APPENDIX A

EPA NINE KEY ELEMENTS

To gain approval from the EPA, the Nonpoint Source Management Plan must address the nine key elements established for state programming. Some of the key elements were addressed or demonstrated on a statewide level throughout the main body of the text; however, Appendix A contains program specific information needed to address the nine key elements. This information will be especially helpful to the EPA in determining whether or not the plan satisfactorily meets program requirements.

KEY ELEMENT #1

The State program contains explicit short- and long-term goals, objectives and strategies to protect surface and ground water.

The following four goals for nonpoint source improvement were established through the NPSMP visioning process, by the core partners and stakeholders. Within each goal, the Section 319 Program has established specific program objectives and milestones toward achieving watershed improvement. The goals and objectives are listed below.

GOAL 1: WATERSHED COLLABORATION:
Build partnerships to enhance a collaborative watershed approach to nonpoint source water pollution.

Objective 1: Expand the basin coordinator network from 4 to 5 by 2018, and, subject to available funding, expand the basin coordinator network from 5 to 6 by 2023.

Objective 2: Hold quarterly basin coordinator partner meetings to strengthen agency and program collaboration.

Objective 3: Facilitate the establishment of a minimum of three Watershed Management Authorities within 5 years as determined by local interest.

Objective 4: State and federal partners (including DNR Watershed Improvement Program, IDALS-DSC, and NRCS) meet with Watershed Project Coordinators at least twice per year to inform and educate them on watershed-related topics.

Objective 5: Meet quarterly each year with each active watershed group funded by Section 319 funds to provide individual technical/administrative assistance to watershed groups.

Objective 6: Basin coordinators collectively hold a minimum of 10 outreach meetings annually with prospective watershed groups.

Objective 7: Approve or update a minimum of 10 Watershed Management Plans (EPA-approved 9-element WMPs) by 2018 (average 2 per year).

GOAL 2: EDUCATION / OUTREACH / TECHNICAL ASSISTANCE:
Improve technical assistance, outreach and education to facilitate NPS assessment, planning and implementation.

Objective 1: Prepare and distribute a watershed success stories document annually.

Objective 2: Prepare and distribute a quarterly watershed newsletter.

Objective 3: Provide GIS mapping support to all prospective watershed groups that apply for DNR Planning Grants, IDALS-

DSC Development and Planning Grants, and to existing watershed projects.

Objective 4: Provide tools for conducting watershed inventories and assessments (such as the RASCAL stream assessment, tablet land use assessment, etc.) to all prospective watershed groups that apply for DNR Planning Grants, IDALS-DSC Watershed Development and Planning Grants, and for existing watershed groups.

Objective 5: Conduct a statewide survey of Iowans' understanding of and attitudes about water quality and watershed improvement at year 1 and year 5 of the NPSMP.

Objective 6: Encourage the incorporation of a minimum of three water quality questions per year into the Iowa Rural Life Poll.

Objective 7: Develop a guidebook for communities to facilitate HUC-8 watershed visioning in Iowa by 2018.

Objective 8: Support education and outreach to women landowners in Iowa through a minimum of 4 events per year that target women landowners in existing 319 watersheds and through statewide events.

Objective 9: Inform and educate Iowans about water quality issues through a minimum of 3 statewide educational efforts (examples include Project AWARE, IOWATER Workshops, Iowa Learning Farms, and the Iowa State Fair) per year.

Objective 10: Work with each Section 319-funded project to hold at least one project field day event annually for the duration of the project.

Objective 11: Develop and implement a water quality educational campaign targeted to Iowa children in grades K-12 by 2014.

Objective 12: Develop a water quality education campaign targeted to Iowa adults by 2018.

GOAL 3: SCIENCE-BASED PERFORMANCE MEASURES:
A major component of water quality is the need for science-based performance measures, which lays the foundation for understanding water quality problems and how to effectively remediate them.

Objective 1: Annually track progress and evaluate on the implementation of each EPA-approved Watershed Management Plan.

Objective 2: Transition to developing Total Maximum Daily Loads (TMDLs) using a rotating basin approach, by 2016.

Objective 3: Develop at least 20 lake TMDLs by 2018.

Objective 4: Complete TMDLs for all 2002 listed impaired waters (category 5a) by 2016.

Objective 5: Remove 5 water quality impairments by 2018 for waters currently listed as impaired on the state Integrated Report.

Objective 6: Establish and conduct monitoring annually to track changes in water quality resulting from watershed improvement in Section 319-funded watersheds. The DNR will report on annual monitoring to EPA in GAPRs or the Annual Program Report.

Objective 7: Provide analysis and interpretation of watershed-based water quality data annually to active Section 319-funded watershed groups to inform them and improve their understanding of progress towards reaching WMP goals.

Objective 8: Provide analysis and interpretation of statewide water quality data annually to guide state and local groups.

Objective 9: Report on modeled annual pollutant load reductions for sediment, phosphorus, and nitrogen, in Section 319 priority watersheds.

Objective 10: Develop or adopt a tool to estimate annual pollutant load reductions from urban conservation practices within Section 319 priority watersheds by 2014.

Objective 11: Digitally map all conservation practices installed in Section 319 priority watersheds by 2014.

GOAL 4: FUNDING:
The support of public resources, such as the waters of the state, require resources, both public and private, to achieve positive results.

Objective 1: Target at least 50% of Section 319 funds annually to support priority locally-led impaired watershed projects within the 6 major river basins and 3 major river regions (see figure A-1) in Iowa, by 2013.

Objective 2: Promote the use of 604(b) funding for regional watershed planning.

Objective 3: Promote the use of clean water SRF funds statewide and within Section 319 priority watersheds as a means to increase private investments to address nonpoint source pollutants.

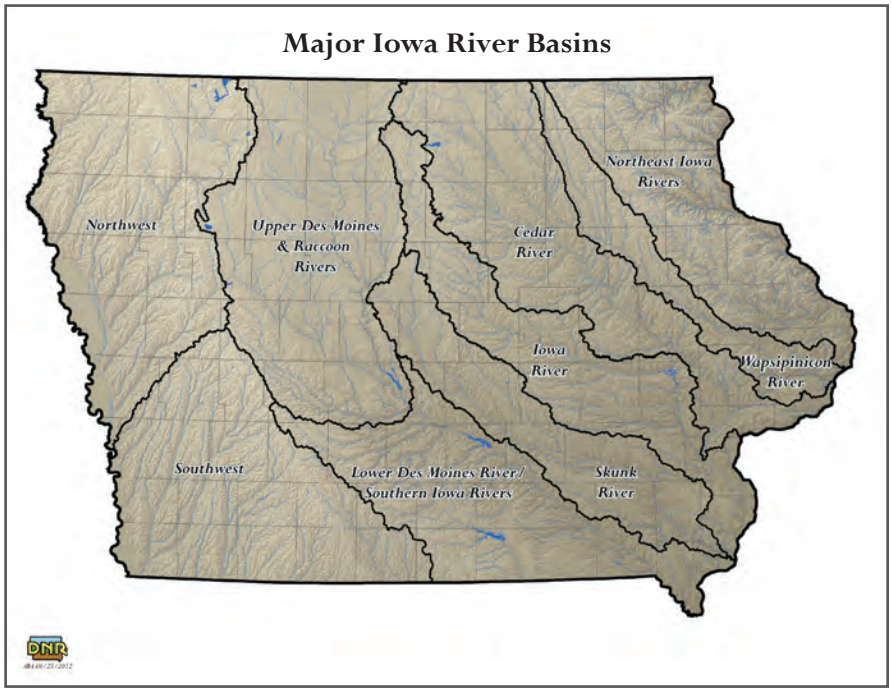


Figure A-1: Major Iowa river basins.

Objective 4: Annually promote the use of USDA funding programs such as, EQIP, CREP, MRBI, etc., within Section 319 priority watersheds as a means to increase private investments to address nonpoint source pollutants.

Objective 5: Annually document and report on the amount of dollars leveraged by Section 319 funds, including public and private investments, in Section 319 priority watersheds.

More information on funding can be found under Key Element #9 of this Appendix.

The table on the next page illustrates the objectives that each agency is associated with in either a lead or secondary role. While this information is available on each of the objective pages in the form of the "molecules," this table serves as a quick reference for what each organization is responsible for. The descriptions for responsibilities associated with serving as the lead or as a secondary group are described following the table.

Objective	DNR	ISU	NRCS	IDALS-DSC	CDI
1.1	Lead	Lead	Lead	Lead*	Lead
1.2	-	Secondary	-	Lead	Lead*
1.3	Lead	Secondary	Secondary	Lead	Lead*
1.4	Lead	Lead*	-	Lead	-
1.5	Lead	-	-	Lead*	-
2.1	-	Lead*	Secondary	-	Lead
2.2	Secondary	Secondary	Lead*	Lead	Secondary
2.3	Lead	Lead*	Secondary	Lead	Secondary
2.4	Lead*	-	Secondary	Secondary	-
2.5	Lead*	Lead	Lead	Lead	Lead
2.6	-	Secondary	Lead*	Lead	-
3.1	Lead*	-	-	Secondary	-
3.2	Lead	-	-	Lead*	-
3.3	Secondary	Lead*	-	Secondary	-
3.4	Secondary	Lead*	-	Secondary	-
3.5	Lead*	Secondary	-	-	-
3.6	Lead*	Secondary	Secondary	Lead	-
4.1	Lead*	Lead	Lead	Lead	Lead
4.2	Lead*	Secondary	-	Lead	-
4.3	Secondary	Lead*	Lead	Secondary	-

*Denotes convening agency for that objective

Lead Responsibility: An agency, organization or group has lead responsibility if its official leadership and/or members have agreed that the "organization" will serve as a key implementer and as a primary coordinator toward the fulfillment of particular objectives in the NPSMP Strategic Plan. It is important to note that lead agencies are not necessarily solely responsible for the implementation of the Plan, but can serve as organizers and facilitators for efforts to achieve particular objectives. In many cases an objective (or closely related activity) may already be a significant element of the agency's own programming. In some instances it may call for an expansion of the organization's current operations. Lead organizations will:

- Recruit secondary organizations, as appropriate
- If more than one organization is listed as lead, then form an implementation partnership or a coordinating relationship (as appropriate)
- Assume responsibility for appropriate action steps;
- Oversee and advise on progress made toward action steps;
- Submit progress reports to the oversight or coordinating group concerning status, accomplishments, challenges and key findings; and
- Carry out other responsibilities necessary to achieve the objective(s).

Note: Normally there is one organization designated with lead responsibility. If a new task force or coalition of multiple organizations is to be "lead", then a single organization should be designated as the convener.

Secondary Responsibility: An agency, organization or group has secondary (or "active support") responsibility if its official leadership and/or members have agreed that the "organization" will serve as an active implementer along with the lead organization and other secondary organizations toward the fulfillment of particular objectives in the NPSMP. Secondary agencies will work closely with lead agencies to determine what action steps should be taken, the timeline for each action and the proper designation of responsibility. Each secondary agency is asked to take an active role in the implementation of the plan's objectives. "Active role" implies that resources will be needed and used (people, money, information, etc.). Secondary agencies will often partner with other agencies, possibly for the first time, to ensure the success of the Plan. Secondary agencies will:

- Assume responsibility for appropriate action steps; and
- Report progress, challenges and key findings to the lead agency/organization.

Implementation Schedule

Each organization helped develop action steps associated with the 20 objectives and will play a role in implementing those action steps. Since this is a 5 year plan, tracking 20 objectives with over 100 total action steps will require a certain level of organization and coordination. The following tables plot the anticipated deadlines for individual action steps each year for the five years of the Plan's anticipated life for each of the Core Partner organizations. Some action steps are considered "ongoing" indicating a responsibility that will need to be incorporated every year as appropriate. Entities are not limited to participation in the objectives as shows below as the needs of objectives and action steps may require additional personnel from Core Partner and other groups to implement. Additionally, only objectives in which the organization volunteered for a Lead Responsibility designation are recorded in the following tables.

DNR Objective	2013	2014	2015	2016	2017	Ongoing
1.1						AS-1, 2
1.3	AS-1	AS-2, AS-5	AS-3			AS-4, 6, 7
1.4		AS-1	AS-3b			AS-2, 3, 4
1.5	AS-1, 2, 3		AS-5, 6			AS-2, 3, 4, 5, 6
2.3	AS-1					AS-2, 3, 4
2.4*	AS-1, 2, 3	AS-4	AS-5	AS-6	AS-7	
2.5*		AS-1, 2, 3, 4, 5	AS-6	AS-7		
3.1*	AS-2, 3	AS1, 4, 5, 6				
3.2		AS1, 2		AS-4	AS-5, 6, 7	AS-3
3.5*		AS-1, 2, 3	AS-4	AS-5		AS-6
3.6*		AS-1, 2	AS-3			AS-3, 5
4.1*		AS-1, 2				
4.2*	AS-1, 2, 3, 4		AS-5, 6	AS-7, 8, 9, 10		

ISU Objective	2013	2014	2015	2016	2017	Ongoing
1.1						AS-1, 2
1.4*		AS-1	AS-3b			AS-2, 3, 4
2.1*		AS-1, 2, 3				
2.3*	AS-1					AS-2, 3, 4
2.5		AS-1, 2, 3, 4, 5	AS-6	AS-7		
3.3*						AS-1, 2, 3, 4, 5
3.4*				AS-1	AS-2	
4.1		AS-1, 2				
4.3*		AS-1, 2, 3				

*Denotes convening agency for that objective

NRCS Objective	2013	2014	2015	2016	2017	Ongoing
1.1						AS-1, 2
2.2*	AS-1, 2, 3	AS-4	AS-5	AS-7		AS-6
2.5		AS-1, 2, 3, 4, 5	AS-6	AS-7		
2.6*	AS-1	AS-2, 3, 4				AS-5, 6
4.1		AS-1, 2				
4.3		AS-1, 2, 3				

IDALS-DSC Objective	2013	2014	2015	2016	2017	Ongoing
1.1*						AS-1, 2
1.2	AS-2		AS-3		AS-9	AS-1, 4, 5, 6, 7, 8
1.3	AS-1	AS-2, AS-5	AS-3			AS-4, 6, 7
1.4		AS-1	AS-3b			AS-2, 3, 4
1.5*	AS-1, 2, 3		AS-5, 6			AS-2, 3, 4, 5, 6
2.2	AS-1, 2, 3	AS-4	AS-5	AS-7		AS-6
2.3	AS-1					AS-2, 3, 4
2.5		AS-1, 2, 3, 4, 5	AS-6	AS-7		
2.6	AS-1	AS-2, 3, 4				AS-5, 6
3.2*		AS-1, 2		AS-4	AS-5, 6, 7	AS-3
3.6		AS-1, 2	AS-3		AS-3, 5	
4.1	AS-1, 2					
4.2	AS-1, 2, 3, 4		AS-5, 6	AS-7, 8, 9, 10		

*Denotes convening agency for that objective

CDI Objective	2013	2014	2015	2016	2017	Ongoing
1.1						AS-1, 2
1.2*	AS-2		AS-3		AS-9	AS-1, 4, 5, 6, 7, 8
1.3*	AS-1	AS-2, AS-5	AS-3			AS-4, 6, 7
2.1		AS-1, 2, 3				
2.5		AS-1, 2, 3, 4, 5	AS-6	AS-7		
4.1	AS-1, 2					

*Denotes convening agency for that objective

The following table illustrates a schedule and milestones for the Section 319 program on specific Key Element #1 goals as required by the CWA Section 319 (b)(2)(C) and (h)(8). Included are quantitative milestones and the associated year the milestone is expected to be completed in. Many objectives will be repeated each year, and are recorded as such. Annual objectives and objectives outside of the 5 year timeframe but nonetheless important to record in the plan, are recorded in the "2018+" column, representing a commitment beyond the anticipated 5 year life of the plan. This table should help with annual reporting as annual milestones are included and broken down by year they are due, however, more specific annual milestones may be identified and included in the annual grant work plan where appropriate.

319 PROGRAM: GOAL 1

Milestone	2013	2014	2015	2016	2017	2018+
Objective 1: 5th Basin Coordinator hired 6th Basin Coordinator hired					●	●
Objective 2: 4 basin coordinator meetings held	●	●	●	●	●	●
Objective 3: 3 WMAs established with 28E agreement					●	
Objective 4: 2 Project Coordinator meetings held	●	●	●	●	●	●
Objective 5: 4 meetings with watershed project held	●	●	●	●	●	●
Objective 6: 10 Basin Coordinator outreach meetings held	●	●	●	●	●	●
Objective 7: 10 new or updated watershed management plans approved					●	

319 PROGRAM: GOAL 2

Milestone	2013	2014	2015	2016	2017	2018+
Objective 1: 1 watershed success story prepared and distributed	●	●	●	●	●	●
Objective 2: 4 quarterly watershed newsletters prepared and distributed	●	●	●	●	●	●
Objective 3: GIS mapping requests met by DNR staff (numbers vary by demand)	●	●	●	●	●	●
Objective 4: Watershed inventory and assessment requests met by DNR staff (numbers vary by demand)	●	●	●	●	●	●
Objective 5: Statewide survey conducted	●				●	
Objective 6: 3 or more water quality questions included in Iowa Rural Life Poll	●	●	●	●	●	●
Objective 7: HUC-8 watershed visioning guidebook completed					●	
Objective 8: 4 outreach events targeting women landowners conducted	●	●	●	●	●	●
Objective 9: 3 statewide educational efforts conducted	●	●	●	●	●	●
Objective 10: 1 field day conducted for each Section 319 funded project	●	●	●	●	●	●
Objective 11: Educational campaign targeted to K-12 developed and implemented			●			
Objective 12: Education campaign targeted to adults developed and implemented					●	

319 PROGRAM: GOAL 3

Milestone	2013	2014	2015	2016	2017	2018+
Objective 1: Progress updated for each active 319 project with a WMP	●	●	●	●	●	●
Objective 2: TMDL basin strategy initiated			●			
Objective 3: 20 lake TMDLs developed and submitted to EPA					●	
Objective 4: TMDL completed for all 2002 impaired waters (category 5a)				●		
Objective 5: 5 impairments removed from 303(d) list					●	
Objective 6: Monitoring data collected for each active 319 project	●	●	●	●	●	●
Objective 7: Monitoring data analyzed and interpreted for each active 319 project with monitoring data	●	●	●	●	●	●
Objective 8: Statewide water quality data analyzed and interpreted	●	●	●	●	●	●
Objective 9: Report completed of annual pollutant load reductions of sediment, phosphorus, nitrogen	●	●	●	●	●	●
Objective 10: Pollutant reduction tool for urban conservation practices developed		●				
Objective 11: Maps of all conservation practices completed for all 319 priority watersheds		●				

319 PROGRAM: GOAL 4

Milestone	2013	2014	2015	2016	2017	2018+
Objective 1: 50%+ funding supported locally-led impaired watershed projects	●	●	●	●	●	●
Objective 2: 604(b) funding promoted for regional watershed planning	●	●	●	●	●	●
Objective 3: SRF funds promoted statewide and to Section 319 priority watersheds	●	●	●	●	●	●
Objective 4: USDA funding programs promoted to Section 319 priority watersheds	●	●	●	●	●	●
Objective 5: Leveraged dollars in Section 319 priority watersheds documented and reported	●	●	●	●	●	●

KEY ELEMENT #2

The State strengthens its working partnerships and linkages to appropriate State, interstate, Tribal, regional, and local entities (including conservation districts), private sector groups, citizens groups, and Federal agencies.

Success in watershed implementation for the 319 program can only be achieved by the coordination and collaboration of other programs. Iowa agencies and organizations have instituted a variety of mechanisms to build nonpoint source partnerships and collaboration between public and private sector groups. A core partnership exists among five primary agencies which address nonpoint source issues in the state: DNR, IDALS-DSC, NRCS, Conservation Districts of Iowa (CDI), and ISU Extension. The inventory in Appendix C is an excellent resource to understand the wide and varied programming that addresses nonpoint source pollution in the DNR and in the core partner organizations. All of the listed programs either have been or potentially could be excellent programs to collaborate with. The Section 319 program uses the most up-to-date research from Iowa State University and even supports some of the research to advance understanding of nonpoint source pollution issues. The 319 program works closely with NRCS, IDALS-DSC, CDI and SWCD professionals when collaborating in specific watersheds and working on statewide issues. Internally, the 319 program seeks out synergistic relationships of DNR staff to address watershed specific issues. This is evidenced by the commitment from the DNR Fisheries Bureau to assign at least 25% of the DNR Fisheries Management Biologists' staff time to watershed improvement efforts to enhance and protect lake and stream water quality. The Lakes Restoration program makes an ideal fit with the 319 program as they are charged with performing in-lake work when watershed issues are satisfactorily addressed. The 319 program is constantly seeking to connect the right programs, resources, and personnel to help empower the people of Iowa to improve local water quality.

In addition, collaboration exists among a group of environmental and conservation organizations, as well as agricultural and industry organizations which address nonpoint source issues. Examples of these organizations include the Iowa Environmental Council, Iowa Soybean Association, Iowa Farm Bureau, and Practical Farmers of Iowa, among many other organizations. The partnerships and collaboration act to help establish priorities for nonpoint source activities, including updating Iowa's Nonpoint Source Management Plan (NPSMP), identify water quality and watershed problems and opportunities for targeted solutions, and provide funding for water quality improvement projects. The list of agencies and organizations that collaborated to update the NPSMP can be found in Appendix D, in the main body of the report under the heading Visioning Team Formation, of the NPSMP. Other examples of how these partnerships and collaborations work together to administer programs and projects and develop policies that reduce nonpoint source pollutants reaching Iowa's waters are summarized below.

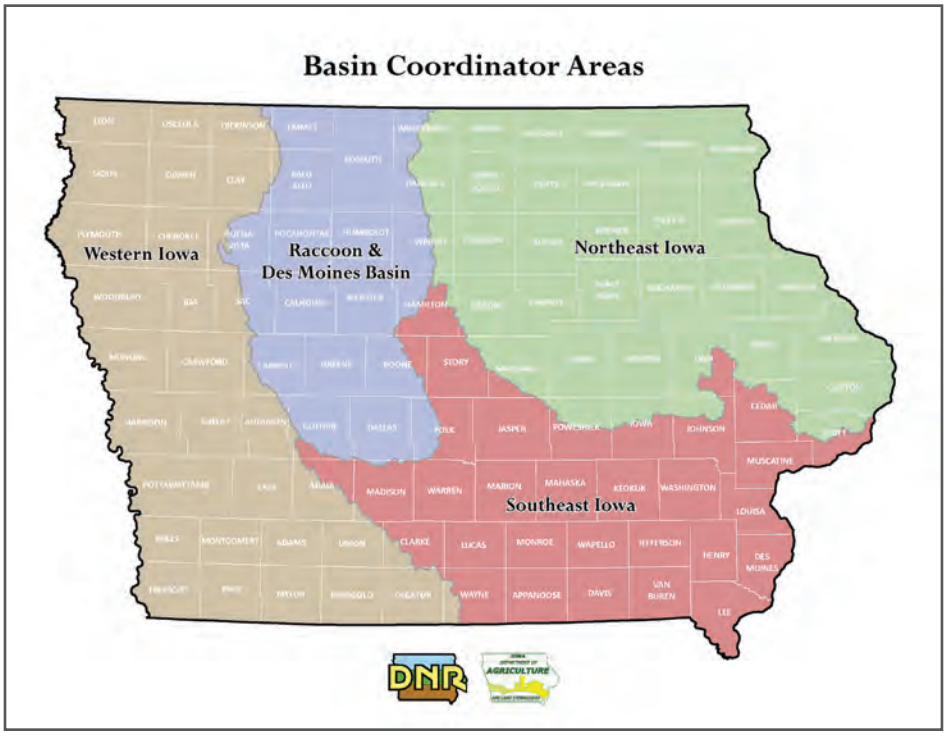


Figure A-2: Basin coordinator areas.

Project Collaboration:

DNR and DSC

To select and fund watershed projects, DNR and IDALS-DSC collaborate on an annual joint application process for watershed project applications for funding under Section 319 (administered by DNR), the state Water Protection Fund (WPF) and the state Watershed Protection Program Fund (WSPF), the latter two issued by IDALS-DSC. Project applications are reviewed and ranked by an inter-agency committee represented by DNR, IDALS-DSC, CDI, NRCS, ISU Extension, the Leopold Center for Sustainable Agriculture, the State Geolo-

gist, and EPA Region 7. The web link to the DNR watershed implementation project grant requests for applications may be found below:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/ResourcesforLocalGroups/ImplementationGrants.aspx

DNR and IDALS-DSC also collaborate to select projects for watershed assessment and planning, through the DSC Watershed Development Grant and the DNR Watershed Planning Grant. For these two grants, the two agencies solicit application review comments from an inter-agency review committee comprised of DNR, IDALS-DSC, NRCS, and CDI. IDALS-DSC also solicits review comments from the Iowa Environmental Council, Iowa Farm Bureau, and Leopold Center on Watershed Development Grant applications. DSC Watershed Development Grants, which provide funds primarily to conduct watershed assessments, are limited to local soil and water conservation districts (SWCDs). The DNR Watershed Planning Grants, which are for the purpose of developing an EPA-approved 9-element Watershed Management Plan, are available to SWCDs, county conservation boards, and other agencies or organizations capable of conducting planning activities. More information on the DNR Watershed Planning Grant may be found on the webpage below:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/WatershedPlanningGrants.aspx

DNR and IDALS-DSC also work closely together to administer and oversee watershed projects in Iowa, which are typically implemented through a local soil and water conservation district. DNR and DSC provide joint oversight of jointly-funded projects, which includes hiring watershed project coordinators, attending project workshops and field days, annual review meetings, and reviewing and approving project budgets, expenditures and reports. The two agencies also conduct statewide project coordinator meetings, typically twice a year, in the fall and the spring.

Basin Coordinator Network

In 2008, the DNR Watershed Improvement Program initiated a discussion within its core partnership (DNR, Iowa Department of Agriculture and Land Stewardship – Division of Soil Conservation, Natural Resources Conservation Service, and the local Soil and Water Conservation Districts) to explore rethinking and reshaping the approach used to deploy staff resources to more effectively support efforts to improve watershed management and improve water quality throughout the State of Iowa. As a result of this discussion, DNR and DSC established a network of 4 Basin Coordinators, with territories based on river basin boundaries, to provide assistance to local watershed groups in conducting watershed assessments, developing watershed management plans, and applying for watershed project implementation funding. Three of the Basin Coordinators are co-funded by DNR and DSC and are employed by DSC and one is fully funded and employed by DNR. The Basin Coordinators work with groups within their respective basin area, as shown on the map at left.

In late 2010, DNR added a separate Basin Coordinator to facilitate watershed planning efforts in the Iowa and Cedar River basins. The recently added Iowa/Cedar River Basin Coordinator is actively supporting the U.S. Army Corps of Engineers Iowa River Basin Interagency Coordinating Team (IRBIACT), as well as the grassroots Cedar River Watershed Coalition. The IRBIACT, led by the Corps of Engineers, is working toward preparing a Watershed Plan for the entire Iowa/Cedar River Basin over the next several years. This staff position is also providing technical support to the Upper Cedar River, Indian Creek, Turkey River, and Catfish Creek watershed management authority processes that were initiated in late 2011.

The specific collaborative roles of the four Basin Coordinators are to:

- Advise and serve as liaison between the DNR Nonpoint Source Pollution Management Program, the Iowa Department of Agriculture and Land Stewardship (IDALS) – Division of Soil Conservation (DSC), local watershed coordinators, Soil and Water Conservation Districts (SWCD), and other local watershed groups.
- Facilitate local watershed planning and project meetings and activities, and advise and assist watershed coordinators, SWCDs, and other local watershed groups in the development and implementation of watershed management plans, and the development and implementation of watershed projects in accordance with the watershed plan and the watershed project plan of operations and budget.

- Assist and advise watershed coordinators in building linkages with technical resource personnel from state and federal agencies and with university research and outreach personnel, to facilitate technical inputs needed for achieving watershed plan and section 319 watershed project objectives.
- Offer and, where accepted, provide direct technical assistance to SWCDs, other units of local government, and other local watershed groups to assist them in the conceptualizing, organizing, and developing watershed management plans and implementation projects to address water quality protection and improvement needs. Initiate contacts and respond to requests from SWCDs and other local watershed groups for assistance, background information, and watershed management plan development advice. Seek input from local watershed groups on developing state watershed improvement priorities and targeted priority watershed areas for developing watershed management plans and subsequent watershed projects.

Statewide Projects

The DNR Section 319 Program has partnered with other agencies and organizations to implement projects that address nonpoint source issues on a statewide basis. The Iowa Learning Farms Project (ILF) is one example of a statewide project supported by multiple agencies and partners that addresses nonpoint source issues related to agriculture. ILF is an ongoing farmer educational project administered by Iowa State University jointly funded by DNR Section 319, DSC, NRCS, the Leopold Center, and supported by CDI, ISU Extension, Iowa Farm Bureau, Iowa Soybean Association, and other private organizations. The purpose of the project is to utilize farmer partners, in conjunction with ISU researchers, to promote a "Culture of Conservation" and to demonstrate innovative conservation farming practices implemented on their farms through farmer-to-farmer networking. More information about Iowa Learning Farms may be found on the web link below:
http://www.extension.iastate.edu/ilf/

Another statewide project initiated in 2010 is the Small Feedlot Education Project, funded primarily with Section 319 funds. Through this project, DNR staff, led by the DNR Animal Feeding Operation Program Coordinator, are working with partners from NRCS, IDALS-DSC, ISU Extension, plus the Iowa Cattlemen's Association and Iowa State Dairy Association, to develop a coordinated educational program for owners and operators of small feedlots (1,000 animal units or smaller) to address the water quality impacts of small open feedlots. Handbooks and practice fact sheets are being developed by ISU Engineering staff to assist with educating producers of the impacts open feedlot runoff can have on water quality. In addition, a 10-minute educational video demonstrating water sampling and testing for ammonia has been developed. Also, an associated fact sheet will assist producers and service providers to properly use water monitoring test kits that will be provided through ISU Extension offices to enable producers to conduct their own sampling of the water quality in streams below feedlots. Field days at demonstration sites are being planned to let producers educate other producers on what can be done to proactively protect water quality.

Another statewide project addressing nonpoint source issues is the Iowa Manure Management Action Group (IMMAG), led by ISU Extension, which has received financial support from multiple agencies. This project provides information and education programs to producers and service providers to assist in the making of appropriate decisions about the utilization of manure and manure nutrients. IMMAG has conducted ISU Extension Manure and Nutrient Management Workshops, and has proven successful through the numbers of workshop attendees, hits on the web sites, and copies of requested newsletters. The IMMAG website is also being used to post information produced through the Small Feedlot Education Project.
http://www.agronext.iastate.edu/immag/smallfeedlotsdairy.html

DNR Section 319 staff have also partnered with the Women, Food, and Agriculture Network (WFAN), a statewide effort to provide outreach to women landowners in Iowa on conservation issues. Since research has shown that women landowners tend to be underserved through conventional conservation programs, WFAN has incorporated the use of surveys of women landowners and direct meetings with woman landowners to help provide information in a manner to enhance their understanding of conservation issues.

Watershed Improvement Review Board
The state Watershed Improvement Review Board (WIRB) is a state-funded and designated inter-agency board which solicits, selects, and oversees watershed project grant applications in Iowa. WIRB has traditionally been funded at an annual appropriation of $5 million from the State of Iowa, with the funding used to implement water quality practices through watershed projects administered through eligible public entities. Section 319 supports 0.25 of an FTE for administration of the WIRB program. vThe agencies and organizations that collaborate to represent the WIRB are listed on the web link below:
http://www.iowaagriculture.gov/IWIRB.asp

DNR's Section 319 Program Coordinator serves as DNR's representative on the WIRB.

Advisory Collaboration

NRCS State Technical Committee
NRCS works actively with a State Technical Committee (STC), which serves an advisory function to collaboratively provide feedback to the NRCS State Conservationist on various program and policy issues. According to the NRCS, "Per section 1446 of the 1990 Farm Bill, the Iowa USDA established a technical committee to provide advice for technical considerations and technical guidelines necessary to implement conservation provisions of USDA legislation. The committee also helps assure that Civil Rights requirements in Program Delivery are met. The NRCS State Conservationist chairs the committee. Additionally, the State Technical Committee provides recommendations on a number of issues within a variety of conservation programs. Although the State Technical Committee has no implementation or enforcement authority, USDA gives strong consideration to the Committee's recommendations."

NRCS State Technical Committees are composed of individuals and groups who represent a diverse group with interests in a variety of natural resource sciences and occupations, including the soil, water, air, plants, wetlands, wildlife, agricultural community, and environmental community.

The agencies and organizations represented on the STC are listed on the following web link:
http://www.ia.nrcs.usda.gov/about/STC.html

DNR is currently represented on the STC by the Section 319 Program Coordinator, the State Forester, and by a Wildlife Bureau representative.

Water Resources Coordinating Council
IDALS convenes the state Water Resources Coordinating Council (WRCC), an inter-agency council designated by the State of Iowa to coordinate activities affecting water in Iowa. The original legislation enabling the WRCC, approved by the Iowa Legislature in 2008, stated that "its purpose is to preserve and protect Iowa's water resources, and to coordinate the management of those resources in a sustainable and fiscally responsible manner. The success of the council's efforts will ultimately be measured by whether Iowa citizens can more easily organize local watershed projects; can more easily access available funds and water quality program resources; and whether the funds, programs, and regulatory efforts coordinated by the council eventually result in a long-term improvement to the quality of surface water in Iowa." According to its legislative mandate:

"The purpose of the Water Resources Coordinating Council (WRCC) shall be to preserve and protect Iowa's water resources, and to coordinate the management of those resources in a sustainable and fiscally responsible manner. In the pursuit of this purpose, the council shall use an integrated approach to water resource management, recognizing that insufficiencies exist in current approaches and practices, as well as in funding sources and the utilization of funds."
The agencies and organizations represented on the WRCC are listed on the web link below:
http://www.iowaagriculture.gov/WRCC.asp

Watershed Planning Advisory Council

IDALS also convenes the state Watershed Planning Advisory Council (WPAC). The Watershed Planning Advisory Council was established in 2010 by the Iowa Legislature for purposes of assembling a diverse group of stakeholders to review research and make periodic recommendations to various state and federal agencies regarding methods to best protect water resources in Iowa, assure an adequate supply of water, mitigate and prevent floods, and coordinate the management of those resources in a sustainable, fiscally responsible, and environmentally responsible manner. The agencies and organizations represented on the WPAC are listed on the web link below:
http://www.iowaagriculture.gov/WPAC.asp

State Soil Conservation Committee

A State Soil Conservation Committee (SSCC) provides a forum for the discussion of soil and water conservation issues and the development of policy and program initiatives that affect water quality in Iowa. The SSCC receives reports from representatives of DSC, NRCS, DNR, CDI, and ISU Extension. DNR is currently represented on the SSCC by the Section 319 Program Coordinator. The SSCC web link may be found below:
http://www.iowaagriculture.gov/soilConservationCommittee.asp

Conservation Districts of Iowa

Conservation Districts of Iowa (CDI) is the organization representing Iowa's 100 Soil and Water Conservation Districts. CDI conducts regional meetings of SWCDs, an annual meeting, and meets regularly with the State Soil Conservation Committee, IDALS DSC, NRCS, DNR, and other conservation agencies. The CDI webpage can be found at:
http://www.cdiowa.org

KEY ELEMENT #3

The State uses a balanced approach that emphasizes both State-wide nonpoint source programs and on-the-ground management of individual watersheds where waters are impaired or threatened.

The Iowa DNR operates a balanced 319 program with a central focus on planning and implementation in watersheds with water quality impairments. The Section 319 program is dedicated to investing at least 50 percent of total grant funds to support on the ground implementation efforts in these watersheds. Cornerstone to this focus on implementation is the ongoing commitment to watershed planning, as evidenced by the DNR Watershed Planning Grant, created in 2009. The watershed planning grant fuels engaged local watershed groups with the financial support and technical guidance and resources needed to develop a 9-Element Watershed Management Plan. The planning process emphasizes a holistic approach to water quality improvement and divorces from the mentality of a quick fix. Planning brings together landowners and local leaders with agency professionals to come to the table and determine what needs to be done on a watershed scale. The DNR Planning Grant encourages widespread support from the community and engages the necessary water quality professionals when developing the plan. This way of thinking beyond an individual property or isolated area and establishing quantifiable watershed goals is vital for long term restoration efforts.

Success in watershed implementation for the 319 program can only be achieved by the coordination and collaboration of other programs. The inventory in Appendix C is an excellent resource to understand the wide and varied programming that addresses nonpoint source pollution in the DNR and in the core partner organizations. All of the listed programs either have been or potentially could be excellent programs to collaborate with. The Section 319 program uses the most up-to-date research from Iowa State University to advance understanding of nonpoint source pollution issues. The 319 program works closely with NRCS, IDALS-DSC, CDI and SWCD professionals when collaborating in specific watersheds and working on statewide issues. Internally, the 319 program seeks out synergistic relationships of DNR staff to address watershed specific issues. This is evidenced by the commitment from the DNR Fisheries Bureau to assign at least 25% of the DNR Fisheries Management Biologists' staff time to watershed improvement efforts to enhance and protect lake and stream water quality. The Lakes Restoration program makes an ideal fit with the 319 program as they are charged with performing in-lake work when watershed issues are satisfactorily addressed. The 319 program is constantly seeking to connect the right programs, resources, and personnel to help empower the people of Iowa to improve local water quality. Some of the highlights of these synergies from the recent past include:

- Kiowa Marsh – Partnership with DNR Wildlife Bureau and Ducks Unlimited to protect an important natural wetland
- Black Hawk Lake – Partnership with the Sac SWCD, NRCS, DNR Lakes Restoration Program, other DNR Fisheries staff to revitalize a highly valued natural lake
- Carter Lake—Partnership with Nebraska DEQ, City of Carter Lake, City of Omaha, West Pottawattamie SWCD, IDALS, and Iowa DNR Fisheries to restore an oxbow lake on the Missouri River
- Lake Darling—Partnership with the Friends of Lake Darling, Washington SWCD, NRCS, IDALS, DNR Parks, DNR Lake Restoration and other DNR Fisheries staff to restore a state park lake

On the other hand, the DNR recognizes the importance of statewide initiatives that can help advance the needs of current and future watershed groups and increase understanding of water quality issues in Iowa. This balance can be demonstrated throughout the narrative and goal portion in the main body of the document, where many of the objectives and action steps were state-wide in scope. Joining partner programs to support the development and completion of these initiatives will help advance the larger goal of water quality improvement throughout the state and within individual watersheds. Previous and ongoing statewide initiatives supported by the 319 program include public outreach, community assessment tool development project, and water quality evaluations such as a statewide mussel survey. Statewide projects with Section 319 support that provide ongoing education to farmers and landowners include the Iowa Learning Farms Project (ILF) and the Small Feedlot Education Project.

ILF is an ongoing farmer educational project administered by Iowa State University jointly funded by DNR Section 319, DSC, NRCS, the Leopold Center, and supported by CDI, ISU Extension, Iowa Farm Bureau, Iowa Soybean Association, and other private organizations. The purpose of the project is to utilize farmer partners, in conjunction with ISU researchers, to promote a "Culture of Conservation" and to demonstrate innovative conservation farming practices implemented on their farms through farmer-to-farmer networking. For more information about Iowa Learning Farms, see the project web link below:
http://www.extension.iastate.edu/ilf/

In the fall of 2010, DNR initiated the Small Feedlot Education Project, funded primarily with Section 319 funds. Through this project, DNR staff, led by the DNR AFO Coordinator, are working with partners from NRCS, IDALS DSC, ISU Extension, plus beef and dairy industry partners, to develop a coordinated educational program for owners and operators of small feedlots (1,000 animal units or smaller) to address the water quality impacts of small open feedlots. Handbooks and practice fact sheets are being developed by ISU Engineering staff to assist with educating producers of the impacts open feedlot runoff can have on water quality. In addition, a 10-minute educational video demonstrating water sampling and testing for ammonia has been developed. Also, an associated fact sheet will assist producers and service providers to properly use water monitoring test kits that will be provided through ISU Extension offices to enable producers to conduct their own sampling of the water quality in streams below feedlots. Field days at demonstration sites are being planned to let producers educate other producers on what can be done to proactively protect water quality.

Public outreach efforts have continued to prove valuable for expanding the network of Iowans interested in watershed work by celebrating the successes and sharing information across the state. All publications developed, from the Clean Water Starts With Us quarterly newsletter to the annual success stories publication, share a consistent style. Clean Water Starts With Us took second place against other external newsletters from across the United States in the Association of Conservation Information's (ACI) 2010 competition. The annual contest is sponsored by ACI, whose membership includes natural resource agencies throughout the country. As we continue to focus more on long term implementation and results, it will be imperative to continue sharing successes and expand the base of interested landowners and citizens.

The DNR Communications Bureau has undertaken a number of projects to promote the DNR's Watershed Improvement Section programming and efforts to provide information and education on a watershed basis.

The quarterly e-newsletter, Clean Water Starts with Us, continues to provide watershed information to various groups. It was developed for current and potential clients, including existing and prospective watershed projects, SWCDs, county con-

servation boards, and the core nonpoint source partner agencies.

The Communications Bureau also led an effort to promote the recreational and environmental benefits of the newly renovated Kiowa Marsh with a highway sign, educational kiosk, news releases and direct mail.

Some of the other major activities conducted through the Section 319 information/education staffing support include:

- Developed "Working for Clean Water: 2011 Watershed Improvement Successes in Iowa," an annual publication since 2007 that highlights eight success stories of Iowans improving their streams, rivers and lakes.
- Developed promotion plans for the DNR Watershed Planning Grants and DNR Watershed Implementation lists, maintaining a list of target audiences and creating e-mail blasts, fact sheets, news releases and more to reach potential grant applicants and encourage them to apply.
- Prepared news releases and other materials for TMDLs.
- Prepared news releases for EcoNewsWire and for various publications, announcing success stories, pollutant reductions, calls for grant applications, etc.
- Sent a monthly listserv message to watershed coordinators announcing training and grant opportunities, as well as other items of interest to coordinators
- Maintained the Watershed Improvement section of the DNR website.
- Created display materials for conferences, shows and meetings.
- Provided guidance and critiques to watershed project coordinators on newsletters, news releases, websites and other communications products.

The DNR watershed publications may be found at the website below:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedNews.aspx

The Section 319 Program will continue to employ a balanced approach to watershed work. The 319 Program will continue to invest in watersheds with strong local interest to improve water quality by supporting watershed management planning grant opportunities and implementation dollars to achieve the goals in those plans. Section 319 will continue to support the work of the Iowa Learning Farms and the IDNR Communications Bureau in strengthening outreach to Iowans, including a K-12 statewide education campaign. Section 319 will continue to invest in a statewide mussel survey to assess the state of mussels in Iowa streams. Section 319 will also provide support for many of the outlined action steps created by the Visioning Team as determined by need and interest. While it is unknown at this time the specifics of all statewide initiatives, DNR remains committed to embracing the balanced approach to watershed work.

KEY ELEMENT #4

The State program (a) abates known water quality impairments from nonpoint source pollution and (b) prevents significant threats to water quality from present and future nonpoint source activities.

a) The core business of the Section 319 program for Iowa is focused on water quality improvement in water resources identified as impaired. The Iowa DNR set of programs that cover water quality monitoring and assessment, the 303(d) impaired waters list, total maximum daily loads, and 319 planning and implementation is expanded upon in Key Element 5 below. The program focuses on watersheds up to approximately 30,000 acres to increase the likelihood of creating a positive change in water quality from implementation efforts. Therefore, most of the watershed management plans and watershed projects supported by the 319 program are lakes and smaller sized streams.

