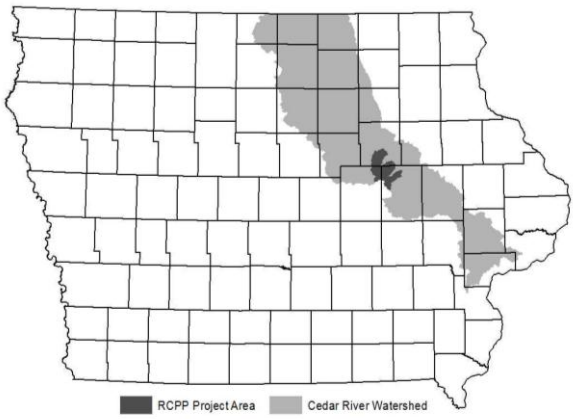
Section 1. Application Cover



a) **Project Title:** Middle Cedar Partnership Project

b) **Project Director:** Steve Hershner

c) **Lead Partner & Other Collaborating Partners:**
City of Cedar Rapids, Iowa (Lead)
Tama County Soil and Water Conservation District
Black Hawk Soil and Water Conservation District
Benton County Soil and Water Conservation District
Iowa State University Extension Service
Iowa Soybean Association
Iowa Department of Agriculture and Land Stewardship (IDALS)
Iowa Department of Natural Resources
DuPont-Pioneer
Natural Resources Conservation Service (NRCS)
The Nature Conservancy
Iowa Farm Bureau
Iowa Corn Growers Association
Benton / Tama, and Miller Creek Watershed Quality Initiative projects
Benton, Tama, and Blackhawk counties
Sand County Foundation

d) **Lead Partner Address & Phone:**
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e) **Funding Pool:** This project seeks funding from the Iowa state funding pool.

f) **General Summary:** The Middle Cedar Partnership Project seeks resources to advance implementation of nutrient and flood reduction practices in targeted areas of the Middle Cedar watershed, a 2,417 square mile watershed, which is part of the larger Cedar River watershed. The Middle Cedar watershed is located in east central Iowa. The project seeks to target funds to five HUC 12 watersheds located in Black Hawk, Tama and Benton counties. The five HUC 12 watersheds total 135,000 acres. Within the focus area two ongoing projects funded by the Iowa Department of Agriculture and Land Stewardship are currently demonstrating practices identified in the Iowa Nutrient Reduction Strategy. This RCPP project proposal seeks to increase implementation of select in-field and edge-of-field conservation practices by partnering Iowa's second largest city, Cedar Rapids, with local producers and conservation groups. Practices identified include nutrient management, cover crops, bioreactors, saturated buffers, wetland creation, and wetland easements. This RCPP project will expand the scope and reach of the ongoing watershed demonstration projects in the Middle Cedar watershed.

The Middle Cedar Partnership Project combines downstream water users, specifically the City of Cedar Rapids, with upstream conservation entities (SWCDs, NRCS, etc.) to embark on a long-term

effort to reduce nutrient concentrations and loading and mitigate flood impacts. Without sustained efforts to control nutrient loading in the larger Cedar River watershed, the City of Cedar Rapids raw water sources will become increasingly difficult and costly to treat to produce safe, abundant drinking water supplies. A large majority (70 – 75 %) of the drinking water produced by Cedar Rapids Water Treatment facilities is distributed to large food production industrial users, such as PepsiCo, Cargill and General Mills. Cedar Rapids has developed a strong economic base by having these various industrial users within the City. A devastating economic ripple effect would be put into motion if the City were unable to consistently provide a safe, high quality water product for these industrial consumers to use in their processes. Implementing various in-field and edge-of-field conservation measures has been shown to reduce nitrate run-off, one specific nutrient of concern for the drinking water industry. The City of Cedar Rapids has sought interested partners to share in the implementation, monitoring, administration, and funding of employing these various conservation measures in specific targeted areas of the Middle Cedar watershed.

Historical analytical data has shown the nitrate concentration in the Cedar River, which directly impacts the well water sources of Cedar Rapids drinking water supplies, can increase dramatically and suddenly. In August of 2012, during a significant drought period, samples collected and analyzed for nitrate concentration showed a monthly average of 0.00 mg/L NO3 – N. Less than a year later, May 2013, samples collected from the same sample point, and analyzed for nitrate concentration showed an historically high concentration of 16.2 mg/L on May 14, 2013 and a monthly average concentration of 12.28 mg/L NO3 – N. The Safe Drinking Water standard for NO3-N is 10 mg/L. High nitrate concentrations in source water supplies are not merely a water quality concern. These elevated concentrations could have far-reaching health and safety, economic, social and industrial impacts.

Effective and efficient implementation of any of the proposed conservation measures will require a strong and well organized plan. The City of Cedar Rapids wishes to allocate 100% of the $25,000 first year contribution for Technical Assistance to a partnership with Sand County Foundation, to develop a Watershed Planning and Assessment Plan for the five specific HUC 12 waterways identified in Table 1 below. This plan will specify long range goals for land, water, soil and social concerns in the watershed area and specify priorities so that all resources available are consumed and protected in a manner consistent to the best interests of all parties, whether inside or outside the watershed area.

