IV. Chapter 4 Nine Key Elements

Chapter 4 of Iowa's NPSMP addresses the nine key elements as presented in guidance by U.S. EPA. These nine key elements, developed by EPA and the states, characterize an effective and dynamic State nonpoint source program.

A review of Iowa's 1992 NPSMP and the processes currently in place was conducted to assess the revisions necessary to meet the intent of the nine key elements and EPA's request for an upgrade to the NPSMP. In addressing each individual key element, an attempt has been made to present what is currently being done in Iowa, and what actions are planned to address each key element.

The IDNR is the lead agency for nonpoint source pollution control efforts in Iowa, through its administration of the Section 319 program and other related water quality programs in the state. However, due to the complexity and the widespread magnitude of the state's nonpoint pollution issues, the desired water quality improvements can only be achieved through a coordinated and cooperative effort of many agencies, organizations and individuals. Iowa's Nonpoint Source Management Program provides the mechanism for coordinating the state's efforts, as it enables all water quality issues and the roles and perspectives of the various agencies and organizations to be considered.

In recent years, IDNR has developed successful working relationships with many of the agencies and organizations involved in the state's efforts to address water quality concerns in an effective and cost-efficient manner. IDNR has worked with these groups in both a formal setting, such as participation on technical or advisory committees or through joint sponsorship of water quality projects, and through informal approaches such as telephone conversations or meetings to discuss ideas, issues and solutions. Both means have provided successful outcomes.

As water quality becomes a higher priority for the citizens of the state, it will be crucial for IDNR to enhance existing and develop new working relationships with its water quality partners. Doing so will allow IDNR and its partners to draw upon additional resources, assure continuity of the statewide program and prevent duplication of efforts. Even though the partnering agencies and program areas have varied priorities and goals, the NPSMP can bring these together in a unified effort to improve water quality.

As discussed in Chapter 3, Iowa's previous Section 319 funding priorities include: the priority waterbodies listed in Appendices 2, 9 and 10; public water supply wells and reservoirs; areas in proximity to agricultural drainage wells and sinkholes; ongoing agricultural and urban nonpoint control projects; and other threatened publicly owned waterbodies of a local or regional importance (to include 303(d) listed waters). Other funding programs, such as the WPF and EQIP, share many of the same priorities, although some differences do exist. These funding priorities are changing as the state begins to more fully address the requirements of the Unified Watershed Assessment, TMDLs, and nutrient criteria and standards. While increased funding is expected to be

used for projects on impaired waters, voluntary watershed projects will continue to receive Section 319 funding support as the state deems appropriate.

Chapter 3 also provides a breakdown of how Iowa expended the Section 319 funds over the past years. Funds have been used to support staffing to administer the Section 319 program, monitoring activities, implementation of BMPs, demonstration of new and innovative practices, wetland and trout stream restoration, and information/education activities. It is expected to continue to utilize Section 319 funds to support these activities with future grant awards.

In looking at Iowa's nonpoint source management plan, it is important to recognize many of the programs currently being used to address the state's critical nonpoint source issues are still evolving. Therefore, these programs can only be presented as they stand today, along with an indication of the direction the state believes these programs will take in the future, as they are modified to better address the state's water quality needs.

A major force driving the state's nonpoint control programs is the federal Clean Water Action Plan (CWAP). The CWAP released in February 1998, was developed by cooperating federal agencies to revitalize the nation's commitment to water resources. A major cornerstone of this plan is the use of a comprehensive watershed based approach to protecting and improving the nation's water resources. The CWAP is a multi-year plan, with proposed activities outlined through year 2008.

The CWAP includes such programs as the Unified Watershed Assessment, the National Conservation Buffer Initiative, the Conservation Reserve Enhancement Program, the Animal Feeding Operations Strategy, the State Revolving Loan Funds, and Watershed Restoration Action Strategies. The plan outlines how these and other federal water quality programs will be used to assist states in addressing their water quality problems in a uniform, consistent and cooperative manner.

Legislation passed in FY2000 includes the I on IOWA, (Initiative on Improving Our Watershed Attributes). This initiative approves $11.19 million in state funding for the resources necessary to provide Iowans safer and cleaner water.

The I on IOWA initiative provides assistance for a variety of water quality activities. IDNR received funding under this initiative to develop and provide GIS maps for land cover, topography, soils, and potential erosion and soil delivery on a watershed basis. This information will be provided for all watersheds across the states to assist in the development of water quality projects and will be available on both IDNR's home page and in hard copy. Other activities provided by this initiative include expanding the use of buffers and wetlands on agricultural lands, and using revolving loan funds to upgrade private septic systems. Many of the specifics of the state initiative are discussed under the remaining sections of this chapter. However, the recurring theme to the diverse approaches it "providing the tools necessary for individuals and communities to take the

lead in efforts to improve water quality in their area", according to IDNR's Director Paul Johnson.