Additionally, a local and engaged citizen group must show a continued interest in water quality improvement for that local resource for the Section 319 program to invest resource dollars in that watershed. As most resource dollars in invested in watershed projects in Iowa help improve privately held land, the landowners in that watershed must be willing to work together to achieve improvements in water quality. Many of the idiosyncrasies that exist in a particular watershed come to the surface during watershed planning, including the level of interest to work on watershed issues. This information helps inform funding decisions in watersheds with the highest likelihood of long term success in water quality improvement.

The manageable watershed size combined with a local engaged citizen group creates a demand for limited resource dollars that outstrips the supply of the 319 program. Partnerships with local, state, and federal programs help leverage Section 319 monies and expand the number of projects in the portfolio. With a growing number of active watershed groups and completed watershed management plans, and a significant pool of impaired resources to work on, the Section 319 priority will remain primarily focused on impaired waters.

There are now more than 15 completed and approved Watershed Management Plans that identify actions needed to abate known water quality impairments from nonpoint source pollutants. These plans may be found on the DNR Watershed Improvement website below:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/ManagementPlans

b) High quality resources, like those identified on Iowa DNR's list of Outstanding Iowa Waters, demand attention from engaged citizens and water quality professionals to ensure the integrity of that resource remains intact. The Section 319 program has explored the possibility of utilizing the watershed management planning tools available to traditional watershed projects for use in protecting high quality resources from potential water quality degradation. While the concept of a Watershed Protection Plan is different than the normal work focused on impaired waters, the principles of water quality as a reflection of land and its usage remain the same.

A successful Watershed Protection Plan must be driven by an active local watershed group, with citizens willing to adopt practices and make land use decisions to preserve the resource for generations to come. The Section 319 program is currently investing in the development of Iowa's first Watershed Protection Plan for Waterloo Creek, a trout stream on the Outstanding Iowa Waters list, starting in the spring on 2012. This effort serves as a pilot project for other protection plan efforts and a test of the planning tools available.

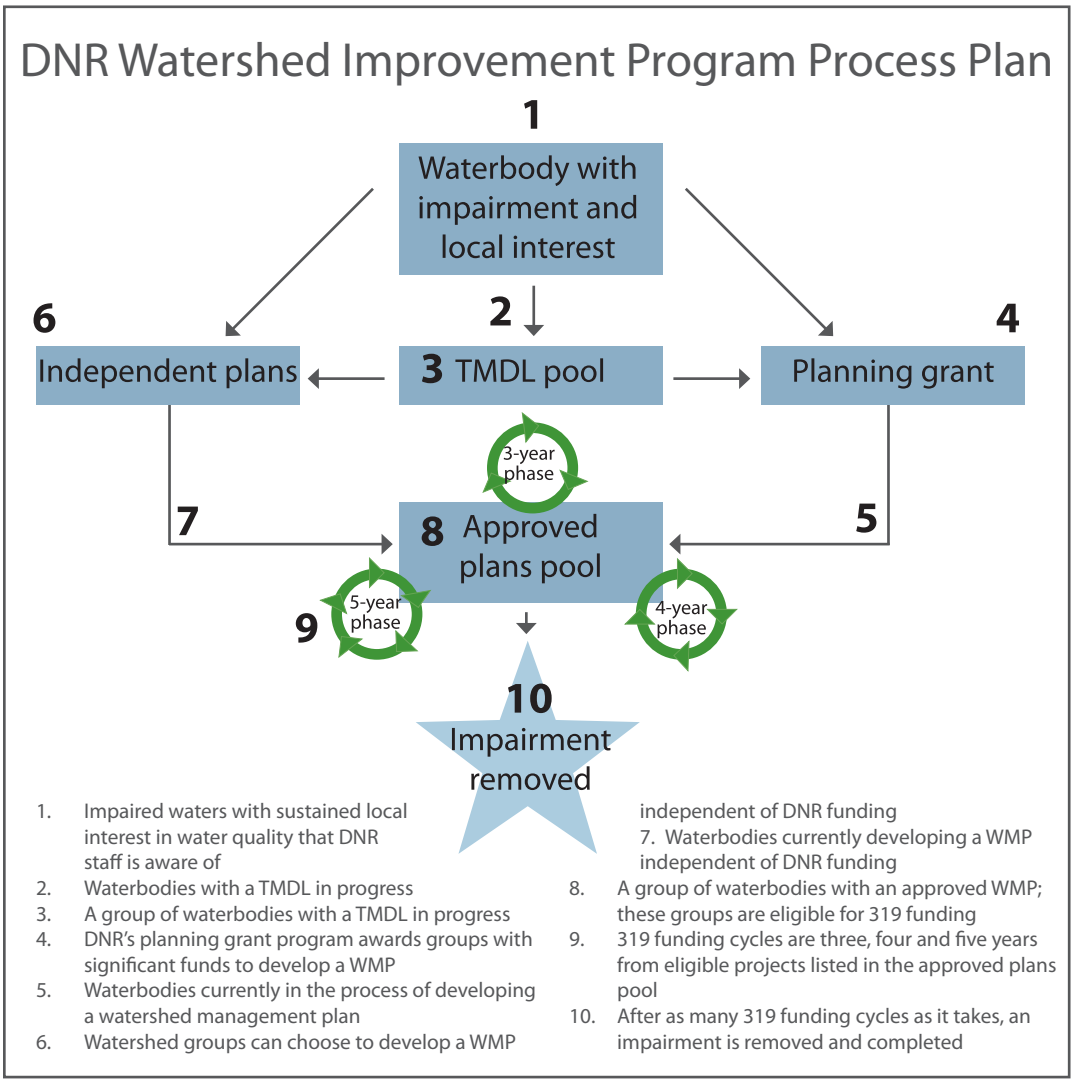


Figure A-3: DNR Watershed Improvement Program Process Plan

Since watershed protection planning is a new concept, there is a lot of work to be performed in order to ensure a successful program. One of the important factors will be finding partners willing to share in the costs of investing in protection planning and implementation. The DNR will work to find partners to help leverage Section 319 funds in this effort.

The DNR hopes to apply lessons learned from this project and invest in similar projects in the future. Unfortunately, one barrier that has prevented DNR from prioritizing this kind of protection work in the past is a lack of credit the program can earn for this

kind of investment from EPA measurements. While implementation work in impaired water bodies remains the key focus, the DNR would like to explore possibilities for establishing success measurements on watershed protection work with EPA in the future.

Additionally, the Iowa DNR developed anti-degradation rules (567 IAC 61.2(2)), which became effective in State rules on February 17, 2010 and was approved by EPA on September 30, 2010. More information on anti-degradation in Iowa can be found on the DNR website: http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards/Antidegradation.aspx

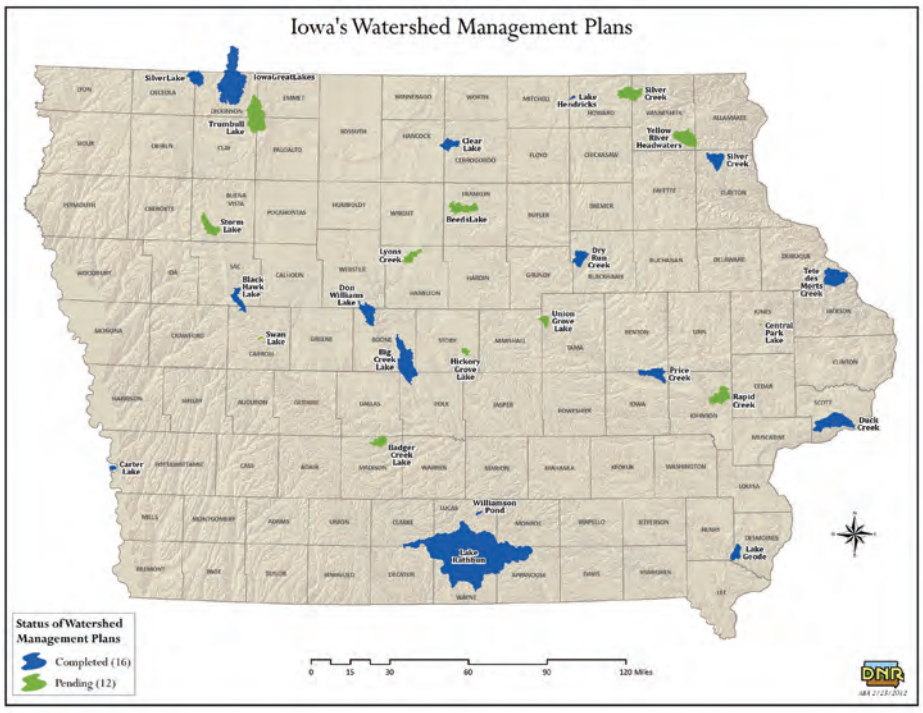


Figure A-4: Map of watersheds with approved or pending watershed management plans in Iowa

KEY ELEMENT #5

The State program identifies waters and their watershed impaired by NPS pollution, and also identifies important unimpaired waters that are threatened or otherwise at risk. Further, the state establishes a process to progressively address these identified waters by conducting more detailed watershed assessments and developing watershed implementation plans, and then by implementing the plans.

The DNR administers a set of programs that work together to interpret the state of water quality in Iowa. This set of programs gathers information about the condition of waters, applies that information against a set of water quality standards, determines sources and contributions of water quality problems, and works with local communities to implement practices to remedy the problems.

The basis for our understanding of the condition of Iowa waters starts with water quality standards, maintained by the DNR. This set of physical, chemical, and biological thresholds and criteria were developed in order to protect the health of humans that interact with the rivers, lakes, and streams of Iowa, in addition to the aquatic organisms that make water their home. Water quality standards most relevant to nonpoint source pollution include nitrate, bacteria, pH, dissolved oxygen, ammonia, algae, and turbidity. Some pollutants measure against numeric criteria, which means the results of a water quality analysis should yield a number that lies within an acceptable range of values. Other pollutants measure against narrative criteria, such as "aesthetically objectionable conditions."The presence of algae blooms, which lack a numeric trigger but are easily observed with the naked eye, illustrates one example of narrative criteria. For a full listing of water quality standards, please reference the Iowa Administrative Code under the Environmental Protection Commission (567) in Chapter 61.

The DNR regularly gathers monitoring data in Iowa's rivers, lakes, and streams. Other programs throughout the state contribute to the data set as well, including the State Hygienic Lab at the University of Iowa, the Limnology Laboratory at Iowa State University, some local government and non-governmental organizations (i.e., Des Moines Water Works, Ag Clean Water Alliance), and a volunteer network called IOWATER. The DNR's monitoring group maintains a network of "ambient" streams and lakes: a defined set of waterbodies monitored on a regular basis and tested for the same potential pollutants. This data set establishes baseline information and paints a picture of long-term water quality trends. Additionally, this data set allows the state to determine if a waterbody fails to meet the standards associated with its intended use.

The state fulfills its requirement to prepare a biennial (every other year) report that describes the condition of the State of Iowa's waterbodies according to credible monitoring data and the water quality standards discussed above. If a water-

body fails to meet expectations for a particular standard, the water body qualifies as "impaired" and is identified as such on the state's "303(d)" or impaired waters list. The monitoring network does not cover every stream and lake for all sampling parameters due to financial constraints and, as a result, potentially limits listing the full number of impaired waterbodies the state truly has. As additional monitoring data is made available, future impaired waters list may include additional waterbodies that fail to meet water quality standards. The current impaired waters list can be accessed at the following: http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedResearchData/ImpairedWaters.aspx

The most recent impaired waters list dates from 2010. This list shows a total of 588 impairments throughout the state – 470 on streams and rivers and 118 on lakes and flood control reservoirs. The most common stream impairments include biological (246) and bacterial (212). Lake impairments most commonly include algae (57), turbidity (45), pH (41), and bacteria (35). Many times, algae, turbidity and pH impairments link back to a common pollutant, typically phosphorus. The DNR develops Total Maximum Daily Loads (TMDLs) to satisfy the requirements of the Clean Water Act for determining the quantity of the problem and the needed reductions for meeting water quality standards for all impaired waters. The figure below illustrates how an impaired waterbody funnels through DNR programs including development of a TMDL, a watershed management plan, and securing 319 implementation dollars with the ultimate goal of removing the impairment.

The TMDL contains valuable information to help local water quality improvement efforts by estimating the relative importance of pollutant sources and providing alternatives to achieve reductions. The Iowa DNR places extra emphasis in the development of an "implementation plan" in each TMDL it develops. The implementation plan does not prescribe specific improvements, but rather provides potential solutions for local citizens to decide what works in their watershed. Due to the emphasis on implementation in TMDL documents, the DNR calls these documents "water quality improvement plans" because they contain the "math and the path" to successful water quality improvement.

In the past, the TMDL program has prioritized development of water quality improvement plans to fit strategic efforts. Currently, priority TMDLs focus on watersheds with stakeholder interest and the potential likelihood of implementation in the watershed. This will likely remain a priority as the TMDL, in many ways, serves as the best starting point for initial research into a water quality problem. In the future, the TMDL program will also likely shift to a river basin approach to maximize efficiency of work efforts and monitoring dollars, in addition to tackling impairments that have persisted since 2002 and 2004. The TMDL program posts all completed documents and the anticipated five year development schedule on its website:

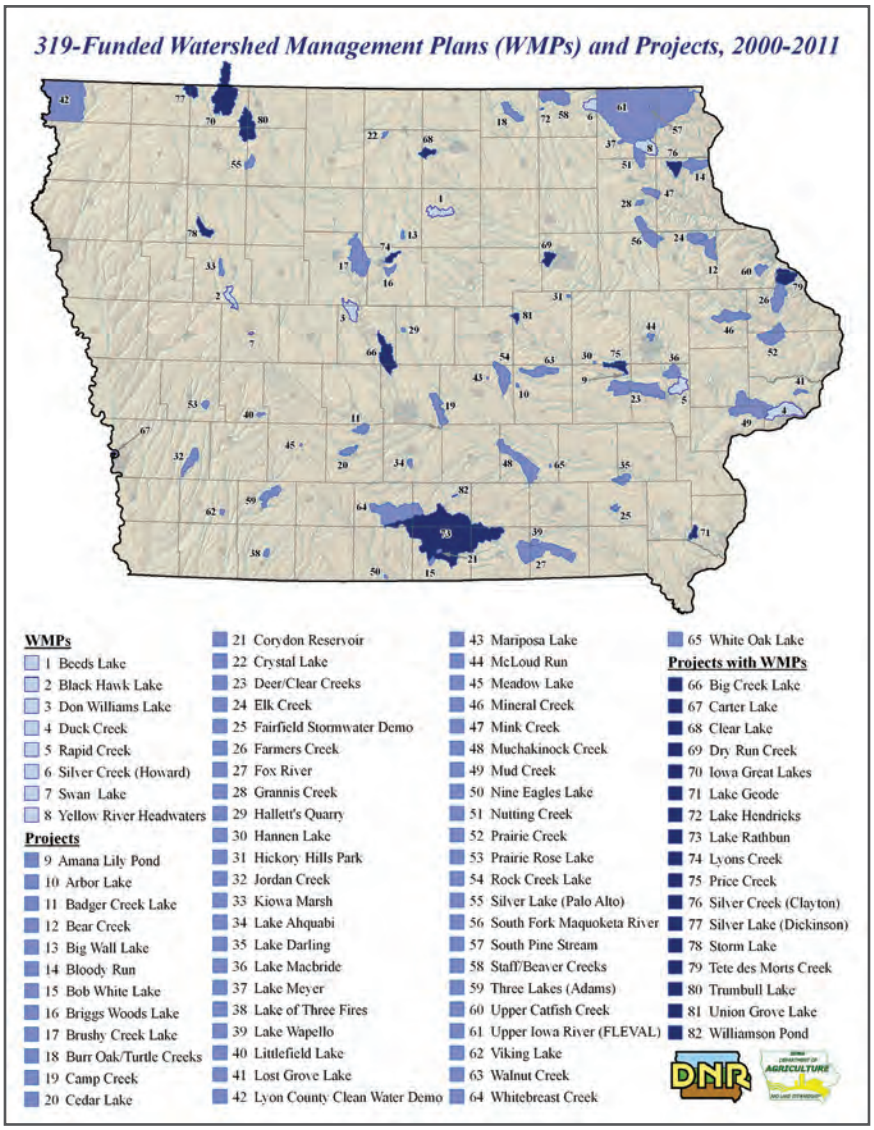


Figure A-5: 319-Funded Watershed Management Plans (WMPs) and Projects, 2000-2011

http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedResearchData/WaterImprovementPlans.aspx

The DNR's Section 319 Program requires the development of a comprehensive watershed management plan that meets EPA's nine elements (not to be confused with EPA's nine key elements). These requirements help shape a plan that describes the magnitude of the problem, the sources contributing to the problem, and a strategy to rectify the situation. Many of the required elements of a watershed management plan share common ground with the water quality improvement plans prepared by the DNR. The difference between the two lies in the more comprehensive and locally-developed nature of the watershed management plan, which also includes timelines and cost estimates. The best plans are updated regularly and learn from successes and failures alike. The Section 319 program aims to help groups successfully develop these watershed management plans by awarding planning money under its planning grant program.

The Section 319 program invests dollars to implement projects in watersheds where an identified water quality problem and approved watershed management plan designed to achieve measurable water quality improvements exists. Moving the needle on water quality impairments may prove difficult and expensive, but can be achieved through persistence and targeted resource allocation and careful selection and placement of effective BMPs. The Section 319 program usually limits its focus to smaller watersheds (less than 30,000 acres) where water quality improvements manifest in a reasonable timeframe. The figure below depicts the watersheds across the state that the Section 319 program invested resources from 2000-2011. Over those 12 years, Section 319 investments total approximately $34.2 million while leveraging local and other resource investments estimated at $70.5 million.

Many programs and funding sources throughout the state help implement projects that improve water quality related to runoff pollution. Usually, these funding sources require the watershed to complete a plan similar in nature to the EPA nine element plans. While these other programs may operate different metrics to measure success, all programs aim to reduce runoff pollutants and improve water quality. The DNR Section 319 Program works with the DNR Lakes Restoration Program, the Watershed Improvement Review Board, the USDA-NRCS, the IDALS-DSC, and other funding programs to collaboratively invest in watersheds throughout the state to optimize leverage of 319 dollars and realize a greater rate of return on those investments.

In addition to impaired waterbodies, the state keeps a list of "Outstanding Iowa Waters," which receive a higher level of antidegradation protection under Iowa's Code of State Regulations, Chapter 61, Subrule 61.2(2) paragraph "c." This important list identifies important stream segments and natural lakes that represent the best the state has to offer in water quality. Additional information on Outstanding Iowa Waters and antidegradation can be found on the DNR's website at: http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards/Antidegradation.aspx

KEY ELEMENT #6

The State reviews, upgrades, and implements all program components required by section 319(b) of the Clean Water Act, and establishes flexible, targeted, and iterative approaches to achieve and maintain beneficial uses of water as expeditiously as practicable. The State programs include:

- A mix of water quality-based and/or technology-based programs designed to achieve and maintain beneficial uses of water; and
- A mix of regulatory, non-regulatory, financial and technical assistance as needed to achieve and maintain beneficial uses of water as expeditiously as practicable.

Water Quality-based Programs

Iowa's nonpoint source program includes a mix of both water quality-based and technology-based programs to address nonpoint sources of pollution. Water quality-based programs are summarized below.

Impaired Waters

The DNR Watershed Monitoring and Assessment Section compiles the state's impaired waters list, or 303(d) list The 303(d)

list is composed of lakes, wetlands, streams, rivers, and portions of rivers that do not meet all state water quality standards. These are considered "impaired waterbodies." Pursuant to the Clean Water Act, Iowa is required to calculate total maximum daily loads (TMDLs) for pollutants causing impairments.

The DNR Section 319 program has increased investment in efforts to restore impaired waters in Iowa, in part due to EPA requirements that approximately 50% of Section 319 grants be used to support the restoration of impaired waters. DNR's program includes: 1) completing TMDLs which determine how much of a pollutant can enter a water body in one day and still allow the water body to meet the state's water quality standards; 2) watershed planning that identifies specific practices needed to address the impairment(s); and 3) targeted implementation of watershed plans.

Total Maximum Daily Loads (TMDLs)

The DNR Section 319 Program supports the development of water quality improvement plans, also known as Total Maximum Daily Loads or TMDLs. For TMDLs which identify nonpoint sources of pollution as contributing causes to the impairment, the ultimate goal of these plans is to guide local efforts to improve water quality and remove streams and lakes from the impaired list. The plans use research results and the public's input to help identify the contributing sources and amounts of pollutants causing the impairment. Water quality improvement plans also suggest ways that communities can improve their stream or lake to meet Iowa's water quality standards. More information, including a list of completed TMDLs or Water Quality Improvement Plans, may be found by following the web link provided:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedResearchData/WaterImprovementPlans.aspx

Watershed Planning and Implementation

In response to EPA Section 319 requirements that watersheds complete 9-element Watershed Management Plans (WMPs) prior to implementing 319-funded watershed projects, the DNR Watershed Improvement Program implemented a new program to assist local watershed groups develop and complete targeted WMPs. Initiated in 2009, the DNR Watershed Planning Grant provides financial and technical assistance to local watershed groups to develop a 9-element WMP. Eligible organizations for the DNR Planning Grant include soil and water conservation districts, county conservation boards, cities and counties, and other public and private organizations capable of developing WMPs. As a companion document to the Planning Grant, DNR developed an Iowa-based Watershed Planning Guidebook for local watershed groups to assist in completing a WMP. More information about the Planning Grant program is available on the following DNR webpage:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/WatershedPlanningGrants.aspx

As a result of the new program emphasis on planning, the number of completed WMPs in Iowa jumped from two in 2009 to 16 in early 2012, with another 12 WMPs nearing completion. The watersheds with completed WMPs serve as a pool of eligible candidates for future Section 319-funded watershed implementation projects.

DNR Watershed Implementation Grants provide funding and assistance to local watershed groups to implement WMPs through a local watershed project. Projects are typically led by a project coordinator whose primary role is to contact landowners in a watershed to market the implementation of Best Management Practices (BMPs) in high priority areas, based on the needs identified in the WMP to remove the water quality impairment(s) and fully restore the waterbody. Projects typically provide cost-share funding to landowners of up to 75% in high priority areas for the installation of practices that reduce the amounts of pollutants reaching the waterbody. Short term projects may last from 3 to 5 years in duration, whereas longer term projects may require multiple phases of projects of 3 to 5 years each, in order to achieve the pollutant reduction goals needed to meet the water quality objectives.

The DNR Section 319 Program provides at least 50% of its annual grant funds to support the implementation of watershed projects. The program typically supports approximately 5 to 7 new projects or project phases per year, depending upon the size of Iowa's Section 319 grant award and upon the funding needs of the project. As nationwide EPA Section 319 funding has been cut in recent years, Iowa's Section 319 grant award has been reduced by approximately the same percentage as

the nationwide funding cut. Due to the funding cuts, DNR has had to reduce the number of projects supported. Despite funding fewer projects per year, Section 319-funded projects have resulted in numerous documented water quality improvements, including three projects which resulted in the removal of impairments and are currently featured on EPA's 319 "Success Stories" webpage: http://water.epa.gov/polwaste/nps/success319/

Technology-based Programs

The technology-based nonpoint source programs are largely non-regulatory, voluntary programs which provide assistance to local watershed projects to implement practices that address both agricultural and urban nonpoint sources of pollution. Most of the approved Best Management Practices (BMPs) implemented through 319-funded watershed projects are found in the NRCS Field Office Technical Guide (FOTG). More information about the FOTG may be found below: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/fotg

Technology-based agricultural BMPs implemented to address nonpoint sources include: nutrient and pest management programs, grassed waterways, grass/tree filter strips, wetland restoration, sediment basins, contour farming, pasture and hay land management, critical area plantings, streambank stabilization, stream corridor fencing, alternative watering systems, sinkhole and spring protection, no-till farming, animal waste management structures and grazing management. Technology-based urban BMPs, such as pervious pavement, rain gardens, and bioswales, abate nonpoint source pollutants by allowing runoff water to infiltrate into the soil in highly developed areas instead of carrying pollutants directly into receiving waterbodies. More information about NRCS-approved urban conservation BMPs may be found below: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/alphabetical/plants/pub/?cid=stelprdb1044049

Watershed successes resulting from targeted implementation of technology-based programs may be found in the DNR Watershed Improvement Section's annual success story publication, Working for Clean Water. Published annually since 2007, this publication documents watershed successes in Iowa. Copies of the annual publication may be found below: .http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedSuccesses.aspx

Regulatory Programs

Regulatory programs related to nonpoint sources of pollutants from urban areas and private residences include stormwater permitting, discharges from unpermitted, unsewered communities, and private septic systems. Regulation of these nonpoint sources have been revised and upgraded since 2000.

Stormwater

Activities regulated under state stormwater regulations include construction activities that disturb one or more acres, which must be covered by a storm water permit before any soil is disturbed at the site. Industrial and commercial activities that are classified as having "storm water discharge associated with industrial activity" are required to obtain permit coverage. Additionally, larger cities and universities in Iowa are required to have permits for their Municipal Separate Storm Sewer Systems (MS4). More information about stormwater regulation may be found at the website below: http://www.iowadnr.gov/InsideDNR/RegulatoryWater/StormWater/WhoMustApply.aspx

Unsewered Communities

Before state wastewater standards went into effect in the 1960s, raw sewage could flow directly to a stream without treatment. Despite the standards, this continues in many areas today. In areas called "unsewered communities," outdated and poorly functioning septic tanks still allow untreated wastewater into our waters. The DNR works with these communities to find funding sources, alternatives for treatment systems and to allow adequate time to upgrade the systems. As a number of communities across the state have shown, there are affordable options for building a community wastewater treatment system to protect human health and water quality.

An unsewered community does not have to be an incorporated city. In this case, a "community" has 10 or more residential homes with one or more houses per acre. It is "unsewered" if it lacks a central sewage treatment system or if most of its septic systems do not meet state standards. Additional information about unsewered communities may be found at the DNR

website below:
http://www.iowadnr.gov/InsideDNR/RegulatoryWater/RuralCommunitySewers.aspx

Private Septic Systems
Iowa's septic system regulations were updated in 2009 to include a time of sale inspection requirement and to address improvements and innovations in the onsite wastewater industry by updating the state septic system code. Iowa Administrative Code (IAC) 567 – Chapter 69, "Private Sewage Disposal Systems" now includes new technologies such as textile and peat filters to provide more options to properly treat wastewater on restrictive lots. Septic tank lids must be brought to the surface and effluent screens are now required to promote management of onsite systems. Many other changes were made to enhance system management and performance. Additional information can be found at:
http://www.legis.state.ia.us/aspx/ACODOCS/DOCS/567.69.pdf .

As noted above, Iowa law now includes a statewide requirement for time of sale septic system inspections. Every building with a septic system must have that system inspected prior to the transfer of the deed for that property. The time of sale is the most advantageous time to inspect and upgrade systems since money is already changing hands for the sale of the property. The inspection is primarily a method to discover the estimated 100,000 inadequate septic systems in Iowa. When an inadequate system is discovered during inspection it is required to be repaired or replaced. The inspections are conducted by a state certified inspector to ensure consistency and the results of these inspections are provided to the county environmental health offices for any required follow-up. Since the program began, an estimated 12,000 inspections have been conducted and 4000 inadequate systems have been replaced with new code compliant systems. Additional information can be found at;
http://www.iowadnr.gov/InsideDNR/RegulatoryWater/PrivateSepticSystems/TimeofTransfer.aspx

Animal Feeding Operations
Iowa has two types of animal feeding operations (AFOs) regulated under the DNR: confinements and open feedlots. Both AFO types are confined (kept and fed for 45 days or more per year) in a lot, yard, corral, building or other areas. Both types include manure storage structures, but do not include livestock markets. AFO regulations include requirements for construction of facilities, manure management, nutrient management, land application, and manure applicator certification.

In 2009, the Iowa General Assembly passed two new laws affecting animal feeding operations, which added new requirements for stockpiling dry confinement manure, construction of dry-bedded confinements, and applying liquid confinement manure on frozen or snow-covered ground. The new requirements were added to Chapter 65 of Iowa Administrative Code 567 (567—65.2 and 65.3), which regulates animal feeding operations. Under the new regulations, agricultural producers are now responsible for meeting the specific requirements for stockpiling dry confinement manure, construction of dry-bedded confinements, and applying liquid confinement manure on frozen or snow-covered ground.

The new regulations prohibit the application of liquid confinement manure on snow-covered ground between December 21 and April 1 except for when there is an emergency, and prohibit the application of liquid confinement manure on frozen ground between February 1 and April 1, except for when there is an emergency.
More information about AFO regulations may be found at the DNR website below:
http://www.iowadnr.gov/Environment/LandStewardship/AnimalFeedingOperations/AFORulesRegulations.aspx

Technical Assistance:
The state has upgraded efforts to provide technical assistance on a variety of nonpoint source topics to nonpoint source professionals and technical services providers as a way to implement effective programs and practices.

The DNR Watershed Improvement Program, along with IDALS-DSC and NRCS, provide technical assistance to local watershed groups in conducting detailed watershed assessments, watershed planning, and watershed project implementation. In addition to developing GIS watershed assessment tools, DNR and IDALS-DSC jointly support a network of Basin Coordinators whose primary responsibilities are to provide technical assistance to local watershed groups (see Key Element #2 for a more detailed description). More information about this technical assistance may be found at:

http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/GuidanceTechAssistance.aspx

In the area of urban stormwater management, the Urban Stormwater Education Project has successfully provided outreach to MS4 city elected officials and staff, developers, contractors, and builders. The development of a model post-construction stormwater ordinance, the maintenance of the Iowa stormwater website (iowastormwater.org), meetings with stakeholders, the development of a SWPPP checklist to be used by MS4 communities, and technology transfer of erosion and sediment control design standards and specifications have raised awareness about stormwater. In addition, the IDALS-DSC has upgraded efforts to provide technical assistance on urban practices by establishing an Urban Conservation Program. This program provides technical assistance to homeowners, businesses, and communities on the implementation of urban BMPs to reduce nonpoint source runoff from urban areas.

Other state agencies, including the Iowa Economic Development Authority, have incorporated improved stormwater management into their programs and staffing. In addition, DNR staff is implementing the storm water program strategy at the Department field office level.

To enhance training to septic system installers, inspectors, and other professionals, the Onsite Wastewater Training Center of Iowa operates at the Des Moines Area Community College and provides training to county sanitarians, onsite installers, engineers and others in the onsite wastewater industry. The Training Center is a member of the Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT). The training center was developed with the assistance of a Section 319 grant for technical assistance and training. The center has been in operation since 2005 and has delivered 78 classes to more than 2,500 participants since its inception. In 2011, eleven classes were conducted in all parts of the state with topics pertinent to that area. The Training Center continues to provide quality education to sanitarians to improve the quality of septic systems used in Iowa. The Training Center also provides training for certified time of transfer inspectors. Additional information can be found at: www.wastewatertraining.com.

Financial Assistance

The state has increased the number of financial assistance programs available to assist implementation of a variety of nonpoint source programs and practices.

DNR Section 319 Funding:

DNR Watershed Planning Grants

Mentioned previously, the DNR Watershed Planning Grant, funded by EPA Section 319 funding, provides financial and technical assistance to local watershed groups to develop a 9-element WMP. Grants of between $10,000 and $50,000 are awarded to successful applicants, and eligible applicant organizations include soil and water conservation districts, county conservation boards, cities and counties, and other public and private organizations capable of developing WMPs. More information may be found at: http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/WatershedPlanningGrants.aspx

DNR Watershed Implementation Grants

The DNR Watershed Implementation Grant, also funded by EPA Section 319 funding, provides major watershed project funding and assistance to local watershed groups to implement a watershed management plan. Watershed projects are typically implemented through a soil and water conservation district, a county conservation board, or another local watershed organization capable of implementing the project. DNR Section 319 funds usually provide funding alone or in combination with state Water Protection Fund (WPF) and Watershed Protection Funds (WSPF), administered through IDALS-DSC. More information may be found at:
http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/ResourcesforLocalGroups/ImplementationGrants.aspx

Water Protection Fund (WPF) and Watershed Protection Fund (WSPF)

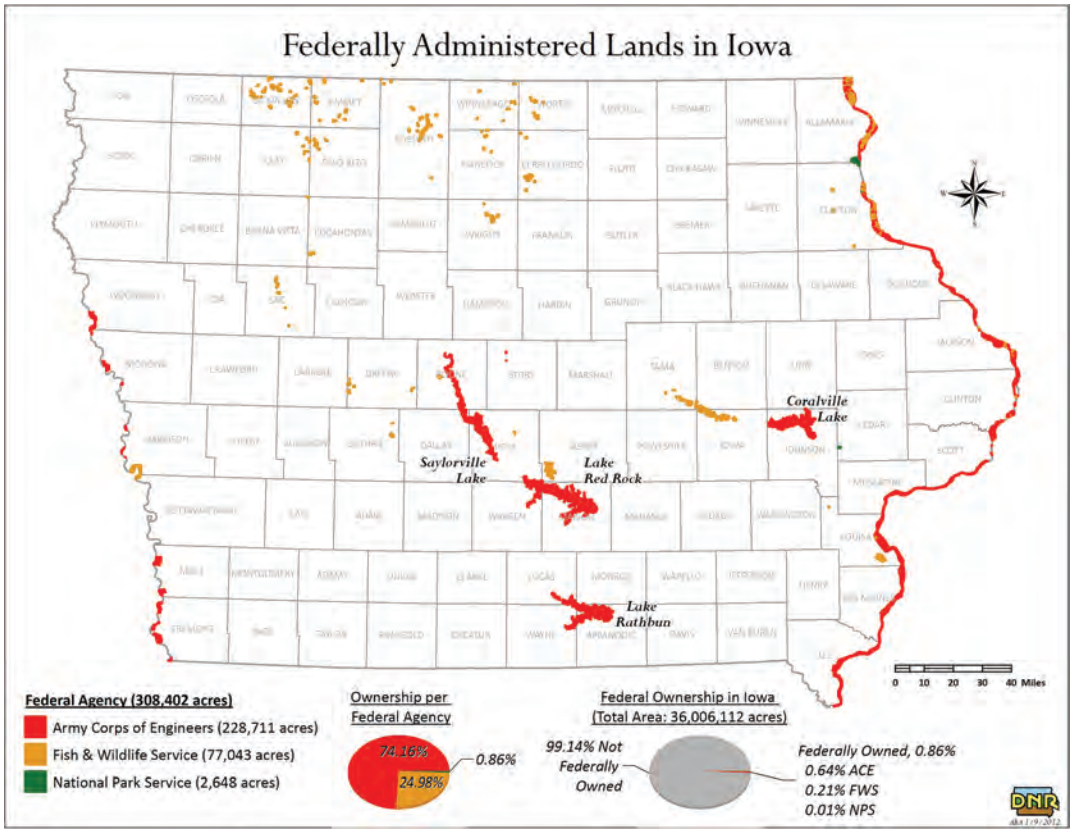
The state Water Protection Fund (WPF), funded through the state Resource Enhancement and Protection Program (REAP) and administered through IDALS-DSC, provides funding to county soil and water conservation districts to carry out projects to protect surface and groundwater from point and nonpoint sources of pollution. The state Watershed Protection Fund (WSPF), funding through state appropriations and administered through IDALS-DSC, provides funding to soil and water conservation districts to achieve multiple-objective water quality protection, flood control, erosion control, recreation, wildlife habitat and other resource protection issues. Projects funded by WPF and WSPF are often funded jointly with DNR Section 319 funding. More information may be found at:
http://www.agriculture.state.ia.us/waterResources/projectApplicationRequest.asp

Watershed Development and Planning Grant

The IDALS Watershed Development and Planning Grant provides funding to soil and water conservation districts to conduct watershed assessments to help identify high priority areas and to assist with the development of a watershed project. Grant awards are typically between $10,000 and $15,000. More information may be found at:
http://www.agriculture.state.ia.us/requestForApplications.asp

Publicly Owned Lakes Program

The Publicly Owned Lakes Program provides state funding to soil and water conservation districts to implement watershed protection practices on private land in watersheds of publicly-owned lakes in Iowa. The program receives a state appropriation of $350,000 per year. Applications are reviewed jointly between DNR and IDALS, and project funding is administered by IDALS to successful applicants. More information may be found at:
http://www.agriculture.state.ia.us/FieldServices/POLdesignation.asp



Watershed Improvement Review Board (WIRB)

The Iowa Watershed Improvement Review Board is responsible for allocating appropriations from the Iowa Legislature in grants for water quality improvement and flood prevention in Iowa, on a watershed basis. WIRB was originally funded at $5 million per year, but funding has been reduced significantly in recent years. Grant awards are limited to no more than 10% of the annual allocation. More information may be found at: http://www.agriculture.state.ia.us/IWIRB/iwirbRFA.asp

State Revolving Fund

The state developed programs after 2000 to utilize State Revolving Loan Fund (SRF) monies as a source of low-cost financing available through IDALS-DSC to assist and encourage landowners to address non-point source pollution of Iowa streams and lakes. The SRF loan programs for landowners include general nonpoint source loans to assist with implementing a variety of conservation practices, and livestock nonpoint source loans to assist with implementing practices to prevent, minimize, or eliminate nonpoint source pollution. More information about the SRF nonpoint source loans and livestock loans

may be found at the following websites:
http://www.iowasrf.com/program/other_water_quality_programs/general_nonpoint_source.cfm
http://www.iowasrf.com/program/other_water_quality_programs/livestock-water-quality/

Another SRF low-interest loan program developed by DNR after 2000 for septic systems (called Onsite Wastewater Assistance Program) has supported the replacement or upgrade of outdated private septic systems and has distributed more than 1,150 loans for a total of over $8 million. The program provides low interest loans for homeowners to update inadequate septic systems. Additional information about this program can be found at:
http://www.iowasrf.com/program/other_water_quality_programs/onsite_waste_water_assistance_program.cfm

Additional SRF loan programs exist to provide financial assistance for stormwater practices, community wastewater treatment, and other water quality programs. More information may be found at: http://www.iowasrf.com/

Additional financial assistance programs:

- State IJOBS funding ($1.25M) was made available in 2009 to provide one-time funding the installation of urban stormwater practices and green infrastructure practices across the state (17 projects). More information may be found at: http://www.ijobsiowa.gov/
- Green Infrastructure funds have been established through the Iowa Economic Development Authority to assist communities with the implementation of practices that infiltrate runoff. More information may be found at: http://www.iowaeconomicdevelopment.com/community/green_initiatives.aspx

KEY ELEMENT #7

The State identifies Federal lands and activities which are not managed consistently with State nonpoint source program objectives. Where appropriate, the State seeks EPA assistance to help resolve issues.

Federal land makes up less than 1% (specifically, 0.86%) of Iowa's landbase, so the relative importance of federal land in the state is fairly insignificant. (See map of federal land below). The small number of acres of federal land in Iowa does not cause a significant impact in terms of nonpoint source pollution to the waters of the state.

The three top federal agencies owning or managing land in Iowa include the U. S. Army Corps of Engineers (COE), the U. S. Fish and Wildlife Service (USFWS), and the National Park Service. The cooperative effort established and maintained in Iowa with partnering federal agencies allows for extensive communication, active management, and the resolution of identified problems associated with the federal lands.

The largest tracts of federal land in Iowa are lands owned by the COE and the USFWS. Most of the lands owned by the COE, and some lands owned by USFWS, are managed by the DNR Wildlife Bureau, and are divided into five different management areas: 1) the Missouri River corridor; 2) the Prairie Pothole region; 3) flood control reservoirs; 4) the Iowa River corridor, and 5) the Mississippi River corridor. The DNR Wildlife Bureau manages these lands according to individual conservation management plans to achieve beneficial environmental results and, where land is rented for agricultural production, the lands are managed according to an NRCS-approved conservation plan. The implementation of these individual management plans provide for consistency with achieving the goals of the NPSMP. Examples of the plans and mitigation activities within each of the five management areas may be found on the following websites:

Missouri River Mitigation/COE
The following web address will take you to the specific mitigation site. Lands/COE http://www.moriverrecovery.org/mrrp/f?p=136:200:3086617266731737::NO:RP:P200_SEARCH_TEXT:Missouri%20River%20Mitigation

Iowa River Corridor/USFWS
The DNR and USFWS are currently in the process of developing a formal long term plan. A draft is not available for public

view at this point.

Prairie Pothole Region/USFWS
Lands managed for USFWS in this area are based on the Prairie Pothole Joint Venture Program. For more information, see the website: http://www.ppjv.org/implement2.htm
USFWS and DNR are currently involved in a Comprehensive Conservation Plan process and taking public comments on their draft plan. http://www.fws.gov/midwest/planning/iowawetlands/index.html

Flood Control Reservoirs/COE
- Saylorville--The COE Saylorville 25-Year Master Plan is available through the COE Rock Island District Office.
- Coralville --The COE Coralville 25-Year Master Plan is available through COE Rock Island District Office.
- Lake Rathbun --The COE Rathbun 25-Year Master Plan is available through the COE Kansas City District Office.
- Red Rock--The Red Rock Plan may be found on the webpage below:
  http://www2.mvr.usace.army.mil/RedRock/RedRockMasterPlan.cfm

Mississippi River/USFWS/COE
More information of COE projects may be found at the following website:
http://www.ppjv.org/implement2.htm

USFWS and DNR are currently involved in a Comprehensive Conservation Plan process and taking public comments on their draft plan (see below website for more information):
http://www.fws.gov/midwest/planning/iowawetlands/index.html

For more information about the USFWS Comprehensive Conservation Plan, see the following website:
http://www.fws.gov/midwest/planning/uppermiss/index.html

Army Corps of Engineers Projects:
Despite the small amount of federal land in Iowa, the COE has been heavily involved in implementing water quality and water resources projects. The COE has designed and implemented significant water quality improvement projects in the past several years, including the restoration of Ventura Marsh, adjacent to Clear Lake in north central Iowa, and shoreline stabilization along the Rathbun Lake, in south central Iowa, among other projects. COE has also led river basin planning efforts in the Cedar River basin to help prevent future flooding, in the wake of severe flooding along the river in 2008.

More information about the COE's environment projects and regulations pertaining to Iowa may be found at:
http://www.mvr.usace.army.mil/MoreNews.asp?CAT=Environment

The U.S. Army Corps of Engineers has reaffirmed its commitment to the environment by formalizing a set of "Environmental Operating Principles" applicable to all its decision-making and programs. These principles foster unity of purpose on environmental issues, reflect a new tone and direction for dialogue on environmental matters, and ensure that employees consider conservation, environmental preservation and restoration in all Corps activities. Sustainability can only be achieved by the combined efforts of federal agencies, tribal, state and local governments, and the private sector, each doing its part, backed by the citizens of the area.

These principles help the Corps define its role in that endeavor. By implementing these principles, the Corps will continue its efforts to develop the scientific, economic and sociological measures to judge the effects of its projects on the environment and to seek better ways of achieving environmentally sustainable solutions. The principles are being integrated into all project management process throughout the Corps.