Development of a formal Watershed Planning and Assessment Plan will assist in laying the groundwork for others to follow, not only in the Cedar River basin, but throughout the entire state of Iowa. It is hoped that this project, and this plan, will help to establish long term cooperative relationships amongst producers, consumers, individuals, utilities and regulatory agencies.

g) **Geographic Focus:** The focus area of the Middle Cedar Partnership Project is five HUC 12 watersheds contained with the larger Middle Cedar HUC 8 watershed. The HUC 12 watersheds, listed below, are located in Black Hawk, Benton and Tama Counties, all in east central Iowa. The size of the five watersheds combined is approximately 135,000 acres.

HUC 12 Name	HUC 12 ID	HUC 12 Size
Rock Creek-Cedar River	70802051001	24,365 acres
Pratt Creek	70802051101	31,696 acres
Wolf Creek	70802050809	36,220 acres
Miller Creek	70802050905	19,324 acres
Headwaters Miller Creek	70802050904	23,137 acres

Table1. Project area watersheds.

Land use in the focus area is predominately row crop, primarily corn and soybeans. The Middle Cedar watershed has been designated a priority area by the Iowa Water Resources Coordinating Council. As one of nine priority watersheds in Iowa, special funding has been made available for demonstrating and promoting practices identified in the Iowa Nutrient Reduction Strategy. The five HUC 12 watersheds identified as the focus area for this project are all demonstration sites for the Iowa Nutrient Reduction Strategy.

h) **Start/End Date & Yearly Request:** The Middle Cedar Partnership Project proposes a five-year timeline. The estimated start date is 1/1/2015 and the project end date is 12/31/2019. The yearly RCPP request is provided in the table below. All budget calculations used NRCS incentive rates. All requests are from the Environmental Quality Incentive Program.

RCPP Request	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Technical Assistance	$60,000	$62,400	$64,896	$67,492	$70,192	$324,980
Financial Assistance	$71,553	$220,295	$336,168	625,046	$442,895	$1,695,957
RCPP Total Request	$131,553	$282,695	$401,064	$692,538	$513,087	$2,020,937

Table 2. RCPP request.

i) **Total RCPP Funding Request and Partner Contributions:** The total RCPP request is $2,020,037.00. Partners participating in the Middle Cedar Partnership Project have estimated preliminary contributions to the project totaling $2,238,975. Additional match will likely be secured prior to submitting a final proposal.

Partner	**Match**
City of Cedar Rapids (Council Approved)	$240,955
City of Cedar Rapids (Future Requests)	$75,820
Benton/Tama Water Quality Initiative Project	$468,000
Miller Creek Water Quality Initiative Project	$499,530
The Nature Conservancy	$175,000
Iowa Soybean Association	$125,000
Iowa Department of Natural Resources	$554,670
Sand County Foundation (tentative)	$60,000
Iowa State University Extension and Outreach	$40,000
TOTAL Match	$2,238,975

Table 3. Partner match.

The City of Cedar Rapids will contribute a minimum of $25,000 each year of the five-year project. An in-kind match of 0.25 FTE time for RCPP reporting, data collection, sampling, and monitoring is approved for year one of the project and the City anticipates like in-kind contribution for the remaining four years. It is also anticipated that after the completion of the Watershed Assessment Plan in the first year, 100% of match contributions in years 2-5 will be utilized for cost share implementation of conservation best management practices by producers.

The match from both the Benton/Tama and Miller Creek Water Quality Initiative Projects will support promotion and implementation of best management practices (see table 4), staffing of two local outreach coordinators, promotion of project objectives via media outlets, field days and other events, and water quality monitoring.

The Nature Conservancy is working on a project in the Middle Cedar to quantify the benefits associated with conservation practices, both those that improve economic returns to farmers, such as improved soil health, and benefits that accrue off-farm and provide benefits to neighboring communities. The Conservancy will design a campaign to communicate the value of agricultural conservation practices to farmers and local communities and support the local Water Quality Initiative projects already underway in the Middle Cedar watershed.

The Iowa Soybean Association match will provide 100 hours of staff support to the project, three communication pieces per year, project features on the Iowa Soybean Association's website, and support of water quality monitoring efforts beyond the current 3-year timeframe in the Miller Creek watershed.

The Iowa Department of Natural Resources match supports ongoing water monitoring stations in the Middle Cedar watershed. This includes six ambient stream monitoring locations, six ambient lake monitoring sites, and three stream flow and discharge gages. The Iowa DNR also supports the Iowa-Cedar River Bain Coordinator, who will provide support to the RCPP project if funded.

The Sand County Foundation will support watershed-planning efforts in the project area.

Iowa State University Extension and Outreach will provide assistance with coordinating and delivering cropping and livestock system outreach and education as it relates to the nutrient and soil management objectives of the project. In-kind time contribution by Extension Field Agronomists, Engineers, County Extension Coordinators, state specialists and the Water Quality Program Manager will be $40,000 over 5 years.