A variety of agencies and organizations initiated the Conservation Milestones at the Millennium celebration in Iowa in 1999. This was a statewide campaign designed to celebrate the achievements made in natural resources conservation on Iowa's private lands. This effort was initiated to inform Iowans on the progress made in protecting and improving soil, water, and other resources in 10 conservation areas. In addition, the campaign outlined the future challenges the state faced, and asked all Iowans to support and assist in these conservation efforts.

Chapter 3 of this plan discusses the programs that Iowa is currently using to address its water quality issues. This discussion covers both programs where water quality is the primary program purpose and programs where improved water quality is a secondary result of activities conducted to accomplish the program's major goal(s). Many of the program descriptions include details of their accomplishments in improving water quality.

As IDNR and other partnering agencies and organizations continue to work toward protecting and improving the state's water resources, several programs will play a critical role in focusing the state efforts. As these programs are still undergoing development, the program specifics outlined below are expected to change over the next few years, as a result of changes in identified needs, regulations, etc. However, the importance of these programs can not be ignored and must be included in the NPSMP, even if only as a proposal or a plan for the future. These include:

A. Watershed and Water Quality Projects

A major emphasis in Iowa's past nonpoint source control programs has been on providing funding and technical assistance to small watershed protection projects. This approach has enabled the state to initiate and complete a number of locally driven water quality projects, and has shown that a focused and watershed based approach can be successful in improving water quality.

Currently there are 66 watershed based water quality projects underway. (A directory of water quality projects, March 2000, is attached as Appendix 14.) Funding for these projects has been provided from a variety of funding programs, including Section 319, WPF, and EQIP. These projects address a variety of nonpoint source issues and improve water quality by providing technical assistance, cost-share for best management practices in priority areas, and information/education materials to both landowners and the general public. Many of these projects have been able to document specific water quality improvements resulting from their activities.

In addition to the watershed projects, the state's nonpoint control efforts have also included several statewide projects. These have included regional or statewide public information and education programs on such topics as nutrient and animal manure

management, demonstrations of innovative or alternative best management practices such as buffers or animal waste management systems, and development of an Iowa specific Farm*A*Syst program.

In addition to its water quality programs, many other programs in Iowa whose primary purpose is something other than water quality nonetheless assist in the state's water quality efforts. This is particularly true for programs designed to protect wildlife, improve habitat, reduce solid and hazardous wastes, improve lawn care, etc. An example is Ducks Unlimited as they assist in the development and improvement of wildlife habitat, specifically wetlands. Through this work with wetlands, designed for wildlife habitat, improved water quality for the area can also be expected.

As the state begins to address more complicated issues, such as TMDLs, it will need to move from a small watershed approach to one which address problems and issues on a larger basis, such as a river basin. Over the past several years, the state has begun to do so, with an example of this being the activities that have been initiated in the Maquoketa River Basin. In this basin, several locally driven projects have been developed to address the water quality problems of the Maquoketa River, a 1,879 square mile watershed in northeast Iowa that is a direct tributary to the Mississippi River. Several other efforts are also currently underway in the state to address water quality issues on a large watershed basis.

In response to the requirements of the CWAP, in 1999 the Iowa Unified Watershed Assessment (UWA) and Restoration Action Strategy was developed. Iowa's UWA identified all of the state's 8-digit watersheds as Category I Watersheds in Need of Restoration. The UWA also placed each watershed into Priority Category 1, 2, or 3 for restoration, and identified the specific water quality priorities of the state. In accordance with the UWA guidance, Iowa will develop and fund watershed and water quality projects based on its UWA, in addition to previously noted Section 319 priorities (Chapter 3).

The CWAP encourages states to develop Watershed Restoration Action Strategies (WRASs) for watersheds that are not meeting clean water and other natural resource goals. In addition to identifying the water quality problems and control needs of a watershed, WRASs are to identify proposed activities and schedules for addressing these problems, and funding needs and sources. Local involvement in the development and implementation of the WRAS is critical. At present, Iowa water quality project applications are serving as the basis for WRASs, and are submitted as part of the state's annual Section 319 grant application to Region VII EPA. In the future the development of TMDLs and wasteload allocations for specific impaired waters are expected to form the core of the WRAS.