The principles are consistent with the National Environmental Policy Act, the Army Strategy for the Environment with its emphasis on sustainability and the triple bottom line of mission, environment and community, other environmental statutes,

and the Water Resources Development Acts that govern Corps activities. The principles also dovetail with the Corps 12 Actions for Change and specifically with Action Six, Focus on Sustainability. More information about the COE Environmental Operating Principles may be found on the webpage below:
http://www.usace.army.mil/Missions/Environmental/EnvironmentalOperatingPrinciples.aspx

U. S. Fish and Wildlife Service Projects:
A significant portion of the USFWS land in Iowa includes the Neal Smith Wildlife Refuge, near Prairie City, which incorporated a Section 319 National Nonpoint Source Monitoring Project. This project involved the conversion of a portion of the Walnut Creek watershed from row crops to native prairie, and long-term watershed monitoring has provided data on water quality impacts of this conversion. More information of this watershed monitoring study may be obtained from the DNR Geological and Water Survey Bureau.

More information about environmental management on National Wildlife Refuges may be found on the webpage below:
http://www.fws.gov/refuges/whm/

Threatened and Endangered Species:
The Endangered Species Act directs all Federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. This applies to management of Federal lands as well as other Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal permits, licenses, or other actions
More information about Threatened and Endangered Species conservation on federal lands may be found on the U.S. Fish and Wildlife Service webpage below:
http://www.fws.gov/endangered/

Permitting Requirements on Federal Lands:
To assure consistency between state and federal programs, DNR has established a process to review a number of federal programs. In some cases, such as with the Section 401 wetlands permitting process, DNR and the COE have established a joint application and review process to assure consistency between state and federal programs. These programs are summarized below.

Sovereign Lands Permits:
Lands which are managed by DNR including any federal lands under DNR management may be subject to Sovereign Lands Construction permitting requirements. The permit requirements are established through 571 Iowa Administrative Code Chapter 13, "Permits and Easements for Construction and Related Activities on Public Lands and Waters." This rule requires that any construction activities or related activities on public lands and waters be reviewed and approved by DNR prior to the commencement of construction or other project activities. Any federal lands managed by the DNR also require coordination and approval from the federal agency which owns the land. This rule pertains to Meandered Sovereign Lakes, Meandered Sovereign Rivers, State Forests, Wildlife Management Areas, State Parks, and State Preserves.

More information about Sovereign Lands permitting requirements may be found on the DNR webpage below:
http://www.iowadnr.gov/InsideDNR/RegulatoryLand/SovereignLandsPermits.aspx

Wetlands Permitting (Section 401)
Laws of the United States and the State of Iowa have assigned the US Army Corps of Engineers (COE) and the Iowa Department of Natural Resources (DNR) with specific and different regulatory roles designed to protect the waters within and on the State's boundaries.

A Section 401 Water Quality Certificate is Iowa Department of Natural Resource's certification that a project will not violate state water quality standards and is required before the Corps of Engineers can issue a Section 404 permit.
Construction, excavation or filling in streams, lakes, wetlands, or on the flood plains may require permits from both the

Corps and Iowa DNR. A Joint Application Form (Protecting Iowa Waters) shall be submitted to both agencies to begin the permit process for any of the following activities:

- cutting the bank of a river, stream, or lake;
- any excavation or dredging in a wetland, lake, stream or river;
- channel changes or relocations (including stream straightening);
- construction of any permanent dock, pier, wharf, seawall, boat ramp, beach, intake or outfall structure on a stream, river or lake;
- placement of any fill, riprap, or similar material in a stream, river, lake, or wetland;
- construction of a dam across any waterway;
- placement of fill, construction of levees, roadways and bridges; and similar activities on a floodplain; or
- construction of buildings on a flood plain.
- Any construction on, above, or under all fee title lands and waters, dedicated lands and waters under the jurisdiction of the Natural Resource Commission (Commission) and managed by the Commission for public access to a meandered sovereign lake or meandered sovereign river; meandered sovereign lakes; meandered sovereign rivers; and sovereign islands (except those portions of the Iowa River and Mississippi River where title has been conveyed to Charter Cities).

More information about the DNR Section 401 permit and the U. S. Army Corps of Engineers Section 404 permitting requirements may be found on the DNR webpage below:
http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WetlandsPermitting.aspx

Other Permits:
The Iowa Department of Natural Resources also requires permits for the construction and operation of water and wastewater treatment facilities, water withdrawal, water storage, and solid waste disposal on federal lands. More information about these land and water permits may be found on the DNR webpages below:
http://www.iowadnr.gov/InsideDNR/RegulatoryWater.aspx
http://www.iowadnr.gov/InsideDNR/RegulatoryLand.aspx
More information about regulatory permits issued by the U. S. Army Corps of Engineers may be found on the webpage below:
http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx

The COE announced in February of 2012 its intent to issue revised and renewed nationwide permits necessary for work in streams, wetlands and other waters of the United States under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The permits are necessary to replace existing permits, which expire on March 18, 2012. The new NWPs will take effect March 19, 2012.

These new nationwide permits will be published in the Federal Register on or about February 21, 2012 and have been posted to the USACE Web site at:
http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/NationwidePermits.aspx

KEY ELEMENT #8

The State manages and implements its nonpoint source program efficiently and effectively, including necessary financial management.

Congress provides limited grant funds to those states with approved Nonpoint Source Management Programs. As the designated Section 319 Program agency, Iowa DNR is eligible to apply for these monies and, in turn, sub-awards most these funds to various local, county, and state governments as well as various nongovernmental organizations and universities, etc., to assist in the implementation of the State's Nonpoint Source Management Program.

The NPS pollution control program and project activities of federal, state, and local agencies and organizations are coordinated to ensure the BMPs needed to control NPS pollution in Iowa are implemented efficiently and effectively. In addition,

activities conducted under programs whose primary purpose is something other than nonpoint pollution control, but which can provide secondary nonpoint pollution control benefits are coordinated with state nonpoint control activities, and efforts are made to identify and implement ways by which the effectiveness of these programs in controlling nonpoint pollution can be increased. (See Appendix C for details on the various programs and activities related to NPS pollution control available through Iowa's NPS Partnership.)

Program coordination efforts encompass all aspects of the state's nonpoint pollution control program (including targeting priority watersheds for 9-Element Watershed Plan development, BMP implementation in priority watersheds with approved 9-Element Watershed Plans, statewide and targeted public information, education and outreach programs, technical assistance, financial assistance, and enforcement of regulatory requirements), and focus on achieving greater coordination of agency and organization activities, improving existing programs, encouraging programs to give greater emphasis to water quality improvement, identifying new directions and developing new programs (where necessary), developing and deploying the use of new technologies and tools (such as LiDAR, RASCAL Stream assessments, Community Assessment toolbox, etc.) and institutionalizing the state NPS management program.

The IDNR has the basic responsibility for carrying out, through the Section 319 program, the statewide implementation of NPS pollution activities, including coordination of inter-agency efforts to implement nonpoint source control projects. The role of various local, state, and federal agencies in project implementation is frequently dictated by the requirements of the program providing funds for project implementation. Agencies that play a major role in implementing agricultural control projects in Iowa include: NRCS, IDALS/DSC, IDNR, ISUE, and SWCDs.

Iowa has developed and is utilizing an efficient, multi-agency process to develop 9-Element Watershed Management Plans and implement water quality improvement projects designed to make improvements in water quality in priority impaired waters in Iowa. This process begins with Basin Coordinators and others identifying priority watersheds where there is keen local interest in addressing water quality concerns identified through the impaired waters list. Local watershed groups are encouraged to review the TMDL for the waterbody (if available) and are guided to seek Watershed Development Grant funding from IDALS-DSC to conduct needed assessments of local watershed conditions (including watershed and stream assessments, and perhaps additional monitoring to further characterize the nature and extent of water quality concerns). Upon completion of the assessment work, local watershed groups are encouraged to seek Watershed Planning Grant funding from DNR to conduct a community assessment and develop an EPA 9-Element Watershed Management Plan. Competitive solicitation for both of these grants is done on a regular basis and applications are reviewed and evaluated by a multi-agency team.

Once watersheds complete an approved Watershed Management Plan, they are eligible to apply for DNR Implementation Grants (Section 319 funds) and IDALS-DSC project implementation funds (WSPF and WPF) to begin implementing their plans. Competitive solicitation for these grants is conducted on an annual basis. All applications are reviewed and evaluated by a multi-agency committee as described in detail under Key Element #2. Watershed groups that are successful at implementing the initial phase of their Watershed Management Plan are eligible to apply for additional funding in the future to continue to implement additional phases of their multi-phase Watershed Management Plans in order to restore the water body to meet the water quality standards for its designated use(s).

All DNR Section 319 Program grants seek to leverage a variety of local, state and federal funds and technical resources in order to maximize 319 fund utilization and efficacy. For example, in order to be eligible for DNR Watershed Planning Grants applicants must provide a minimum 50 percent local match, of which 20 percent of the local match must be in the form of hard dollars. Furthermore, all DNR watershed Implementation Project Grants leverage a variety of other funding resources, including USDA program funds such as EQIP, CRP, WHP, etc., IDALS-DSC WSPF, WPF, POL and WIRB funds, DNR Lake Restoration funds, and local SWCD in-kind funds, among others. In additions, projects benefit from technical assistance provided by NRCS, IDALS-DSC, SWCDs, ISUE and other programs within DNR.

Iowa utilizes a number of strategies to ensure that the state's NPS pollution control program is targeting resources within priority watersheds to the most critical areas contributing NPS pollution. Through the development of TMDLs for prior-

ity waterbodies, the use of the watershed and stream assessment tools to evaluate current watershed land use and stream corridor conditions, coupled with analysis and interpretation of the data by state agency technical staff, local watershed groups develop 9-Element Watershed Management Plans which clearly identify priority lands to be targeted for improvement to address water quality concerns and demonstrate measurable improvements in water quality. Through management and oversight by DNR Section 319 Project Officers and Basin Coordinators, watershed groups receiving 319 grant support are held accountable for ensuring financial and technical resources are used to target priority areas for treatment. In addition, implementation projects are required to prepare annual project work plans and budgets which identify priority improvement activities and locations for the coming year. These annual work plans and budgets are reviewed and approved by DNR 319 Project Officers and are used to monitor project activities throughout the year. In addition, DNR 319 Project Officers conduct project site visits at least twice per year with each local watershed project team to review progress, offer technical assistance and address any ongoing concerns or challenges confronting the project. Furthermore, Project Officers attend annual review meetings for each of their assigned local watershed implementation projects to review progress to date, and anticipated future actions to continue implementing the approved Watershed Management Plan. Finally, DNR's 319 Project Officers utilize the Grants Reporting and Tracking System (GRTS) to report to EPA the required information regarding Section 319 funded projects.

The following typical annual schedule of programmatic activities by DNR summarizes the efficient and effective management and implementation of the state's NPS program:

Schedule of Activities:

• State NPS Program Implementation	Ongoing
• Develop Public Information Materials	Ongoing
• Prepare RFA, review applications, and make selections for watershed planning grants	Annually
• Prepare RFA, review applications, and make selections for implementation project grants	Annually
• Review Section 319 Project Progress and Annual Reports	Ongoing
• Conduct Project site visits	Ongoing
• Attend Annual Project Review meetings	Ongoing
• Provide General Project Management and Oversight of all 319 Funded Projects	Ongoing
• Maintain and update GRTS database with project data	Ongoing
• Provide Technical Assistance to Developing and Ongoing Water Quality Projects in the form of GIS Maps, Water Quality Assessment/Evaluation, etc.	Ongoing
• Develop Contracts for FFY Section 319 Funded Projects	Ongoing
• Interagency NPS Coordination	Ongoing
• Section 319 FFY Grant Application (solicit and review water quality project applications, develop Workplan)	January – September
• Submit Annual Project Performance Reports	December
• Submit Final Project Performance Reports	Upon Project Completion
• Submit Annual NPS Program Progress Report to EPA	December
• Conduct Joint Evaluation	January

In order to ensure sound fiscal management of Section 319 grant funds, DNR's 319 staff review and approve all invoices and other requests for reimbursement by 319-funded projects prior to disbursement by DNR's Budget and Finance staff. DNR Budget and Finance staff also tracks and regularly reports to EPA and DNR 319 Program staff the financial status of all Section 319 funded projects based on grant year and project expenditures. 319 Program leadership meets monthly to review these financial status reports and assess project expenditures and draw down rates. This information allows DNR 319 Program staff to effectively manage the financial aspect of the program, while assuring the technical integrity of the water quality projects. To further illustrate the soundness of DNR's fiscal management of Section 319 grant funds, the most recent (August 2010) Section 319 Programmatic On-site Review by EPA Region 7 staff resulted in a favorable review of the Iowa Section 319 Grant Program.

KEY ELEMENT #9

The State periodically reviews and evaluates its nonpoint source management program using environmental and functional measures of success, and revises its nonpoint source assessment and its management program at least every five years.

The Iowa DNR has established mechanisms to track progress toward achieving the state's nonpoint source goals, as well as measures to evaluate progress made through individual watershed projects. These mechanisms include establishing environmental and functional indicators of success, conducting water monitoring to track changes resulting from the implementation of watershed projects, and updating the state's nonpoint source assessment and management program every five years. Below is a summary of these efforts.

Environmental Indicators

The state has established milestones for the number of 9-element Watershed Management Plans (WMPs) for restoring impaired waters to be completed and approved per year of the Nonpoint Source Management Program (NPSMP). The state's goals are to approve or update a minimum of 15 WMPs within 5 years (3 per year). Since EPA limits eligibility for watershed project implementation to watersheds with approved WMPs, Iowa considers the development of WMPs as a high priority toward implementing watershed improvements.

The state has also established milestones for the number of impairments to be removed resulting from watershed-based improvements in water quality. The state's goals are to remove 5 water quality impairments within 5 years for waters currently listed as impaired on the state Integrated Report.

The state has also developed milestones for tracking the progress toward fully implementing approved WMPs. The criteria used for tracking implementation progress may include one or several different criteria, such as to quantify pollutant load reductions through the implementation of Best Management Practices (BMPs) achieved at different stages of a watershed project, to quantify the number and types of BMPs implemented through a watershed project, or to measure water quality improvements resulting from implementing the WMP. The state plans to evaluate and track progress annually on the implementation of each WMP.

The DNR Watershed Monitoring and Assessment Program is responsible for water monitoring activities in the following program areas: beach monitoring, biological monitoring, groundwater monitoring, lake monitoring, stream monitoring, and wetland monitoring. DNR also tracks fish kills in lakes and streams in Iowa, and maintains information about the locations and possible causes of fish kills. Monitoring through these programs provides environmental indicators of water quality for the parameters measured. More information about these programs may be found at the webpage below:
http://www.iowadnr.gov/Environment/WaterQuality/WaterMonitoring.aspx

Every year, the DNR conducts routine sampling of Iowa's water resources as part of the state's Ambient Water Monitoring Program. The purpose of ambient monitoring is to gather baseline or background information so that stream health can be tracked over the course of time. The Ambient Water Monitoring Program collects data on temperature, dissolved oxygen, pH, and other physical conditions of the stream. Samples of the water are taken and sent to the lab for analysis of chemical conditions, such as nitrate levels, scans for pesticides and herbicides, and other contaminants.

In 2005 DNR also established a statewide Water Quality Index (WQI) to incorporate data from multiple water quality parameters into a mathematical equation that rates the health of a stream with a single number. The number is placed on a relative scale that rates the water quality in categories from bad to excellent. The Iowa WQI was created by "custom fitting" the National Sanitation Foundation Water Quality Index to reflect the water quality conditions of Iowa waters. The Iowa WQI rates water quality using the nine different water quality parameters. More information about the Iowa WQI may be found on the below webpage:
http://www.iowadnr.gov/Environment/WaterQuality/WQI

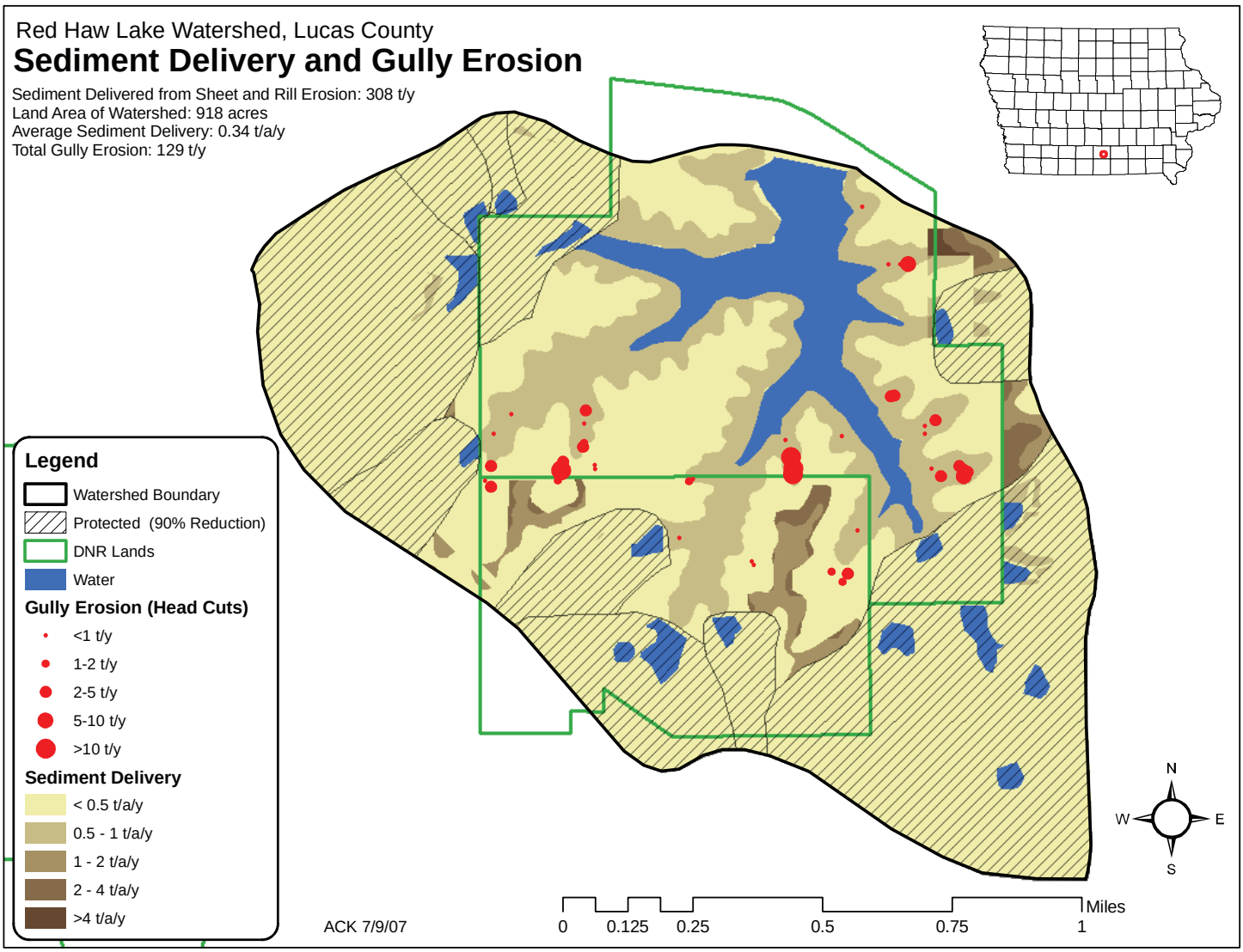


Figure A-7: Example of sediment delivery data for the Red Haw Lake Watershed (Lucas County).

DNR also initiated in 2010 a 5-year statewide mussel survey of streams in the state to use as a measure of stream biological health. While there had been previous mussels surveys conducted in Iowa streams and rivers, there had not been a comprehensive survey of the entire state. The survey is intended to serve as a baseline environmental indicator of the biological conditions in the stream and river segments surveyed by comparing mussel populations in Iowa using a mussel-specific index of biotic integrity. Results from the monitoring will provide decision-makers with information to establish a baseline relationship between land use changes and improvements in water quality.

The DNR Fisheries Bureau has for more than thirty years documented the number of streams in Iowa capable of sustaining populations of naturally-reproducing trout, which serves as an alternate environmental indicator of the biotic health of cold-water streams. Due to watershed and streambank habitat improvements in certain stream segments, the number of streams in Iowa with naturally-reproducing trout has increased from 6 in 1980 to 36 in 2011. DNR Fisheries continues to monitor trout populations in coldwater streams in Iowa to measure changes in the number of streams with naturally-reproducing trout.

Monitoring in Watershed Projects

DNR calculates and reports to EPA annual pollutant load reductions for sediment, phosphorus, and nitrogen resulting from practices implemented through Section 319-funded watershed projects. The load reductions are calculated based on the input of BMP installation data by DNR or watershed project staff into the Sediment Delivery Calculator. Section 319-funded

watershed project staff are required to report this information to DNR for each BMP implemented through the project. DNR then reports to EPA load reductions resulting from BMPs installed for all Section 319 projects during each federal fiscal year (October 1 through September 30). Annual load reductions are maintained in EPA's Grant Reporting and Tracking System (GRTS) database for each federal fiscal year.

Since 2008, the DNR Watershed Improvement Program has been working with EPA and coordinating with the DNR water monitoring program on developing a strategy and plan for implementing water quality monitoring for all newly funded watershed projects which follow the nine elements of a watershed plan. The purpose of this water monitoring effort is to establish baseline water quality information at the beginning of a watershed improvement project, so that changes in water quality may be accurately measured during and after the project is implemented. The parameters measured focus on the specific water quality problems the project is addressing. For example, if a lake or stream is impaired due to excessive algae or due to a problem directly related to high levels of phosphorus, then the water monitoring plan would focus on tracking levels of phosphorus or directly related water quality problems.

DNR has developed a series of detailed Geographic Information System (GIS)-derived watershed assessment tools to identify areas within a watershed which deliver the highest amounts of pollutants (typically sediment and phosphorus) to the stream or lake, and to quantify the pollutant loading to the water. One of the first watershed-wide land use assessments was conducted for the Rock Creek Lake watershed, completed in 2002, to determine sediment delivery.

Additional GIS assessments that have been developed include the RASCAL (Rapid Assessment of Stream Conditions Along Length) streambank assessment. The RASCAL assessment protocol was developed in 2006 and refined in 2007 to inventory in- and near-stream characteristics such as bank erosion, substrate, aquatic habitat, riparian cover, livestock access and more. The procedure requires watershed project personnel to walk the length of stream being assessed and note conditions using a GPS-equipped PDA. When complete, the data and resulting maps are used to identify possible areas for targeted BMP implementation. Other GIS assessments developed by DNR include a gully assessment, a land cover assessment, a livestock assessment, and an urban assessment. In addition to helping identify targeted areas of pollutant loading, the assessments can forecast expected pollutant load reductions resulting from BMP installation. Map 3 (below) is an example of a completed sediment delivery map showing areas of sediment delivery in the Red Haw Lake watershed in Lucas County, Iowa.

DNR will continue to refine and modify its current method of program review and evaluation of its Section 319 program. Annual progress reports which evaluate progress and accomplishment of program goals and objectives will be prepared and submitted to EPA. Additional measures of success that focus on modeled and measured water quality improvements will be required for watershed projects to receive Section 319 funding to implement approved WMPs.

Updating the Nonpoint Source Management Program:
DNR will facilitate efforts to update the state's NPSMP every five years by continuing to engage its core nonpoint source partner agencies (IDALS DSC, NRCS, ISU Extension, and CDI) and nonpoint source stakeholder groups in the process. Updated drafts of the NPSMP will be submitted to EPA for review and approval. The approved NPSMP will then guide the state's subsequent Section 319 Program for the duration of the approved NPSMP.

APPENDIX B

GLOSSARY OF TERMS

303(d) List (also referred to as the Impaired Waters List) – Refers to section 303(d) of the Federal Clean Water Act, which requires a listing of all public surface waters (creeks, rivers, wetlands, and lakes) that do not support their general and/or designated uses.

Abatement – The reduction, ending, or lessening of, in this case, pollution from runoff or nonpoint source pollution.

Algae – A group of non-flowering, non-rooted, aquatic organisms capable of photosynthesis. True algae are members of the plant kingdom, but some bacteria, such as blue-green algae (cyanobacteria), are sometimes referred to as algae.

Algal Blooms – A rapid increase of algae in an aquatic ecosystem. Algal blooms can deplete available dissolved oxygen for other aquatic life, leading to fish kills, and create an unappealing environment for human recreation. Some blooms can leach potentially harmful toxins to the water column (e.g., blue-green algae or cyanobacteria) when the cells die and decay.

Ambient Monitoring – As referred to in the plan, Ambient Monitoring represents the historically consistent set of stream and lake systems monitored on a regular (usually monthly) basis by the DNR's Water Monitoring and Assessment Section.

Bacteria – In the context of this plan, a water quality standard for bacteria protects human health by testing for E. coli, which can indicate the presence of an illness-causing micro-organism (bacteria, virus, or protozoa). Illness causing micro-organisms are sometimes collectively referred to as pathogens.

Basin Coordinator (also called Regional Basin Coordinator) – A term used by the DNR – DSC partnership to describe the shared staff responsible for guiding the development of local watershed projects. Basin Coordinators are divided by major river basins and river regions in the state.

BMPs – see Best Management Practices

Best Management Practices (BMPs) – A general term for any structural, land management, or upland soil or water conservation practice. For example: conservation tillage, buffer strips in agricultural areas and green roofs or pervious paving in urban areas.

Buffer Strips – An area of land maintained in permanent vegetation to help control soil erosion and benefit water quality, commonly found bordering streambanks.

CDI – Conservation Districts of Iowa - An organization representing the 100 Soil and Water Conservation Districts in Iowa, a Core Partner in this Plan. To learn more about CDI programming, see the inventory (Appendix C).

Clean Water Act – The Clean Water Act, also known as the Federal Water Pollution Contract Act, established in 1972, sets the basis for point source regulation with the NPDES permitting program and, with the 1987 amendments, provides a framework for reducing pollution from nonpoint sources.

Conservation Tillage – A tillage system that minimizes the turning of the soil and leaves a protective amount of crop residue on the surface all year. Common examples include: no tillage, strip tillage, and ridge tillage.

Core Partner – A term coined for the purposes of this plan, representing the following organizations: Iowa Department of Natural Resources, Iowa Department of Agriculture and Land Stewardship – Division of Soil Conservation, USDA Natural Resources Conservation Service, Iowa State University, and the Conservation Districts of Iowa.

Cyanobacteria (aka: Blue-Green Algae) – Microorganisms related to bacteria but capable of photosynthesis like algae. Cyanobacteria can create problems as some species produce a toxin that can be harmful to humans if consumed.

CWA – Clean Water Act

Designated use – Represents the expected use of a water body. For example, the Raccoon River is designated as a drinking water source (Class C use) as well as for human recreational use (Class A1 and/or A3).

Dissolved Oxygen – Aquatic organisms require oxygen to respire and many organisms are able to meet their needs through oxygen available in the water. Water can be unsuit-

able for aquatic life if levels of dissolved oxygen are too low.

DNR – Iowa Department of Natural Resources, the designated state agency for water resources. Also a Core Partner in this Plan. To learn more about DNR programming, see the inventory (Appendix C).

DSC – Division of Soil Conservation under the Iowa Department of Agriculture and Land Stewardship, a Core Partner in this Plan. To learn more about DSC programming, see the inventory (Appendix C).

EQUIS – A web-based, water quality database

FTE – Full Time Equivalent employee

Green Roof (also called Vegetative Roof) – A roof on a building partially or completely covered by vegetation, a growing medium, and a waterproof membrane.

HUC – Hydrologic Unit Code – A watershed address consisting of 2 to 12 numbers. The more numbers in the HUC, the smaller the watershed. A HUC 12 watershed usually falls between 10,000 and 40,000 acres.

IDALS-DSC – See DSC

IEDA – Iowa Economic Development Authority

Impaired Waters List – See 303(d) List

Iowa Learning Farms – Housed in the Leopold Center for Sustainable Agriculture at Iowa State University, the Iowa Learning Farms is building a Culture of Conservation, calling attention to the importance of improved water and soil quality through conservation farming practices.

IOWATER – A water monitoring network comprised of trained volunteers throughout the state

ISU – Iowa State University, a land grant university with many programs and departments dedicated to runoff pollution and conservation research, a Core Partner in this Plan. To learn more about ISU programming, see the inventory (Appendix C).

MRBI – Mississippi River Basin Initiative - MRBI aims to improve the health of the Mississippi River Basin, including water quality and wildlife habitat. Through this Initiative, NRCS and its partners will help producers in selected watersheds in the Mississippi River Basin voluntarily implement conservation practices that avoid, control, and trap nutrient runoff; improve wildlife habitat; and maintain agricultural productivity.

NGO – Non Governmental Organization

Nine Elements – The Nine Elements of a Watershed Management Plan refer to the EPA requirements a plan for a specific watershed must include to be eligible for Federal Section 319 grant money.

Nine Key Elements – Required aspects of this Nonpoint Source Management Plan, found in detail under Appendix A of the Plan.

Nonpoint Source Pollution (also called Runoff Pollution)– Water pollution from diffuse sources such as urban stormwater or agricultural lands.

Nonpoint Source Management Plan (also referred to as the Plan) – An updated Nonpoint Source Management Plan is a requirement for state programs to access Federal Section 319 grant money.

NPDES – National Pollutant Discharge Elimination System – A permitting program for point sources under the Clean Water Act, administered by the DNR in Iowa.

NRCS – Natural Resources Conservation Service, a branch of the United States Department of Agriculture, is a Core Partner in this Plan. To learn more about NRCS programming, see the inventory (Appendix C).

Pathogen – a micro-organism (bacteria, virus, or protozoa) capable of causing a disease or illness if ingested or enters the bloodstream (i.e. through eyes or open wound).

Pervious Paving – A permeable surface designed to allow percolation and infiltration of stormwater through the surface to the soil below. If properly applied, this urban BMP reduces runoff and nonpoint source pollution.

pH – The measure of acidity (and alkalinity) of a solution, important for water quality purposes as aquatic life thrive in only certain ranges of pH.

Phosphorus – An essential element in plant growth and, therefore, a common element in fertilizer. Algae, as one particular type of plant life, use phosphorus in their life cycle.

Runoff containing phosphorus (or sediment with phosphorus attached) can lead to algal blooms.

Plan – See Nonpoint Source Management Plan

POCs – Point of Contacts

Point Source – A single identifiable source of water pollution, typically discharging from the end of a pipe, requiring an NPDES permit.

QAPP – Quality Assurance Project Plan - A QAPP documents the planning, implementation, and assessment procedures for a particular project, as well as any specific quality assurance and quality control activities. It integrates all the technical and quality aspects of the project in order to provide a "blueprint" for obtaining the type and quality of environmental data and information needed for a specific decision or use. All work performed or funded by EPA that involves the acquisition of environmental data must have an approved QAPP.

Regional Basin Coordinators – See Basin Coordinator

RSS Feed – "Really Simple Syndication Feed" is a content delivery vehicle that allows all subscribers to instantly receive information updated by approved authors / keepers of a webpage.

Runoff Pollution – See Nonpoint Source Pollution
Sediment – Soil and other earthy matter moved by runoff from the land to the stream or lake system.

Smart Planning Principles – A set of guidelines to help cities use a comprehensive approach to meet the changing needs of their city, including natural resources and water quality issues.

Stakeholder Group – As used in this Plan, stakeholder groups represent other entities interested in nonpoint source pollution outside of the Core Partner group.

STORET – An online water quality database maintained by the DNR.

SWCD – Soil and Water Conservation District

Synthetic Fertilizer – Commercially prepared mixture of nutrients to restore soil fertility and increase crop yields.

TMDL – Total Maximum Daily Load; a numeric assessment of how much of a given pollutant a water body can receive on a daily basis and still support designated uses and meet water quality standards.

Turbidity – Indicates water transparency (or lack thereof); highly turbid water is cloudy or murky typically caused by suspended particles of sediment or organic materials.

Visioning Team – A group comprised of 20 Stakeholder Group representatives and 10 Core Partner representatives charged with the creation of a vision for runoff abatement work in Iowa and the associated goals and objectives to reach that vision.

Watershed - The area of land that drains into a lake or stream

Watershed Management Plan – A tailored document for a particular watershed that identifies water quality problems, sources of the problems, and a plan to remediate them. To be eligible for Section 319 funds, a Watershed Management Plan must meet the EPA Nine Elements.

Water Quality Standards (WQS) – A set of measures that indicate attainment (or lack thereof) of the designated use of the water body.

WPAC – Watershed Planning and Advisory Council – The WPAC was established by the 2010 Iowa Legislature in House File 2459 for purposes of assembling a diverse group of stakeholders to review research and make periodic recommendations to various state and federal agencies regarding methods to best protect water resources in Iowa, assure an adequate supply of water, mitigate and prevent floods, and coordinate the management of those resources in a sustainable, fiscally responsible, and environmentally responsible manner.

WRCC – Water Resources Coordinating Council - The purpose of the Water Resources Coordinating Council (WRCC) shall be to preserve and protect Iowa's water resources, and to coordinate the management of those resources in a sustainable and fiscally responsible manner.

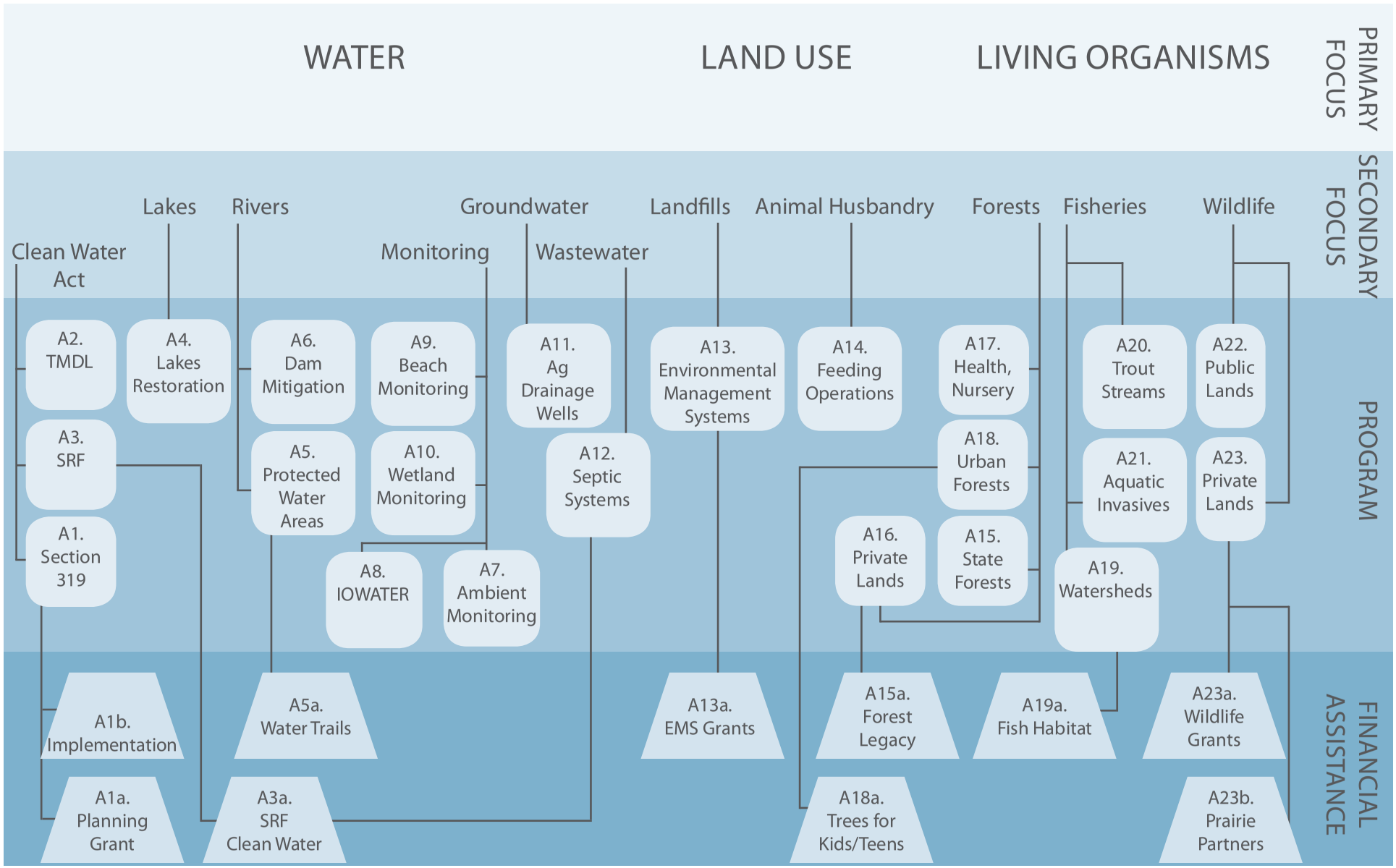
APPENDIX C

PROGRAM INVENTORIES

The following is an inventory of programs related to nonpoint source pollution reduction from the five core partner groups; Iowa Department of Natural Resources, Iowa State University, Natural Resource Conservation Service, Iowa Department of Agriculture and Land Stewardship – Division of Soil Conservation, and Conservation Districts of Iowa. A summary of the stakeholder entities in the state and responses from stakeholder groups can be found at the end of this appendix. This inventory was assembled in the spring of 2011 in cooperation with all partner groups named above. While this list may not be exhaustive, considerable effort has been taken to record all significant programs related to nonpoint source pollution operated within these five organizations.

To help users of this inventory, a flow chart was developed for each of the core partner groups. Depending on the complexity of the organization, a focus area may be identified before it is linked to individual programs. A program is represented by a rounded rectangle whereas a financial assistance (grant) program is represented by a trapezoid. The numbers corresponding to the rounded rectangles and trapezoids follow the numbering system found in the narrative of this appendix and are linked back to the vision and gap analysis. A simple breakdown of each program is found in the narrative within the rounded rectangles (programs on the left, financial assistance on the right) to give quick facts of each program or grant and an associated website if available.

A. IOWA DEPARTMENT OF NATURAL RESOURCES



A - IOWA DEPARTMENT OF NATURAL RESOURCES

The Department of Natural Resources (DNR) is a large agency with many responsibilities. As the agency responsible for water resources, it is not surprising to find a wide range of environmental programs that work with water that cover the broad spectrum of issues. Because water quality serves as an excellent indicator of environmental health, many programs have a water quality component. This section attempts to provide a brief summary of the programs identified as having an impact on nonpoint source pollution.

DNR at a glance

Number of FTEs: ~216

Annual Funding: ~$32M
(does not include SRF funds)

http://www.iowadnr.gov

The programs herein describe the work of over 280 full time employees, most of which (~220) work on the ground as fisheries, forestry and wildlife staff. The rest of the staff is spread out between monitoring, watershed improvement, rivers programs, and groundwater and land use issues.

A1. Section 319

Number of FTEs: 8

Budget: ~$3.6M

http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement.aspx

A1 – Section 319 Program – Watershed Improvement

The DNR is designated as the state agency responsible for implementation of Iowa's Nonpoint Source Management Program (NPSMP). The Section 319 Program, also known as the Watershed Improvement Program or the Nonpoint Source Program, executes the mission of Section 319 of the Federal Clean Water Act for the State of Iowa by implementing the NPSMP.

The Section 319 Program is responsible for: coordination at a state level of the NPSMP and project activities of federal, state, and local agencies; review of federal programs and projects for consistency with the state's NPSMP; and carrying out a variety of activities essential to implementation of the NPSMP, such as updating the NPSMP to reflect changes in federal and state laws and programs, responding to requests for information and assistance from the public, developing Section 319 grant applications and project implementation plans, and providing EPA with annual and final reports on the state's nonpoint pollution control programs and projects.

Section 319's responsibilities for implementation of individual nonpoint pollution control efforts vary from project to project. For those projects receiving Section 319 funds, DNR's responsibilities are extensive, and include: solicitation and review of project proposals; selection of projects for which funding will be requested and development of grant applications and project implementation plans; negotiation with EPA on project funding; development of contracts or agreements for funded projects; and reporting of project achievements to EPA and the public. In addition, for some projects DNR has specific direct implementation responsibilities.

Section 319 also provides assistance to local watershed groups to conduct watershed assessments through the use of GIS technology. Assessments include land use assessments, streambank assessments, gully assessments, livestock assessments, and urban assessments. With this assistance, local watershed groups developing watershed management plans and implementation projects are able to prioritize and focus efforts to areas and practices allowing for maximum water quality benefits. In addition, using the data obtained through this assistance, actual water quality benefits are more easily documented. The use of visuals produced with the GIS technology provides a tool to educate the public (landowners, concerned citizens, public officials, school children, etc.) regarding watersheds and water quality issues.

Information/outreach is an integral part of the NPSMP. To support a variety of NPS pollution public information and education activities, Section 319 funding is provided to assist individual projects with public outreach through the development of project brochures, fact sheets, newsletters, and public presentations. In addition, this effort involves a multitude of statewide NPS public outreach efforts, such as an updated watershed improvement program annual report, updates of selected water quality project brochures, legislative presentations, TMDL and Section 303(d) meetings, animal waste issues, etc.

In addition to the two grants listed below, the Section 319 Program augments the DSC Development Grant program

(program D1a in this inventory) by offering financial assistance for additional water monitoring.

A1a. Planning Grant

Award: $200,000

Range: $10,000 - $50,000

http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/

A1a – Section 319 Planning Grant

The Environmental Protection Agency (EPA) requires an approved 9-Element Watershed Management Plan for a watershed to be eligible for Section 319 incremental funding. To successfully develop a plan with this level of detail, it is necessary to invest a significant amount of staff time and/or financial resources in the development of the plan. To help watersheds planning groups across the state develop these plans, Section 319 introduced the Watershed Planning Grant in 2009. This grant is offered to Soil and Water Conservation Districts, County Conservation Boards, Resource Conservation & Development (RC&Ds), Councils of Government, Regional Planning Commissions, cities, counties, public utilities, academic institutions, public solid waste agencies, drainage districts, chambers of commerce, and other non-government, non-profit organizations. The grant is usually offered twice a year, as funding allows, through a request for applications. While these plans are required for eligibility of Section 319 implementation funds, the plans produced through the planning grant process give a competitive edge for watershed groups to compete for many other funding programs.

A1b. Implementation Grant

Award: ~$2M

Range: $varies

http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/ResourcesforLocalGroups/ImplementationGrants.aspx

A1b – Section 319 Implementation Grant

The Section 319 Implementation Grant is the primary funding mechanism in the state targeted first and foremost for the purpose of water quality improvement. This program requires a 9-Element Watershed Management Plan to be eligible for funding and supports aspects of "phases" of the approved plan. This grant is offered to entities with an approved Watershed Management Plan including Soil and Water Conservation Districts, County Conservation Boards, Resource Conservation & Development (RC&Ds), Councils of Government, Regional Planning Commissions, cities, counties, public utilities, academic institutions, public solid waste agencies, drainage districts, chambers of commerce, and other non-government, non-profit organizations. The grant is offered once a year through a competitive request for applications.

A2. TMDL

Number of FTEs: 6.5

Budget: ~$880,000

http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedResearchData/WaterImprovementPlans.aspx

A2 – Total Maximum Daily Load (TMDL) Program

The mission of the watershed improvement section is "Empowering Iowans to Revitalize their Rivers, Lakes and Streams by Fostering Community Partnerships and Offering Technical Guidance." The Total Maximum Daily Load (TMDL) program, also known as the Water Quality Improvement Plan (WQIP) program, strives to provide useful, understandable documents that help provide the tools and resources for watershed planning and implementation while satisfying the obligations of section 303 of the Clean Water Act. The State of Iowa is responsible for the development of TMDL documents for all impaired waters in the state of Iowa, based on the 303(d) Impaired Waters List. This program is funded by the Section 319 Program.