The Iowa Farm Bureau Federation (IFBF) is considering additional in-kind support. IFBF is the largest general farm organization in the state with more than 154,000 member families. IFBF policy generally supports voluntary soil and water conservation programs and practices. As the goals of this Regional Conservation Partnership Program project are consistent with IFBF policy, the program partners anticipate working with IFBF to provide in-kind information, education and outreach programs and resources, such as IFBF News Services & Public Relations programs (the Iowa Minute, Conservation Counts Iowa, and *The Farm Bureau Spokesman*), and more. Additionally, the IFBF SHARE Grant Program can provide participating county Farm Bureaus matching funds for projects involved in conservation and water quality.

Section 2. Project Summary

a) Project Objectives & Natural Resource Concerns:

The Middle Cedar Partnership Project objective is to support and expand ongoing demonstration and implementation projects aimed at reducing nutrient impacts to Iowa waters and the Gulf of Mexico. The natural resource concerns addressed by this project include water quality, water quantity and soil health. The Middle Cedar watershed has been designated as a priority watershed by the Iowa Water Resources Coordinating Council under the Iowa Nutrient Reduction Strategy. Priority watersheds were chosen based on annual average levels of nitrogen and phosphorus export. Further, the Middle Cedar contains multiple communities that have experienced considerable flood damage and associated economic impacts. Soil health is closely linked to solutions for both water quality and water quantity concerns.

The Middle Cedar Partnership Project seeks to advance implementation of conservation practices by building upon the conservation goals established by the Miller Creek and Benton/Tama Water Quality Initiative demonstration projects. Conservation practice objectives for these state-funded projects include implementation practices to reduce nitrogen and phosphorus losses. Table 4 provides a list of practices and goals for the demonstration projects. The Middle Cedar Partnership Project plans to continue the support of the Miller Creek and Benton/Tama Water Quality Initiative after the current funding source expires and expand the program to include practices and goals identified in table 5.

Practice	Goal
Cover Crop	6,500 acres
Strip/No till	5,000 acres
Buffers	48 acres
Drainage Water Management	4,000 acres
Nitrification Inhibitors	6,000 acres
Bioreactors	5 number
4R Practices	3,800 acres

Table 4. Existing watershed project implementation practices and goals.

b) Evaluation, Monitoring, Modeling and Reporting:

Iowa DNR's Ambient Monitoring program has conducted monthly water quality testing of nitrogen, phosphorous, and other analytes at six stream sites, including Wolf Creek and the Cedar River, since 1999. This monitoring provides useful baseline data on long term water quality trends and will continue through the life of the proposed project.

The Iowa Soybean Association is collaborating with the Miller Creek Water Quality Initiative Project to monitor water quality conditions resulting from conservation practices and tile outlets. Individual results are confidential but aggregated results can be used to track improvements at the field and practice scale. Additionally, the Iowa Soybean Association is monitoring multiple stream locations within the Miller Creek watershed in hopes of identifying critical areas and over time, tracking improvements.

Staff from the National Lab for Agriculture and the Environment in Ames, Iowa is in the process of developing conservation practice placement maps. The maps take into account landscape characteristics such as land use, soils and other information to identify best placement of conservation practices to achieve maximum benefit. These maps, and other information, will be used to prioritize placement of practices.

Reporting will be provided by the City of Cedar Rapids per NRCS guidelines and work agreements if the project is accepted and approved.

c) Activities:

Activities in this project will revolve around collaborating with landowners and farmers to implement a suite of practices that address water storage, water quality, and soil health within farm fields and at the edge of fields. Nutrient management, an on-farm practice, aims to prevent nutrient loss by applying fertilizer in the right amount and closest to the timing of uptake by crops. Edge-of-field practices, such as saturated buffers and bioreactors, capture nitrate already lost to the sub-surface drainage system and process it before this water enters local waterways. Wetlands, another edge-of-

field practice, will provide both water storage and water quality benefits. Proposed practice implementation levels and timeline are outlined in Table 5.

Practice	Unit	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Cover Crops	Acres	500	800	900	900	900	4,000
Cover Crops - 2 Species Mix	Acres	-	200	300	300	300	1,100
Cover Crops - 3 Species Mix	Acres	-	-	100	100	100	300
Nutrient Management	Acres	200	900	1,900	2,200	2,400	7,600
Nutrient Management Enhanced NM	Acres	-	-	100	100	100	300
Nutrient Management Plan	Number	1	7	13	15	16	52
Bioreactors	Number	-	2	2	3	3	10
Saturated Buffers	Number	-	1	1	-	2	4
Wetland Creation	Acres	-	-	-	-	10	10
Wetland Reserve Easement	Acres	-	-	-	20	-	20

Table 5. RCPP conservation practice goals.

d) Meeting or Avoiding Regulatory Requirements: All practices and approaches being proposed via this project will support the implementation of practices in a voluntary non-regulated manner. Producers implementing practices are not anticipated to meet or avoid existing natural resource regulatory requirements. Practices proposed target nonpoint source pollution from agricultural landscapes.

e) Requested Adjustments: No adjustments are requested at this time.

f) Alternative Funding Arrangements: No alternative funding arrangements are requested at this time.