In 1999 the Division of Soil Conservation, IDALS, received legislative authorization and state funding to establish the Iowa Watershed Protection Program. This state program includes three components: Watershed Protection Implementation Grants, Watershed

Protection Development Grants, and the Iowa Watershed Initiative Task Force. For FY2000, the program was funded at $1,250,000. This program is targeted to receive an additional $1.45 million in funding under the approved FY2000 legislation, with the new funds targeted at water quality problems related to the state's 303(d) listed water bodies.

A major component of the Iowa Watershed Protection Program is the Iowa Watersheds Initiative Task Force. Through this Task Force, DSC and a number of other agencies and organizations are evaluating Iowa's existing watershed programs and approaches, with the goal of determining how these can be strengthened to better address the state's water resource problems and needs. Approximately 100 Iowans represent the overall Task Force. The Task Force includes a Steering Committee and Coordinating Committee, as well as 3 distinct work groups: Scope and Priorities; Program Development; and Local Outreach and Communication.

Issues being addressed by the Iowa Watersheds Initiative Task Force include:

- how can state watershed programs best be structured to assist local communities address water quality, flood control, soil erosion and other natural resource concerns,
- how can coordination between local communities, the general public, state, and federal agencies on watershed issues and activities be enhanced; and,
- how can assistance be provided to the growing number of local communities that want to sponsor watershed protection efforts and provide resources to leverage other funding available at the federal and local level.

The Task Force will submit a full program report to the Iowa Legislature in January 2001. This report will provide additional information regarding the state's watershed program needs and will be considered in determining the future direction of Iowa's NPS program.

A second effort DSC is initiating as part of the Iowa Watershed Protection Program is the addition of two staff to assist in development and implementation of future water quality projects. With the addition of this staff, direct assistance can be offered to county soil and water conservation districts in the planning stages of water quality projects. Through these positions, technical assistance will be provided to assure all water quality impacts have been addressed, local support obtained, appropriate measures considered and a potentially successful project is being proposed. In addition to their role in assisting in project development, these positions are also expected to provide assistance during the implementation phase of projects.

Many of the components of the I on IOWA are supportive of an expanded state watershed approach. In addition to increased funding for the Iowa Watershed Protection Program, the Initiative includes $1.5 million for wetlands to intercept and remove nitrates from tile drainage areas, $2 million to Soil Conservation Cost Share, $195,000 for providing GIS maps to local groups involved in developing and carrying out watershed projects, and $70,000 to support volunteer monitoring and watershed efforts.

In addition to the watershed activities being undertaken by governmental agencies, a number of private organizations are involved in conducting watershed activities within Iowa. Two examples of ongoing efforts in this area include the “Watershed Works!” and the “Watershed Heroes” programs.

“Watershed Works!” is a training program initiated in Iowa in calendar year 2000 and sponsored by the NRCS, Iowa Farm Bureau and Trees Forever. The program was developed because the project sponsors recognized the importance of working together at the local level to successfully deal with the conservation and environmental challenges of the future, and is designed to build leadership and facilitation skills for effective local involvement in watershed planning. The program will utilize two training sessions to promote locally-led watershed planning, with the first focusing on getting the locally-led watershed planning and implementation process started, and the second on keeping the process going. Locally led conservation can bring together diverse people and groups who share a stake in the resources. Through this process, they work together to create a vision for these resources and make the vision a reality.

The Watershed Heroes Conference is an annual conference sponsored by the American Farm Bureau Federation, with IDNR being a co-sponsor for the FY2000 conference. This conference provides an opportunity for participants to better understand the challenges farmer’s face in maintaining crop production while addressing water quality concerns. Through participation in a variety of activities dealing with crop production the participants, i.e., municipal water suppliers, teachers, crop consultants, county supervisors, local citizens, etc, are afforded a "hands-on" opportunity to experience all aspects of watershed management.

B. Total Maximum Daily Loads (TMDLS)

Section 303(d) of the Clean Water Act requires that waters of a state that are found to be impaired and whose impairment will not be corrected through existing pollution control programs be listed on the state’s 303(d) list. Waters placed on a state’s 303(d) list must be prioritized and a schedule developed for establishing TMDLs for each pollutant and waterbody. Federal law requires EPA to establish the 303(d) list and develop TMDLs for a state, should the state fail to do so.