The purpose of a TMDL document is to determine what pollutant or pollutants are causing the impairment(s) and assign a total maximum daily load allowable for that waterbody. The Total Maximum Daily Load is an equation that quantifies loads of the pollutant of concern to the waterbody. The equation has three terms: (1) "Load Allocations" include nonpoint sources of pollution in the watershed, (2) "Waste Load Allocations" incorporate point sources (those sources operating under an NPDES permit), and (3) a "Margin of Safety" that accounts for uncertainty and is protective of the resource. The resulting equation

takes the form: TMDL=∑LA + ∑WLA + MOS.

To provide for additional technical assistance for local watershed groups, TMDL documents include an implementation section, which suggests general practices that would address nonpoint source pollution issues. These plans (TMDL + implementation) are called Water Quality Improvement Plans and are prioritized for development based on the presence of a sustained local interest in water quality improvement. This local interest is necessary to increase the probability of the development and implementation of a locally-led 9-Element Watershed Management Plan for targeted water quality improvement.

A3 – State Revolving Fund (SRF)

A3. State Revolving Fund

Number of FTEs: 2 DNR (5 Total)

Budget: ~$30M*

http://www.iowaSRF.com

The Clean Water State Revolving Fund (SRF) is a shared program between the Iowa Department of Natural Resources, the Iowa Finance Authority, and the Iowa Department of Agriculture and Land Stewardship. Part of the purpose of the program is to provide low-interest loans to Iowans for practices to reduce nonpoint source pollution and protect water quality. There are five SRF programs that are related to this mission: Local Water Protection Program, Livestock Water Quality Facilities Program, Onsite Wastewater (Septic Systems) Assistance Program, Stormwater Best Management Practices Program, and the General Nonpoint Source Program. All programs accept applications. *Note: The $30M SRF was not included in the overall annual funding estimate for DNR at the beginning of this section.

A3a. State Revolving Fund Programs

Program:	*Local Water*	*Livestock*	*Septic Systems*	*Stormwater*	*Nonpoint*
Award:	$6M	$6M	$2M	$10M	$6M
Range:	$2 - $500k	$10 - $500k	$2k - no max	$5k – no max	$5k to no max

www.iowasrf.com/program/other_water_quality_programs/local_water_protection.cfm

www.iowasrf.com/program/other_water_quality_programs/livestock_water_quality.cfm

www.iowasrf.com/program/other_water_quality_programs/onsite_waste_water_assistance_program.cfm

www.iowasrf.com/program/other_water_quality_programs/storm_water_management_best_practices.cfm

www.iowasrf.com/program/other_water_quality_programs/general_nonpoint_source.cfm

A3a – Clean Water State Revolving Fund (SRF)

The Clean Water State Revolving Fund helps finance many important projects throughout the state. In many cases, SRF funding helps organizations and private citizens afford their portion of a grant's cost-share. Once money is repaid, it can be redistributed for additional loans. Each program has unique attributes as described below:

- The Local Water Protection Program provides low-interest loans for soil, sediment, and nutrient control practices on agricultural land. This program is available to farmers and landowners. Applications are approved through Soil and Water Conservation Districts.

- The Livestock Water Quality Facilities Program provides low-interest loans for manure management plans and practices at eligible animal feeding operations. The program is available to owners of existing animal feeding operations with fewer than 1,000 animal units or not otherwise designated as a concentrated animal feeding operation. Applications are approved through Soil and Water Conservation Districts.

- The Onsite Wastewater (Septic Systems) Assistance Program provides low-interest loans to rural homeowners to replace failing or inadequate onsite septic systems. This program is available to homeowners in unincorporated areas with failing or inadequate onsite septic systems. Applications are approved by the DNR in conjunction with the Private Sewage Disposal Program (go to A13 for more information).

- The Stormwater Best Management Practices Program provides low-interest loans for stormwater management practices that protect water quality. This program is available to cities, counties, developers, landowners, and watershed groups. Applications are approved through Iowa Department of Agriculture and Land Stewardship.

- The General Nonpoint Source Program provides low-interest loans for projects to protect or improve water quality, including brownfield cleanup, landfill closure, lake and river restoration, wetlands, and others. This program is available for both public and private entities. Applications are approved through the DNR.

A4. Lakes Restoration

Number of FTEs: 2

Budget: ~$8.6M

http://www.iowadnr.gov/Environment/WaterQuality/LakeRestoration.aspx

A4 – Lakes Restoration Program

The Lakes Restoration Program (LRP) focuses on restoring impaired lakes to improve the quality of life for Iowans. The LRP funds lake restoration projects that are designed to ensure a cost effective, positive return on investment for the citizens of Iowa and secure the local communities commitment to lake and watershed protection. The practices implemented should lead to significant improvement in water clarity, safety, and quality of Iowa lakes and provide for a sustainable, healthy, functioning lake system. The ultimate goal would be for the lake system to be removed from the 303(d) Impaired Waters List.

The Lakes Restoration Program is not grant based but rather works with community representatives, usually with the help of an intra-agency technical advisory committee, to develop a joint lake restoration action plan. The action plan documents the causes, sources, and magnitude of lake impairment, evaluates the feasibility of the lake and watershed restoration options, establishes water quality goals and a schedule for attainment, assesses the economic benefits of the project, identifies the sources and amounts of any leveraged funds, and describes the community's commitment to the project, including local funding.

A5. Dam Mitigation

Number of FTEs: 1

Budget: ~$70,000

http://www.iowadnr.gov/Recreation/CanoeingKayaking/LowHeadDams/DamMitigationSafety.aspx

A5 – Dam Mitigation

The Dam Mitigation program assists communities and DNR land management with dam mitigation, including removal, rapids conversion, river restoration, recreational enhancements, and safety retrofits. Technical assistance from Dam Mitigation staff is available to priority dam owners. This program is funded by a conservation trust fund from boating fees. As funds are available, the program offers a grant to dam owners to help remove low-head dams known as the "Low-head Public Hazard Grant Program". It is not included as a funding mechanism here as funds are not consistent, but low-head dam owners interested in working with the DNR can contact the program to inquire about fund availability.

A6. Protected Water Areas

Number of FTEs: 1

Budget: ~$65,000

http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrails.aspx

A6 – Protected Water Areas

The Protected Water Areas Program focuses on riparian and aquatic habitat and scenic areas in five river segments that have outstanding natural and cultural resources. One project this program is currently piloting is an assistance project for landowners in the Boone River. The most visible

aspect of this program is the development of water trails.

A6a. Water Trails Grant

Award: $50,000

Range: up to $50,000

http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx

A6a. Water Trails Development Grant

Local water trail developers are eligible to apply for the development of a water trail for the benefit of paddlers. Water trails development grants help standardize features for state-designated water trails including signage, launch types, a statewide numbering system, and common mapping symbols. This program aims to develop more stream miles into usable waterways for paddlers across the state, which leads to an increase in river use and recreation.

A7 – Ambient Monitoring Program

A7. Ambient Monitoring

Number of FTEs: 8.5

Budget: $1.4M

http://www.iowadnr.gov/Environment/WaterQuality/WaterMonitoring.aspx

The ambient monitoring program consists of two parts. The first part works in streams throughout the state to develop a monitoring network that can describe and measure water quality geographically throughout all of Iowa and can identify possible differences among watersheds and among ecological regions. The network should be capable of documenting total loading of nutrients and synthetic organic compounds from Iowa to the Mississippi-Missouri River system with accompanying analysis. To achieve this goal, the network must represent water quality from all river basins in Iowa and allow for regional representation of water quality. In addition, consideration is given to the water quality from a variety of basin sizes, each representative of different ecological regions.

The second part of the ambient monitoring program focuses on lakes, which began in 2000 as an effort to better understand and characterize lake water quality in Iowa. The objective of this program is to sample 131 of Iowa's recreational lakes and to describe current water quality and trends in water quality. Due to great temporal variability of Iowa's watersheds, samples are collected 3 times a summer at each of the 131 lakes from May through September.

A8 – IOWATER Program

A8. IOWATER

Number of FTEs: 2.5

Budget: $300,000

http://www.iowater.net/

Iowa's volunteer water quality monitoring program, IOWATER, empowers citizens to take a proactive approach to water quality. By monitoring the water resources in their backyards, we can ensure the protection of high quality water resources, and learn how to improve lower quality resources. The program brings people closer to the landscapes that surround them and encourages them to develop a sense of place within the watersheds where they live. Data collected through trained IOWATER volunteers under a Quality Assurance Performance Plan (QAPP) can be used under the credible data law to determine impairment status and official water quality trends. Samples collected outside of a QAPP is still of tremendous value as anecdotal evidence of water quality trends and issues.

A9 – Beach Monitoring Program

A9. Beach Monitoring

Number of FTEs: 1

Budget: ~$100,000

http://www.iowadnr.gov/Environment/WaterQuality/WaterMonitoring/MonitoringPrograms/Beaches.aspx

Routine water quality monitoring is conducted at all State Park beaches and many locally managed public beaches in Iowa. In order to help protect the health of Iowans using the beaches, the Beach Monitoring Program works with various public health and management agencies throughout the state to inform the public of the most current water

quality conditions. This program helps in the analysis of why there are bacteria problems at these beaches and the severity of the impairments.

A10. Wetland Monitoring

Number of FTEs: 1.5

Budget: ~$300,000

http://www.iowadnr.gov/Environment/WaterQuality/WaterMonitoring/MonitoringPrograms/Wetlands.aspx

A10 – Wetland Monitoring Program

Much of the landscape of Iowa was covered with wetlands when the area was first settled. Most of those wetlands were drained to make way for agricultural purposes. Now we realize that wetlands provide many benefits for both water quality and wildlife. A statewide monitoring program for wetlands is currently under development to assess these valuable areas and gain a greater appreciation for how the native landscape may have handled water quality and quantity issues. Results from this monitoring will enable the DNR to determine the ecological condition of wetlands while documenting the leading contaminants and stressors found in these systems. This information will help make informed decisions affecting the future of Iowa's wetlands.

A11. Ag Drainage Wells

Number of FTEs: 0.25

Budget: ~$20,000

http://extension.agron.iastate.edu/waterquality/projects/adw.html

A11 – Agricultural Drainage Wells

The Agricultural Drainage Wells program minimizes the contamination potential of agricultural drainage wells (ADW). The ADW continued use permit program tries to bring existing ADWs into compliance with DNR's rules and minimize aquifer contamination. The rules arise from the 1987 Iowa Groundwater Protection Act, and Senate File 473, from the 1997 Iowa General Assembly. ADWs were constructed in Iowa in the early 1900s to provide outlets for surface runoff and tile drainage water from cropland areas. Because ADWs discharge water directly to groundwater aquifers, they are potential sources for movement of contaminants to aquifers. This program is not to be confused with DSC's Agricultural Drainage Wells Closure Program, discussed under section D8 and D8a.

A12. Septic Systems

Number of FTEs: 2

Budget: ~$130,000

http://www.iowadnr.gov/InsideDNR/RegulatoryWater/PrivateSepticSystems.aspx

A12 – Private Sewage Disposal Program (Septic Systems)

The Private Sewage Disposal Program ensures that septic systems are properly installed, operated and maintained. There are approximately 300,000 homes and businesses in Iowa with septic systems. This program partners with county environmental health offices to ensure these homes and businesses have adequate wastewater treatment to protect Iowa's water quality. This program is also responsible for the administration of a low-interest loan program for the replacement of failed existing septic systems in unincorporated areas, as discussed in Section A3a above. Iowa's time of transfer septic system inspection law (SF261) was passed by the Iowa legislature in April of 2008 and took effect July 1, 2009. The new law requires that every home or building with a septic system must inspect the system prior to the sale or deed transfer for the home or building. The purpose of the law is to eliminate sub-standard or polluting septic systems.

A13 – Solid Waste Environmental Management Systems Program

The Solid Waste Environmental Management Systems (EMS) program is a pilot program born out of 2008 legislation allowing six solid waste agencies to try a new method of environmental management beyond the current Comprehensive Management method, which concentrates only on waste reduction. Recycling Education, Greenhouse Gas, Water Quality,

Recycling, Household Hazardous Waste and Yard Waste are the six main plan components. The program is funded out of solid waste tonnage fees and constitutes 30 percent of Solid Waste Alternative Program (SWAP) funding.

A13. Environmental Management Systems

Number of FTEs: 1

Budget: ~$575,000 program

http://www.iowadnr.gov/InsideDNR/RegulatoryLand/SolidWaste/ComprehensivePlanning/SolidWasteEMS.aspx

A13a – Environmental Management Systems Grant Programs

The Environmental Management Systems Grant is a two tiered program aimed at supporting other environmental improvement efforts besides waste reduction. Tier I, also called EMS Quick Start Grants, have a cap of six grantees per year. Quick Start grants can be used as seed money to provide immediate budgetary resources to initiate EMS development at waste agencies. The Tier II grant has a ceiling of $50,000 per grantee and funds larger scale projects that would achieve environmental improvements such as installation of stormwater best management practices.

A13a. EMS Grant

Tier I - Award: up to $120,000

Range: up to $20,000

Tier II – Award: Up to $500,000

Range: up to $50,000

A14 – Animal Feeding Operations Program

The Animal Feeding Operations (AFO) Program assists livestock producers with meeting the state's regulations for animal feeding operations. This includes assistance with the development of Manure Management Plans, compliance reviews of those plans, assistance with construction requirements for new and expanding operations, responding to citizen complaints about compliance issues and working with producers to correct issues and pay penalties, if appropriate.

A14. AFO

Number of FTEs: 17.75

Budget: ~$2.4M

http://www.iowadnr.gov/Environment/LandStewardship/AnimalFeedingOperations.aspx

A15 – State Forestry Program

The State Forestry Program is responsible for managing the State Forests to ensure sustained forests for future generations. State Forests are managed for multiple benefits including demonstrating good woodland management, providing forest products, wildlife habitat and a variety of outdoor recreational opportunities. One of the underappreciated benefits is the role properly functioning forests can play in good water quality. Many of the better performing water resources in the state will have a well functioning forest system nearby. The State Forestry Program can act as a model for how to maintain or incorporate publicly owned forestry to improve water quality.

A15. State Forestry

Number of FTEs: 18

Budget: ~$1.3M

http://www.iowadnr.gov/idnr/Environment/Forestry.aspx

A16 – Private Lands Forestry Program

The Private Lands Forestry Program provides forestry assistance to the citizens of Iowa in the form of on-site consultation, referrals, land management options, forest stewardship planning, cost share programs, tree planting/reforestation, insect/disease/ other pest ID, invasive pest and plant control advice, timber sale assistance, habitat improvement, recreation development, protect endangered species, soil/watershed protection, buffer plantings, and prairie assistance. New and

A16. Private Lands Forestry

Number of FTEs: 15

Budget: ~$1.4M

http://www.iowadnr.gov/Environment/Forestry/ForestryLandownerAssistance.aspx

improved forestry on private lands represents an excellent opportunity to engage landowners to improve water quality.

A16a. Forest Legacy

Award: National award

Range: $5,000 - $10M

http://www.iowadnr.gov/Environment/Forestry/ForestryLandownerAssistance/ForestLegacy.aspx

A16a – Forest Legacy Program

The Forest Legacy program is a national funding mechanism available to any landowners with forested land. This program works with landowners to purchase conservation easements or fee acquisitions to ensure preservation and proper management of the private forest. Because this is a federal grant program, projects compete nationally and Iowa is not assured funding. However, Iowans have taken advantage of this program; since 2005 the state has been successful in earning eight Forest Legacy easements and two fee acquisitions.

A17. Forest Support

Number of FTEs: 6

Budget: ~$1.25M

http://www.iowadnr.gov/Environment/Forestry/StateForestNursery.aspx

A17 – Forestry Support Programs - Forest Health Program & State Nursery

The Forestry Bureau has two programs that support foresters and Iowans in maintaining and building healthy forest communities. The first program is the State Forest Nursery. The Nursery provides high quality seedlings at cost to aid in reforestation, wildlife habitat, air quality, soil protection, and water quality. The second supporting effort is the Forest Health program, which aims to control invasive plants that cause severe erosion and prevent natural regeneration of forests. Additionally, the program works to control and monitor exotic pests (disease and insect) to keep forests and tree species alive and healthy.

A18. Urban Forestry

Number of FTEs: 4

Budget: ~$655,000

http://www.iowadnr.gov/Environment/Forestry/UrbanForestry.aspx

A18 – Urban Forestry Program

The Urban Forestry Program provides technical assistance, education, training, volunteer coordination and recognition to communities across the state. The program is currently focused on providing inventory and management assistance to communities to prepare them for the spread of emerald ash borer. The Urban program also has two special programs with identical goals and a grant program. Operation ReLeaf, funded by Alliant Energy, and Plant Some Shade, funded by MidAmerican Energy, are the same program with different names as both focus on residential tree distribution. The goal is to provide affordable and desirable landscape trees for residents to purchase and plant on their property for long-term community reforestation and energy conservation. The grant program is called Trees for Kids / Trees for Teens as described below.

A18a.Trees for Kids/Teens

Award: $170,000

Range: $1,000 - $5,000

http://www.iowadnr.gov/Education/ForTeachers/EducationTrainingPrograms/TreesforKidsTeens.aspx

A18a –Trees for Kids / Teens Grant Program

Trees for Kids and Trees for Teens are educational programs that incorporate hands-on experiences with youth by planting trees. A focus is placed on Iowa's elementary and secondary school students to communicate the value of trees and to encourage tree planting projects at schools or other public areas in the state. The program develops educational curriculums, learning centers, and bulletin boards and distributes them to public and private K – 12 schools in the state. Schools are targeted recipients of the grant program, but other public entities that can educate school-age youth can apply.

A19 – Fisheries Staff Watershed Work

The DNR Fisheries Bureau management personnel dedicate, on average, 25 percent of their time to watershed work to

reduce nonpoint source pollution in order to improve fish habitat and water quality. As part of this effort, fisheries personnel provide technical assistance and help coordinate public participation in watershed work. This work supports the Lake Restoration Program (see A3 for reference) in their efforts working with local watershed communities. The fisheries program emphasizes targeting sensitive lands in the watershed to gain the biggest benefit for using limited resources.

A19. Watershed Work

Number of FTEs: 8

Budget: ~$1M

http://www.iowadnr.gov/Fishing/AboutFishinginIowa/HabitatLakeProjects.aspx

A19a – Fish Habitat

The Fish Habitat Program is available to County Conservation Boards for land acquisition and development of fish habitat. Up to 90 percent of costs are eligible for reimbursement under this program. Land must be under the direct control of the county to be eligible for assistance. Available funds are divided equally between the six county districts.

A19a. Fish Habitat

Award: $70,000

Range: $N/A

http://www.iowadnr.gov/InsideDNR/GrantsOtherFunding/FishHabitatProgram.aspx

A20 – Coldwater Stream Habitat Restoration (Trout Streams)

The Coldwater Stream Habitat Restoration Program is focused on protecting high quality coldwater streams and their watersheds. These streams support trout, one of the most sought after game fish the state has to offer. The program focuses on protecting the stream riparian corridors, reducing pollution from the watershed with installation of best management practices, and stabilizing stream banks and installing in-stream habitat structures.

A20. Trout Streams

Number of FTEs: 4

Budget: ~$300,000

http://www.darestoration.com/

A21 – Aquatic Nuisance / Invasive Species Program

The Aquatic Nuisance / Invasive Species Program focuses on the prevention and elimination of aquatic invaders that do not naturally occur in Iowa lakes and river. Species of interest in Iowa include the Bighead carp, silver carp, Eurasian watermilfoil, and zebra mussels. These exotic species have the potential to cause great ecological and economic harm by taking over native plants and animals, damaging water resources, and interfering with recreational activities.

A21. Aquatic Invasives

Number of FTEs: 2 + seasonal

Budget: ~$700,000

http://www.iowadnr.gov/Fishing/AboutFishinginIowa/FightingInvasiveSpecies.aspx

A22 – Public Lands Wildlife Program

The Public Lands Wildlife Program is responsible for managing the 355,000 acres of State Wildlife Management Areas. These areas are managed for wildlife by restoring and enhancing native ecosystems and developing wildlife habitat. These public areas are comprised of grassland, forestland, and wetlands habitats, which are designed to provide significant water quality benefits.

A22. Public Lands Wildlife

Number of FTEs: 94.5

Budget: ~$5.8M

http://www.iowadnr.gov/Hunting/PlacestoHuntShoot/WildlifeManagementAreas.aspx

A23 – Private Lands Wildlife Program

The Private Lands Wildlife Program focuses on working with landowners to gain interest in conservation programs across the state. The DNR program coordinates the efforts of the Private Lands personnel with NRCS, Farm Service Agency, and SWCD staff. Other organizations provide assistance and work cooperatively with this group to achieve the

A23. Private Lands Wildlife

Number of FTEs: 11

Budget: ~$1.1M

http://www.iowadnr.gov/Environment/WildlifeStewardship/NonGameWildlife.aspx

goals of the program, including Pheasants Forever and The Nature Conservancy. Private Lands Wildlife personnel advise landowners of potential conservation practices for their landscape including wetlands, shelterbelts, and native grass and tree plantings. Proper species selection and placement can have a great influence on water quality by infiltrating more water on the land and treating the water before it enters the stream.

A23a – Wildlife Grants Program

A23a.Wildlife Grants

Award: $207,000

Range: $N/A

http://www.iowadnr.gov/InsideDNR/GrantsOtherFunding/WildlifeHabitatGrant.aspx

The Wildlife Grants Program works to protect and rebuild wildlife habitat, which has a significant impact in the protection of endangered species. A properly functioning ecosystem will utilize plant and tree species that will keep more water on the land with deeper roots, treating rainfall where it falls and infiltrating the water not used by plants and trees. Funds have helped protect public land to aid species conservation while providing additional recreational opportunities for Iowa's citizens. It has funded vital research that has helped public and private land managers make better decisions for wildlife. This grant is available for private landowners in northeast Iowa within two miles of a Wildlife Management Area with a Forest Wildlife Management Plan.

A23b – Prairie Partners

A23b.Prairie Partners

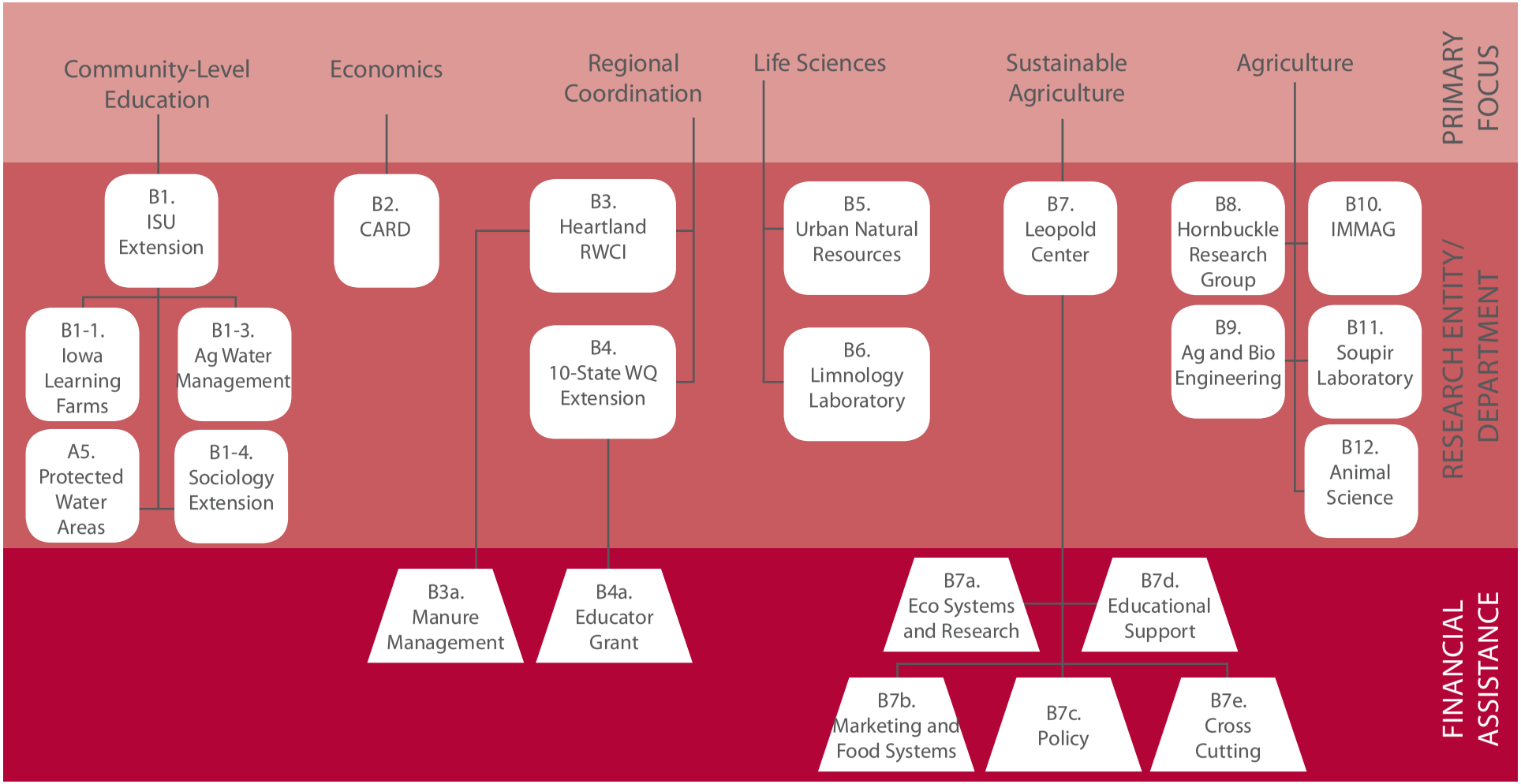
Award: $40,000

Range: $N/A

http://www.iowadnr.gov/InsideDNR/GrantsOtherFunding/WildlifeHabitatGrant.aspx

In partnership with the Iowa Native Seed Growers Association and the Iowa Chapter of Pheasants Forever, the Prairie Partners Program provides 50% cost-share for the cost of native grass and forb plant materials (seeds or plugs) to reestablish native grasslands. Native grasses have deep roots and have great absorption capacity, which helps retain and infiltrate stormwater to help reduce flooding and improves water quality.

B. IOWA STATE UNIVERSITY



B - IOWA STATE UNIVERSITY

ISU at a glance

Number of FTEs: ~45

Annual Funding: ~$6M

http://www.iastate.edu/

Iowa State University (ISU) was the first Land Grant educational institution in the country. As befits a school with this designation and being located in an agricultural dominated state, ISU has established itself as a leading research institute in agriculture and agricultural related fields including nonpoint source pollution reduction. The flow chart that accompanies this section of the inventory does not follow a traditional college-department-program hierarchy, but rather breaks out groups by their primary focus. Many of the entities described below are research based or research oriented and grouped into their respective focus. The two regional coordination activities have small grant programs associated with them while the Leopold Center has a larger grant program. There are many connections within ISU itself in terms of sharing staff, resources, and research results, which is probably most prevalent in the ISU Extension program, which brings a wide variety of research to the people of Iowa. ISU receives funding from and/or works in conjunction with all of the other core partners by serving in a research, investigation and educator role and delivers valuable information from which all partner groups and stakeholders benefit.

B1. ISU Extension

Number of FTEs: 17

Budget: ~$1.7M

http://www.extension.iastate.edu/

B1. ISU Extension to Agriculture and Natural Resources

ISU's Extension program is a collection of education and services provided by the University and delivered to Iowans across the state with a presence in all 99 counties. Extension programs reach across many organizational entities to bring important information from the University to the people of Iowa. This means engaging Iowans in the classroom and partnering with government agencies, nonprofit groups to spread important information with the people who will benefit the most. The Extension's core mission is to "…build partnerships and provide research-based learning opportunities to improve the quality of life in Iowa."

Extension is divided up into six main program areas, including the Extension to Agriculture and Natural Resources. This branch of Extension aims to "…provide unbiased, research-based knowledge and educational programs to agricultural professionals to grow the economic base of Iowa agriculture." The following four programs are aspects of ISU's Extension to Agriculture and Natural Resources that focus on nonpoint source pollution reduction.

B1-1. Iowa Learning Farms

Number of FTEs: 7

Budget: $692,000

www.extension.iastate.edu/ilf/

B1-1. Iowa Learning Farms

The Iowa Learning Farms is building a "Culture of Conservation" by calling attention to the importance of improved water and soil quality through conservation farming practices. The program brings together partners from across the state including; farmers who use conservation farming methods such as reduced tillage, terraces, grassed waterways and cover crops; educator partners teaching the lessons associated with conservation practices to the next generation of Iowa landowners; and funding partners.

Iowa Learning Farms boasts an array of informative programs and initiatives to help spread the "Culture of Conservation" across the state. The following list summarizes these initiatives:

- Iowa Learning Farms Conservation Station (a 22-foot mobile education / outreach trailer)
- Iowa Learning Farms portable rainfall simulator trailer (a 14-foot mobile education / outreach trailer)
- Iowa Learning Farms videos:
  - "Culture of Conservation" video series

- "Troubled Waters" video
- "How-to" video series covering
  - No –tillage planter conversion
  - Cover crops
  - Manure management and low-disturbance injector manure application
  - Grassed waterways
- Iowa Learning Farms / Practical Farmers of Iowa cover crop working group
- Iowa Learning Farms Strip-Tillage Initiative
- Iowa Learning Farms small-group listening sessions with farmers and urban residents
- Iowa Learning Farms "Community Assessments: Successful Community-Based Watershed Improvement" project

B1-2. Phosphorus Management Research and Extension Program

B1-2. Phosphorus Management

Number of FTEs: 2

Budget: $75,000

Another branch of the ISU Extension program is focused on phosphorus management. The purposes of this program is to better understand the impacts of phosphorus and crop management practices on phosphorus delivery to water resources in order to improve phosphorus risk assessment tools and overall water quality in Iowa. This work is supported by the Iowa Department of Agriculture and Land Stewardship and the Iowa Egg Council.

B1-3. Agricultural Water Management Research and Extension Group

B1-3. Ag Water Management

Number of FTEs: 5

Budget: $495,000

www.abe.iastate.edu/agdrainageresearch

The Agricultural Water Management Research and Extension Group at Iowa State University is a multi-tiered effort to study and analyze the impact of agricultural management practices on surface and subsurface drainage, from both a water quality and quantity perspective. The goal of this research is to study the fate and transport of water and contaminants on the agricultural landscape and to develop and promote practices that minimize water quality impacts of agricultural production. To accomplish these goals, the group uses field and lab research facilities, establishes a university extension presence, and develops and delivers publications and presentations.

The major research and initiatives of the Ag Water Management Group are as follows:

- Impacts of nitrogen and drainage management on water quality and quantity
- Impacts of strategic prairie placement on water quality and quantity
- Impacts of biomass production practices on water quality
- Education of Iowans on the impacts of management practices on water quality and quantity

B1-4. ISU Extension – Sociology

B1-4. Sociology Extension

Number of FTEs: 3

Budget: ~$395,000

www.soc.iastate.edu/extension/watershed/performance.html

The Sociology branch of ISU Extension focuses on performance-based watershed management projects that are designed to help improve watersheds in the state. The project focuses on establishing

watershed groups in impaired sub-watersheds throughout Iowa. Local farmers, rural residents, and business owners residing in the watershed participate in the watershed groups and collectively set goals at the watershed level that are environmentally sound and economically practical. The projects are implemented through partnerships of farmers, extension specialists, and state and local governments.

The goals and outcomes of these endeavors are as follows: to build local watershed management capacity by developing leadership among landowners and operators within selected impaired watersheds; strengthen partnerships among agency technical providers, educators and farmers through performance-based farmer-led working groups in the watersheds; and broaden the range of measures available for local watershed communities to use in evaluating their own agricultural management efforts for environmental improvement.

The following is a list of projects this group is currently involved with:

- An educational program to increase citizens' responsibility for management of agricultural watersheds
- Pilot-testing performance-based incentives for agricultural pollution control
- Developing local leadership and extension capacity for performance-driven agricultural environmental management
- Urban fishing program in Des Moines
- Cedar River Coalition
- Improving secondary agriculture and science student' understanding of watershed and water quality issues
- Lime Creek market-based nonpoint source management project
- Lower Coldwater-Palmer watershed performance-based management project
- Watershed improvement projects for Hewitt Creek, North Fork Maquoketa, Middle West Fork of Crooked Creek, Compentine Creek, Dry Creek, Bremer County, Dry Run Creek

It would be difficult to go into detail about each of these projects in this venue. Some additional websites that may be helpful to learn more are as follows:

- http://www.soc.iastate.edu/extension/watershed/performance.html
- http://www.soc.iastate.edu/extension/watershed.html
- Individual project websites: http://www.soc.iastate.edu/extension/watershed/watersheds.html
- http://iowacedarbasin.org/cedar/

B2. CARD

Number of FTEs: none directly to NPS

Budget: $0 to NPS directly

http://www.card.iastate.edu/environment/

B2. Center for Agricultural and Rural Development - CARD

The Center for Agricultural and Rural Development (CARD) is a research organization focusing on agricultural and environmental policy. While CARD is not directly involved in any programs to reduce nonpoint source pollution, they use watershed modeling to study landscape options and evaluate the economic efficiency of alternatives. CARD has been involved in a number of watershed studies that help support watershed groups and their work to reduce nonpoint source pollution. CARD can be a valuable resource in working with other groups in developing science-based, watershed management plans.

B3. Heartland Regional Water Coordination Initiative

The Heartland Regional Water Coordination Initiative aims to build institutional partnerships and increase the capacity of

citizens, educators, agencies, and community leaders to better address water quality concerns. This is accomplished through watershed modeling and education. This group also takes a specific look at nutrient management issues and human dimensions issues.

B3. Heartland RWCI

Number of FTEs: 0.50

Budget: $200,000

http://www.heartlandwq.iastate.edu/regionhome

The Heartland Initiative is also in charge of the Animal Manure Management Issue, which assists state regulatory agencies and federal partners within the four state region of Iowa, Kansas, Nebraska and Missouri with integration of new federal CAFO regulations and CNMP/NMP implementation through understanding by public and private sector livestock, dairy, and poultry advisors. To accomplish this task, the Heartland Initiative holds annual animal manure management workshops, hosts annual "topic" round-tables and interagency quarterly meetings, and issues regular newsletter and website updates.

B3a. Heartland Animal Manure Management

B3a. Manure Management

Award: $27,500

Range: N/A

http://www.heartlandwq.iastate.edu/manuremanagement

The purpose of the Heartland Animal Manure Management grant program is to assist state regulatory agencies and federal partners within EPA Region 7 with integration of new federal concentrated animal feeding operation (CAFO) regulations and comprehensive nutrient management plan (CNMP) guidelines into state rules. This is accomplished by expanding the understanding of public and private sector livestock industry advisors concerning federal and state CAFO regulations and the tools to implement those regulations. This grant program is available to non-governmental organizations in a competitive bid process. The grants are delivered over two years.

B4. Ten Upper Midwest States Extension Staff Teaming Up for Water Quality for Small- and Medium-sized Livestock Farms

B4. 10-State WQ Extension

Number of FTEs: 0.67

Budget: $70,000

http://www.heartlandwq.iastate.edu/regionhome

The 10-State Water Quality Team was created to form multidisciplinary discussion topic teams of Extension faculty and educators to address sustainable nutrient management and in field conservation practices, and farmstead storm water, polluted runoff and wash water management and treatment systems. The goals of the Team are to:

- Increase the Extension professional scholarly knowledge of manure management by building long term partnerships, connecting them through educational events, professional development opportunities, list serves, Internet video conferencing, and discussion formats.
- Share and expand successful Extension outreach programs across the 10 states as well as other states where the knowledge is applicable.
- Protect surface waters by bringing the current knowledge on manure management to small- and medium-sized livestock producers through Extension education, providing a systems approach to incorporating appropriate components into individual operations.

B4a. Educator Grant

B4a. Educator Grant

Award: $30,000

Range: N/A

http://animalagteam.msu.edu/

In order to execute the goals of the 10-State Water Quality Team, an Educator Grant was developed to help assist non-governmental

organizations spread the message of sustainable nutrient management and field conservation practices, farmland stormwater, polluted runoff and wash water management and treatment systems. The grant program is offered every three years and available only to non-governmental organizations.

B5. Urban Natural Resources

Number of FTEs: 1.5

Budget: ~$50,000

http://www.nrem.iastate.edu/

B5. Urban Natural Resources Research Group

The Urban Natural Resources Research Group is housed in the Natural Resource Ecology and Management Department. The group is interested in exploring the linkages between terrestrial and aquatic ecology of urban and near-urban headwater streams, and quantifying relationships between land cover, land use, stream hydrology, and a variety of physical, chemical, and biological attributes of urban-influence streams. The Urban Natural Resources Research Group has been involved in the following projects:

- Integrating citizen participation in stormwater best management practices
- Exploring the functional ecology of forests with respect to water quality outcomes
- Examining the combined impacts of urbanization and climate change on stream dynamics

B6. Limnology Lab

Number of FTEs: 4

Budget: $550,000

http://limnology.eeob.iastate.edu/default.aspx

B6. Limnology Laboratory

The Limnology Laboratory researches aquatic ecology and limnology focusing on eutrophic to hypereutrophic lakes and streams of the Midwest. The lab also engages in watershed analyses to understand the links between land use and water quality. The ISU Limnology Laboratory has served as the home of the Iowa state lake water quality monitoring program for nearly a decade and collects annual data on the water quality of 130+ lakes across the state to gain an understanding of the consequences of nutrient enrichment.

B7. Leopold Center

Number of FTEs: 9

Budget: $1.7M

http://www.leopold.iastate.edu/

B7. Leopold Center for Sustainable Agriculture

The Leopold Center for Sustainable Agriculture is a research and education center with statewide programs to develop sustainable agricultural practices that are both profitable and conserve natural resources. It was established under the Groundwater Protection Act of 1987 with a three-fold mission: to conduct research into the negative impacts of agricultural practices; to assist in developing alternative practices; and to work with ISU Extension to inform the public of Leopold Center findings. In addition to the five programs and associated competitive grants offered, the Leopold Center recently led the effort for Iowa's Local Food and Farm Plan, engage in an effort to reach more women landowners, and work in conjunction with many other branches of the University through shared research or funding.

Through competitive grants programming, the Leopold Center makes funds available to researchers and educators at all Iowa colleges and universities, and to investigators at private, nonprofit agencies and foundations in the state to conduct education, research and demonstration that support the Leopold Center mandated mission. These awards often act as seed money to initiate work for which other large sources of funding then become available.

All of these programs are funded by the Groundwater Protection Act from the Agricultural Management Account. The Center receives approximately $1.3 million per year generated from fees charged on sales of nitrogen fertilizer and pesticide registrations. The State of Iowa also receives a direct appropriation of about $440,000 per year.

Eligible entities for the grant awards include investigators representing any Iowa nonprofit organization, agency and/or educational institutions, which include soil and water conservation districts, schools and colleges, and regional development groups. The Leopold Center also strongly encourages the involvement and collaboration of farmers, landowners and farm-based businesses in the application process. All of the competitive grants are annual grants with the exception of the Educational Support Program, which is a rolling entry. Awards are given to the five program areas discussed below.

B7a. Ecology Systems and Research Initiative

B7a. Eco Systems & Research

Award: ~$600,000

Range: $2,500 - $47,000

http://www.leopold.iastate.edu/research/ecology.htm

The Ecology Systems and Research Initiative's Vision is for "a 'new generation' food and agricultural system that meets the challenges of the 21st century with more productive and profitable farms, ecologically resilient landscapes and healthy rural communities." The grant program supports a wide range of research, demonstration and outreach anchored in the development and adoption of "ecologically friendly" production systems. These ecologically friendly productions systems strive to be more resilient and less costly to farmers, communities and the environment; put living roots in the soil; integrate people and animals into the landscape; enhance biodiversity; and use natural processes as models for design, practice and management

The work supported by this initiative generally falls in one of two categories: doing it better or doing it differently. Ideally, projects merge these two categories to do agriculture differently and better. This encourages new and creative ways for agriculture to improve toward realizing the sustainable landscape vision and can be the ideas of a "new generation" of agriculture in Iowa.

B7b. Marketing and Food Systems Initiative

B7b. Marketing & Food

Award: ~$470,000

Range: $1,000 - $40,000

http://www.leopold.iastate.edu/research/marketing.htm

The Marketing and Food Systems Initiative aims to research and test new marketing strategies and business structures that allow Iowa's farmers and communities to retain more of the value for energy, food or fiber produced. This initiative also supports education, conducts research and facilitates partnerships to increase investment and support of local and regional food, fiber and energy enterprises. This is accomplished by using a "communities of practice framework" to conduct research and education to address the challenges that impede farmers and farmer networks from being equal partners in energy, food or fiber-based value chains.

This initiative supports the Value Chain Partnerships, which are food and agricultural working groups that bring together producers, businesses and state and federal organizations. These partnerships include working groups for the Pork Niche Market, Grass-Based Livestock, and Fruit and Vegetable producers and consumers as well as a working group for Farm Energy. The initiative also works for better access to healthy food for Iowans through the Food Access & Health Working Group and invests in building local food connections for local communities through the Regional Food Networks Working Group.

B7c. Policy Initiative

B7c. Policy Initiative

Award: ~$44,000

Range: $5,000 - $45,000

http://www.leopold.iastate.edu/research/policy.htm

The Leopold Center identified public policy as a major component of developing and implementing sustainable agriculture practices and ecologically sustainable systems in Iowa. This initiative promotes research that will help policy makers formulate sound decisions. The program supports research that will identify potential policies

and/or barriers to successful policy and to evaluate policy proposals and alternatives. While the Leopold Center does not take positions on specific legislation, it does realize the importance of informing policy makers with more information about the issue and provide alternatives by stimulating creative thinking about potential policies and their potential consequences.

The Leopold Center is interested in policy research in the following areas:

- Diversifying the landscape
- Alternative government programs
- Use of Conservation Reserve Program
- Alternative definition of a farm
- Farmer producer groups
- Impact of Regulations
- Potential programs to aid small, beginning and/or retiring farmers
- Impact and implementation of watershed level management

B7d. Educational Support

Award: ~$12,000

Range: $in-kind - $1,000

http://www.leopold.iastate.edu/news/support.html

B7d. Educational Support Program

The Educational Support Program is the smallest funded component of the competitive grants that the Leopold Center awards. Much of the help offered through this program, however, comes in the form of in-kind support from Leopold Center staff.

B7e. Cross Cutting

Award: ~$34,000

Range: $5,000 - $50,000

http://www.leopold.iastate.edu/compgrants/XO2011.html

B7e. Cross Cutting Initiative

The "Cross Cutting" Initiative was developed out of the realization that many project proposals incorporated elements from two or more of the above initiatives. Recognizing the need and goals of federal and state programs to be holistic and take a systems approach, the Cross Cutting Initiative invests in projects that include multi-faceted research, recognizing the importance of creating and understanding the connections inherent in the research.

