically placed structural practices, rotational grazing systems, and buffer strips. These practices will reduce soil loss, reduce sediment delivery, improve water quality, and improve wildlife habitat in the watershed. Utilizing partnerships with NRCS and IDALS-DSC will be important in making this project successful. In addition to using matching funds from EQUIP, WHIP, and CRP, the Monroe SWCD is committed to prioritizing local cost share funds through IFIP and REAP for use in the Miller Creek Watershed.

9033-018 Camp Creek Watershed

Growing Green Communities is strongly committed to improving the quality of Camp Creek and its watershed by reducing soil loss, which will benefit landowners by preserving their topsoil and improve the water quality of Camp Creek by reducing sediment loading of the creek. To accomplish the goal of reducing soil loss and improving water quality, Growing Green Communities has worked with the Iowa Department of Natural Resources to identify areas of concentrated flow paths (CFPs) within the Camp Creek Watershed using LiDAR topographic mapping technology. A goal of this project is to identify sites expected to have the greatest impact in reducing soil loss and to install Best Management Practices (BMPs) at these sites. Landowners and other project partners will work to develop the most effective BMPs for each site. After BMPs are designed and constructed, a conservation easement will be recorded to protect the BMPs. GGC plans to record 40 acres as easements. The easements will be purchased by Growing Green Communities and donated to a qualified conservation organization for long term management and maintenance.