In 1999, a lawsuit was filed against EPA alleging, in part, since Iowa had failed to submit its 303(d) list for 1998 and previous years, and failed to establish TMDLs, EPA was required to disapprove these actions and establish a 303(d) list and TMDLs for Iowa. The Lawsuit is still pending. In late 1999, EPA finalized a 303(d) list for Iowa, and it contains 157 waterbodies.

EPA has committed to developing five TMDLs for three of the listed waterbodies in the year 2000. These waterbodies include the Corydon Reservoir in Wayne County, Rock Creek in Clinton County, and the Cedar River at Cedar Rapids. Decisions by EPA on

development of additional TMDLs are currently on hold, pending the outcome of negotiations with IDNR regarding development of TMDLs.

The IDNR has drafted and submitted to EPA a proposed schedule for developing TMDLs for the remaining 154 waters currently on Iowa's 303(d) list. This schedule calls for Iowa to develop the required TMDLs on a river basin basis (with all the TMDLs for a specific river basin developed in a single year), and for TMDLs for all of the currently listed waters to be completed over a 10-year period.

In addition, the IDNR has begun the process of obtaining the necessary staffing and other resources needed to establish and implement TMDLs. State legislation adopted in 1999 authorized and provided funding to IDNR to add two technical staff specifically for the purpose of developing TMDLs. These positions have now been established and are currently being filled. In addition, the IDNR has recently hired an individual to serve as the state TMDL coordinator. This individual has the overall responsibility for preparing and implementing the state's TMDL development plan, and for coordinating the TMDL program activities with other related water quality programs. In addition, the FY2000 legislation provided $153,000 for the TMDL program.

As part of the 2000 legislation, Iowa law requires data that IDNR uses to establish the 303(d) list and TMDLs be considered "credible data". Credible data must meet certain criteria set forth in the law, however IDNR has not yet developed rules or procedures regarding this matter. The implications of meeting the standard for credible data are uncertain, however will be considered in future monitoring, both for regulatory agencies and volunteer monitoring groups.

Due to changes recently proposed by EPA in the TMDL regulations, as well as other ongoing water quality program developments at both the national and state levels, the nature and scope of Iowa's TMDL program is expected to continue to evolve over the next several years. Although somewhat unknown, expected changes include:

- a significant increase in the number of waterbodies placed on Iowa's 303d list,
- the need for substantially greater resources within IDNR and other agencies to implement the state's TMDL responsibilities, and
- the need for changes in state legislation and agency regulations to better support TMDL implementation.

Because the TMDL program in Iowa, as well as nationwide, is continuing to evolve, it is unclear at this time how the TMDL program will impact the state's ongoing nonpoint source programs (including the 319 program). However, given that a majority of the water bodies placed on Iowa's 303(d) list are expected to be added due to nonpoint related water quality problems, there will clearly need to be a close relationship between the TMDL program and Iowa's nonpoint source programs. As Iowa's TMDL program becomes more defined and implementation of projects to correct identified water quality impairments is initiated, Iowa will evaluate how the state's Section 319 program and

funding, as well as other related programs and funding, can best be utilized to support the state's TMDL efforts.

C. Nutrient Criteria/Standards

Iowa has long recognized excessive nutrient runoff into surface waters and leaching of nitrates to groundwater was adversely impacting the quality and uses of some of its waters. However, since on a statewide basis only a small number of Iowa's waters were believed to be significantly impacted by nutrients, the state generally did not consider nutrients to be a major water quality concern. Several recent developments have changed the state's perspective of nutrient issues, and have caused the state to begin giving higher priority to addressing nutrient management issues.

In recent years, nutrient runoff has become a major national environmental issue. For midwestern states, a major concern is the finding that high nitrogen loads from states draining into the Mississippi River may be responsible for hypoxic conditions (or a dead zone) in the Gulf of Mexico. These findings are of particular concern to Iowa, since studies by the IDNR's Geological Survey Bureau have suggested, on the average, Iowa contributes almost 25% of the nitrate-N delivered to the Gulf of Mexico by the Mississippi River. While a number of questions remain regarding the role nitrogen plays in creating the hypoxic conditions in the Gulf, several studies have proposed midwestern states take steps to substantially reduce the amount of nitrogen they discharge to the Mississippi River.

In addition to the hypoxia issue, in recent years several outbreaks of *Pfiesteria* in coastal waters of eastern states have been linked to high nutrient levels in these waters. In these cases, high levels of phosphorus, rather than nitrogen, have been implicated as being the major pollutant of concern. Although similar problems have not yet been found in Iowa or other Midwestern states, the eastern state outbreaks nonetheless have focused attention on phosphorus as a major national water quality issue.