B8. Hornbuckle Research Group

Number of FTEs: 3.5

Budget: $200,000

B8. Brian Hornbuckle Research Group

The goal of the Brian Hornbuckle Research Group, located in the Agronomy Department at ISU, is to use satellite remote sensing to monitor the terrestrial water cycle. The hope is that future satellite measurements of soil moisture will be used in conjunction with land surface models to predict the flow of water from the farm field to a local water body. The results of this research will produce a higher level of scientific understanding of the terrestrial water cycle and train new scientists to better predict flow from fields.

B9. Ag & Bio Engineering

Number of FTEs: 1

Budget: $N/A

http://www.eng.iastate.edu

B9. Department of Agricultural & Biosystems Engineering

The Department of Agricultural and Biosystems Engineering, led by Tom Glanville, plans and implements educational courses, research projects, and extension programs dealing with applications of engineering in support of environmentally-, economically-, and socially-sustainable agricultural production of food, fiber, and fuel.

The Department of Ag and Biosystems Engineering performs research on environmentally sound and bio-secure systems for emergency and routine disposal of livestock and poultry mortalities. They also are involved with outreach programs on routine and emergency poultry and livestock disposal options as well as composting.

B10. Iowa Manure Management Action Group (IMMAG) & Manure Applicator Certification

The Iowa Manure Management Action Group (IMMAG) provides a vehicle for a coordinated and comprehensive approach to improve manure management in Iowa. IMMAG provides an educational component for the state mandated Manure Applicator Certification program. Producers are required to attend an annual training to meet the certification requirements for manure application. This training includes a regulatory update on land application practices, information on the impact of manure upon water quality, manure spill response and mitigation and emergency action planning.

B10. IMMAG

Number of FTEs: ~2

Budget: ~$210,000

http://www.agronext.iastate.edu/immag/

B11. Soupir Lab

Number of FTEs: 5

Budget: ~$1M (varies)

http://www.public.iastate.edu/~msoupir/

B11. Michelle Soupir Laboratory

The Soupir Laboratory focuses on soil and water quality, nonpoint source pollution control, watershed management, and water quality monitoring. The day to day work includes laboratory, pilot and field scales to study the occurrence, fate and transport of pathogens, pathogen indicators, nutrients and contaminants of emerging environmental concern (CoEECs) such as antibiotics and antibiotic-resistant organisms to surface and groundwater systems. Results from research performed by the Soupir Lab has the potential to improve the Total Maximum Daily Load (TMDL) development and implementation process, improve the assessment of the impact of land use practices on water quality, and better design of management practices to reduce pollutant transport.

The following are programs the Soupir Lab is involved with:

- Occurrence and Movement of Antibiotic Resistant Bacteria and Resistance Genes in Tile-Drained Agricultural Fields Receiving Swine Manure Application.
- Improving a watershed scale model to integrate wetlands into watershed planning.
- Resuspension of E. coli in Sediment Laden Streams.
- Hickory Grove Water Quality Improvement Plan.
- Improving SWAT for developing TMDLs for bacteria.
- The Potential Role of Poultry Manure Fertilizer in Pathogen and Pharmaceutical Contamination of Soil and Water

B12. Department of Animal Science – Jim Russell Laboratory

The long-term goal of this research and education program is to demonstrate reduced sediment, phosphorus and pathogen loading into surface water resources as a result of implementation of cost-effective grazing management and/or pasture improvement practices that alter the timing, frequency, duration and/or intensity of cattle grazing near pasture streams.

The following are projects that the Russell Lab is involved with:

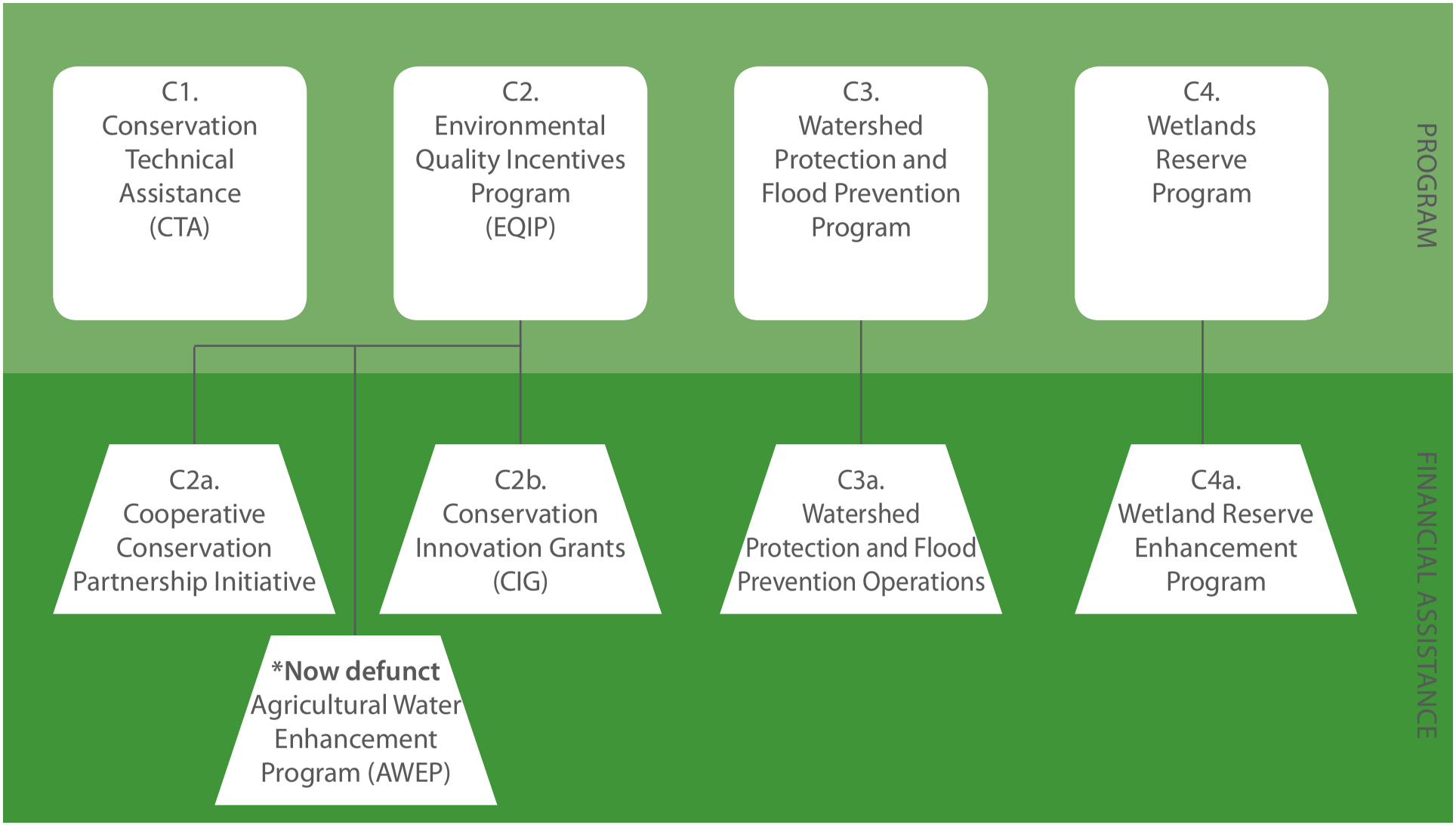
- Pasture Management Effects on Non-point Source Pollution of Midwestern Watersheds
- Grazing Management Effects on Pathogen Loading of Midwestern Pasture Streams
- Site Specific Implementation of Practices that Alter the Spatial/temporal Distribution of Grazing Cattle to Improve Water Quality of Pasture Streams in the Rathbun Lake Watershed

B12. Animal Science

Number of FTEs: 0.5

Budget: ~$249,000

C. NATURAL RESOURCES CONSERVATION SERVICE



C – NATURAL RESOURCE CONSERVATION SERVICE

The Natural Resource Conservation Service (NRCS) is a federal entity under the United States Department of Agriculture (USDA). The NRCS provides science-based conservation assistance for the management of natural resources for present and future generations. The NRCS strives to be recognized as America's premier private lands conservation agency whose actions result in productive working lands and a healthy environment. Four main strategy goals drive the NRCS; high quality, productive soils; clean and abundant water; clean air; and healthy plant and animal communities.

NRCS at a glance

Number of FTEs: ~280

Annual Funding: ~$45.4M

www.nrcs.usda.gov/programs

www.nrcs.usda.gov/technical

While an organization as large and diverse as the NRCS does more than focus on nonpoint source pollution issues, the four relevant program areas and their associated funding mechanisms are discussed herein.

C1. CTA

Number of FTEs: ~255

Budget: ~$21.3M

www.nrcs.usda.gov/programs/cta

C1. Conservation Technical Assistance

The Conservation Technical Assistance (CTA) is the aid NRCS and its partners provide to land users to address opportunities, concerns, and problems related to the use of natural resources and to help land users make sound natural resource management decisions on private, tribal, and other non-federal lands. This assistance can help land users do all of the following:

- Maintain and improve private lands and their management
- Implement better land management technologies
- Protect and improve water quality and quantity
- Maintain and improve wildlife and fish habitat
- Enhance recreational opportunities on their land
- Maintain and improve the aesthetic character of private land
- Explore opportunities to diversity agricultural operations and
- Develop and apply sustainable agricultural systems

This assistance may be in the form of resource assessment, practice design, resource monitoring, or follow-up of installed practices. Although the CTA program does not include financial or cost share assistance, clients may develop conservation plans, which may serve as a springboard for those interested in participating in USDA financial assistance programs. CTA planning can also serve as a door to financial assistance and easement conservation programs provided by other Federal, State, and local programs.

C2. Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) has five defined national priorities. The first priority is to reduce nonpoint source pollution, such as nutrients, sediment, pesticides, or excess salinity in impaired watersheds consistent with Total Daily Maximum Loads (TMDLs), where available; the reduction of surface and groundwater contamination; and reduction of contamination from agricultural point sources, such as concentrated animal feeding operations (CAFOs).

C2. EQIP

Number of FTEs: ~76

Budget: ~$21.2M

http://www.nrcs.usda.gov/programs/cta

Other priorities include the conservation of ground and surface water resources; the reduction in soil erosion and sedimentation from unacceptable levels on agricultural land; and the promotion of

at-risk species habitat conservation. The final priority does not have a direct link to water quality as it aim in the reduction of emissions, such as particulate matter, nitrogen oxides (NOX), volatile organic compounds, and ozone precursors and depleters that contribute to air quality impairment violations of National Ambient Air Quality Standards.

In addition to funding cost-sharing contracts with individual farmers and ranchers, EQIP also works through two associated programs, the Cooperative Conservation Partnership Initiative and Conservation Innovation Grants, described below. A third program, Agricultural Water Enhancement Program, is now defunct and is not included.

C2a. CCPI

Award: $22M (national)

Range: N/A

http://www.nrcs.usda.gov/programs/ccpi/

C2a. Cooperative Conservation Partnership Initiative

The Cooperative Conservation Partnership Initiative (CCPI) is a broad financial assistance program that is associated not only with EQIP but also Wildlife Habitat Incentives program and the Conservation Stewardship Program. This is a program whereby partners with approved projects will enter into multi-year agreements with NRCS to help enhance conservation outcomes on agricultural lands and private nonindustrial private forest lands. One purpose of CCPI is to leverage resources of certain Federal government programs along with services and resources of non-Federal partners to implement natural resource conservation practices. Applicants must be organizations (government or non-government) and can respond to a national request for proposals (RFP) issued by the NRCS annually, but must be in a CCPI approved area. This program is nationally competitive and is sometimes targeted to help augment or support other programs. Recently, RFPs have been tied to the Mississippi River Basin Healthy Watersheds Initiative (MRBI). The national award dollars tally $22 million and have no defined minimum or maximum award. Individual producers will be able to apply for grant dollars through awarded organizations.

C2b. Conservation Innovation Grants

Conservation Innovation Grants (CIG) is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals.

C2b. CIG

Award: $25M (national)

Range: up to $1M

http://www.nrcs.usda.gov/technical/cig/

CIG enables NRCS to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches to address some of the Nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with Federal, State, and local regulations. NRCS administers CIG.

C3. Watershed Protection & Flood Prevention Program

Under the Watershed Program NRCS cooperates with States and local agencies to carry out works of improvement for soil conservation and for other purposes including flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land. This program awards funds under the Watershed Protection and Flood Prevention Operations budget described below.

C3. Watershed Protection & Flood Prevention Program

Number of FTEs: 2.4

Budget: ~$984,000

http://www.nrcs.usda.gov/programs/watershed/index.html

C3a. Watershed Protection & Flood Prevention Operations

The Watershed Protection & Flood Prevention Operations budget

can only be spent on projects with an approved plan that has been authorized for operations by the Chief of the USDA Natural Resources Conservation Service. Funding requests are made through the NRCS State Conservationist by qualified entities, which can be state or local units of government. At least one sponsoring entity for the project must have the power of eminent domain and the authority to levy taxes.

C3a. Watershed Protection & Flood Prevention Operations

Award: $784,000

http://www.nrcs.usda.gov/programs/watershed/protect-and-prevent.html

C4. Wetlands Reserve Program

C4. Wetlands Reserve Program

Number of FTEs: 9.4

Budget: ~$12M

http://www.nrcs.usda.gov/programs/wrp

The Wetlands Reserve Program (WRP) is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. The NRCS provides technical and financial support to help landowners with their wetland restoration efforts. The NRCS goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection. The Wetland Reserve Enhancement Program, discussed below is the funding mechanism for this program.

C4a. Wetland Reserve Enhancement Program

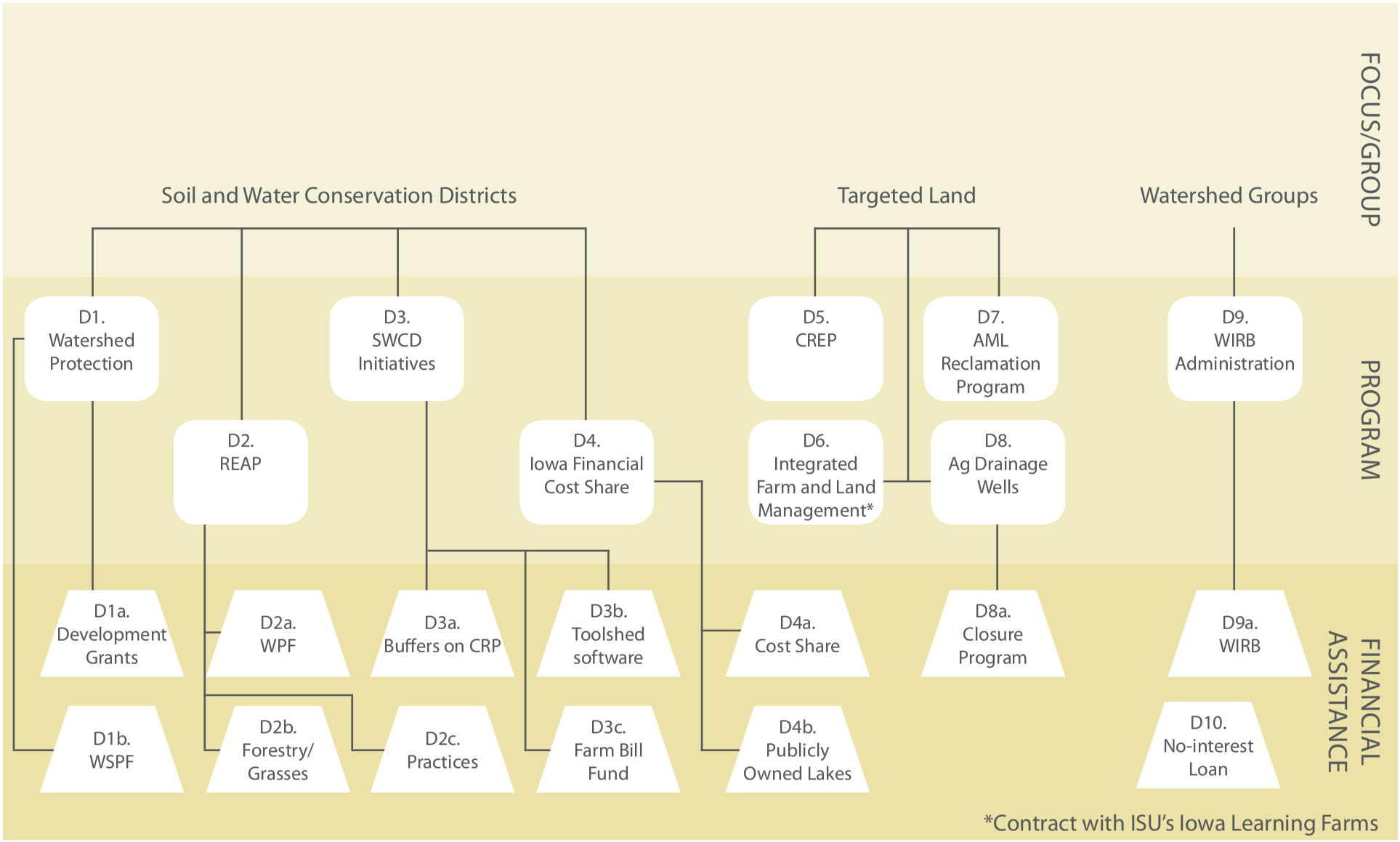
C4a. Wetland Reserve Enhancement Program

Award: $25M

http://www.nrcs.usda.gov/programs/wrp/pdfs/2010-8143.pdf

The Wetland Reserve Enhancement Program (WREP) is a nationally competitive program for state and local governments, Indian tribes, and non-governmental organizations. The purpose of the grant is to restore natural wetlands with the help of NRCS's technical guidance. Applicants must respond to a national request for proposals, which are issued by the NRCS on an annual basis. Recent RFPs have been tied to the Mississippi River Basin Healthy Watershed Initiative (MRBI).

D. IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION



D – IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION

The Division of Soil Conservation (DSC) is housed in the Iowa Department of Agriculture and Land Stewardship (IDALS). DSC is the arm of IDALS responsible for the protection and management of soil, water and mineral resources. DSC assists Soil and Water Conservation Districts (SWCD) and private landowners to achieve their agricultural and environmental objectives.

DSC at a glance

Number of FTEs: ~144

Annual Funding: ~$20.3M

http://www.iowaagriculture.gov/soilconservation.asp

DSC supports a number of Project Coordinators on watershed projects throughout the state, many of which are shared in funding with the DNR Section 319 program. DSC and DNR also share in the responsibility of Basin Coordinators, high level liaisons for all watershed groups in a particular major river basin or basins. These employees are on the front line of watershed work by working with landowners directly to improve water quality by applying the resources available across the partner groups.

DSC administers numerous programs targeted to address nonpoint source issues and improve water quality. These programs are described below.

D1. Watershed Protection

Number of FTEs: ~20

Budget: ~$1.5M

http://www.iowaagriculture.gov/waterresources/watershedprotection.asp

D1. Watershed Protection Program

The Watershed Protection Program provides technical and financial assistance to locally led watershed based projects sponsored by Soil and Water Conservation Districts. Project development is targeted to protect soil, water quality, and other natural resources as well as provide assistance in reducing the threat of flooding in selected watersheds. The watershed protection program houses two funding mechanisms to help local watersheds. Development grants to help groups assess their watersheds and Watershed Protection Fund Program, which supports implement projects.

D1a. Development Grant

Award: $120,000

Range: $9,500 – $22,050

D1a. Watershed Development and Planning Assistance Grant Program

The Watershed Development and Planning Assistance Grant Program, known more simply as the "Development Grant", is a program designed to help local watershed groups understand their watershed better by gathering valuable information such as conducting land use assessments. The awards can range from $9,500 to $22,050 with a total grant award cap of approximately $120,000 annually. Grants are issued through agreements executed between DSC and the local SWCD. Districts are eligible to apply for a grant twice a year through a competitive request for applications process.

DNR's Section 319 Program augments this grant by offering financial assistance for additional water monitoring. The water monitoring supplement can be applied for by completing the water monitoring supplement form when completing the Watershed Development and Planning Grant application.

D1b. WSPF

Award: $1.2M

Range: $1,250 – $100,000

D1b. Watershed Protection Fund Program

The Watershed Protection Fund Program (WSPF) supports watershed improvement and protection projects throughout the state of Iowa. The focus of these watershed-based projects can range from preventing soil erosion to addressing water quality impairments to reducing the impact of flooding. Similar to the Development Grants, only Soil and Water Conservation Districts are eligible to receive funding from this source. The

competitive request for applications is offered once a year and awards can range from $1,250 up to $100,000 for each year of the approved project.

D2. REAP

Number of FTEs: 51

Budget: ~3.0M

http://www.iowaagriculture.gov/fieldservices/waterqualityprotectionprojects.asp

D2. Resource Enhancement and Protection Program

DSC administers the Resource Enhancement and Protection (REAP) program to improve water quality across Iowa by awarding funds to Soil and Water Conservation Districts (SWCDs). Funds allocated to the REAP Program are divided equally between the REAP Water Protection Projects and the REAP Water Protection Practices Programs.

The funding mechanism for the REAP Water Protection Projects Program is the Water Protection Fund (WPF) program, which focuses on protecting and improving Iowa's surface and groundwater by supporting the development of locally led watershed based projects initiated by the SWCDs. In developing a project, the sponsors need to consider the importance of the water resource, the nature and extent of the water quality problem(s), and the overall cost effectiveness of the proposed project.

The REAP Water Protection Practices Program allocation is split between the REAP Practices Program and the REAP Practices Forestry / Native Grasses Program. These programs improve and protect Iowa's water quality by providing SWCDs with funding to support landowner installation of water protection practices that can include woodland establishment and protection, establishment of native grasses and forbs, installation of soil conservation practices, and the implementation of stormwater best management practices.

D2a. WPF Program

Award: ~$1.3M

Range: $500 - $1.3M

D2a. REAP Water Protection Fund Program

As the funding distribution mechanism for the REAP Water Protection Projects program, the Water Protection Fund (WPF) Program provides technical and financial assistance to support the implementation of water quality protection and improvement projects sponsored by local SWCDs. A new request for applications is offered annually with evaluation occurring through a competitive process. Funding awards can range from as little as $500 per year of the project to $138,850 or more per year dependent upon project needs and funding availability.

D2b. Forestry / Native Grasses Program

Award: $327,690

Range: $3,276.90 to each SWCD

D2b. REAP Forestry / Native Grasses Program

The REAP Forestry / Native Grasses Program receives 25 percent of the REAP Water Protection Practices Program allocation. These funds are then divided equally between the 100 SWCDs through an allocation process. This allocation is used to provide cost share assistance to producers for the installation of practices that establish and protect woodlands or establish native grasses and forbs. While these awards appear to be small by comparison to others, they can be used effectively for individual practices or to fund specific practices within larger projects where native grasses and woodlands are included.

D2c. Practices Program

Award: $982,753

Range: $9,827.53 to each SWCD

D2c. REAP Practices Program

The REAP Practices Program is similar to the Forestry / Native Grasses Program in that it evenly distributes funding to all 100 SWCDs across the state. The SWCDs use that money to provide financial cost share assistance to producers for the installation of water protection practices and/or storm water management practices. The list of eligible practices available under this program include but are not limited to field borders, filter strips, contour buffer strips, and constructed or restored wetlands along with storm water management practices such as bio-

retention, infiltration basins, and pervious paving.

D3. SWCD Initiatives

D3. SWCD Initiatives

Number of FTEs: ~7

Budget: $945,310

http://www.iowaagriculture.gov/FieldServices/districtInitiatives.asp

SWCDs have initiatives that mirror the goals of DSC in soil and water quality improvement. Through the use of Environment First funds, DSC is able to help the SWCDs meet their goals and fund employees. One such initiative is to target landowners with land in the Conservation Reserve Program (CRP) to install buffers on their land. Another initiative awards money to SWCDs to utilize a software program to help in watershed work. The last is funding to take advantage of federal Farm Bill dollars to implement projects. These initiatives could change over time depending on the needs of the SWCD.

D3a. Buffers on CRP

D3a. Buffers on CRP

Award: $390,344.65

Range: $140 - $9,450

The Conservation Reserve Program (CRP) is an important program in Iowa that compensates landowners for high priority lands that would have a significant impact in soil erosion and water quality if kept in traditional production agricultural practices. This initiative focuses on landowners already utilizing the CRP program to incorporate buffer strips on their land. A request for these funds can be made through the IP-1 application process and are one-time incentives.

D3b. Toolshed Software

D3b. Toolshed Software

Award: $89,200

Range: $1,000 - $7,020

The Toolshed software is a program developed by Agren that the SWCD use to help facilitate best management practices planning. This is a one-time payment to a SWCD.

D3c. Farm Bill Fund

D3c. Farm Bill Fund

Award: $465,765.62

Range: $505 - $2,156

The final initiative put forth by DSC is to take advantage of federal Farm Bill dollars. The Farm Bill requires that SWCDs match the federal award in order to be eligible for funding. The federal award is granted to the Conservation Districts of Iowa by the NRCS. In order to capture the benefit of those important programs, DSC helps districts fund their matches for District employee salaries. These awards are made as one-time payments to SWCDs.

D4. Iowa Financial Cost share

D4. Cost Share

Number of FTEs: ~57

Budget: $6.95M

http://www.iowaagriculture.gov/FieldServices/financialAssistance.asp

The Iowa Financial Incentives Cost Share Program (IFIP), better known as the "Cost Share" program, is the backbone of DSC's soil and water conservation practices that provide permanent protection of Iowa's soil resources. The program is administered in conjunction with SWCDs. The Publicly Owned Lakes program is a subset of IFIP and is used to install permanent conservation practices above publicly owned lakes.

D4a. Cost Share

D4a. Cost Share

Award: $6.6M

Range: $39,615 - $570,000

The bulk of funds go to the traditional Cost Share program ($6,602,500). Each of the 100 SWCD receive $39,615 to use for conservation practices (60 percent of the total), while the remaining 40 percent of funds are allocated based on SWCD need in relation

to statewide need. Soil and water conservation practices funded by this program include alternative tillage techniques (no-till, strip till, ridge till), contouring and contour strip cropping, filter strips and field borders and critical area planting. The cost share program also funds terraces, windbreaks, grassed waterways, tree plantings, conservation cover, grade stabilization structures and pasture / hay land planting.

D4b. Publicly Owned Lakes

The Publicly Owned Lakes program is a special aspect of the Cost Share Program that funds practices in watersheds above significant publicly owned lakes. SWCD can apply for funding and private landowners then make use of these funds to install conservation practices. The maximum amount of an award is equivalent to 75 percent of the practice cost or annual allocation, whichever is less.

D4b. Publicly Owned Lakes

Award: $347,500

Range: up to $347,000

D5. CREP

Number of FTEs: 2

Budget: $1.5M

http://www.iowaagriculture.gov/waterResources/CREP.asp

D5. Conservation Reserve Enhancement Program (CREP)

The Conservation Reserve Enhancement Program (CREP) is a joint effort between DSC and the USDA Farm Service Agency to strategically target and design wetland restorations to intercept tile drainage water from agricultural lands to improve water quality while also restoring high quality wetland and prairie habitat for wildlife and recreational opportunities. The funding for this program comes from a state appropriation. Advanced computer techniques using geographical information systems help site CREP wetlands to ensure they are properly located and designed to meet program criteria and objectives. Removal of nitrate from these waters helps protect drinking water supplies and reduce hypoxia in the Gulf of Mexico. The program is available in 37 Soil and Water Conservation Districts (SWCD) in the tile-drained region of North Central Iowa. Landowners receive annual rental payments from FSA for 14 to 15 years and 100 percent cost share for costs of wetland and buffer establishment. DSC makes one-time market based incentive payments to landowners for either a 30-year of permanent easement.

D6. Integrated Farm & Land Mgmt Demo

Number of FTEs: 1

Budget: $750,000

http://www.iowaagriculture.gov/waterResources/IFLM.asp

D6. Integrated Farm and Land Management Demonstration Program

The goal of this program is to implement a statewide, voluntary farm management demonstration program to show the effectiveness and adaptability or emerging practices in agronomy that protect water resources and provide other environmental benefits. The state of Iowa appropriates $750,000 a year to support this program. DSC contracts this work to ISU's Iowa Learning Farms and the Iowa Soybean Association. For a more complete description of the work performed by Iowa Learning Farms, please reference section B.

D7. Abandoned Mine Land

Number of FTEs: 4.5

Budget: $1.87M

www.osmre.gov
www.naamlp.net

D7. Abandoned Mine Land Reclamation (AML) Program

The Abandoned Mine Land Reclamation (AML) Program addresses priority features related to surface coal mining disturbances that occurred prior to August 1, 1977. While these mining operations could be considered point sources, the program is included in this inventory because these lands are not permitted and may be diffuse in nature, which would categorize them as nonpoint sources of pollution.

Iowa has more than 12,000 acres of abandoned coal sites that were mined prior to 1977 and are eligible to be reclaimed under Title IV of the Federal Surface Mining Control and Reclamation Act. Completed projects provide improved water and air quality and reduce sediment deposition and clogging of streams off-site. The AML program works with landowners in the design and development of a reclamation plan that will provide a suitable land use following completion of the project.

D8. Agricultural Drainage Well Closure Program

Agricultural drainage wells (ADWs) were constructed in north central Iowa beginning in the early 1900s to provide outlets for surface runoff and tile drainage water from cropland areas. Because agricultural drainage wells discharge water directly to groundwater aquifers, they are potential routes for movement of contaminants to underground drinking water supplies.

D8. Ag Drainage Wells

Number of FTEs: 0.3

Budget: $1.25M

http://www.iowaagriculture.gov/waterResources/agDrainageWellClosure.asp

The Agricultural Drainage Well Water Quality Assistance Fund was established in 1997 and amended in 2006. This program provides financial assistance to protect groundwater aquifers by closing ADWs and providing alternative drainage outlets to surface streams. The recent amendment was made to allow for other management practices to be considered where conditions for providing alternative drainage has excessive costs or where other factors are present, such as shallow bedrock.

D8a. Ag Drainage Wells Closure Program

To be on the list to be considered for cost share (maximum of 75%) a landowner with an ADW or a landowner with land that drains to an ADW must apply to DSC. The range for awards is $23,800 to $1.5M for drainage districts, private landowners and users of ADWs.

D8a. ADW Closure

Award: $1.25M

Range: $23,800 - $1.5M

D9. Watershed Improvement Review Board Administration

The purpose of the Watershed Improvement Review Board (WIRB) and associated funding is to grant awards for water quality improvement and flood prevention in Iowa on a watershed basis. WIRB receives funding through a State of Iowa appropriation and is subject to the annual fluctuations of the state budget. WIRB was funded at $2 million in state fiscal year 2011. WIRB is a 15-member board composed of representatives of environmental, agricultural, commodity, and water-related organizations and groups; a representative from the Iowa Department of Natural Resources; a representative from the Iowa Department of Agriculture and Land Stewardship; two state representatives; and two state senators. Administrative support to the WIRB is provided by DSC and is therefore represented under their umbrella.

D9. WIRB Administration

Number of FTEs: 0.5

Budget: varies based on budget

http://www.iowaagriculture.gov/IWIRB.asp

D9a. Watershed Improvement Review Board Grants

The purpose of WIRB grants is to assist eligible applicants to implement watershed-based water quality improvement or flood prevention projects. Eligible applicants are local watershed improvement committees, Soil and Water Conservation Districts, counties, county conservation boards, public water supply utilities and cities. The Iowa Legislature makes annual appropriations to the Watershed Improvement Fund and is announced about twice a year through a competitive request for applications (RFA). The frequency of RFA announcements will vary with the availability of funds and the number of applications received and funded previously from the same appropriation. The maximum amount requested per application is limited to 10% of the annual appropriation to the fund from the legislature.

D9a. WIRB Grants

Award: $ Varied based on budget

Range: up to 10 percent of allocation

For example, if $5 million is appropriated to the Watershed Improvement Fund, the maximum allocation for an individual application that year is $500,000. Projects can be funded on a single application for multiple years.

D10. Revolving No-Interest Loan

Number of FTEs: 1+

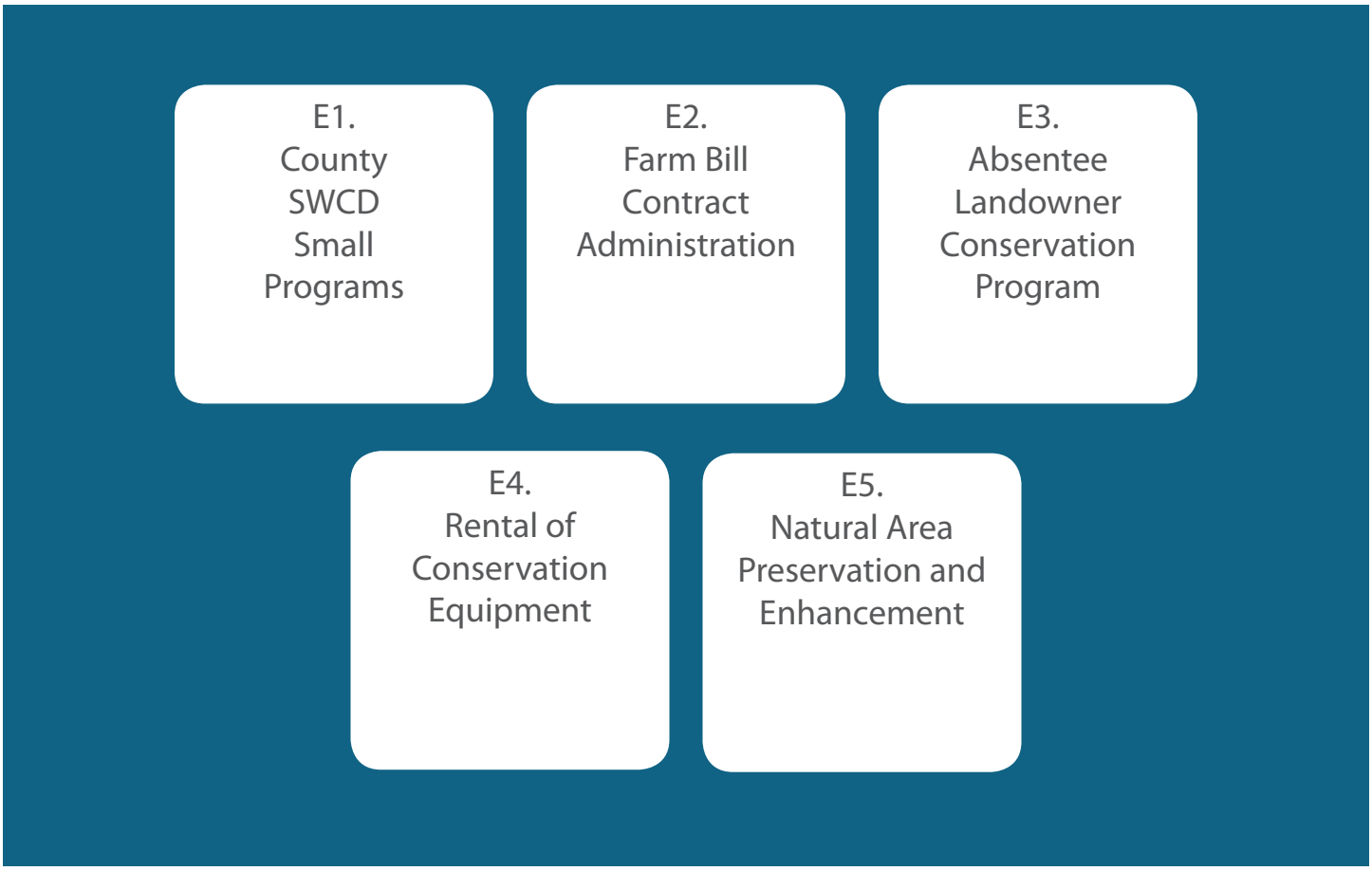
Budget: $570,000

http://www.iowaagriculture.gov/fieldServices/noInterestLoans.asp

D10. Conservation Practice Revolving No-Interest Loan Program

The Revolving No-Interest Loan Program allows DSC to make loans available to eligible landowners at no interest for the construction of permanent soil conservation practices. This program is an alternative to government cost share. SWCDs set the priorities for their district of practices that are needed most such as grassed waterways, terraces, and erosion control structures. Producers can secure a loan of up to $10,000 for a 10-year period broken into annual payments. Once this money is repaid, it can be reallocated in a new loan to a new farmer to implement new conservation practices.

E. CONSERVATION DISTRICTS OF IOWA



E – CONSERVATION DISTRICTS OF IOWA

CDI at a glance

Number of FTEs: 3+ (volunteer)

Annual Funding: ~$2.1M

www.cdiowa.org

The Conservation Districts of Iowa (CDI) is a non-profit organization that supports Iowa's Soil and Water Conservation Districts (SWCD) and their commissioners in protecting Iowa's natural resources. SWCDs are in every county in Iowa (two in Pottawattamie) and provide valuable "boots on the ground" work. Much of what SWCDs contribute to nonpoint source pollution reduction is covered in the inventories of the other partner groups described above. CDI is supported by dues from the districts and other program funding resources as available. CDI provides educational resources and learning opportunities, promotion of conservation practices, and other programs that embrace conservation of soil, water, and other natural resources. CDI works closely with all 100 SWCDs to promote sustainable agricultural and urban practices. CDI's success is built on the dedication of Iowans throughout the state that devote countless hours and wisdom to help translate conservation expectations to field level results in each county. The following programs are supported by the CDI organization and augment the efforts of over 500 conservation volunteers to see that local conservation issues are addressed.

E1. County SWCD Small Programs

Number of FTEs: Volunteer

Budget: $300,000

E1. County SWCD Small Programs

Some of the most visible and engaging activities CDI administers come in the form of programs small in funding amount but big in impact. The following are all programs that CDI has coordinated with funding from all 100 SWCD, tree sales, fees, donation, and proceeds from rental programs. These small programs are enjoyed around the state to a variety of stakeholders focusing on information and education and engaging people in conservation. Funding for each of these programs ranges from $15,000 to $50,000 a year annually.

- SWCD & CDI Scholarships – Promotes student involvement in natural resource conservation careers, which helps train future conservationists.
- Poster and Photo Contest – Elementary through high school students compete in a conservation poster and photo contest to promote natural resource conservation. Students gain a better understanding of nonpoint source pollution reduction and in-turn help educate adults that may otherwise not be engaged.
- Envirothon – Iowa's version of Envirothon is used to help educate high school students about natural resources, environmental stewardship, and conservation. Students study conservation and natural resource issues and compete in local, state and national contests testing their knowledge and understanding of natural resource conservation.
- Local Events – One of the core functions of the soil and water conservation districts is to help spread the message of conservation in Iowa. Some of the most effective ways to accomplish this is to expose citizens to the message at local fairs and banquets.
- Conservation Tours – CDI and SWCDs coordinate conservation tours to interested citizens to show damages by uncontrolled runoff events on one field paired with tours of successful conservation practices that help control those same storm events.
- Urban Conservation – Promotes urban conservation and runoff control practices in urban communities educating people on what they can do on their own property while also engaging cities and businesses (golf courses) on the importance of stormwater practices.
- Conservation in Classroom programming – This program is targeted to weave conservation and runoff control lessons directly to students in their normal learning environments (schools, 4-H clubs, Boy and Girl Scout meetings).
- Contractor Meetings – SWCDs coordinates meetings with contractors to help educate the people responsible for

directly installing practices by sharing the best construction techniques and "tricks of the trade".

- Media and Award Programming – The purpose of this strategic effort is to spread the message through traditional public media outlets the need for conservation practices. This helps educate the public about nonpoint source pollution issues and sediment erosion and connect it back to the cost of natural resources. The award programming rewards producers and citizens who exemplify the ideals of good land stewardship to help develop champions and role models in communities.
- Public Policy Advocacy – Another strategic effort for CDI is for commissioners and CDI officers and staff to lobby for increased funding for nonpoint source pollution reduction. Programs like REAP, cost share programs, EQUIP and other government program funds are important for on the ground success. Lobbying for legislation and rules relevant to nonpoint source resource programming is also an important aspect of this work.

E2. Farm Bill contract administration

E2. Farm Bill contract administration

Number of FTEs: Core mission

Budget: $800,000

Part of the core mission of the SWCDs is the distribution of money from the farm bill to landowners interested in conservation practices. Most of these practices aim in controlling runoff and reducing soil erosion while benefitting water quality. These programs are funded through grants from other partner groups (NRCS & IDALS), but the administration of the farm bill contracts is the responsibility of the SWCDs and CDI. At some level, all employees of SWCDs help administer these grant monies, with the commissioners and CDI helping to solve any problems along the way.

E3. Absentee Landowner Conservation Program

E3. Absentee Landowner Conservation Program

Number of FTEs: 2+ volunteer

Budget: $600,000

Over the past few decades, an interesting trend has emerged in Iowa's farming communities. The number of farmers working the land declines but the number of landowners changes at a much slower rate. Many people who own farmland in Iowa don't farm the land themselves and they may not even live in the state. The result is that a lot of land is rented in exchange for cash or a share of the crop profit, which in some circumstances can lead to a lack of conservation-minded farming. To help reach this growing segment of the farmland, CDI works to target landowners that rent out their land to educate on the importance of protecting the future fertility of the land and the benefits of conservation practices to land value and the natural environment. This important program has found financial and in-kind support from AGREN, foundation grants including a McKnight grant, CIG grants, and REAP grants.

E4. Rental of Conservation Equipment

E4. Rental of Conservation Equipment

Number of FTEs: volunteer

Budget: $200,000

One of the biggest barriers to adaption to conservation practices can be the high cost of equipment. Before some farmers are willing to make the capital investment in big machinery, giving a test run may help convince that farmer the practice is for them. Additionally, some equipment would only be used for a one-time installation or used rarely as to not make an outright purchase practical. SWCDs helps facilitate this rental of conservation equipment across the state for farmers in need of installing conservation practices and planters for native prairie plantings and no-till. This program is supported by local SWCD funds and by rental fees for the equipment. Farmers across the state have access to this program but it is important to sign up as equipment is in limited supply.

E5. Natural Area Preservation & Enhancement

The Iowa Great Lakes in Dickinson County is an example of a valued natural area that has been developed or enjoyed for recreational purposes. With few natural lakes, Iowa showcases these deepwater marvels in a thriving tourist business that

E5. Natural Area Preservation & Enhancement

Number of FTEs: volunteer

Budget: $200,000

stimulates a great amount of economic activity. To ensure the continued enjoyment of the Iowa Great Lakes, special programs in Dickinson County work with the local citizens, government entities and business enterprises to raise awareness of nonpoint source pollution issues and raise investment in the lake and watershed. This partnership raises local matching funds in order to leverage any private, state, and federal grant dollars for nonpoint source pollution mitigation and watershed improvement. With a staggering 285 agreements to date between cities, county government and SWCD, this partnership continues to ensure the future viability of the area. CDI and SWCDs realize that the development of natural areas for recreation is interlaced with the protection of Iowa's farmland and livestock industry as enhancements to both will have a positive effect on recreation areas.

One of the programs developed in Dickinson County is the Rock Tile Intake Program. This program removes exposed portions of tile intake and resets the pipe underground at a 45 degree angle and surrounding it with rock. This practice yields an approximate 40 percent reduction of sediment and phosphorus runoff and helps mitigate phosphorus and nitrogen concentrations in water.

F – STAKEHOLDER ORGANIZATIONS

The following portion of the inventory includes a summary of the stakeholder identification process, a listing of said stakeholders, and some information from responsive stakeholders on NPS programming and investments. The following is not meant to be an exhaustive nor complete listing of stakeholder groups in Iowa.