In Iowa, high nitrate levels are becoming an increasing problem for a number of the state's drinking water supplies. Several of the state's larger public water supply utilities, including those serving Des Moines and Cedar Rapids, are finding nitrate levels in their raw water sources at levels about the drinking water MCL with increased frequency. At the same time, a number of smaller water utilities throughout the state are having to deal with high nitrate levels, particularly where shallow ground waters are serving as the water source.

In response to these and other concerns, several actions have been initiated at the federal level to reduce nutrient concentrations in the nation's waters. Although these actions have as yet had minimal impact on nutrient management in Iowa, that situation is expected to change greatly in the next few years.

Several components of the federal CWAP are likely to significantly impact Iowa's future nutrient management activities. The first of these is EPA's call for all states to adopt numeric criteria for nitrogen and phosphorus in their water quality standards. Currently, these activities are focused on EPA's development of guidance documents and recommended numeric criteria for states to use in developing nutrient standards. EPA's current schedule calls for the following:

- guidance documents for lakes/reservoirs and rivers/streams to be completed in February 2000;
- recommended numeric nutrient criteria to be developed for lakes/reservoirs in the ecoregions covering Iowa by the end of calendar year 2000; and
- recommended numeric nutrient criteria to be developed for rivers/streams in the ecoregions covering Iowa by the end of calendar year 2001.

The CWAP calls for states to adopt numeric nutrient water quality standards by the end of calendar year 2003, and indicates EPA will promulgate such standards for any state which fails to adopt nutrients standards by that date. The development and adoption of numeric nutrient criteria for wetlands was also called for in the CWAP, but the current schedule established by EPA does not call for completion by 2003.

Review of EPA's draft guidance documents for lakes/reservoirs and rivers/streams indicates Iowa may be put in the position of having to adopt nutrient standards that are lower than the nutrient levels currently found in many of Iowa's surface waters, particularly for phosphorus. Should this happen, a substantial number of Iowa's waters would be considered impaired, and would have to be placed on the state's 303(d) impaired waters list. In turn, placement of these waters on the 303(d) list would also require the state to develop TMDLs and implementation plans for bringing these waters into compliance with the nutrient standards.

The second CWAP component likely to significantly impact Iowa's future nutrient management activities is the revised federal animal feeding operation strategy. Among the actions called for in this strategy are the following:

- increased permitting of large animal feeding operations, as well as for smaller operations found to be contributing to the impairment of waters placed on Iowa's 303(d) list;
- mandatory development of comprehensive nutrient management plans (CNMPs) for permitted animal feeding operations, and voluntary development of CNMPs for others; and,
- accounting for both nitrogen and phosphorus in CNMPs.

Although the full impact proposed changes in federal programs will have on nutrient management in Iowa is not clear, the state has nonetheless begun to more fully address nutrient management in its water quality programs. Actions which have been taken or are planned, include:

- through a subcommittee of the NRCS State Technical Committee, work has begun on revising the NRCS 590 Nutrient Management Standard – proposed

revisions include updating the standard to reflect current ISU Extension nutrient management recommendations and publications and to make the standard conform to new provisions of the NRCS national standard;

- as part of the NRCS subcommittee's activities, a series of forums has been held to inform attendees on a variety of phosphorus management issues – meetings have addressed such topics as crop phosphorus needs, soil testing for phosphorus, water quality impacts of phosphorus, and EPA's nutrient criteria development process; meeting attendees have included university staff, agency personnel, and agricultural commodity representatives;
- a coalition of agricultural oriented agencies and organizations has re-established a state nutrient management task force, for the purpose of assessing the progress and current status of a state nutrient management program developed by the task force in the early 1990's;
- a new statewide nutrient management information project has been initiated by ISU, using Section 319 funding from IDNR – project is staffed by an ISU extension crops specialist, is intended to give a state level focus to water quality and nutrient management issues, work will be carried out in conjunction with a broad-based advisory committee;
- as part of its FY2000 legislative initiatives, the IDNR proposed changes in the state's manure management plan (MMP) legislation to require both nitrogen and phosphorus be accounted for in development of MMPs– current law only requires nitrogen be considered in a MMP – this legislation was not adopted, however IDNR may consider pursuing future proposals;
- as part of the FY2000 I on IOWA, the Iowa Legislature appropriated $0.85 million to IDALS to carry out a statewide farm and livestock demonstration project designed to show the effectiveness of and encourage greater adoption of emerging agricultural nutrient and pesticide management systems.

Additional nutrient related water quality activities are expected to be undertaken in Iowa, as specific needs are identified and the resources needed to carry out such activities become available. Such activities may include, but not be limited to, development of a comprehensive state nutrient management strategy, expanded information and education activities on nutrient management for both agricultural and non-agricultural audiences, and the development and testing of a phosphorus index to better identify those areas of farms & fields where improve phosphorus management is critical to maintaining water quality.

D. Animal Feeding Operations

During the 1990's, Iowa has devoted considerable resources to development and implementation of programs to regulate large animal feeding operations. These efforts were directed mainly at reducing the water quality and other environmental impacts associated with construction and operation of confinement feeding operations, and were taken in response to significant expansion of large confinement hog, poultry, and dairy operations in Iowa since the early 1990's.

Major accomplishments resulting from the state's efforts have included:

- development in 1994 of a Governor's Livestock Revitalization Task Force report calling for an expanded state regulatory program for large confinement operations;
- passage in 1995 of HF519 by the Iowa Legislature – included number of provisions, including setting separation distance, permitting, and manure management plan requirements for certain large confinement operations;
- adoption by IDNR in 1996 of rules to implement HF519's provisions;
- passage in 1998 of SF2494 - expanded the regulatory provisions of HF519 significantly, including placing certain restrictions on manure disposal, requiring training and certification of manure applicators, and making a greater number of confinement operations subject to manure management plan requirements; and
- adoption by IDNR in 1999 of rules to implement the provisions of SF2494.

Even though Iowa's animal feeding operations program underwent major changes during the 1990's, the program changes are not expected to end. Instead, even more changes in the program are anticipated, driven both by continuing concerns regarding the adequacy of the current program to protect Iowa's environment and by the need to maintain consistency with federal animal feeding operation program requirements.

As part of its year 2000 legislative recommendations, IDNR recommended four major changes in Iowa's laws regulating confinement feeding operations. These include:

- making the owner of a livestock operation and the owner of animals fed in that operation share the responsibility for manure disposal;
- providing IDNR greater flexibility in determining where large confinement facilities can be located, particularly with regard to location near environmentally sensitive areas;
- prohibiting construction of new confinement operations within the 500 year floodplain; and,
- requiring that both nitrogen and phosphorus be considered in determining the amount of manure that can be applied on farmland.

Although none of IDNR's recommended changes were adopted by the 2000 legislature, these changes may be considered in future legislative sessions. In addition, further

changes in Iowa's animal feeding operation program will undoubtedly be proposed in the next several years in response to the recently revised EPA/USDA animal feeding operation strategy. A comparison of Iowa's current program with the revised federal strategy indicates there are several areas where the state's program is inconsistent with the federal strategy, including:

- the federal strategy calls for NPDES operation permits to be issued to large (over 1000 animal unit) confinement operations, while confinement operations are exempt from obtaining operation permits under Iowa's program;
- the federal strategy proposes that NPDES permits be issued to all animal feeding operations contributing to the impairment of an impaired watershed, while Iowa's program has no similar requirement;
- the federal strategy requires development of comprehensive nutrient management plans (CNMPs) for all permitted animal feeding operations (both open lots and confinement), and calls for voluntary development of CNMPs for nonpermitted operations, while Iowa's program only requires manure management plans (MMPs) for larger confinement operations (open feedlots are exempt from the state's MMP requirements); and,
- the federal strategy requires that CNMPs address several issues not covered under Iowa's MMP requirements, including the need to consider the adequacy of existing manure collection and storage facilities and to address both nitrogen and phosphorus in determining maximum manure application rates.

To continue administering the NPDES permit program for animal feeding operations in Iowa, the state will need to modify its existing laws and rules to make them compatible with the revised federal requirements. As an alternative, the state can maintain NPDES permitting authority if it can demonstrate to EPA its existing program is functionally equivalent to the federal program (i.e.- the state program provides an equivalent level of environmental protection). While demonstrating functional equivalency may be possible for some aspects of the current state program (such as permitting), in other areas the differences between the state and federal program requirements are so great functional equivalency can probably not be claimed.

E. Storm Water Program

IDNR administers the federal NPDES storm water permit program in Iowa. IDNR's responsibilities under this program include adopting regulations governing storm water discharges in Iowa and issuing NPDES permits for covered discharges. Phase I of the NPDES storm water program is currently in effect in Iowa. Phase I generally requires stormwater permits for medium and large municipalities and for 11 industrial categories, one of which is construction activity that disturbs 5 acres or more of land. Under Phase I rules, permits have been issued to 2 Iowa cities, to between 200 and 265 construction sites annually, and to 1711 industrial facilities.