Stakeholders at a glance

Number of Entities Identified: ~55

Annual Funding: Undetermined

Stakeholder Identification: During the preparation for the visioning sessions, the Core Partners identified 55 stakeholder entities that they believed had some stake in the Nonpoint Source Management Plan and NPS issues. To successfully facilitate an effective series of visioning sessions, the number of representatives from stakeholder entities was limited to 20. To determine how the 20 seats would be allocated, the stakeholder entities were divided into eight categories (to encourage balance) and asked to self select two to three representatives, depending on the category, to participate in the visioning session. The representatives were encouraged to communicate back to their larger category group any updates. The following represents the stakeholder categories and identified stakeholder entities that were invited. The bold font indicates the represented groups in the visioning sessions.

Category	Stakeholder Groups (Participants represented in bold)
Group A: Agriculture / Producer Organizations	**Iowa Soybean Association, Iowa Pork Producers Association, Iowa Farm Bureau**, Iowa Cattlemen's Association, Iowa Corn Growers Association, Iowa State Dairy Association, Iowa Poultry Association
Group B: NGO Conservation Organizations	**The Nature Conservancy, Environmental Working Group, Soil and Water Conservation Society**, Trees Forever, Iowa Natural Heritage Foundation, Iowa Prairie Network
Group C: Environmental Policy Organizations	**Raccoon River Watershed Association, Iowa Environmental Council, Sierra Club**, Iowa Rivers Revival
Group D: Local Government Organizations	**Iowa Association of Water Agencies, Iowa Association of Municipal Utilities, Iowa Environmental Health Association**, Iowa Association of County Conservation Boards, Iowa Association of Regional Planning Agencies (COGs), Des Moines Water Works, Iowa League of Cities, Iowa Rural Water Association
Group E: Industry / Agribusiness Organizations	**Agribusiness Association of Iowa, Land Improvement Contractors Association**, Farmland Industry, Iowa Certified Crop Advisors, Iowa Fertilizer and Chemical Association, Iowa Forage and Grassland Council, Iowa Limestone Association, Iowa Renewable Fuels Association
Group F: Recreation / Sporting Organizations	**Pheasants Forever, Ducks Unlimited**, National Wild Turkey Federation, Trout Unlimited, Izaak Walton League
Group G: Other Government Organizations	**Iowa Groundwater Association, Iowa Homeland Security**, Iowa League of RC&Ds, Farm Service Agency, National Agriculture Statistics Service, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Iowa Environmental Health Association, USDA Forest Service, USDA Rural Development
Group H: Alternative Agriculture / Food Organizations	**Practical Farmers of Iowa, Iowa Farmers Union**, Buy Fresh - Buy Local of Iowa, Iowa Food Cooperative, Iowa Network for Community Agriculture

and is certainly not exhaustive of entities that could be involved in NPS work. This list should be helpful as a starting point for agency programs or other stakeholder entities for strengthening old or developing new partnership opportunities.

During the visioning sessions, the Core Partner inventory was distributed to the group. Some interest was shown by the stakeholder entities to include similar information in the plan. Although the following only includes a small percentage of the identified stakeholders, the information provided is useful and could be expanded upon to develop a more complete inventory of stakeholder entity programming.

F1. Iowa Soybean Association

Number of FTEs: 10

Budget: ~$2.5M

http://www.iowasoybeans.com

F1. The Iowa Soybean Association

The Iowa Soybean Association strives "to be the premier commodity organization by enhancing the lives of US soybean farmers, our communities, and our customers." One of the strategic goals Iowa Soybean Association has identified is to "stabilize and increase yield while improving production efficiency and the environment." This can be done by "advancing agricultural leadership for environmental quality by developing, applying and promoting programs that assist producers to perform agronomically and economically.

The Iowa Soybean Association runs or supports several programs and initiatives including; CEMSA (Certified Environmental Management Systems for Agriculture), ADAPT (Agricultural Data Analysis and Planning Tool), STAARS (Strategies Targeting American Agricultural Resources and Sustainability), and Cooperative Conservation for Watershed Health (a USDA NRCS/ NFWF Conservation Innovation Grant Project).

Iowa Soybean Association also provides technical assistance for watershed organizations in assessing resource concerns and writing watershed plans, developing projects, seeking funds for implementation, and evaluating outcomes. Farmers can request technical assistance to help assess and prioritize resource concerns and planning, implementing and evaluating management strategies using CEMSA/ADAPT. Iowa Soybean Association also provides laboratory and monitoring services quantifying water quality parameters that assess the effectiveness of land practices intended to improve the condition of Iowa lakes and streams.

F2. Practical Farmers of Iowa

Number of FTEs: 9

Budget: ~$728,000

http://www.practicalfarmers.org

F2. Practical Farmers of Iowa

Practical Farmers of Iowa (PFI) is an open, supportive, and diverse organization advancing profitable, ecologically sound, and community-enhancing approaches to agriculture through farmer-led investigation and information sharing. PFI would like farms to be prized for their diversity of crops and livestock, their wildlife, healthy soils, innovations, beauty and productivity, their connection to a rich past and a fulfilling present where individuals and families are earning a good living. Furthermore, PFI's vision places an emphasis wholesome food that is celebrated for its connections to local farmers, seasonality, hard work and good stewardship. These goals can help create communities alive with diverse connections between farmers and friends of farmers; places where commerce, cooperation, creativity and spirituality are thriving; places where the working landscape, the fresh air and the clean water remind us of all that is good about Iowa. PFI works with farmers in several programs including the Cooperators Program, Grazing Clusters, Field Days, and Next Generation Program.

F3. The Nature Conservancy

Number of FTEs: ~4

Budget: ~$1M

http://www.nature.org

F3. The Nature Conservancy

The mission of The Nature Conservancy (TNC) is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. The Iowa TNC chapter has been heavily involved in the Boone River Watershed Project, working closely with Iowa Soybean

Association, by providing support in watershed management plan composition and other technical support. Iowa TNC has also carved out a critical role in the Iowa-Cedar River basin initiatives including a seat on the Interagency Team, fundraising to complete an ecosystem services mapping and valuation project, and working toward an integrated vision among all agencies for wetland protection and restoration.

F4. Iowa Farm Bureau Federation

The Iowa Farm Bureau Federation (IFBF) is an insurance company dedicated to helping farm families prosper and improve their quality of life. The IFBF is involved in many aspects of nonpoint source pollution reduction including: Farm Policy Development & Implementation, Iowa Farm*A*Syst, Iowa Wetland Mitigation Bank, Inc., Working Watersheds: Buffers & Beyond, Carbon Credit Program, the Coalition to Support Iowa's Farmers, and energy programs like Wind Energy Assessments, On-Farm Energy Audits, and Alternative Energy Funds. Additionally, the IFBF provides news and information for its members and the public.

F4. Iowa Farm Bureau Federation

Number of FTEs: 1

Budget: Undetermined

http://www.iowafarmbureau.com

5. Sierra Club Iowa Chapter

The Sierra Club of Iowa is an environmental organization made up of dedicated volunteers. The Sierra Club of Iowa participates in many activities to reduce nonpoint source pollution including lobbying the Iowa Legislature, advocating for federal and state administration rules, litigation to motivate implementation of the Clean Water Act, and educating Sierra Club members and the public of nonpoint source pollution issues.

F5. Sierra Club Iowa Chapter

Number of FTEs: 0

Budget: $0

http://www.iowa.sierraclub.org

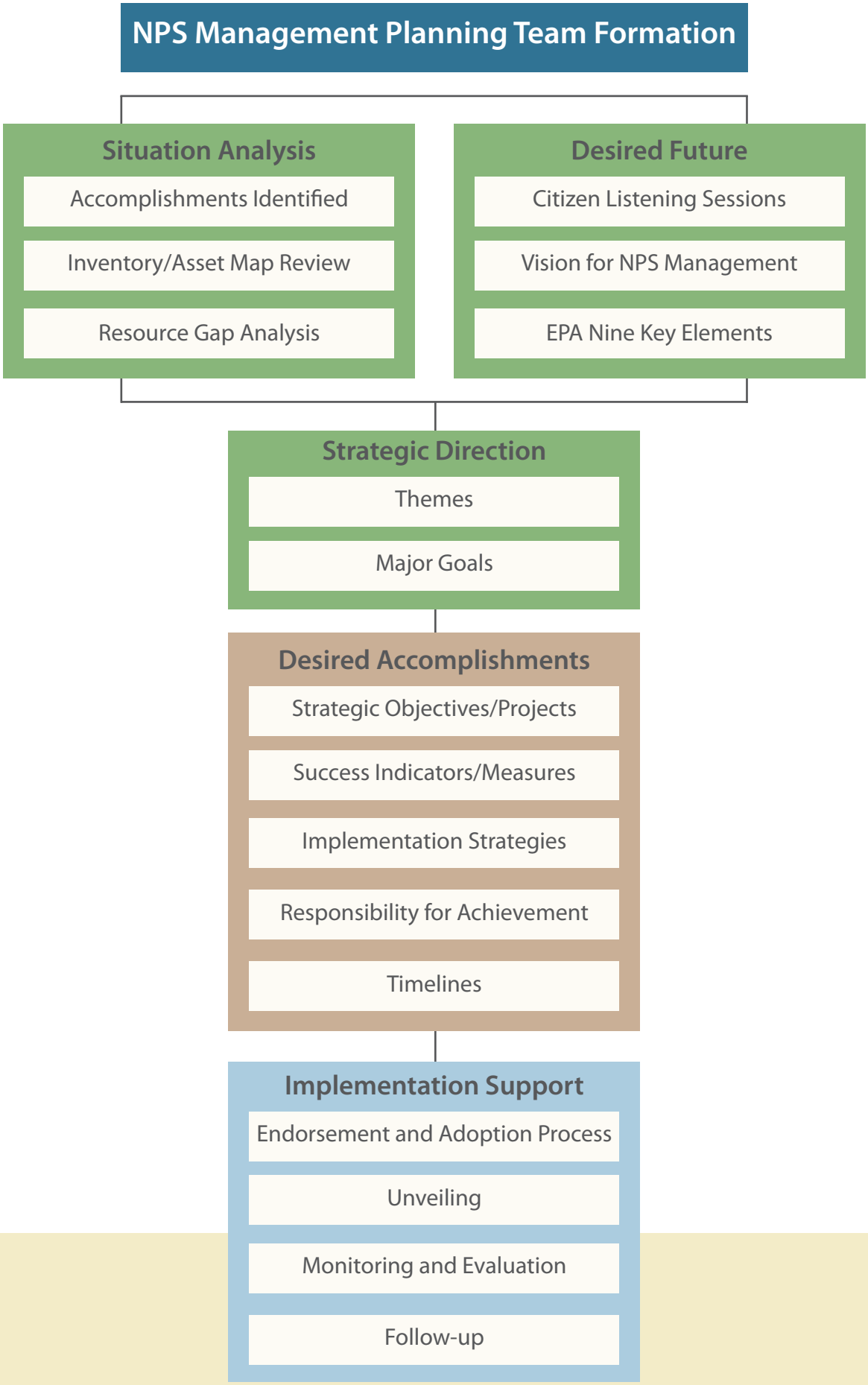
APPENDIX D

VISIONING PROCESS RESULTS

INSTITUTE FOR DECISION MAKING

The University of Northern Iowa's Institute for Decision Making (IDM) was commissioned to facilitate the development of Iowa's Nonpoint Source Management Plan in coordination with an intra-agency partner group comprised of the Iowa Department of Natural Resources, Iowa Department of Agriculture & Land Stewardship, Natural Resource Conservation Service, Iowa State University, and Conservation Districts of Iowa. The Institute for Decision Making's primary focus is on community economic development, applied research, practical planning, technical assistance and group decision making. Since 1987, IDM's hands-on staff has guided and advised more than 680 communities and local development groups across Iowa and beyond.

IDM was selected to facilitate the Nonpoint Source Management Plan because they are well respected throughout Iowa for their work in strategic planning and are viewed as a neutral third party when it comes to water quality planning. The Institute for Decision Making (IDM) and the DNR- Environmental Services Division developed a planning partnership. The expected outcome from this partnership is a shared vision and focused plan for what Iowa wants to accomplish in nonpoint source pollution management and key NPS Issues in the next 10 years. When implemented, the plan will reflect the watershed approach, align with the EPA's Nine Key Elements, help target other programs, and help expand funding opportunities. Unique to this plan, there is a set of guiding principles weaved throughout the plan: collaboration, cooperation, coordination and the commitment to the greater good. IDM utilized the following planning model for the development of the Nonpoint Source Management Plan. The planning process is also explained in detail in the following pages.


NPS Management Planning Team Formation
Situation Analysis
Accomplishments Identified
Inventory/Asset Map Review
Resource Gap Analysis
Desired Future
Citizen Listening Sessions
Vision for NPS Management
EPA Nine Key Elements
Strategic Direction
Themes
Major Goals
Desired Accomplishments
Strategic Objectives/Projects
Success Indicators/Measures
Implementation Strategies
Responsibility for Achievement
Timelines
Implementation Support
Endorsement and Adoption Process
Unveiling
Monitoring and Evaluation
Follow-up
Implementation by Many Organizations

PLANNING TEAM FORMATION

The Iowa Department of Natural Resources (DNR) is the designated state water quality agency and, therefore, is responsible for taking the lead on the NPSMP. This plan, however, is developed with the help and input from all the partners who share in the responsibility for managing nonpoint sources. The Institute for Decision Making's planning model attempts to maximize collaboration and consensus-building throughout the strategic planning process.

The advantages of collaboration are numerous, and they benefit all parties involved.

1. Collaboration is educational. It helps all participants learn about each other's agencies, mission, programs, services, eligibility criteria, etc.

2. Collaboration helps prevent the duplication of services. When you collaborate with your peers, individuals will be directed to the agency that is in the best position to provide those services and programs that they need most. This frees up time for professionals to focus on the provision of services for which they are most skilled and qualified.

3. Collaboration saves time. When professionals collaborate, they can reach more people, as they will know exactly where to send people to meet their specific needs.

4. Collaboration helps organizations to pool their resources to meet a common goal. For example, it may be cost prohibitive for one organization to host a "Water Quality Improvement" conference. However, if they partner with other organizations serving people with similar missions, each organization could contribute a portion of what it takes to finance the conference. Also, grantors like to see collaborative efforts, and in some cases, they are more willing to fund organizations that collaborate on specific projects.

Consensus-building is also a critical component of the planning process. Consensus is a cooperative process in which all group members develop and agree to support a decision in the best interest of the whole. The Institute for Decision Making utilizes the following definition of Consensus:

- All team members have an opportunity to give input, exercised or not
- Team members' ideas have been acknowledged by the group, and each person feels he or she has been "heard"
- Team members indicate that they can live with the outcome of the process; they will not speak negatively or work against the outcome, since the process has been fair; team members agree to move forward
- Team members accept that consensus is not necessarily unanimous agreement, and if a "final vote" is necessary, a majority will determine the decision.

The Iowa NPSMP is by definition a plan for the State of Iowa. As a state plan, it contains some initiatives beyond the purview and legal authority of the DNR however other partners will be implementing those initiatives. As such, it requires collaboration amongst all core partners addressing NPS issues in order for it to be successful. The Core Partner agencies called on to participate in the planning process included the Iowa Department of Natural Resources (DNR), Iowa State University (ISU), Natural Resource Conservation Service (NRCS), Department of Agriculture & Land Stewardship- Division of Soil Conservations (DSC), and Conservation Districts of Iowa (CDI) representing Soil and Water Conservation Districts. Representatives from each organization participated throughout the planning process.

While it is true that collaborating with other nonprofit entities takes time and energy, collaboration helps agencies to share expertise, avoid the duplication of services, and save time and money.

This plan is developed with the assistance and input of not only core partners from state agencies, but also private organizations and citizens who share in the responsibility and concern for managing nonpoint sources of water pollution. The Iowa DNR convened a task force to develop the NPSMP for Iowa to ensure viewpoints from many stakeholders were included in the planning process.

The planning team included members from the following stakeholder groups:

- Agricultural/ Commodity
- Non-Governmental Organizations (NGO)
- Environmental Advocacy
- Local Government
- Business & Industry
- Recreation
- Alternative Agriculture
- Other Government Entities

Within the seven groups listed above, there were over fifty organizations identified as potential stakeholders to include in the planning process. To successfully administer a visioning and planning process, each stakeholder group was allocated either two or three spokespersons to represent the collective interests of the group. Spokespersons for each stakeholder group were ultimately chosen by their peers to be a representative on the Nonpoint Source Management Planning Team. The representatives chosen would also be responsible for communicating with their representative groups during the planning process. Below is the list of Nonpoint Source Management Planning Team members and the stakeholder group and organization they represented. Also, below is a listing of the representatives from the five core partner agencies involved in the planning process.

The hard work and many hours contributed to the Nonpoint Source Management Plan by stakeholders who have worked as a planning team in addressing NPS pollution in Iowa is greatly appreciated. It is a credit to those involved that they have cooperated and developed this plan for Iowa. Working together, the various core partners and stakeholders developed a vision statement, guiding principles, goals, strategic objectives, suggested strategies/action steps and success indicators for achieving improved water quality as it relates to NPS pollution in Iowa.

NPS Management Planning Team

Stakeholder Group Representatives	Core Partner Representatives
Agriculture/ Producers Roger Wolf- Iowa Soybean Association Rick Robinson- Iowa Farm Bureau Tyler Bettin- Iowa Pork Producers	*Department of Natural Resources* Allen Bonini Mike McGhee Mary Skopec
NGOs/ Public Policy Advocates Jennifer Filipiak- Nature Conservancy Brett Lorenzen- Environmental Working Group	*Conservation Districts of Iowa* Darrell Weems
Environmental Nonprofits Wally Taylor- Sierra Club Steve Roe- Raccoon River Watershed Association Susan Heathcote- Iowa Environmental Council and Iowa Rivers Revival	*Iowa Department of Agriculture and Land Stewardship-* *Division of Soil Conservation* Jim Gillespie Mike Franklin
Local Government Linda Kinman- Iowa Association of Water Agencies Pat Sauer- Iowa Association of Municipal Utilities Jeff Thomann- Environmental Health Administrator, Washington Co.	*Iowa State University* Michelle Soupir Chad Ingels Rick Cruse
Business/ Industry John Grandin- Iowa Association of Business and Industry (GROMARK, Inc.) Mark Erpelding- Land Improvement Contractors Association (Erpelding Excavating Enterprises)	*Natural Resource Conservation Service* Marty Adkins
Recreation Eric Lindstrom- Ducks Unlimited Tyler Bass- Pheasants Forever	
Other Government Bob Libra- Iowa Groundwater Association Tim Kautza- Iowa Homeland Security- Emergency Management Division	
Alternative Agriculture Sarah Carlson- Practical Farmers of Iowa Bill Drury- Iowa Farmers Union	

DEVELOPING A VISION

A vision is an important part of any strategic plan. It is the introduction, the "one thousand foot level" description that gives the rest of the plan direction. The rest of the plan provides the concrete data necessary to move forward towards a shared vision. A vision is a concise statement about what you would like the future to look like in the definable future. It provides the foundation upon which all future planning efforts will be built. Vision statements present an image of future successes. The vision does not represent one individual's or just one group's point of view. It must represent the consensus of a group of people drawn from varying interests. This is not to say that every stakeholder will endorse every part of the vision. However everyone should feel that the vision arose from a fair and representative process, and that therefore the vision as a whole is legitimate and acceptable.

It is essential to revisit the vision as the strategic planning process moves along. The vision should represent a stretch for the imagination, but not be impossible to achieve. In sum, the vision and the rest of the comprehensive planning process should feed off of and support one another. Good visioning and good planning strengthen each other. Developing a "shared" vision can often be challenging and time consuming. When done right, the visioning process should focus the resources and efforts of organizations in the most effective and efficient manner. Below is a description of the visioning and planning process used by the Institute for Decision Making to get to a shared vision.

VISIONING SESSION I- CREATING SHARED VISION ELEMENTS

The Nonpoint Source Management Planning Team convened for the first time on April 8, 2011. The planning session purpose was "To chart the course for the development of the Nonpoint Source Management Vision and Strategic Plan, while orienting planning team members on the planning process and their responsibilities." IDM staff explained to the group that the purpose of the planning team was to develop a vision for the future and provide direction for the core partner groups concerning nonpoint source pollution management. Furthermore, to establish major goals and determine priorities that will lead to the fulfillment of the vision. The planning team would then seek adoption and endorsement by the core partners and stakeholder groups identified as having responsibility for implementation.

IDM gave a presentation which outlined the background and motivation for the Nonpoint Source Management Plan. The presentation contained information about:

- Nonpoint source management history dating back to the Clean Water Act of 1972
- Creation of the Section 319 Program in 1987
- Nonpoint Source Management Plan Elements
- Iowa's NPS Management Plan history
- Why a new NPS Management Plan?
- Partner and stakeholder groups involved in the planning process
- How the planning team was selected
- EPA's Nine Key Elements

IDM staff also presented and explained the following set of proposed operating principles for the team to utilize during all of their planning sessions. The group adopted these operating principles for use throughout the planning process.

As a team and as individuals -

- We will keep it informal, yet structured, and start on time/end on time unless otherwise agreed
- We will encourage maximum participation, being open / candid here in the session
- We will listen and not dominate
- We will remain constructive
- We will focus on and commit to the greater good

- We will "be present while we are here" (turning off cell phones)
- We will take silence to mean affirmation or informed consent
- We will trust the process
- We will be specific and use examples to avoid unintended misunderstandings
- We will operate with consensus, as defined below

Definition of Consensus:
- All team members have an opportunity to give input, exercised or not
- Team members' ideas have been acknowledged by the group, and each person feels he or she has been "heard"
- Team members indicate that they can live with the outcome of the process; they will not speak negatively or work against the outcome, since the process has been fair; team members agree to move forward
- Team members accept that consensus is not necessarily unanimous agreement, and if a "final vote" is necessary, a majority will determine the decision.

The planning process used by IDM emphasizes group interaction and engagement. The first interactive exercise was to identify the most significant accomplishments & barriers in nonpoint source management over the past 10 years. The full planning team discussed the progress and setbacks that have occurred over the past ten years. This exercise was meant to assist the group with developing a vision for the future of nonpoint source pollution management by informing them of current and past activities. The following summary of accomplishments and barriers, based on the planning team's perspective, were identified.

Accomplishments
- Increase in Institutional Knowledge, Better Tools & Technology (23 comments)
- DNR's Water Quality System (Monitoring, TMDLs, Planning) (21 comments)
- Funding / Better Use of Resources – Targeting (10 comments)
- Rules & Regulations / Standards (6 comments)
- MS4 / Storm water / Urban Issues (6 comments)
- Actual Water Quality Improvement (4 comments)
- Economics (3 comments)
- Other (7)
- Agricultural Land / BMP related (19 comments)
- Citizen Engagement / Public Awareness (18 comments)
- Watershed Approach / Local Coordination (14 comments)
- Leadership / Partnerships / Coordination (12 comments)

Barriers
- Lack of Education / Awareness & Response / Access to Materials, Data (18)
- Lack of Communication / Collaboration / Coordination (16)
- Current Agricultural Environment / Framework of Incentives Program / Lack of Enforcement (13)
- Lack of Funding / Stability of Funding & Programs (12)
- Wrong Strategy / Lack of Prioritization / Targeting (12)
- Past NPSMP issues / Lack of Information (7)
- Other (3)

IDM then distributed a "Creating the Future" worksheet to each participant with the following instructions: Focus on your vision for the State of Iowa and what you truly desire to see. In one or two sentences, please complete the following: (Put yourself out into the future and assume some really great initiatives have happened in and around Nonpoint Source Management.) When it comes to nonpoint source management, what are your hopes for the future? Each planning team member was given time to fill out the worksheet individually. Small groups were then asked to come to consensus as to their top 5-7 vision elements. Each small group had a recorder/reporter that wrote each element on an 8 x 11 card and posted on the

wall. The following vision elements were recorded and separated into vision clusters to help identify common themes.

Vision Themes (Clusters) and Elements

Education & Outreach

- Education/Accountability
- Take a stand- enforcement
- Expand educational efforts that include a common message that informs agriculture and urban residents of issues facing both sides
- Coordinate educational messages
- "Water Quality"–not nonpoint pollution. Not understood.
- Improved technical assistance, outreach, and education to facilitate NPS assessment, planning and implementation
- Renewed focus on land stewardship
    - outreach
    - education
    - expectations

Watershed Approach

- Increased attention to overlooked erosion sources and soil retention needs
    - stream banks
    - gullies
- Use watershed approach for programming- scaled to watershed level
- Promote a holistic and working lands approach to support Iowa's economy, while protecting our water, soils, and natural resources
- Recognize increasing importance of water retention (at point where water begins)
- Watersheds
- Manage comprehensive (w/s managed comprehensively to reduce flooding, pollutant loads, while preserving landscape functions- soil, water, wildlife, fish, etc.)
- Science-based
- Target (money and funding to the highest areas of need)
- Common ground (between urban/rural government, non-government, nonprofits, etc.)
- Locally-lead collaborative approach and sub basin watershed management including residents of all interests
- Continued focus on citizen-driven, watershed-based solutions

Science-based Performance Measures

- Focus on nitrogen along with phosphorous
- Meet or exceed reasonable and achievable WQ standards
- Continued objective science-based monitoring efforts to identify problems, tract performance measures and implement adaptive implementation and management strategies (use science-based approach)
- Promote researched and demonstration of sustainable practices that provide a flexible and effective approach and managing for WQ improvement
- Don't filter scientific data (by policy makers/ legislature)

Community & Stakeholder Engagement

- Recognize public need and interest in clean, healthy and drinking water
- Focus on the decision of the farmer or land manager and build program from there (individual driven, empowerment at local level)
- Community engagement

Collaborative Strategic Planning Approach

- Merge bottom-up and top-down driven approach (not mutually exclusive) to achieve outcomes
- Cooperative approach amongst state agencies beginning at highest level down to project level
- Integrate NPS planning and coordination efforts today to optimize Iowa's water security, demands and multi-stakeholder uses in 2050
- Economics (factors)
    1. Efficient use of nutrients
    2. Recreation
    3. Wildlife
    4. Drinking water
- Establish a plan with long-term goals that have measureable outcomes or benchmarks throughout the implementation period
- Increased focus on monitoring and data collection
    - measure results and determine needs
    - make data available and utilize
- A strategic plan that prioritizes watershed issues to maximize effectiveness of resources
- Should include:
    - workable strategic steps
    - identifiable, measurable goals

Funding

- Increased private and public resource investments to address Iowa's NPS through an equitable, coordinated and balanced approach of voluntary, incentive-based and regulatory measures
- Programs/Funding
    - Don't create new (programs)
    - Better utilize (what we have)
    - Increase funding (of what we have)

The planning team was then asked "*What are the common themes that have emerged?"* The group identified several common theme areas which include:

- The need for improved education and outreach
- The need for scientific-based performance measures
- Movement towards a watershed approach for water quality management
- The importance of community and stakeholder engagement
- The importance of a collaborative strategic planning approach

Several small groups also identified common guiding principles in the vision elements: collaboration, cooperation, and coordination.

Subsequently, the vision elements and common themes listed above were incorporated into the development of a draft vision statement for the Nonpoint Source Management Plan. Participants were asked at each subsequent session to consider the following questions as they reviewed the draft vision statement.

- Is it in line with my/our hopes for the future?
- Is it visionary and potentially inspiring?
- Is/can it be understood and widely supported by stakeholders?

The planning team reviewed and edited the vision statement throughout the planning process. Below is the final vision statement developed and adopted by the planning team in the final planning session:

Iowa's Vision for Nonpoint Source Pollution Management

The cornerstone of our vision for the future is fishable, swimmable, drinkable, clean water for all Iowans. The key elements required to reduce and remediate nonpoint source pollution in Iowa's waterways is the ability of stakeholder groups and agencies at the federal, state, and local levels to collaborate, cooperate, and coordinate efforts. From a future perspective, citizens of the State of Iowa are engaged and educated about the impact of NPS pollution and successful remediation practices that improve and protect Iowa's water resources. Programs, projects, and practices in existence are analyzed using universally accepted scientific-based environmental and functional measures of success on a watershed-by-watershed basis to ensure resources are used efficiently and effectively.

A vision statement is often times the most commonly misunderstood aspect of the planning process. Many practitioners fail to recognize that once the vision is established, numerous strategic goals, action steps with time lines, and success indicators must be developed to fully support it. The first visioning session laid the foundation for all the work to come. The next step was to provide a situational analysis surrounding nonpoint source pollution management.

VISIONING SESSION II & III- SITUATION ANALYSIS

The second visioning and planning session took place on April 29, 2011. The purpose of the session was "To provide a situation analysis and begin shaping ideas from Session I into a shared plan." Jeff Berckes, NPS Management Plan Project Coordinator, from the Department of Natural Resources began the session with a presentation about the multiple groups involved in water quality issues. Specifically, Jeff focused on the five core partner groups which included the Department of Natural Resources, Iowa State University, Conservation Districts of Iowa, Natural Resource Conservation Services, and the Iowa Department of Agriculture- Land Stewardship. The purpose of the presentation was to illustrate that nonpoint source management is not just the responsibility of the DNR and specifically the 319 program, but many more entities are involved on a daily basis in water quality issues. Jeff explained that the vision and strategic plan produced by the planning team would be presented to the core partner groups with the expectation that they would adopt and endorse the overall plan and align their programs to fulfill those goals and strategic objectives.

Jeff reemphasized it is this planning team's mission to develop major goals that address issues affecting nonpoint source pollution. The core partners listed above would then be responsible for developing strategies to accomplish those goals and strategic objectives.

Next, planning team participants were asked to identify major issues affecting water quality in agricultural and urban areas. It was explained, this process would provide valuable information for the planning team moving forward in developing goals and strategic objectives. After all, it is important to identify problems, either real or perceived, before planning solutions. Planning team participants were asked to divide into four groups of 5-6 with three groups concentrating on agriculture and one group on urban areas. Participants were asked to individually complete a worksheet identifying 5 major issues affecting water quality in agriculture or urban area depending on which group they selected. IDM staff instructed each small group to discuss and reach a consensus on the top issues affecting nonpoint source pollution management. Each group selected a recorder/reporter who documented the agreed upon issues.

Next, the group working on urban issues was asked to report on their conclusions. Each response was recorded on easel paper. The entire planning team was then given an opportunity to add to the list of issues. Each planning team member was then given five stickers and asked to vote on the top five issues they wanted to prioritize. After the votes were counted, the top five priority issues in urban areas that emerged were:

1. Increasing percentage of impervious surfaces and retrofitting the developed areas (30 votes)
2. Lack of awareness on the part of the public, city councils, zoning officials and staff in urban areas (24 votes)
3. Slow adoption/ reluctance of alternative storm water management practices (15 votes)

4. Lawn fertilizers and pesticides (15 votes)
5. Impact of agriculture on urban water resources (lack of watershed collaboration) (13 votes)

The same process was used to identify top priority issues for agriculture. After the votes were counted, the top seven priority issues that emerged from the group were:

1. Reliance on voluntary participation when we need landscape scale changes but dealing with patchwork private land (16 votes)
2. External, economic, and public policies that don't align or run counter to water quality goals (15 votes)
3. Drainage- who has the authority? Need to update management system- jurisdiction (11.5 votes)
4. Lack of coordination and consistency in program delivery- make it more user friendly (11 votes)
5. Changing weather patterns and the need to adopt programs and practices to recognize that (9 votes)
6. Prioritization and targeting of funds, resource concerns, watersheds, etc…(9 votes)
7. Cost-benefit of nonpoint source management and challenges to meet environmental and production goals (9 votes)

The planning team decided to use the top seven priorities rather than top five due to the natural break in total votes. The planning team utilized this information when developing goals and strategic objectives for this plan. (Note- The priority issues identified by the Nonpoint Source Management Planning Team may not be representative of the views of all Iowans.)

At the end of the second planning session, participants were asked if they would commit to a fourth visioning and strategic planning session since we took time away from a scheduled planning session to go into detail about the project work plan and provided additional information about water quality programs and services. It was stated, this would also provide an opportunity for more input from the stakeholders in identifying major goals and strategic objectives. Throughout the second session, planning team members expressed an interest in not only helping to develop the major goals to achieve the vision, but also the more detailed strategic objectives. The Department of Natural Resources agreed to a fourth session to further include stakeholder involvement in the plan. From the beginning of the planning process, the Department of Natural Resources representatives expressed to the planning team a willingness to be flexible and allow for maximum input from core partners and stakeholders.

Iowa Learning Farms Presentation

Iowa Learning Farms was commissioned to conduct four listening sessions across Iowa to get input from average Iowans (rural and urban) for the Nonpoint Source Management Plan. The listening sessions assessed the degree citizens are aware of the impact of nonpoint source pollution on water resources, ascertain community capacity for addressing nonpoint problems and identify specific activities Iowans intend to conduct to improve its water resources. Jacqueline Comito, PhD, from Iowa Learning Farms presented the findings of the listening sessions at the start of session three. Below are a list of observations she documented and the recommendations for moving forward.

Observations

1. IDNR, NRCS and SWCD should see themselves as partners, not adversaries, in the pursuit of cleaner water in Iowa. While these agencies often participate in weekly meetings with each other and their funding is linked and shared, they don't always communicate effectively with each other. "Social politeness" doesn't help address the challenging issues. Conflict among agencies can often lead to mixed messages about the state of water quality and a fragmentation of agriculture and natural resources; this dismays and confuses farmers and urban residents. Instead, IDNR, NRCS and SWCD should recognize, as farmers and urban residents do, that they have complimentary roles and that all are necessary: cop, technical support, scientists, decision makers and vision makers. Rather than fighting "turf wars," they need to understand how they fit together working with each other's strengths and complimenting each other's weaknesses.

2. SWCD Commissioners should be vision makers and decision makers in local watersheds. Too often they only see themselves in the role of funding agent. They need to move beyond funding issue and administering dollars, stepping up to their roles as community leaders and proponents of soil and water quality. Soil and Water Conservation Districts are logical local frameworks in which to nurture a citizen-based watershed approach. While there are some excellent examples of SWCD

Commissioners who excel in their jobs as visionaries and public educators, many other commissioners could do much better to lead their communities in public conservation promotion and education.

3. The NRCS has announced that they will begin conducting aerial conservation compliance reviews in Iowa but the question still remains how they will act on violations when they find them. Farmers want to see the NRCS crack down on non-compliant farmers. NRCS staff expressed some hesitancy to telling their neighbors that they are doing something wrong on their land. The NRCS' strength, their identification with farmers, also tends to be their weakness when it comes to issues of conservation compliance.

4. The IDNR's role as regulators and natural resource "cop" is also important. Research shows that individuals will often not change their behavior unless there is a strong enough consequence to doing the wrong thing (Morton and Brown 2010). It is time that they accept the tension that comes from their dual roles as natural resources specialists and regulatory cops. Also, it is time they embrace a role as natural resource educators and learn to approach local citizens with more humility.

5. The state universities, primarily Iowa State University, University of Iowa and University of Northern Iowa, do not have a clear voice in Iowa concerning water quality issues. Local newspaper articles on water issues seldom report on the work of these universities and as a result they don't seem very engaged in the public dialogue about water quality. Researchers need to do a better job of being accessible to the general public through the media and other outreach situations, especially those "experts" working in the fields of water quality. In addition, several SWCD Commissioners complained that they had trouble following the water quality reports released by Iowa State and Iowa based on water monitoring data. It would strengthen local ability to respond to water quality challenges if the university specialists could write reports that were understandable to local officials and watershed groups.

6. It is time that we stop using the urban/rural divide in Iowa as an excuse to not act on water quality issues. Pointing the blame at one group or the other simplifies the problem and creates a barrier to action. Pointing out agriculture's contribution to water quality problems is not "picking on farmers." Likewise, the fertilization of lawns in urban areas is not the primary cause of water pollution in Iowa. This blame game masks the true complexity of Iowa's water quality problems and polarizes efforts to find solutions rather than encouraging urban and rural interests to work together.

7. Urban residents need to recognize their contributions to water quality problems and organize to do their part to improve the conservation practices on public and private lands. Missing from the listening session data are the voices of small towns and middle-sized municipalities. These communities need to be involved in finding solutions and should be included in future listening sessions.

8. Greater understanding of farmers' multiple identities as producer, businessperson, hero, and steward is needed. These collective identities are a part of the public discourse on farmers that are generated by agricultural stakeholder groups and appropriated by farmers. More research is needed to understand how farmers are negotiating in their identities among popular images versus real practices. Allowing all farmers to claim these identities misrepresents the reality that not all farmers share those identities.

Recommendations

1. A creative visioning process needs to happen at the local level. The Iowa Learning Farms, a collaboration of the major water quality stakeholders in Iowa, is in a unique position to help local leaders, especially SWCD Commissioners, to conduct visioning sessions in their counties. Local citizens need to determine current water quality conditions, where they would like to be in 25 years and what steps they can take to get there. This kind of visioning is foundational to real change at the local watershed level. It is key to nurturing sound community growth.

2. We need a statewide campaign to inform people about water quality issues and motivate them to get involved in watershed work and to change their behavior. This campaign could utilize a variety of strategies: newspaper editorials, television commercials, advertisements at major sporting events, YouTube 1-3 minute videos, and radio segments. Suggested topics

include urban water quality issues, rural issues such as septic tanks, stories of good conservationists across state, agricultural issues, water impairments and how a water body gets put on the 303(d) list, and water monitoring. To be most effective, this campaign should appeal to the different age groups in Iowa. It is important that the campaign combine science with emotional appeals, utilizing humor, music, art, and poetry to educate and motivate the citizens of Iowa. A good example of this is the Conservation Campaign that passed the Iowa Water and Land Legacy Amendment in November 2010. The Iowa Learning Farms program could be a means for achieving this statewide campaign. (The full report can be found in Appendix E.)

VISIONING SESSION III- DEVELOPING GOALS

Goals flow directly from the vision and represent the specific theme areas on which the planning team focused its efforts to advance the vision. Goals are qualitative and directional statements that support the vision. They represent the desired outcomes of the planning process. Goals provide identifiable points of reference for making decisions and developing strategic objectives, subsequent projects, and programs to achieve them. Goals also serve to educate people and inspire them to participate in the implementation process. Essentially, goals communicate the intent of water quality improvement efforts.

Effective goal statements are clear and concise and always stated in positive terms. Goals are also complementary of each other and do not have a negative impact on each other during a particular timeframe. During the planning process, many goals may be formulated, even if they cannot all be accomplished within the time frame and resource limitations of the plan.

Validating Draft Major Goals based on Vision Elements & Priority Issues

IDM staff used the vision elements determined by the planning team in session one and major issues identified in session two to develop five draft goals. These draft goals were presented to the full planning team for reaction. The following five themes were identified from the previous discussions of priority areas of emphasis:

- Watershed Collaboration
- Education/Outreach/Technical Assistance
- Scientific-based Performance Measures
- Funding
- Policy

IDM staff reviewed the draft goals developed under each of these theme areas to receive reaction and validation from the planning team. The following major goals were reviewed by the planning team:

Watershed Collaboration
Build partnerships to enhance a collaborative watershed approach to NPS water pollution reduction

Education/Outreach/Technical Assistance
Improve technical assistance, outreach and education to facilitate NPS assessment, planning and implementation

Scientific-based Performance Measures
Expand an objective identification, monitoring and assessment system for NPS pollution

Funding
Increase private and public resource investments to address NPS pollution

Policy
Promote public policy that aligns with economic, social and water quality goals

There was a considerable amount of discussion about removing "Policy" as a standalone theme area and goal because it potentially could be involved in every theme area in the plan. Ultimately, there was consensus from the group to remove "Policy" as a major goal leaving four major goals as illustrated below.

Iowa's Vision for Water Quality

Guiding Principles

Collaboration

Cooperation

The Greater Good

Coordination

EPA Nine Key Elements

Watershed Collaboration

Major Goal:
Build partnerships to enhance a collaborative watershed approach to NPS water pollution reduction

Objectives

Suggested strategies:

Timeline:

Responsibility:

Success Indicators:

Education/Outreach/ Technical Assistance

Major Goal:
Improve technical assistance, outreach and education to facilitate NPS assessment, planning and implementation

Objectives

Suggested strategies:

Timeline:

Responsibility:

Success Indicators:

Scientific-based Performance Measures

Major Goal:
Expand an objective identification, monitoring and assessment system for NPS pollution

Objectives

Suggested strategies:

Timeline:

Responsibility:

Success Indicators:

Funding

Major Goal:
Increase private and public resource investments to address NPS pollution

Objectives

Suggested strategies:

Timeline:

Responsibility:

Success Indicators:

Developing Strategic Objectives and Potential Strategies for each Major Goal

Once the goals were established and validated, it was time to begin developing strategic objectives. Strategic objectives are quantitative and directional statements that support the vision and goal. They set performance standards and enumerate exactly what is to be accomplished. Strategic objectives are specific, so they are easy to measure and monitor, either in terms of time or quantitative indicators of achievement.

Participants were asked to choose a theme area to begin developing strategic objectives to accomplish the major goals. There were four tables devoted to the following vision theme areas:

- Watershed Collaboration
- Education/Outreach/Technical Assistance
- Scientific-based Performance Measures
- Funding

Each small group was given a worksheet asked to record the developed strategic objectives and suggested implementation strategies to accomplish the major goals. Planning team members were reminded to develop objectives that also address the priority issues identified in session two and the recommendations from the Iowa Learning Farms report. Each group also had a copy of the vision elements from the first session to refer back to as strategic objectives were developed. The third planning session concluded with each small group reporting to the full team on the strategic objectives developed. A general consensus was sought, once the strategic objectives were clarified for understanding.

VISIONING SESSION IV- VALIDATING STRATEGIC OBJECTIVES FOR EACH MAJOR GOAL

The final planning session of the core partners and stakeholder groups was primarily devoted to reviewing and validating strategic objectives developed in the previous session. Planning team participants were once again divided into small groups. The small groups were asked to identify changes needed to the draft objectives and/or suggested strategies. Each small group was also asked to look for gaps-missing or needed objectives and develop new strategic objectives that will help reach the goal. Each group was provided handouts to record changes to the strategic objectives and suggested implementation strategies.

Each small group reported the identified changes to the strategic objectives and suggested strategies to the full planning team. The updated goals and objectives as determined by a consensus of the planning team are included in the Nonpoint Source Management Plan.

CORE PARTNER COLLABORATION SESSIONS

Again, the purpose of the Nonpoint Source Management Planning Team was to develop a vision for the future and provide direction for the core partner groups concerning nonpoint source pollution management. On August 23, 2011, IDM convened a meeting of representatives from the Core Partner Groups to seek validation of the vision, goals, and specific objectives developed by the NPSM Planning Team. The core partner representatives attending the meeting were decision-makers at their respective agencies or organizations and were empowered to determine what role their organization would play in implementation of specific objectives.

Following a brief overview of the planning process to date, IDM presented the vision and major goals developed by the planning team. The Core Partners validated the major components of the Nonpoint Source Management Plan. The validation process was expedited due to the fact many of the representatives at the meeting also participated in developing the plan.

IDM's planning model attempts to engage implementing entities in the planning process for this reason.

IDM reviewed with the Core Partners for clarification what it means to take "Lead" and "Secondary" responsibility for implementation of key strategic objectives. The group was given a handout prior to the meeting which clearly defines each term and was instructed to come to the meeting ready to discuss their role in implementation. Below are the definitions distributed to the Core Partner groups prior to the session.