Final Phase II NPDES storm water program rules were published in the Federal Register in December 1999, and it is expected IDNR will adopt the Phase II rules by early in 2001.

Based on this schedule, facilities covered by the Phase II rules will be required to apply for permits from IDNR by March 2003.

The Phase II rules are expected to require an additional 31 smaller-sized Iowa cities to obtain permits from IDNR. Several additional cities must be evaluated by IDNR to determine if their storm water discharges have the potential to cause violations of state water quality standards or other significant water quality impacts. If so, these cities will also be required to obtain permits.

No additional industrial categories are covered by the Phase II rules. In fact, a number of the industrial facilities currently permitted under the Phase I rules may not be permitted by Phase II due to the no exposure exemption, where the industrial activity is conducted under a cover and thus is not exposed to rain or runoff.

Under Phase II, permits will be required for construction site activities that disturb land areas greater than one acre. This represents a significant reduction in the size of the disturbed area for which a permit is required (reduced from 5 acres to 1 acre). Even so, IDNR staff does not anticipate a significant increase in the number of applications, as the majority of construction activity occurs in areas of five acres or more that already are required to be permitted.

The operators of any facility or site covered by the Phase II rules will be required to apply for NPDES permit coverage and implement storm water management controls that effectively reduce or prevent the discharge of pollutants into state waters. The permitting process includes submitting permit application forms, paying required fees, and providing public notification. In addition, a pollution prevention plan (PPP) must be prepared and implemented. However, submittal of the PPP with the permit application is not currently required, nor does IDNR conduct a technical review of the PPP.

In anticipation of adopting the Phase II rules, IDNR staff has begun providing information to local groups and agency personnel regarding the status of the current program and the potential impacts of the Phase II rules. One of the most widely used mechanisms has been through public meetings and presentations. IDNR staff has been invited to many homebuilder, developer and contractor meetings to provide information on requirements of the program. In addition, IDNR has established a working relationship with county SWCDs, whose staff in many instances are the initial contact for construction site erosion concerns or complaints.

As Iowa's storm water program expands under the Phase II rules, it is anticipated that additional investigation and enforcement actions will be required. To ensure greater and more uniform statewide compliance with the requirements, the six IDNR regional field offices will be provided with additional training regarding the storm water program and will be encouraged to enforce the regulations equitably.

In response to concerns about the adequacy and effectiveness of the state's construction site erosion control programs, in February 2000 a committee with membership from a variety of natural resource agencies and organizations submitted a report to Paul Johnson, Director of IDNR. This report reviewed the state's current NPDES permitting process for construction sites, and made several recommendations on steps that should be taken to achieve better environmental performance on construction sites. Major concerns identified in the committee report included the lack of adequate staffing to administer the permit program (all aspects of the entire stormwater permitting process are handled by two IDNR staff), the failure to review pollution prevention plans prior to permit issuance, and apparent inconsistencies in enforcement of the pollution prevention requirements between different areas of the state.

The committee report emphasized the need for Iowa to develop a uniformly enforced, technically sound construction site erosion control program, and provided several recommendations for doing so. Key elements which the committee recommended the state address included: utilizing local leaders, in addition to IDNR staff, to provide information/education on NPDES and related construction site regulations; establishing a network of trained individuals who can provide technical assistance in developing adequate Pollution Prevention Plans (PPPs); establishing a process for review of PPPs prior to permit issuance, etc.

F. On-Site Wastewater Treatment Disposal

In Iowa, county boards of health have primary responsibility for regulating construction and operation of septic tanks and other on-site wastewater treatment systems serving less than 15 people, while IDNR has the primary responsibility for larger (public) systems. In conducting their activities, these boards must as a minimum comply with the minimum state standards developed by IDNR. If counties fail to adopt or enforce IDNR standards for smaller systems, IDNR has the authority to force compliance by individuals and the counties with these standards.

Improving private on-site wastewater systems is an essential step in improving water quality in Iowa. It is estimated that Iowa currently has up to 300,000 private septic systems and that up to two-thirds of those may be inadequate in terms of the level of waste treatment provided. Although often considered to be a farm related problem, residential homeowners now outnumber farmers by a three-to-two margin in the state's unincorporated areas. In addition, much of the new construction of homes in rural areas of the state is occurring in the form of larger subdivisions, often resulting in individual properties no longer being large enough to build the required leach fields.