Lead Responsibility: An agency, organization or group has lead responsibility if its official leadership and/or members have agreed that the "organization" will serve as a key implementer and as a primary coordinator toward the fulfillment of particular strategic objectives in the NPSMP Strategic Plan. It is important to note that lead agencies are not necessarily solely responsible for the implementation of the Plan, but can serve as organizers and motivators for efforts to achieve particular objectives. In many cases an objective (or closely related activity) may already be a significant element of the agency's own programming. In some instances it may call for an expansion of the organization's current operations. Lead organizations will:

- Recruit secondary organizations, as appropriate
- If more than one organization is listed as lead, then form an implementation partnership or a coordinating relationship (as appropriate)
- Construct clearly defined action steps with those assuming co-lead or secondary responsibilities to clearly identify what actions should be taken, the timeline for action and the assignment of responsibility;
- Assume responsibility for appropriate action steps;
- Oversee and advise on progress made toward action steps;
- Submit progress reports to the oversight or coordinating group concerning status, accomplishments, challenges and key findings; and
- Carry out other responsibilities necessary to achieve the objective(s).

(Note- Normally there is one organization designated with lead responsibility. If a new task force or coalition of multiple organizations is to be "lead", then a single organization should be designated as the convener.)

Secondary Responsibility: An agency, organization or group has secondary (or "active support") responsibility if its official leadership and/or members have agreed that the "organization" will serve as an active implementer along with the lead organization and other secondary organizations toward the fulfillment of particular objectives in the NPSMP Strategic Plan. Secondary agencies will work closely with lead agencies to determine what action steps should be taken, the timeline for each action and the proper designation of responsibility. Each secondary agency is asked to take an active role in the implementation of the plan's strategic objectives. "Active role" implies that resources will be needed and used (people, money, information, etc.). Secondary agencies will often partner with other agencies, possibly for the first time, to ensure the success of the Plan. Secondary agencies will:

- Work with lead agencies to further develop necessary action steps for the objective;
- Assume responsibility for appropriate action steps; and
- Report progress, challenges and key findings to the lead agency/organization.

IDM staff then led the Core Partners through the draft NPS plan. For each of the twenty strategic objectives, the Core Partners discussed and decided which agency would take on lead and secondary responsibility. Representatives from the five agencies were eager to volunteer to take responsibility when it tied into the mission of their organization. Many of the strategic objectives had multiple lead entities identified because it may be necessary for successful implementation. In the instances where multiple lead entities were identified, the group was instructed to choose which entity would organize and convene the meetings. The entity selected to take on the convener role is indicated in the NPSMP.

The Core Partner representatives were instructed to return to their organization and identify points of contact for each of the strategic objectives they agreed to take on lead or secondary responsibility. As is illustrated in Appendix C, the five core partner agencies have many programs involved in nonpoint source pollution management in some way. It was their task to identify one or two of the most qualified individuals from those programs to serve on the "expert" teams.

Once the "expert" teams were identified, the lead entity was asked to host a meeting with the contacts from each organization identified to take an active role in implementation. Their task moving forward was to develop action steps, time lines, desired outcomes, and success indicators for their assigned objective. The expert groups were given a draft copy of the major goals and strategic objectives developed by the full planning team of stakeholders and validated by the core partners in case they had not been involved with the planning process to date. They were also given a worksheet to help organize the action steps, time lines, desired outcomes, and success indicators developed by the "expert" group. The "expert" groups were also given the instructions outlined below.

Non-Point Source Management Plan –
Core Partners' Task Groups Assignment for Developing Strategies

Recruit "expert team" from lead organization(s) & beyond, if necessary
Identify any additional "secondary" responsible entities
Review draft plan major goals & objectives
Review Inventory of Programs from Core Partners
Consider best practices , other studies and information related to assigned objectives

Utilize plan worksheets provided
Develop strategies for each assigned objective
Suggest timelines for each strategy
Suggest a timeline for assigned objective (3 to 5+ years)
Identify any gaps (based on Core Partners Inventory of Programs)
Determine measures (success indicators/realistic targets) for each assigned objective

Please complete this assignment by Friday, October 7, 2011
Submit worksheets to Institute for Decision Making at UNI - Aaron.Sauerbrei@uni.edu

(Report progress on assignment to Aaron on October 1)

THANK YOU !

Core Partner Adoption & Endorsement

During the first meeting with the core partner group, they agreed to meet again to review and validate the action plans developed for each strategic objective in the Nonpoint Source Management Plan. The Core Partners met a total of three times to accomplish this task. Each meeting provided and opportunity for more collaboration, coordination, and cooperation between the core partners. At the third and final meeting, each core partner group informally adopted and endorsed the plan and agreed to present it to the original Nonpoint Source Management Planning Team on December 7, 2011. Following a review and revisions by the stakeholder groups, the revised draft plan will be returned to the core partner group's leadership for formal adoption and endorsement.

STAKEHOLDER REVIEW SESSION

The stakeholder groups involved in the planning process met once again on December 7, 2011 to review the draft Nonpoint Source Management Plan to date which included responsible "lead" entities, action steps/strategies, time lines, and success

indicators developed by the core partners and their "expert" groups to accomplish the goals and strategic objectives established by the stakeholder planning team.

The stakeholders were provided an updated draft plan in advance and asked to review it prior to the meeting and come prepared with questions for the core partners. During the session, IDM reviewed each of the twenty strategic objectives allowing for questions and comments. The stakeholders offered valuable suggestions for improvement that are incorporated into the final plan. Once all suggested changes were discussed, the stakeholder groups were asked if they would be willing to informally endorse the plan. The stakeholder groups decided to wait for the changes to be incorporated before endorsing the plan. However, there were no objections to the overall plan brought forward during the session. Each of the suggested improvements is incorporated into the final version of the Nonpoint Source Management Plan.

At the end of the session, IDM staff distributed sign-up sheets to each of the stakeholder groups to complete if they wanted to participate in the implementation of specific strategic objectives in the plan. They were asked to identify which strategic objective they were interested in partnering and to send their contact information, along with a description of how they could assist with implementation of the objective, to IDM staff. It was stated, they would be contacted by the strategic objective's lead entity with further instructions.

Implementation & Monitoring of the Plan

Strategic planning is all about executing new initiatives in order to improve upon the status quo. The preceding steps are useless unless the plan is put into action. Project implementation, therefore, is the most critical stage of the planning process.

It is also important to keep in mind that no matter how much planning is done, the plan will only work if adequate resources are allocated to implement the strategic objectives. This is why it is important leadership from the core partner agencies were involved from the inception of the strategic planning process to ensure that realistic resources for executing the plan are allocated.

Since project implementation seldom proceeds as planned, sufficient flexibility (e.g., the allocation of time and resources) should remain in the plan, so that changes, can be carried out during implementation if necessary. The use of sound management techniques such as project monitoring and evaluation are highly recommended and can help avoid delays and ensure smooth implementation.

The Institute for Decision Making recommends identifying a council, task force, or organization empowered to monitor the implementation of this plan. One of the common challenges is a lack of coordination among various agencies and organizations responsible for implementing different components of a goal or strategic objective. The successful implementation of the strategic plan depends upon the ability of the implementation monitoring entity to quickly and competently resolve problems that arise during implementation. The role and potential duties of the implementation monitoring entity is outlined below.

Role of the Implementation Monitoring Committee

The council, task force, or organization will be responsible for monitoring the implementation of the Nonpoint Source Management Plan. These duties include:

- Obtain Implementation Action Plans from the core partners and annually obtain updates.
- Obtain formal status reports from the core partners on a quarterly basis about the progress that is being made.
- Provide the core partners with periodic updates about the progress of the plan's overall implementation.
- Publicize plan successes.

Finally, it is critical to market the new plan to Iowa residents by creating news articles, planning a kick-off event, keeping websites up to date and informing the media of plan successes. The Nonpoint Source Management Plan is a plan for all Iowans so making it accessible to them will only help make the plan successful.

APPENDIX E

EXECUTIVE SUMMARY OF *WATER QUALITY MATTERS TO US ALL*

Appendix E contains the Executive Summary for the Iowa Learning Farms report "Water Quality Matters to Us All." To obtain a bound copy of the full report, please contact the Iowa Learning Farms at: (515)294-8912 or send an e-mail to ilf@iastate.edu
The full report is also available for download at: http://www.extension.iastate.edu/ilf/conservationwater

Water Quality Matters To Us All
Executive Summary

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Water Quality Matters To Us All

At the request of the Iowa Department of Natural Resources (IDNR), the Institute for Decision Making commissioned four stakeholder listening sessions, three rural and one urban, to gather data needed for the IDNR's revision of the Nonpoint Source Management Plan. The purpose of the citizen-focused listening sessions was to give average Iowans (farmers and urban residents) a voice in upgrading the Plan.

This report contains the results of the 2011 commissioned listening sessions and incorporates data from twenty-four Iowa Learning Farms listening sessions conducted between 2008 and 2010 with farmers, rural residents, Soil and Water Conservation District (SWCD) commissioners, agriculture experts, IDNR field staff, and Natural Resources Conservation Service (NRCS) field staff. The data from the listening sessions corroborates the results of the 2007 Heartland Coordination Initia-

tive random sample survey of perceptions of water resource issues in Iowa.

Our findings represent diverse understandings and explore how these voices can change the discourse about water quality and nonpoint source pollution in Iowa. Specific questions concerning water quality asked in the 2011 stakeholder listening sessions provide the framework for this report. These questions included:

What does a water quality problem look like? Is there a problem in your area? Who is most responsible to address water quality issues?

Urban respondents in the 2011 listening sessions were alarmed at the potential threats to their health and wellbeing due to pollution. Most urban respondents viewed farming practices as a causal factor and did not identify their own practices as a contributor. Because they located the pollution as coming from farmers, urban respondents were uncertain what they could do to improve water quality. In general, farmers in the listening sessions claimed a lack of knowledge about the causal link between what they do on their land—how they farm—and its impact on water quality. Farmers dismissed water quality testing as being too subjective or political to give an "accurate" assessment of water pollution, preferring to rely on their own experience with their land to tell them if pollution was an issue. For farmers, the biggest evidence for water pollution was turbidity due to soil erosion.

In general, the IDNR staff participating in the listening sessions spoke candidly about issues of agricultural land management, believing that many farmers abscond their responsibility to care for the land and to farm it in a way that preserves the land as a natural resource and protects against pollution. NRCS staff who participated in the listening sessions were much more empathetic, claiming that farmers are limited in their conservation management decisions by the primary need to make a profit. Their argument is that farmers make the best land management choices they can given their need to work the land for their livelihood. Finally, SWCD commissioners who participated in the listening sessions were mostly concerned with helping farmers feel good about the land management decisions that they make. In general, they favor implementing and promoting landscape alterations such as terraces and waterways, which help farmers better manage the intense agriculture methods of conventional tillage and corn-corn/bean-corn rotations used.

The issue of who is most responsible for addressing poor water quality at the local and state level was frequently linked to whom to blame for the pollution, especially among farmers. Farmers perceived that all of the criticisms of water quality issues are being directed at agriculture by outside, primarily urban, voices. Farmers were quick to note that a double standard exists between urban and rural people and that urban areas are as much the source of water quality problems as agricultural lands, if not more. Listening session farmers often said they did not have enough information about the quality of the water prior to industrial agricultural practices becoming the norm in the state to evaluate current conditions. They concluded that without this information, the relative state of water quality could not be ascertained.

Some listening session farmer respondents highlighted economic factors as being impediments to implementing conservation practices on their land. Agency staff and SWCD commissioners gave similar reasons for why farmers made land management decisions. Farmers, they said, cannot be blamed for environmental degradation because they are just trying to make a living the best they can.

While economic viability is important, many other farmers responded that adoption of conservation practices was due more to how they could manage risk and uncertainty and do long-term planning to protect the land and ensure profits. Faced with the risks of new conservation practices, the status quo is often the preferred choice.
The overall impression of those who attended the IDNR, NRCS, and SWCD listening sessions is that conservation practices are a mixed bag, making it difficult to assess progress. High corn prices, in particular, lead to contradictory practices. In addition, consistency of practice—the degree to which farmers stick with these conservation strategies—seems to be dependent on weather and time.

Listening session participants in general thought a combination of incentives and regulation was needed to promote conser-

vation. The variation among sectors was related to the role of government intervention in addressing water quality. Results of our listening sessions suggest that farmers do not see penalties for violations as effective ways of getting them on board with conservation practices. This may be because part of the culture of farming in the state of Iowa is that government provides rewards and subsidies. Farmers focusing on the need to take advantage of short-term gains—like those represented by historic high crop prices—can result in expectations of cost-share programs and high incentives that match the potential profit from farming even marginal lands. Farmers were quick to point out that enforcement appears unequally portioned out to them. They also reported perceptions that the rules keep changing and they can't keep up with them.

The NRCS participants were also more likely to support incentives programs. They recognized that there is a role for enforcement and regulation and that, difficult as it may be, the agency needs to enforce some of that regulation through withholding of payments or cost-share for noncompliance. They saw regulation as a way for farmers to conform to acceptable standards, codes, and practices.

IDNR participants recognized that they were an enforcement agency and wanted to see more stringent and consistent application of fines and regulation. In general, IDNR staff expressed a belief that farmers will not change their behavior without legal pressure. Stronger laws would also mean the IDNR would have more ability to enforce them with penalties and fines. Farmer participants did not view such an attitude favorably, and perceived IDNR as overzealous and stepping on private property rights.

Urban respondents were in favor of more regulation, higher taxes to promote conservation practices, and funding government agencies at sustained higher levels so that they can do their jobs. Urban respondents expressed trust in the power of regulatory agencies to protect their interests and their water if they are given the means to do so.

Analysis of the water quality messages delivered by twelve of Iowa's newspapers across the state revealed that published articles were fairly evenly divided among city water quality challenges, agricultural contributions to water quality issues, and general articles about watersheds/bodies of water. The primary experts consulted for these articles were city officials (14 percent of the articles) local environmental groups (15 percent of the articles), and agricultural representatives, including IDALS, Farm Bureau, USDA and agribusiness (32 percent of the articles). The IDNR and EPC/EPA were cited in 15 percent of the articles. Watershed coordinators, SWCD commissioners and County Conservationists were the least likely groups to be interviewed concerning water quality issues, even though these are the very groups whose jobs are to work toward watershed improvement in Iowa. They are also the voices that listening session respondents trusted the most.

APPENDIX F

PUBLIC COMMENTS

The Nonpoint Source Management Plan was introduced to the public by the Core Partners via a press release from the Department of Natural Resources on April 5, 2012. The press release announced five public information meetings to be held throughout the state for the purposes of explaining the process and discussing the results of the collaborative planning process. The meetings were held from 6-8 p.m. at the following locations:

- Council Bluffs: April 18, Council Bluffs Public Library, 400 Willow Ave.
- Storm Lake: April 19, Prairie Lakes AEA, 824 Flindt Dr., Suite 105
- Iowa City: April 23, Iowa City Public Library, 123 South Linn St.
- Cedar Falls: April 24, Auditorium at the University of Northern Iowa Center for Energy and Environmental Education, southeast corner of Jennings Drive and Campus Street
- Windsor Heights: April 26, Windsor Heights Community Center - Colby Park, 6900 School St.

The meetings drew a total of approximately 80 people. In addition to representatives of the Core Partner groups, a number of organizations were represented including, but not limited to, Ag Vantage FS, Black Hawk County SWCD, Cedar Falls High School, Cedar River Watershed Coalition, City of Storm Lake, City of Waterloo, City of Windsor Heights, Clean Air Muscatine, Des Moines Water Works, Dickinson County Conservation, Growmark, Iowa Corn, Iowa Limestone Producers Association, Martin Marietta, New Century FS, OMG Midwest, Pocahontas County, Raccoon River Watershed Association, Schildberg Construction, Sierra Club, SIW Paddlers, Trees Forever, and Veolia Water North America. A number of individuals simply identified themselves as "citizens."

The public was free to comment on the document from the April 5 release date until the close of the 45 day comment period on May 21, 2012. A total of 12 comment letters were received via either e-mail or by postal service. Seven of the comment letters were received from the aggregate industry. Two private citizens submitted a public comment, along with the Black Hawk County Soil and Water Conservation District, Des Moines Water Works, and the Iowa Farm Bureau Federation. All letters and responses, in their entirety, are contained on the following pages.

The following constitutes a response to the three comment letters submitted by Mr. Lundy (dated April 19, April 25, and May 4) on behalf of BMC Aggregates L.C., the three comment letters submitted by Mr. White (dated April 23, May 2, and May 8) on behalf of the Iowa Limestone Producers Association, Inc., and the final comment letter submitted by Mr. Pille (dated May 18) on behalf of OMG Midwest, Inc. We have combined the responses for these letters because the issues discussed in all seven letters related to the same subject. Additionally, much of the information was consistent across the letters from all individuals. Suggestions made by one or more parties will all be addressed within this response.

First, the Core Partners want to thank the aggregate industry's engagement throughout the public comment process. We recognize and understand that mining in Iowa is an important industry. The information contained in the table on page 7 of the document was designed to be a helpful primer for individuals new to the issues of nonpoint source pollution. To its intent, general words were chosen, such as "mining operations," to encompass the universe of potential pollutant sources. In the subject of nonpoint source pollution on a national basis, some mining operations can contribute to the nonpoint source pollutant stream. Again, the idea of the chart was to introduce the novice to the concept of nonpoint source pollution, not serve as a detailed, specific reference. It was never the Partnership's intent to single out mining operations in Iowa.

The history and current practices of Iowa mining explained in the letters was helpful, specifically the information that Iowa currently only mines limestone, sand, gravel and gypsum. The letters help explain that heavy metal mining and other mining operations in other states or other parts of the world may contribute to nonpoint source pollution, but that Iowa lacks the mineral resources for this kind of industry. Further, as the letters suggest, it makes sense for the chart to reflect the current nature of mining operations in Iowa.

The letters also suggest that sediment from these mining operations would actually be considered a point source issue as all mining operations in Iowa are covered under the NPDES General Permit 3 and General Permit 5. Not all states have this kind of general permit and in those states, mining operations similar to those in Iowa are considered nonpoint source pollution. For example, Louisiana considers sand and gravel mining as a nonpoint source of pollution complete with an extensive guide on Best Management Practices for addressing these operations. However, considering the Iowa specific information in this context, it makes sense to remove the reference to "mining operations" as a nonpoint pollution source of sediment as mining operations are covered under general permits. Furthermore, applying this logic to the table on page 7 resulted in the removal of references to landfills as landfills are covered under similar permits in Iowa.

Similarly, while construction sites that disturb greater than one acre are required to obtain a permit under General Permit 2 at the DNR for stormwater, construction sites under one acre are not required to carry this permit. Therefore, to attain greater clarity in the table, "construction sites" will be changed to "poorly managed and/or unpermitted construction sites." Additionally, the suggestion to add in the word "Potential" in front of "Associated Land Use(s)" makes sense and has been changed.

The following represents the original table with track changes to demonstrate the changes made as a result of these letters:

Pollutant	Potential Associated Land Use(s)	Potential Impact
Nutrients – (fertilizers, organic matter)	Agricultural fields, livestock operations, gardens, lawns, and forests~~, and landfills~~	Excess phosphorus in lakes can create algal blooms, which can kill aquatic life and prohibit human enjoyment; can create cyanobacteria blooms that produce a toxin; high nitrate levels in drinking water are unsafe for consumption
Oil, heavy metals, salts	Urban runoff from roads and parking lots~~, mining operations, landfills~~	Toxic to aquatic life, high metal content can create drinking water problems
Toxic chemicals (pesticides, organic, inorganic compounds)	Agricultural fields, poorly managed and/or unpermitted construction sites, gardens, lawns, and landfills	Can be fatal to aquatic life, may contaminate groundwater wells
Sediment	Agricultural cropland, poorly managed and/or unpermitted construction sites, ~~mining operations,~~ poorly managed forested areas, streambank and shoreline erosion	Can create muddy or "turbid" conditions that affect aquatic life, human recreation, and drinking water, can reduce the useful life of infrastructure such as ditches, ponds, lakes, dams, culverts, and bridges
Bacteria	Livestock waste, manure surface applied (not incorporated) to agricultural fields, pet waste, faulty or improperly connected septic systems	Poses a potential human health risk as some forms of bacteria can cause illness or indicate the presence of other disease-causing organisms

The revised version of the table can be found on page 7 of this document.

The following constitutes a response to the public comment made on April 25, 2012 by Mr. Sherman Lundy on behalf of the Black Hawk County Soil and Water Conservation District Commissioners regarding the Nonpoint Source Management Plan. The comment read, as follows:

> "As a Soil and Water District Commissioner I would encourage the Task Force to consider the following support for controlling the discharge of sediment and water quality issues from agricultural lands. The sediment and water quality issues from agricultural lands can be controlled with supporting field buffer strips and cover crops. However, support is needed by the Districts in Iowa to provide COST SHARE DOLLARS and APPROPRIATE CRP payments to producers to establish field buffer strips and cover crops. Tile outlets can also be improved with apron structures which will filter water and clean sediment flowing from field tile; again, these types of structures need cost share dollars.
>
> In addition, 319 support for projects like the Dry Run Creek Watershed project will help reduce the amount of pollution from non-point source discharges. I believe a strong recommendation from this task force in the final draft should include the need to continue to fund these projects which have demonstrated the positive impact of BMPs within the watershed which have reduced non-point source pollution."

The Core Partnership appreciates the commenter's understanding and support of agricultural best management practices that can be placed on the landscape to help reduce pollution from runoff. The BMPs mentioned, buffer strips and cover crops, are two important practices the Core Partners believe will help move to a more sustainable landscape. Additionally, no-till farming is another important practice to be considered. As funding for conservation programs like CRP and those programs that offer cost share for practices continue to face scrutiny at the state and federal levels, it is important that the dollars that are available be spent in a targeted manner to best benefit priority watersheds and protect water quality.

The Section 319 program plans to continue to fund projects like the Dry Run Creek watershed as long as local watershed groups continue to make progress toward reaching water quality goals. The Core Partners support current programming including the 319 program and expect the implementation of watershed management plans to produce additional successful watershed projects in the years to come. More information on the 319 program specifically can be found in Appendix A of the document, which describes the 9 Key Elements required by the EPA of the 319 program.

The following constitutes a response to the public comment made on April 26, 2012 by Ms. Virginia Soelberg regarding the Nonpoint Source Management Plan. The comment read, as follows:

> "This is a very comprehensive plan, and well written. However, it does not address the core of the problem with nonpoint source pollution; compliance is not mandated, nor are there consequences for the polluter. Two thirds of Iowa's land is agricultural cropland, mostly corn and beans. Over 90% of the nitrogen comes from this source. Voluntary compliance has not worked in reducing nonpoint pollution. Efforts need to be watershed-based. There are practices that will make a difference, if applied where most needed and as appropriate to the conditions (ie. erodible soil, slope, waterways etc.). Urban areas are expected to manage their stormwater (NPDES permits) and yet the biggest contributors – nonpoint sources – aren't held accountable."

As noted in the comment, Iowa is an agricultural state, with the vast majority of its land in agricultural production. Since the Clean Water Act exempts most agricultural practices from regulation, affecting change in water quality requires a concerted effort in partnership and education. The Core Partners are committed to working together on the goals and objectives described in the plan. This collaboration will hopefully continue to grow and bear fruit as we move forward in implementing the nonpoint source management plan.

The Core Partners appreciate the recognition that efforts need to be watershed-based. The Core Partner groups recognize and understand that we must continue to reshape our thinking to fit how water moves across the landscape and not the political boundaries that separate cities and counties. Core Partner personnel continue to move in this direction, including the implementation of the Basin Coordinator network at the DNR and IDALS.

The following constitutes a response to the public comment made on May 8, 2012 by Ms. Renae Peters regarding the Nonpoint Source Management Plan. The comment read, as follows:

> "I would comment on the volunteer part of the plan, because that's what I do as a member of the Raccoon River Watershed Association. I, for one, would like to be able to do more for improving Iowa's water quality…things of course a volunteer can do, being non-degreed in the science of natural resources. I think our Association and the other stakeholders could play a bigger part in the agencies that are coordinating and implementing the Water Quality Plan. Yes, I know that it is sometimes hard to get volunteers to do anything, but I would think that with all the stakeholder groups out there, and the fact they are so committed to clean water resources…that commitment would provide the necessary motivation. Possibly doing more water sampling for example?"

The Core Partners wholeheartedly agree that volunteers and stakeholder organizations hold the keys for driving significant changes on the landscape and in water quality. Volunteers are vital in helping agencies and research institutions educate the public, gather information, prioritize areas of interest, and implement practices that help protect the waters of the state. All Iowans can help protect water quality – from installing a rain garden and properly disposing of household hazardous waste to supporting pervious paving and bio-retention projects in your neighborhood or community.

The Core Partners also agree that volunteers and stakeholder organizations can play a big part in implementing the actions steps described in the plan to accomplish the goals set out by the Visioning Team. Determining up front what groups could or should be involved in carrying out each aspect of the plan was determined beyond the scope of the planning process. The section identifying responsible entities within the plan does not limit the participation of any stakeholder groups; on the contrary, stakeholder group participation is encouraged at any level. Significant consideration was given to actively engage stakeholder groups from the very beginning of this collaborative process. Over 50 stakeholder groups were identified and invited to be a part of this plan, with 20 people filling seats on the visioning process representing those organizations. Many of those organizations are volunteer based or need strong volunteer membership to survive. The Core Partners look forward to implementing this plan in partnership with your organization and others over the next few years.

As for the question regarding volunteer water quality sampling, the Department of Natural Resources runs a program known as IOWATER. The program trains volunteers across the state to take samples from a local stream. This important network of individuals helps increase the amount of data available to inform agencies' decisions, increases local awareness of water quality issues, and helps develop "ownership" of that stream in terms of working for improved water quality. If you or any members of your organization wish to be trained by the IOWATER team, please view the website http://www.iowater.net.

The following constitutes a response to the public comment dated May 21, 2012 by Ms. Linda Kinman on behalf of Des Moines Water Works regarding the Nonpoint Source Management Plan. Parts of the comment letter are shown below, indented, to focus discussion:

> "The process to develop the Non-point Source Management Plan (Plan) was comprehensive and inclusive of many stakeholders. DMWW offers the following comments for consideration:

1. The Iowa Department of Natural Resources (IDNR) and the Iowa Department of Agriculture and Land Stewardship (IDALS) are currently developing nutrient criteria for Iowa. The greatest contribution of nutrients to Iowa's rivers, streams and lakes comes from non-point sources. Creating a non-point source management plan without addressing or incorporating the nutrient criteria is an incomplete plan."

The comment letter states "nutrient criteria," which the Core Partners assume to mean a reference to the State Nutrient Strategy. The State Nutrient Strategy, which is being developed in response to a memorandum issued by the EPA, will likely address nitrogen and phosphorus from both a nonpoint and point source perspective. The problem with referencing the Nutrient Strategy in the nonpoint source management plan is that the strategy was not available for discussion by the Core Partners or the Visioning Team during the visioning process as it was still under preliminary development. The strategy remained unavailable for review through at least the end of the public comment period. Further, the draft Nutrient Strategy, once it is made available, will need to be reviewed by agency professionals involved in nonpoint source management, undergo a public vetting process, and receive endorsement from the EPA. Therefore, it would be inappropriate for the Nonpoint Source Management Plan to address or incorporate the Nutrient Strategy at this time since it is being developed outside the timeframe of the NPSMP planning process. Any future updates to the Nonpoint Source Management Plan would likely take any successful implementation of a Nutrient Strategy into account.

"2. The goals and action steps are measured by activities (meetings, contacts with the public, providing technical assistance, etc.) There needs to be measurable outcomes identified to gauge whether or not improved water quality is achieved."

The nature of the measureable aspect of the action steps reflects what is to be accomplished by that particular action step. Some of the actions steps will not lead to direct, measureable water quality impact but are important for the efficiency and effectiveness of the process. For example, developing a visioning process for HUC-8 watersheds (Objective 2.4) and the associated action steps would have little direct impact on water chemistry, but is important to leading strategic implementation of water quality practices, which would lead to water quality improvements.

"3. The goals and action steps are labor intensive. At a time when growing government is not popular and in some cases not possible, the Plan should address what role business and industry, non-governmental organizations, associations, and individual's can play to derive change."

b. The Purpose of the Plan under Who Owns the Plan specifically states, "Water quality professionals throughout the state, working in concert with one another, would not accomplish anything without the help and cooperation of stakeholder groups, Iowa landowners and citizens to affect real change on the landscape." This theme should be carried out throughout the plan by incorporating expectations of non-agency organizations.

The scope of the Nonpoint Source Management Plan was not intended to dictate the role business and industry, NGOs, associations, and individuals could or should be, but rather engage those groups to develop the plan vision and goals. Organizations and individuals of all types are encouraged to engage in whatever way their organization feels they are interested in and/or best suited for. The Core Partners strongly believe that volunteer efforts by stakeholders play an important role in implementing the goals and objectives in the plan.

"a. The plan seems to be redefining the role of Conservation Districts of Iowa and Soil and Water Conservation Districts (SWCD). Some stakeholders believe this is already their role and that they have not performed to the public's expectations. Is this a justification for perpetuating their role and will it truly change the demeanor of their role in protecting Iowa's land and water resources?"

The Conservation Districts of Iowa and Soil and Water Conservation Districts remain an important partner in water quality

work throughout the state. As SWCDs are divided along county boundaries, work within a watershed boundary will likely engage multiple SWCDs. Iowa has several successful examples of this watershed collaboration and the Core Partners see value in expanding that success throughout the state. SWCDs will continue to play an important part in driving water quality change at the local level.

> "c. The plan does not identify the connection, if there is one, between SWCD and watershed coordinators."

A Watershed Coordinator, depending on the watershed, may be an employee of the Soil and Water Conservation District.

> "4. The Plan fails to address regulatory solutions. At the end of the day there will be holdouts that refuse to practice some level of conservation. The plan should address how to manage these areas especially if they are critical to improving water quality in a specific watershed."

Iowa is an agricultural state, with the vast majority of its land in agricultural production. Since the Clean Water Act exempts most agricultural practices from regulation, affecting changes in water quality requires a concerted effort in partnership and education. The Core Partners are committed to working together on the goals and objectives described in the plan. This collaboration will hopefully continue to grow and bear fruit as we move forward in implementing the nonpoint source management plan.

> "5. Iowa State University is the only state university identified in the plan. The University of Iowa and the University of Northern Iowa, community colleges, along with some private colleges can contribute to water quality and flooding issues along with planning and implementation of watershed solutions. Their roles need to be identified."

The plan does not in any way limit the involvement of any interested party, including academic institutions. The plan is not meant nor expected to be exhaustive in identifying roles. The foundation of the plan remains the partnership between the Core Partners (Iowa State, DNR, IDALS-DSC, NRCS, and CDI), which represent the major entities that most actively deal with water quality and nonpoint source pollution issues. The other academic institutions in the state can certainly play an important role in planning and implementation, but it will be up to those institutions to define what is best for them.

Response to: "DMWW comments directly related to each goal"
The bulk of the comment letter, from the end of page 2 through the top of page 7, discussed individual objectives and action steps. The objectives and action steps were developed during the visioning process, represent the collaborative thinking of the Visioning Team and were vetted and approved by the Visioning Team. As a result, the Core Partners are unable to add or to delete elements from that section of the plan. The time for groups participating in the visioning process to raise these concerns was during the visioning process when they could be discussed openly by all members of the Visioning Team. The Core Partners acknowledge the goals and objectives may not represent unanimous consensus of the participating stakeholder groups.

> "Where do we go from here?
> The first sentence states, '…the world of runoff pollution abatement…' Runoff pollution should be removed and NPS pollution added. Other areas also refer to runoff pollution and these should be changed as well."

One of the early results from the Visioning Team was the desire by the team to use "runoff" in place of "nonpoint source" in the language of the text as it was perceived as more accessible to the public. The narrative of the document introduces this terminology and is used throughout the body of the text to make the document more understandable to the general public.

> "Who will decide if the agencies listed in Objective 1.1 have been successful in achieving the action steps they are accountable for in the plan?"

Each agency will ultimately be accountable to itself to achieve the action steps identified in the document. The idea behind objective 1.1 allows a central clearing house for reporting progress in the plan. In addition, EPA requirements establish that DNR, through its Section 319 Program, must annually demonstrate to EPA that the state is making "satisfactory progress" in implementing the state's NPSMP in order to be eligible for additional Section 319 funding from EPA.

> "In any of the questions where a reference is made to an agency for inquiries there should be contact information provided, an e-mail or phone number."

Identifying individual contact information can quickly render a document obsolete as people change jobs, move desks, or even change e-mail addresses. The Core Partners believe simple internet searches or calls to an organization's information desk, in the long run, is a more reliable way to yield the most up to date information for a plan that is intended to be in place for 5 to 10 years.

> "The Aldo Leopold quote should be on the cover of the document. It is a very powerful message that is extremely relevant to the issues being addressed in the plan."

This quote seemed an appropriate way to end the document, but would not mesh with the design on the front cover.

The following constitutes a response to the public comment submitted on May 21, 2012 (dated May 18, 2012) by Mr. Rick Robinson on behalf of the Iowa Farm Bureau Federation regarding the Nonpoint Source Management Plan. Parts of the comment letter are shown below, indented, to focus discussion:

> "State Nutrient Strategy
> The U.S. Environmental Protection Agency has asked each state to develop a comprehensive nutrient strategy. This strategy will most certainly include steps to specifically increase voluntary program participation, maximize limited resources, prioritize watersheds and programs, and improve program delivery. The final NPS Management Plan will be one component of the strategy. It is important for it to be consistent with the broader nutrient strategy, once it is developed. In turn, the plan should reference the strategy and recognize the need to be consistent with it and complementary to it.
>
> One critical component of this broader nutrient strategy effort will be an improved, synchronized working relationship between IDALS, NRCS and farmers, and built upon the long-standing principle that these agencies are science agencies that provide voluntary technical assistance to farmers. Accordingly, the IFBF recommends adding a new action step in Objective 1.1, Strengthen and Expand Agency Collaboration, that reflects this recognition of the two documents, their interrelationship and these principles."

The Nonpoint Source Management Plan is a requirement of the Federal Clean Water Act. This document serves as the operating manual for the Section 319 program as well as serving as a reflection of collaborative goals and objectives among the Core Partners and stakeholder groups. The NPSMP reflects the entire universe of nonpoint source pollution issues in the state, including but not limited to, the nutrients nitrogen and phosphorus. The State Nutrient Strategy, which is being developed in response to a memorandum issued by the EPA, will likely address nitrogen and phosphorus from both a nonpoint and point source perspective. Therefore, the Nutrient Strategy will likely serve as a potential component of nonpoint source management. The problem with referencing the Nutrient Strategy in the Nonpoint Source Management Plan is that the strategy was not available for discussion by the Core Partners or the Visioning Team during the visioning process as it was still under preliminary development. The strategy remained unavailable for review through at least the end of the public comment period.

Further, the draft Nutrient Strategy, once it is made available, will need to be reviewed by the agency professionals involved in nonpoint source management, undergo a public vetting process, and receive endorsement from the EPA. Therefore, it would be inappropriate for the NPSMP to contain mention of this yet-to-be released draft Nutrient Strategy since it is being developed outside the timeframe of the NPS planning process. Any future updates to the NPSMP would likely take any successful implementation of a Nutrient Strategy into account. Further, the action steps were developed during the visioning process and were vetted and approved by the visioning team. As a result, the Core Partners are unable to add in additional elements to that section of the Plan.

> "Specific Comments
> On page 9, the third complete paragraph, third sentence: "The contribution from agriculture is proportional to the number of farmers working the land." In fact, this would seem disproportional, as the number of farmers decreases their productivity has increased due to the replacement of labor with technology. We suggest deleting this sentence."

It is true that the number of farmers has decreased over time while productivity, per acre, has enjoyed growth due to technology. The sentence refers to the fact that producers, in terms of their contribution to the state's gross domestic product, contribute a representative amount based on their relative population versus other industry. It is likely true that the productivity of other industries has experienced similar growth.

> "In the same paragraph, there is a reference to Figure 3 on the page, a pie chart depicting Iowa gross domestic product. However, the data is from2006. We suggest using the most recent data available. Data from 2010 is available at this link (http://www.iowaworkforce.org/trends/gsp.html), which indicates a state GDP of almost $142.7 billion. (Other sources of even more recent data may be available.) Also, when data such as this is used, the source of the data should be noted."

The source of the data was noted in the last sentence of the third full paragraph in parentheses as being from the 2007 Iowa Fact Book from the Bureau of Economic Analysis. The data used was from a more complete data set than the 2010 data provided and reflected a more accurate long-term proportional average of business sectors to the overall GDP. The size of the pie, so to speak, was not as important as the proportionality of the slices, illustrating a balanced economy.

> "On page 13, the first partial paragraph at the top of the page, the last sentence seems to be referencing Figure 7, but it is unclear. Also, Figure 7 seems to be a depiction of the number of watersheds that have received assistance from the Clean Water Act Section 319 program for development of watershed plans over a specific period of time. Clearly, there are more watershed plans development by a variety of state and federal funding programs. This needs to be clarified."

A clear reference to Figure 7 has been added to the top paragraph and the figure description has been amended to include more precise information.

> "On the same page at the end of the next paragraph, there is a reference the total investment by the CWA 319 program over the past 12 years. Other indicators of success and scope that we recommend adding to the plan are the tons of sediment and pounds of phosphorus prevented from reaching Iowa's surface waters. The department issues annual news release with these facts and this plan is an opportunity to sum these results and remind readers of that success."

The requested information has been added on page 13 of the document.

> "Plan Objectives and Action Steps
> In addition to adding a new action step in Objective 1.1 regarding the nutrient strategy under development, we offer the following recommendations:

> Move Objective 2.4, Develop a Visioning Process for HUC-8 Watersheds in Iowa, to proceed the current Objective 1.3 (thus, becoming the new 1.3), Develop Local Comprehensive Visions and Actions Plans for Nonpoint Source Water Quality Within the HUC-12 Watershed. It seems logical and sequential that HUC-8 visioning would proceed HUC-12 action plans. It seems that this objective and its action steps would still fit appropriately under Goal 1: Build Partnerships to Enhance a Collaborative Watershed Approach in Nonpoint Source Pollution."

While this suggestion makes sense in the context of sequentially addressing HUC-8 visioning before HUC-12 action plans, the two processes are different and have different needs in the action steps required. This discussion of the needs of HUC-8 and HUC-12 planning, what was needed for each, the merits of having two separate objectives and where they fit into the plan was a subject discussed and agreed to by the Visioning Team. Because these two objectives are found within two different major goals, the Core Partners believe it is important to respect the results of the efforts of the Visioning Team and leave the sequence as it was originally agreed upon within the confines of the visioning process.

> "Edit Goal 2, Objective 2.6, Action Step 3 as follows: Cooperate~~Meet~~ with the Iowa Agribusiness Association ~~Board of Directors and sell them~~ on development of ~~the idea that~~a program to train ~~having~~ their members' staff ~~at the field operations level~~ (e.g. individual cooperative, etc.) ~~being trained~~ to ~~and~~ prepar~~e~~ing conservation plans for their ~~landowner~~ customers. ~~will sustain their business, sustainable farms, environmental awareness, community goodwill.~~"

While these suggested edits are another way to express the intent of this action step, as previously noted, the Core Partners believe it is important to respect the previously completed vetting process of these action steps by the Visioning Team.

BMC Aggregates L.C.

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April 19, 2012

Jeff Berckes
IDNR Wallace State Office Building
502 E. Ninth St.
Des Moines, IA 50319

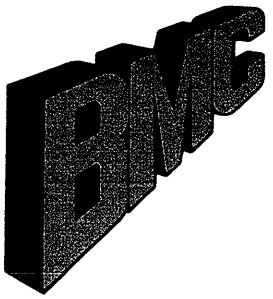
Dear Jeff:

After reviewing the proposed Non-point Management Plan I have some concerns regarding the identification of the "Mining Industry," in Iowa, as a source of non-point source discharge problems. It was my understanding the Non-point Source Management Plan was developed to address non point sources which reflect a wide range of sources including agriculture, urban runoff, and related sites, possibly construction sites, especially where construction sites were not permitted sites according to City or County ordinances. The following paragraphs contain information as researched by the Iowa Limestone Producers Association Environmental Committee along with my comments.

Page 7 of the plan contains a chart which lists "Mining Operations" identified as contributors to non-point source pollutants in two categories: Oil, Heavy Metals, Salt, and Sediment.

It is important for everyone to realize that many different minerals are mined. Those include coal, copper, gold, salt, uranium and potash to name a few. There are also different forms of mining, including surface and underground mining and different mining methods are used within those forms. We certainly appreciate those involved in a study of this nature cannot be expected to have a full appreciation of every facet of this complex industry. But those who understand mining recognize that grouping all forms of mining together is neither scientifically valid nor fair to our aggregate industry.

It is also important to note there are only four materials mined in the state of Iowa. Those are limestone, sand, gravel and gypsum. None these materials is categorized by the EPA as metallic mining and the mining of limestone, sand and gravel, and gypsum does not have the potential to generate oil, heavy metals or salt. Current discharge regulations do not permit the discharge of any sediment from any mining operation. Any sediment or suspended solids generated in aggregate production that could be considered as sediment is currently required by existing law to be collected in settling basins.



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Information supplied to us (our association) by the DNR indicates the chart in Iowa's plan was basically cut and pasted from a document titled *"Ohio State University Extension Fact Sheet"*, and subtitled *"Non-Point Source Pollution: Water Primer"*. Much of that document was produced by a graduate student at Ohio State University 20 years ago.

We have personally contacted two of the three co-authors of the Ohio State University Fact Sheet and neither of them could even remember what types of mining were considered. That pushed us to look into references contained in the Ohio State piece. Only one of the 16 references used for the fact sheet; one titled *"Ohio Nonpoint Source Management Program"* by Ohio EPA, mentions mining. It states:

"In coalfield regions of southeastern Ohio, another cause of impairment is abandoned mine drainage, which has impaired more than 1,300 miles of streams in the region".

This would be consistent with the other reference supplied by Iowa DNR staff, which was a U.S. EPA document referring to abandoned coal mines.

It is critical that everyone understands that aggregate mines in Iowa are regulated by General Permit 5, which is a point source permit, and General Permit 3, which regulates storm water within our operations. The requirements of General Permit 3 must be in place until the mine has been closed, reclaimed according to state code, and released by the Iowa Department of Mines and Minerals. Iowa's aggregate mining operations are required by law to have both Storm Water Pollution Prevention Plans and Spill Prevention, Control and Countermeasure plans in place at all times. The fine for violating the terms of a General Permit #3 is $25,000 per day.

When Iowa's Non-Point Management singles out a specific Iowa industry in this manner, it has the very real potential to harm that industry. Supposition and borrowing information without actual substantive data collected in field investigations for these allegations is not good science. In this instance, we are certain the use of the information from the Ohio State study is not relevant to Iowa and should not be used to single out Iowa's aggregate mining industry as a source of non-point source pollution. Mining is an important industry in Iowa; however, the products mined in Iowa, aggregate production and gypsum mining, do not belong in the Non-Point Management Plan listing as sources of oil, heavy metals, salts, or even sediments.

We have very serious concerns regarding the applicability of this chart for use in identifying actual non-point source pollution sources in Iowa. We strongly encourage the removal, or at the very least, changing the reference from "mining operations' to "abandoned coal mines". Available U.S. EPA documentation add support to the need for this to be limited to abandoned coal.

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If you have further questions or if I can be of further service in working with this project, please do not hesitate to contact me.

Sincerely,

Sherman Lundy
Geologist,
BMC Aggregates

Iowa Limestone Producers Association, Inc.

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www.limestone.org

April 23, 2012

Mr. Jeff Berckes, MS, MBA
Senior Environmental Specialist
Iowa Department of Natural Resources
Wallace State Office Building
502 E. Ninth St.
Des Moines, IA 50319

Dear Mr. Berckes:

I am writing to call attention to concerns relating to the inclusion of the table on page 7 of the *NonPoint Source Management Plan.* And specifically concerns with the references to "mining operations" within that table.

Before going any farther, some background information is probably in order. Our organization was aware of the work being done on the Plan from the very start. In fact, a year ago, I acted as the coordinator for the business and industry category of the planning sessions. In other words, I personally worked with University of Northern Iowa's Aaron Sauerbrei to select the two individuals who represented that category. I was happy to play a small part in the advancement of this important project.

When making those selections, it would have been easy for me to have chosen one of our members to serve. I advanced two individuals from outside of our organization because I did not see, and still do not see, Iowa's aggregate industry as having significant issues in the area of non-point source management.

Because of this involvement I periodically received copies of the University of Northern Iowa summary reports regarding the progress of the Plan. I was also copied on a number of reports from those who participated in the "Visioning" sessions. At no time did I see any indication the table referenced earlier was to be a part of this plan.

My first knowledge of the table was on March 29, 2012, when John Grandin, a member of the Visioning group, forwarded me a copy of the final report.

As you are aware, as soon as I discovered the existence of the table, I tried to determine the justification for the reference to "mining operations". Please understand, there was never an attempt to go over anyone's head. I knew a lot of people were involved in the process, and I was not sure where to start looking. Bill Ehm was someone I have known and respected professionally for a number of years and he agreed to look into it.
At that point, you supplied Bill with two links which he forwarded to me.

From: Berckes, Jeff [DNR]
Sent: Friday, March 30, 2012 8:58 AM
To: Ehm, William [DNR]
Subject: links

http://www.epa.gov/owow/NPS/qa.html
http://ohioline.osu.edu/aex-fact/0465.html

The first link offers this single reference to mining:
"Salt from irrigation practices and acid drainage from abandoned mines"

The second link took us to an Ohio State University Extension Fact Sheet subtitled *Non-Point Source Pollution: Water Primer*. It appears the table on page 7 of *Iowa's NonPoint Source Management Plan* may have been based on the table on page 2 of the Ohio State document.

However, in reviewing the Ohio State piece we found no scientific support for the use of "mining operations" within the table. Additionally we contacted two of the original authors of the Ohio State Water Primer. As you may be aware, the article is 20 years old and neither author was now able to tell us the type of mining referenced. We then went through the 16 articles listed in the Bibliography. In the end, we could find only one mining reference and that was from *"Ohio Nonpoint Source Management Program"* by Ohio EPA. That reference is as follows:
"In coalfield regions of southeastern Ohio, another cause of impairment is abandoned mine drainage, which has impaired more than 1,300 miles of streams in the region".

Across the United States many different minerals are mined. Those include coal, copper, gold, salt, uranium and potash to name a few. There are also different forms of mining, including surface and underground mining. And different mining methods are used within those forms. I know that those involved in a study of this nature cannot be expected to have a full appreciation of every facet of this complex industry. I have been the Executive Director of this Association for over 10 years, and I'm still learning.

But those who understand mining recognize that grouping all forms of mining together is neither scientifically valid nor fair to our industry.

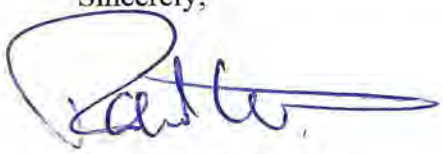
There are only four minerals currently mined in the state of Iowa. Those are limestone, sand, gravel and gypsum. Using generalized information, like that contained in the Ohio State document, deeply concerns me. When *Iowa's NonPoint Source Management Plan*

singles out "mining operations" it will be assumed to mean "mining operations in Iowa". This has the potential to harm our industry.

Personally, I believe with the potential to do harm, comes a responsibility to support the charges with accurate, mineral specific, science.

If the science is lacking to support the table on page 7, we respectfully request the DNR remove any reference to "mining operations". I do not believe anyone at the DNR wishes to perpetuate unsubstantiated information.

Sincerely,



Richard White, CAE
Executive Director
Iowa Limestone Producers Association

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April 25, 2012

Jeff Berckes
Senior Environmental Specialist
IDNR
Wallace State Office Building
502 E. Ninth St.
Des Moines, IA 50319

Dear Jeff:

As a follow-up to an earlier communication and the meeting in Cedar Falls on 4/24, regarding the Non Point Source Management Plan, I have listed some suggestions for changes regarding the listing of Mining Operations in the Charts as contributors to non-point source pollution.

Mining Concerns on Page 7:

a) Under the heading of Oils, heavy metals, and salts, mining operations should be eliminated and replaced with this term: "abandoned coal mine sites." Explanation: only in abandoned coal mine sites do we have issues with acidic runoff and potential metals such as iron or other heavy metals. Aggregate mining which is the only mining type in Iowa is not heavy metal mining. Water flows naturally over limestone and sand/gravel which is the type of mining in Iowa.

b) Under the heading of Sediment the statement regarding mining operations should be changed to read: "mine sites without GP Permits #3, or #5." Explanation: the mining industry is required to have and maintain Discharge Permits issued by EPA,DNR, COE. Those permits do not allow the discharge of sediment. All mining sites are required to have a SWPPP and to control any run-off. The current reference in the chart on page 7 equates construction sites with mining operations and the two are not the same. Mining sites without GP #3 or 5 would be the possible sources of sediment considered under non-point source concerns.

I would appreciate your support of these changes and would be glad to answer any questions regarding the proposed changes in the draft ahead of the final recommendation. If possible, I would like to review the final draft prior to final publication.

Sincerely,

Sherman Lundy
Geologist, BMC Aggregates

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May 2, 2012

Jeff Berckes, MS, MBA
Senior Environmental Specialist
IDNR
Wallace State Office Building
502 E. Ninth Street
Des Moines, IA 50319

Dear Jeff:

I wanted to follow up on my April 23, 2012, letter regarding *Iowa's Nonpoint Source Management Plan*. As you will recall, my concern was with the references to "mining operations" in the table on page 7 of the Plan. In the April 23rd letter I went into detail as to why it might not be appropriate to use information based on a 20 year old Ohio State University Extension study. My original letter is attached.

Joe McGuire, Ph.D., a past president of the Iowa Limestone Producers Association (ILPA) and a current member of the ILPA Environmental Committee has voluntarily been researching the Ohio State University (OSU) document. As part of that research, he has been in contact with as many authors of the original *Ohio State University Extension Fact Sheet* as possible. He is doing this because we believe, based on information you supplied, a table in the OSU Fact Sheet was the basis of the table on page 7 of Iowa's new Plan.

Last Friday, Larry C. Brown, one of the original authors of the OSU Fact Sheet, responded in writing to Dr. McGuire. I am inserting the letter on the following page. I believe it adds significant credibility to our position that the use of information from the Ohio State University study is inappropriate because it is not relevant to aggregate mining in Iowa.

From: Larry C Brown [mailto:brown.59@osu.edu]
Sent: Friday, April 27, 2012 03:17 PM
To: McGuire, Joe (OMG Midwest)
Cc: Rob Leeds <leeds.2@cfaes.osu.edu>; "Larry C. Brown" <brown.59@osu.edu>; Matt Helmers <mhelmers@iastate.edu>; Atherton, Bruce <bruce.atherton@ia.usda.gov>
Subject: Re: Joe McGuire Re: Follow up Mining Question

Hi Joe, the fact sheet is a summary of other's reports, not our research. I believe that if the state or federal agency is using that one fact sheet as the only basis for making their decisions, I believe that the fact sheet alone is not sufficient to do this. Of course I recognize that I do not have all the facts from either side.

Now, as far as the issue of nonpoint sources of pollutants coming from coal and/or other types of mines, my weak recollection is that the NPS was related mainly to coal mining, but probably could also relate to almost any mineral extraction. If you look at the literature from the 1960's, 1970's, and so forth, coal mining was a dominant issue, but I recall Copper Hill in Tennessee from my earlier years. So, if you search the mining-related literature from the USEPA, and State EPAs, and state DNR's, I believe you will find references to a number of resources being extracted. I however, do not recall specifically anything related to aggregate mining (the references I listed at the end of this email may contain sections on aggregate mining). Is your aggregate mining quarry or instream extraction?

I have copied this email to my counterpart at ISU and an Iowa NRCS engineer just to keep them in the loop. I am not suggesting that you contact either of them, or for them to reach out to you (unless they have relevant info and also have the time with all the flooding, etc.). Since I now know the issue in question is in Iowa, I wanted them to know what I have provided to you. We always keep our colleagues across the Midwest in the loop, especially with issues in other states.

I suggest that people get updated versions of publications "like" those below, as well as research articles, to base decisions, not a single fact sheet that was intended to educate general citizens about NPS. Also, contact someone at a university that has mining engineering or a school of mines, for researchers who work in these areas. Got to get someone to specifically address aggregate mining/extraction.

Good luck, Larry

Environmental impact of mining 1977 by Down and Stocks, Royal Sch. Mines, London, UK;
Evolution of Water Pollution Control in the United States-State, Local, and Federal Efforts, 1789-1972: Part I, WL Andreen - Stan. Envtl. LJ, 2003;
Mine water: hydrology, pollution, remediation, PL Younger, SA Banwart, 2002;

The entire letter was included so that nothing was taken out of context, but two statements within the letter are important:

1.) "I believe that if the state or federal agency is using that one fact sheet as the only basis for making their decisions, I believe that the fact sheet alone is not sufficient to do this."

2.) "I however, do not recall specifically anything related to aggregate mining (the references I listed at the end of this email may contain sections on aggregate mining)."

Once again, I would respectfully request the references to "mining operations" in table 7 be removed from *Iowa's Nonpoint Source Management Plan*.

Iowa's aggregate industry should not be singled out in the Plan based on a study which lacks any scientific research related to aggregate mining in Iowa. To allow the Plan to move forward without correction is harmful to our industry and unfair to the thousands of Iowan's who make their living in this important industry.

Sincerely,

Richard White, CAE
Executive Director

CC:	Roger Lande	Iowa Department of Natural Resources
	Chuck Gipp	Iowa Department of Natural Resources
	Richard Simms	State Conservationist
	Bill Northey	Iowa Secretary of Agriculture
	John Lawrence	Iowa State University
	Jim Frederick	Conservation Districts of Iowa
	Jim Gillespie	Iowa Division of Soil Conservation

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May 4, 2012

Jeff Berckes, MS, MBA
Senior Environmental Specialist
IDNR
Wallace State Office Building
502 E. Ninth Street
Des Moines, IA 50319

Dear Jeff:

As a follow up to my letter of April 30th, and comments by Rich White of the ILPA along with some additional research please consider the following:

In regards to the Table on Page 7 of the Non Point Source Management Plan, as we had discussed earlier, mining operations as reference with heavy metals and oils should be changed to reflect coal mining or abandoned coal mines. Abandon coal mines would be the only possible source if any for heavy metals or oils. Limestone and sand and gravel are not heavy metals.

For the classification under sediment for non point source discharges, again as we discussed, we only have aggregate mining in Iowa with some gypsum mining (the gypsum mining is all underground) and the aggregate mining is either limestone or sand and gravel. All aggregate mining operation are required to have permits #3 and #5 which do not permit the discharge of any sediment and further these discharges are monitored both for volume and for water quality components. As noted in my earlier letter to you the only remote possibility for sediment as a non point source issue would be from non permitted operations. The non permitted operations are actually an oxymoron because without permits you cannot operate a commercial quarry or aggregate operation in Iowa. After some additional research into the "sediment," listing in other sources, this concern was apparently related to tailing piles associated with metal mining. Since we do not have any metallic mining where tailing piles or gangue piles would be generated it would appear the only possible source of sediment as a non point source issue would be from, once again, abandoned coal mine sites.

To simplify matters, Rich White's suggestion of the abandon coal mines as potential concerns both for heavy metals and or sediment would be an appropriate listings for your Table. Thank you for your consideration of our concerns.

Sincerely,

Sherman Lundy
Geologist, BMC Aggregates

09819 AM11:44 05/08/12

Iowa Limestone Producers Association, Inc.

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May 8, 2012

Mr. Jeff Berckes, MS, MBA
Senior Environmental Specialist
Iowa Department of Natural Resources
Wallace State Office Building
502 E. Ninth St.
Des Moines, IA 50319

Dear Jeff:

Thank you for contacting me on Wednesday, May 3. As I have stated before, ILPA members and I recognize the term "mining" covers a lot of ground. As such, we understand it would be unreasonable to expect everyone outside of the industry to appreciate the many nuances that separate the various mineral extraction processes. We sincerely appreciate the opportunity to comment on these matters.

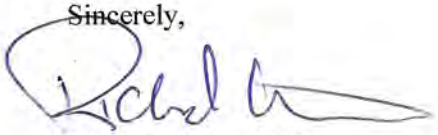
In looking into the issue of nonpoint source pollution and mining, I did not find any reference to aggregate mining, but abandoned coal mine concerns came up in some of the literature. Nothing I read was specific to Iowa, but coal mining is definitely a part of our state's history. Most of Iowa's coal mines operated long before the Clean Water Act and other environmental regulations. This would also be prior to Iowa's strict reclamation requirements. And while Iowa's last commercial coal mine shut down years ago, the "gob piles" left by the industry are still visible in some areas of the state.

I encourage you to discuss the potential pollution associated with runoff from abandoned coal mine sites with Todd Coffelt, Bureau Chief, Iowa Bureau of Mines and Minerals. Since his department is active in the reclamation of these old sites, he might have information regarding any potential nonpoint issues.

If Mr. Coffelt has information confirming runoff concerns, the mining reference in the table on page 7 of *Iowa's Nonpoint Source Management Plan* might be valid if it were specific to abandoned coal mines.

The table might also be improved if the left hand heading were changed from "Pollutant" to "Possible Pollutant" or "Potential Pollutant" since research supporting the specific pollutant-to-source relationships may be unavailable.

Sincerely,



Richard White, CAE
Executive Director

May 18, 2012

Jeff Berckes
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, IA 50319-0034

RE: Iowa Department of Natural Resources
Proposed Nonpoint Source Management Plan

Mr. Berckes,

As Environmental Coordinator for OMG Midwest, Inc., I submit the following commentary on the proposed *Planning for Water Quality – Iowa's Nonpoint Source Management Plan.*

First and foremost, Iowa has a need to protect the waters of this State for future generations. We applaud the Iowa Department of Natural Resources (IDNR) staff and their overall efforts to maintain and/or improve our natural resources.

As a construction materials provider in Iowa, OMG Midwest, Inc. operates gravel pits, limestone quarries, asphalt plants, and concrete plants at over 150 locations throughout western and southeastern Iowa employing well over 800 people. Annually we produce and sell in excess of 9 million tons of aggregate, 1 million tons of asphalt, and 1 million yards of concrete. These various operations require OMG Midwest to obtain several different types of licenses, registrations, and permits. Like countless other citizens of Iowa, many of our employees hunt and fish during their leisure time. To that end, they too want to maintain and/or improve water quality so they can continue to enjoy those outdoor activities.

These things being said, the proposed Nonpoint Source Management Plan (NPSMP) has some flaws that need to be addressed and corrected prior to finalization of the document. Particularly troubling is the Table on page 7 and the reference to "mining operations" as a source of "Oil, heavy metals, salts". Likewise, the reference to "construction sites" as a source of "Toxic chemicals (pesticides, organic, inorganic compounds)" is also cause for concern.

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The main problem for these industries with this Table is that, once finalized, it will become a quotable source for anyone wishing to do so. Any misleading information contained therein will become 'gospel according to IDNR' and could potentially show up at any future contentious hearing for zoning, conditional use, or any other process allowing public comment on an application for opening or expanding a mine operation or a construction project. Iowa businesses and the citizens of Iowa deserve better from the IDNR. To that extent, the information contained in this Table, and the document in its entirety, must be accurate and scientifically supportable. Anything less and the credibility of the NPSMP document, as well as that of the Iowa DNR, suffers, along with the business sectors disparaged by these references.

To provide this kind of misinformation regarding potential pollutants is irresponsible and places an unnecessary burden upon industries already hampered by the current economy. Since this is an IDNR document specifically subtitled as "*Iowa's Nonpoint Source Management Plan*", this paper ought to reflect existing conditions within the State of Iowa. Using EPA information as a source for this document is understandable provided the information is adjusted to reflect conditions in Iowa. Moreover, the use of sources from other states, such as Ohio, can become problematic, especially when overly generalized. What good is a "Plan" if the starting premise doesn't recognize and reflect the actual conditions within our state?

As you are aware, after initial comments from Rich White, Executive Director of The Iowa Limestone Producers Association, regarding the Table and the listing of mining operations as a source of "Oils, heavy metals, salts", two references were provided by IDNR as the sources of the information contained within the Table.

The first reference was an Environmental Protection Agency (EPA) web site which provided a definition of Nonpoint Source (NPS) Pollution. Within that definition, the EPA lists potential pollutants and possible sources. Examining this website, the only pollutant attributed to mines by EPA was *acid drainage*. It should also be noted that EPA specifically identified this potential source as ***abandoned*** *mines*. Sources listed by EPA for "oils" include only urban runoff and energy production (presumably oil drilling) while the source listed by EPA for "salts" includes only irrigation practices. The EPA lists no specific nonpoint source for "heavy metals" on this particular web site but has other web pages that discuss heavy metals contamination in storm water runoff originating from spoil piles associated with **abandoned metal** mines and processing areas.

It should be pointed out that the notation of "construction sites" as a source of "toxic chemicals" also runs contrary to the EPA information. While "**improperly managed** construction sites" are listed as a potential source of sediment, "excess fertilizers, herbicides, and insecticides" are not generally attributable to "construction sites" as alleged in the IDNR Table.

The second reference provided by IDNR was to an Ohio State University Fact Sheet originally written in 1992 (acknowledged by the author as written while he was a grad student) and revised in 1996. After some due diligence regarding the sources of the information contained in the Fact Sheet and the generalized nature of the presentation of the information, it was obvious that the Fact Sheet was sufficiently flawed and should never have been used as a reference for the Nonpoint Source Management Plan. A check of sources cited by the article also found no factual basis for listing anything other than some abandoned metal mines as a potential source for heavy metal contamination in runoff. One of the authors of the OSU Fact Sheet admitted that, "*the fact sheet was a summary of other's reports,*" and, "*if a state or federal agency is using that one fact sheet as*

the only basis for making their decisions, I believe that the fact sheet alone is not sufficient to do this."

Another major flaw in the OSU article is the generalized grouping of pollutants and their sources. Referencing the third column of Table 1 in the OSU Fact Sheet we see that the pollutants "*Acids and Salts*" are attributed to "*Irrigated lands, Mining Operations, Urban runoff, roads, parking lots, and Landfills*". A check of sources cited by the OSU publication demonstrates most would agree that sufficient evidence exists to conclude that "*salts*" can be contained in the runoff from "*Irrigated lands, urban runoff, roads, and parking lots*" and that "*acids*" can be contained in runoff from (coal) "*mining operations*" and "*landfills*". However, combining the two pollutants and mixing the sources is ambiguous at best and encourages a misinterpretation of the facts.

After a check of other internet sources, the only information found on the subject of 'heavy metals in storm water runoff from mine sites' referenced metal mines in other states. Examples included Cabin Branch Mine in Virginia, Formosa Mine in Oregon, Bautsch-Gray Mine in Illinois, Rock Creek mine in Alaska, and Iron King Mine in Arizona to name a few. Based on the articles, heavy metals are either carried from the spoil piles or leached from the processing facilities associated with the operations. Articles on these mines indicated that most of them were either abandoned or "inoperative", all were metal mines, and none were in Iowa.

According to the IDNR Geological and Water Survey Bureau, the only metal mining conducted in Iowa took place in Iowa's portion of the Upper Mississippi Valley Zinc-Lead District. The mining district, a major producer of zinc and lead ores throughout much of this country's history, covers portions of northeast Iowa, southwest Wisconsin, and northwest Illinois. Mining began in the late 1700's and the last of Iowa's zinc and lead mines in the Dubuque area were closed in the early 1950's. Notably, the only problem associated with these Iowa abandoned metal mines was periodic subsidence incidents when abandoned mine shafts cave in and affect some surface structure.

In essence, the science doesn't support the implication that Iowa mine sites of any kind can be significantly notable sources of oil, heavy metals, **OR** salts. Additionally, exception is taken to the listing of construction sites as notable sources of toxic chemicals for the same reason. The science simply doesn't support the assertion.

In my opinion, the Table could be improved by making several changes. Primarily, land uses shouldn't be grouped. Generalizing and combining information from only two reference sources, one of which is already generalized, is compounding the error. Any conclusions drawn from this information are hampered by the generalities and a lackadaisical approach to research on this document which is compounded by the same casual approach on the OSU Fact Sheet.

Another recommendation for the table would be to remove the mining reference entirely as a land use associated with oils, heavy metals, and salts pollutants. Additionally, the reference to construction sites should be removed from the land use list for toxic chemicals. Neither of these land uses can be tied to the respective pollutants as significant sources.

Neither should the table present the "Pollutants" as absolutes from the "Associated Land Use(s)". Instead, the pollutants should be identified as "Potential Pollutants" and the Associated Land Uses could be listed as "Possible Sources". While the paragraph prior to the table seems to imply "potential" pollutants, the last sentence in that paragraph appears to reinforce the idea that land use

is a direct cause of the pollutants rather than a potential cause.

Finally, the IDNR should reach within its own ranks and consult with those who would best be able to provide accurate information regarding nonpoint source pollutants in Iowa. Both the Geological and Water Survey Bureau and the Water Quality Bureau are staffed with a number of highly qualified individuals who would see the error in using the generalities employed in the NPSMP Table.

As always, we look forward to working with the DNR to achieve environmental compliance without unreasonable hindrances in solving water issues within the State of Iowa. Should you have any questions or comments, feel free to contact me at one of the numbers listed below.

Sincerely,

Joe Pille
Enviromental Coordinator
OMG Midwest, Inc
(515) 266-9928 (office)
(515) 480-5430 (cell)

cc: Rich White, Iowa Limestone Producers Association, Inc.

April 25, 2012

Jeff Berckes
Senior Environmental Specialist
IDNR
Wallace State Office Building
502 E. Ninth St.
Des Moines, IA 50319

Dear Jeff:

As a follow-up to the meeting in Cedar Falls on 4/24, regarding the Non Point Source Management Plan, I have listed some suggestions for Agricultural reduction of non-point source discharges from farm acres in my position as a Soil and Water District Commissioner.

As a Soil and Water District Commissioner I would encourage the Task Force to consider the following support for controlling the discharge of sediment and water quality issues from agricultural lands. The sediment and water quality issues from agricultural lands can be controlled with supporting field buffer strips and cover crops. However, support is needed by the Districts in Iowa to provide COST SHARE DOLLARS and APPROPRIATE CRP payments to producers to establish field buffer strips and cover crops. Tile outlets can also be improved with apron structures which will filter water and clean sediment flowing from field tile; again, these types of structures need cost share dollars.

In addition, 319 support for projects like the Dry Run Creek Watershed project will help reduce the amount of pollution from non-point source discharges. I believe a strong recommendation from this task force in the final draft should include the need to continue to fund these projects which have demonstrated the positive impact of BMPs within the watershed which have reduced non-point source pollution.

Sincerely,

Sherman Lundy
Chair, Black Hawk County Soil and Water Conservation District Commissioners.

Berckes, Jeff [DNR]

From: Virginia Soelberg [soelbergv@dwx.com]
Sent: Thursday, April 26, 2012 8:49 PM
To: Berckes, Jeff [DNR]
Subject: Nonpoint Source Management Plan comments

Categories: Public Comment

Comments on the Nonpoint Source Management Plan

This is a very comprehensive plan, and well written. However, it does not address the core of the problem with nonpoint source pollution; compliance is not mandated, nor are there consequences for the polluter.

Two thirds of Iowa's land is agricultural cropland, mostly corn and beans. Over 90% of the nitrogen comes from this source. Voluntary compliance has not worked in reducing nonpoint pollution.

Efforts need to be watershed-based. There are practices that will make a difference, if applied where most needed and as appropriate to the conditions (ie. erodible soil, slope, waterways etc.)

Urban areas are expected to manage their stormwater (NPDES permits) and yet the biggest contributors --nonpoint sources-- aren't held accountable.

Virginia Soelberg
5979 Dogwood Circle
Johnston, IA 50131

Berckes, Jeff [DNR]

From: Renae Peters [rdp.chp@mchsi.com]
Sent: Tuesday, May 08, 2012 9:56 AM
To: Berckes, Jeff [DNR]
Subject: Water Quality Plan

Categories: Public Comment

Hi Jeff!

Thanks for conducting such an important meeting at the Windsor Heights Community Center last month (already)!! I've been going over the Iowa Water Quality Plan on the website...my goodness...there's a lot to it, and some I have to work to understand...but that's why I'm a lay person I guess. I would comment on the volunteer part of the plan, because that's what I do as a member of the Raccoon River Watershed Association. I, for one, would like to be able to do more for improving Iowa's water quality...things of course a volunteer can do, being non-degreed in the science of natural resources. I think our Association and the other stakeholders could play a bigger part in the agencies that are coordinating and implementing the Water Quality Plan. Yes, I know that it is sometimes hard to get volunteers to do anything, but I would think that with all the stakeholder groups out there, and the fact that they are so committed to clean water resources...that commitment would provide the necessary motivation. Possibly doing more water sampling for example?

Aside from that, I was wondering if I could get more copies of the Water Quality Matters To Us All for our Association...for the next meeting or event...maybe 15 to 20? I didn't pick any up at Windsor Heights because I didn't think of it at the time. Do you think I could stop into the Wallace Building some day soon? I just don't want you to spend postage sending them to me.

Thanks for your time and work,
Renae Peters

Sent from my iPad

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May 21, 2012

Jeff Berckes
IA Department of Natural Resources
Wallace Building
502 E 9th Street
Des Moines, IA 50319

RE: Iowa's Non-Point Source Management Plan – Planning for Water Quality

Des Moines Water Works (DMWW), located in Des Moines, IA is a public drinking water utility owned by the citizens of Des Moines and governed by a board of trustees. These citizens have entrusted the utility with the protection of their infrastructure and to diligently operate the utility in a manner that provides safe drinking water to approximately 500,000 people in Central Iowa. Contaminates of concern to the utility are nutrients, bacteria, algae blooms and cyanobacteria, all of which are non-point source contaminants. These contaminants challenge our treatment process, increase the cost of treatment for our customers, and have the potential to put public health at risk.

Primary water sources for DMWW are the Raccoon and Des Moines Rivers. Land use in the Raccoon and Des Moines River Watersheds is overwhelmingly agricultural. About 1.7 million of the 2.3 million acres in the Raccoon watershed is cultivated for corn and soybeans. Land covered by perennial vegetation is nearly non-existent outside urban areas. Animals have been moved from pasture to concentrated feeding systems, and the cover crops of alfalfa and oats have largely been replaced by corn and soybeans. Much of the corn-soybean system requires constructed drainage (agricultural tile drainage) to maximize yields. Application of manure and commercial fertilizers are transported in run-off events and through tile drainage. All of these factors have resulted in various consequences for water quality.

We believe source water challenges from agricultural sources are not concerns unique to DMWW, but concern a large segment of the drinking water industry. The availability, quality and quantity of the sources of water used for drinking water are challenges we as an industry face in varying degrees. The drinking water industry ensures that all Iowans have access to a safe and secure supply of drinking water. We believe every Iowan who drinks a glass of water should recognize the importance of water resources to sustaining life and the critical connection between our water resources and food production.

The process to develop the Non-point Source Management Plan (Plan) was comprehensive and inclusive of many stakeholders. DMWW offers the following comments for consideration:

1. The Iowa Department of Natural Resources (IDNR) and the Iowa Department of Agriculture and Land Stewardship (IDALS) are currently developing nutrient criteria for

Iowa. The greatest contribution of nutrients to Iowa's rivers, streams and lakes comes from non-point sources. Creating a non-point source management plan without addressing or incorporating the nutrient criteria is an incomplete plan.

2. The goals and action steps are measured by activities (meetings, contacts with the public, providing technical assistance, etc.) There needs to be measurable outcomes identified to gauge whether or not improved water quality is achieved.

3. The goals and action steps are labor intensive. At a time when growing government is not popular and in some cases not possible, the Plan should address what role business and industry, non-governmental organizations, associations, and individual's can play to derive change.

    a. The plan seems to be redefining the role of Conservation Districts of Iowa and Soil and Water Conservation Districts (SWCD). Some stakeholders believe this is already their role and that they have not performed to the public's expectations. Is this a justification for perpetuating their role and will it truly change the demeanor of their role in protecting Iowa's land and water resources?

    b. The *Purpose of the Plan* under *Who Owns the Plan* specifically states, "Water quality professionals throughout the state, working in concert with one another, would not accomplish anything without the help and cooperation of stakeholder groups, Iowa landowners and citizens to affect real change on the landscape." This theme should be carried out throughout the plan by incorporating expectations of non-agency organizations.

    c. The plan does not identify the connection, if there is one, between SWCD and watershed coordinators.

4. The Plan fails to address regulatory solutions. At the end of the day there will be holdouts that refuse to practice some level of conservation. The plan should address how to manage these areas especially if they are critical to improving water quality in a specific watershed.

5. Iowa State University is the only state university identified in the plan. The University of Iowa and the University of Northern Iowa, community colleges, along with some private colleges can contribute to water quality and flooding issues along with planning and implementation of watershed solutions. Their roles need to be identified.

DMWW comments directly related to each goal are:

Watershed Collaboration, Objective 1.1, pg. 19,

DMWW agrees that the structure of the Water Resources Coordinating Council (WRCC) and the Planning Advisory Council (WPAC) is the kind of structure Iowa needs to coordinate and demonstrate a collaborate effort to improve water quality and reduce damage created by flooding events.

The WRCC structure must ensure that all agencies come to the table as equals, reduce redundancies between agencies, and identify how funding and programs can be better coordinated to ensure the most benefit is achieved for the dollars spent. Identify some early successes and communicate them to the public.

Watershed Collaboration, Objective 1.2, pg. 20,

Even though the goal specifically identifies SWCD, the IDNR and all other agencies should have a role in fostering the understanding and knowledge of watershed issues and in facilitating citizenry gaining knowledge of watersheds. This is a perfect example of how agencies should work together to identify and deliver a unified well-thought-out message.

Watershed Collaboration, Objective 1.3, pg. 21

There is no reference to the process used in determining a minimum of 0.5 FTEs per watershed. What basis was this determined?

Watershed Collaboration, Objective 1.4, pg. 22

Incorporating smart planning principles in city and county comprehensive plans that address the impact of land use decisions on water quality and quantity issues at the watershed scale are needed as long as <u>all</u> land use is part of the plan.

Improvement to water quality and reducing damages from flood events will only occur when there are rural-urban collaboratives.

Watershed Collaboration, Objective 1.5, pg. 23

Funding is a critical issue. While the objective identifies public and private funding the role of these entities is not clearly defined. Are they to provide funding without representation as a lead or secondary role?

Improve Technical Assistance, Objective 2.1, pg. 24

This goal emphasizes educating the public yet there is no reference to other agencies even in a secondary role. IDNR, Homeland Security, and the Iowa Flood Center should all play a role in educating the public.

Improve Technical Assistance, Objective 2.2, pg. 25

Conservation Central and marketing are both great concepts that have been discussed and presented in multiple past watershed reports (IA Governor's Water Summit, Water Quality Planning Taskforce Report, etc.) but never seem to get off the ground. How can this be facilitated?

Improve Technical Assistance, Objective 2.3, pg. 26

DMWW strongly supports the development and implementation of a consistent message that can be used by a diverse group of stakeholders to raise the environmental literacy of all Iowans.

An indicator of success should not be a higher turnout at meetings.

Building an infrastructure of support for the Executive Director of CDI is not relevant to a NPS management plan and should be deleted from the Plan.

Strengthening local response to water quality challenges through the creation of materials that are engaging and understandable sounds like a performance standard for the University not a management plan measure.

Improve Technical Assistance, Objective 2.4, pg. 27

Standard visioning processes for the state do not seem practical since the personality of each watershed endeavor will be different. Multiple visioning process models already exist. The watershed group should decide which best fits their personality.

Improve Technical Assistance, Objective 2.5, pg. 28

DMWW supports this marketing objective and action steps, however we again believe all agencies and other stakeholders should have at least a secondary role in development and implementation. There is a desperate need to re-establish the public's connection with Iowa's water and land.

Improve Technical Assistance, Objective 2.6, pg. 29

The Iowa Agribusiness Association Board of Directors is identified in this objective. No other private entity is identified in the plan? Why should one specific organization be identified when many organizations can deliver this message? The more times a message is heard the more accepted the practice or behavior becomes. What is the desired "normal" to be achieved?

If the intent is to increase conservation practices and change behaviors this objective should include action steps that emphasize the importance of conservation practices and changes in behavior without cost share. The need to improve soil and water resources for future generations is an ethical issue – a stewardship ethic.

The objective identifies "helpers" but does not define who a helper is?

Science Based Performance Measures, Objective 3.1, pg. 30

DMWW supports greater public participation in the monitoring and evaluation of water quality, but believe producers also have an interest in knowing the water quality leaving their fields and tiles. This again should be an objective that incorporates more agencies at a secondary level.

DMWW has for many years participated in meetings and encouraged the consolidation of monitoring data to facilitate increased access and use of data by the general public.

Science Based Performance Measures, Objective 3.2, pg. 31

Action step 1 appears to be the completion of the RUSLE2 assessment? If not, a 2013 date for completion of state-wide watershed data project at the HUC12 scale seems unrealistic.

Will all SWCD have improved water quality as a high priority? Current practice allows different priorities in each district. Will the SWCD be evaluated based on watershed water quality outcomes or district outcomes?

One desired outcome is prioritizing local funding. This should reflect prioritizing of all funding.

Science Based Performance Measures, Objective 3.3, pg. 32

Again, Iowa State University should not be the only higher education organization to have a role in long-term research projects.

An additional goal needs to reflect the ability of research to be un-biased, non-political, and not compromised by industry or organizational groups. An option might be setting a goal to set-up a state level research fund and organization in which anyone can contribute to the fund and an unbiased board of researchers identify Iowa's research needs and award grants based on need.

Science Based Performance Measures, Objective 3.4, pg. 32

DMWW encourages moving small plot research to larger watershed scale to determine if outcomes continue to be relevant and realistic.

Publishing of journals and proceedings of conferences should not be limited to Iowa based.

Science Based Performance Measures, Objective 3.5, pg. 33

Current monitoring practices and protocols are already in place.

Adding precipitation and flow protocols are needed. Can the protocol be simplistic enough for the general public to comprehend?

It is unclear what is meant by "landowner inputs"? Does this mean monitoring of fertilization inputs or monitoring inputs to a data system?

DMWW supports post project monitoring. There needs to be at least two more action steps, one – to identify sources of funding and two – identify what is to be monitored for post project monitoring.

Science Based Performance Measures, Objective 3.6, pg. 34

DMWW believes this objective should be the number 1 objective. All work within a watershed should be based on a watershed assessment of all systems. After assessment, planning and prioritizing needs should be completed. Then identify and secure funding. By prioritizing funds they can be utilized where they will generate the best outcomes.

Additional field staff should not be a given. An analysis of the technical assistance needs should be conducted including who can best deliver those needs, government or private industry.

Funding, Objective 4.1, pg. 35

DMWW supports science based solutions.

The word runoff should be eliminated from the statement, “For purposes of runoff pollution abatement in Iowa.” It should be changed to, “For purposes of nonpoint pollution abatement in Iowa…”

Priorities should not be based on stakeholder needs as they may not address watershed needs.

Not sure what this means, “provide support that stakeholders can use to engage in securing needed funding?”

Coordination of all sources of funding and programs – everyone working off the same plan – are critical to success in the watershed.

Funding, Objective 4.2, pg. 36

There are regulatory inequities between agriculture and other business and industry that hinder equal investment in NPS pollution issues.

There is an emphasis on getting public investment in NPS solutions in this objective. Consideration should include the 30 years of investment by the public in funding conservation programs with minimal water quality results. Funding which they believe protects Iowa’s water resources. The public is already investing in protecting water quality through their tax dollars, water use fees, operating permit fees, increased treatment costs, storm-water fees, etc. What benefit expectations should their current investment provide?

Not everyone currently provided representation on the WRCC participates. How can this be improved before deciding to add people? Do the organizations need to change to ensure the industry is represented and committed to participating?

DMWW supports a consistent message as discussed previously, but we are unclear as to what is meant by, “target tailored message based on identified local resource needs in coordination with WRCC and WPAC?” What is the intended outcome?

The private sector already provides financial assessment tools and information. Maybe instead of developing the tools, they should become more readily available and user friendly?

Desired outcome for items 7, 8, 9 and 10 is unclear as to the purpose or use of the fact sheets. Who is the audience and what is the desired outcome?

DMWW agrees the Iowa Economic Development Authority should be involved, but not just to solicit funds. They should be a partner with a seat on the WRCC. Water quality and availability is often of interest to firms wanting to locate in Iowa, both from a process perspective and from the recreational benefits it provides their employees.

Funding, Objective 4.3, pg. 37

DMWW supports and encourages the establishment of cross-links between all websites that can provide information on innovative water quality strategies and practices. Are there other sites that should be added? The desired outcome needs to reflect why this is important to researchers? Is this information important to others besides researchers?

Where do we go from here?

The first sentence states, "…the world of runoff pollution abatement…" Runoff pollution should be removed and NPS pollution added. Other areas also refer to runoff pollution and these should be changed as well.

Who will decide if the agencies listed in Objective 1.1 have been successful in achieving the action steps they are accountable for in the plan?

In any of the questions where a reference is made to an agency for inquiries there should be contact information provided, an e-mail or phone number.

The Aldo Leopold quote should be on the cover of the document. It is a very powerful message that is extremely relevant to the issues being addressed in the plan.

DMWW appreciates the opportunity for the drinking water industry to participate in the process of developing Iowa's Nonpoint Source Management Plan. Whether a drinking water provider is a surface or groundwater source, reduction of nonpoint source pollution is a high priority. We look forward to continuing our participation in the forward progress of not only reducing nonpoint source pollution, but reducing the impact of ever increasing flood events in Iowa. Thank you for the opportunity to comment on the plan.

Sincerely,

Linda Kinman
Public Policy Analyst/Watershed Advocate

May 18, 2012

Mr. Jeff Berckes
Iowa DNR
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502 E. Ninth St.
Des Moines, Iowa 50319

RE: Comment on Draft Iowa Nonpoint Source Management Plan

The Iowa Farm Bureau Federation, the state's largest general farm organization with more than 153,000 member families, thanks you for the opportunity to comment on the draft Iowa Nonpoint Source Management Plan. Our members support protection of Iowa's soil and water quality through our state and federal voluntary conservation programs. They have a great deal at stake in the successful implementation of the plan. Following are the Iowa Farm Bureau Federation's comments on the draft plan.

General Comments

Most of the plan's proposed revised elements seem consistent with the stakeholder group's general discussion in 2011-12, and the polices recently implemented by the Iowa Legislature, namely the Water Resources Coordinating Council (WRCC) and the Watershed Planning Advisory Council (WPAC). The principles outlined in these new oversight bodies and enacting legislation, and recognized in the draft revisions to Iowa's Nonpoint Source Management Plan, include news ways to systematically review and prioritize Iowa watersheds, voluntary soil and water conservation programs, and nonpoint source challenges in the context of limited financial and human resoruces. This plan, overall, should aid the state in these important efforts.

State Nutrient Strategy

The U.S. Environmental Protection Agency has asked each state to develop a comprehensive nutrient strategy. This strategy will most certainly include steps to specifically increase voluntary program participation, maximize limited resources, prioritize watersheds and programs, and improve program delivery. The final NPS Management Plan will be one component of the strategy. It is important for it to be consistent with the broader nutrient strategy, once it is developed. In turn, the plan should reference the strategy and recognize the need to be consistent with it and complementary to it.

One critical component of this broader nutrient strategy effort will be an improved, synchronized working relationship between IDALS, NRCS and farmers, and built upon the long-standing

principle that these agencies are science agencies that provide voluntary technical assistance to farmers. Accordingly, the IFBF recommends adding a new action step in Objective 1.1, Strengthen and Expand Agency Collaboration, that reflects this recognition of the two documents, their interrelationship and these principles.

Specific Comments

On page 9, the third complete paragraph, third sentence: "The contribution from agriculture is proportional to the number of farmers working the land." In fact, this would seem to disproportional, as the number of farmers decreases their productively has increased due to the replacement of labor with technology. We suggest deleting this sentence.

In the same paragraph, there is a reference to Figure 3 on the page, a pie chart depicting Iowa gross domestic product. However, the data is from 2006. We suggest using the most recent data available. Data from 2010 is available at this link (http://www.iowaworkforce.org/trends/gsp.html), which indicates a state GDP of almost $142.7 billion. (Other sources of even more recent data may be available.) Also, when data such as this is used, the source of the data should be noted.

On page 13, the first partial paragraph at the top of the page, the last sentence seems to be referencing Figure 7, but it is unclear. Also, Figure 7 seems to be a depiction of the number of watersheds that have received assistance from the Clean Water Act Section 319 program for development of watershed plans over a specific period of time. Clearly, there are more watershed plans development by a variety of state and federal funding programs. This needs to be clarified.

On the same page at the end of the next paragraph, there is a reference the total investment by the CWA 319 program over the past 12 years. Other indicators of success and scope that we recommend adding to the plan are the tons of sediment and pounds of phosphorus prevented from reaching Iowa's surface waters. The department issues annual news release with these facts and this plan is an opportunity to sum these results and remind readers of that success.

Plan Objectives and Action Steps

In addition to adding a new action step in Objective 1.1 regarding the nutrient strategy under development, we offer the following recommendations:

Move Objective 2.4, Develop a Visioning Process for HUC-8 Watersheds in Iowa, to proceed the current Objective 1.3 (thus, becoming the new 1.3), Develop Local Comprehensive Visions and Action Plans for Nonpoint Source Water Quality Within the HUC-12 Watershed. It seems logical and sequential that HUC-8 visioning would proceed HUC-12 action plans. It seems that this objective and its action steps would still fit appropriately under Goal 1: Build Partnerships to Enhance a Collaborative Watershed Approach in Nonpoint Source Pollution.

Edit Goal 2, Objective 2.6, Action Step 3 as follows: Cooperate ~~Meet~~ with the Iowa Agribusiness Association ~~Board of Directors and sell them~~ on development of ~~the idea that~~ a program to train ~~having~~ their members' staff ~~at the field operations level~~ (e.g. individual cooperatives, etc.) ~~being~~ ~~trained~~ to ~~and~~ prepar~~c~~ing conservation plans for their ~~landowner~~ customers. ~~will sustain their business—sustainable farms, environmental awareness, community goodwill~~.

Thank you for the opportunity to comment. I look forward to seeing appropriate changes to the final plan.

Sincerely,

Rick Robinson
Environmental Policy Advisor