The state's revolving loan fund (SRF) programs have enjoyed considerable success when applied to other wastewater and water supply situations, such as in financing municipal sewer systems and sanitary districts. To address the funding needs of on-site wastewater treatment systems, IDNR is revising the state SRF plan to make on-site wastewater treatment system replacement or renovations eligible for funding.

The I on IOWA legislation provides $600,000 of state funds to assist homeowners in improving their on-site wastewater systems. These state funds will be used to match $2.4 million of federal funds, to make available a total of $3 million for this program. (Rules are currently being drafted for implementation of the on-site wastewater treatment system program. These rules will allow IDNR to provide funds to qualified counties, with the no- or low-interest loans being made through local banks. Only replacement or improvement of existing systems would be eligible for funding (systems built as part of new housing developments would not qualify). Using the SRF program in this way would give Iowa citizens a more financially attractive means to correct existing septic system problems.

In areas of the state with extensive clay soils, the use of conventional septic tanks with leach fields is frequently not effective, due to the slow infiltration capacity of these soils. As a result, in these areas use of alternative types of household wastewater treatment systems is often required.

In the Lake Fisher watershed, as part of a Section 319/WFP water quality project and in conjunction with funds provided through the Landfill Alternatives Financial Assistance Program, Waste Management Division of IDNR, an alternative household wastewater system design has been implemented. These systems are designed using chipped tires in place of river rock and other aggregate to distribute waste through the system.

These systems are being installed on an experimental basis with monthly testing conducted for the next two years. The effectiveness of the systems will be determined to assure adequate treatment of the waste is provided. In addition, monitoring will include an evaluation for other substances that could potentially leach from the tires.

New scientific techniques are being used to distinguish pollution caused from septic systems. One of the primary new tools being used is caffeine testing to determine if pollution is coming from human sources. In some areas of Iowa, inadequate septic systems are having a significant adverse impact on water quality. IDNR and the counties will continue to work at the local and state level to provide information/education and technical assistance to reduce the occurrences of inadequate or improper on-site wastewater treatment disposal.

G. Buffers and Wetlands

Conservation buffers are small areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns. Strategically placed buffer strips in the agricultural landscape can effectively mitigate the movement of sediment, nutrients, and pesticides within farm fields and from farm fields. When coupled with appropriate upland treatments, including crop residue management, nutrient management, integrated pest management, etc., buffer strips should allow farmers to achieve a measure of economic and environmental sustainability in their operations.

The National Conservation Buffer Initiative, launched in 1997 by USDA, pledged to help landowners install 2 million miles of conservation buffers by the year 2002. Programs used to promote this effort include the continuous CRP sign-up, EQIP, WHIP and WRP.

Through the Clean Water Action Plan, EPA nationally recognized twelve watershed projects to showcase stream corridor restoration technology and methods for improving the community, environment, and water quality. Bear Creek in Story County, Iowa received designation as one of these Stream Corridor Restoration Projects. The Bear Creek Project was funded in part by Section 319 grants, in conjunction with other partners (i.e., NRCS, DSC, Leopold Center, etc.). Iowa State University Agroecology Issue Team has established a buffer strip along 5 miles of Bear Creek, in addition to installing bioengineering streambank stabilization and constructed wetlands. This site demonstrates a variety of buffer strip installations and provides significant water quality monitoring data.

Buffers are being promoted in Iowa through a variety of programs. The I on IOWA states a goal 500,000 acres on conservation buffers by the year 2005, through programs such as CREP and the Accelerated Conservation Buffer Program. Funding was appropriated as part of the FY2000 legislation for CREP at $1.5 million and for the Accelerated Conservation Buffer Program at $1.5 million. This funding will be used for the state match to provide a significant increase for these programs in federal funding from USDA.

The Accelerated Conservation Buffer Program is a program to assist landowners with incentive payments to take marginally profitable land out of production and establish conservation buffers. Iowa currently has 160,000 acres enrolled in conservation buffers, with a goal of 500,000 acres by 2005.

The Conservation Reserve Enhancement Program (CREP) is a program to promote construction of wetlands for the purpose of intercepting tile line runoff and reducing nutrient loss into rivers and streams in the tile drainage areas of the state. These areas of the state are a highly tile-drained, cropped area, and therefore requiring somewhat unique conservation measures. The I on IOWA states a goal of 32,500 acres of wetlands through the CREP by the year 2005.

Trees Forever's Iowa Buffer Initiative is a statewide project to demonstrate the effectiveness of streamside buffers. This five-year project's goal is to establish 100 demonstration and project sites and to establish a network of buffer specialists to assist in future installations.

Additional resources are included as part of the I on IOWA to support watershed alliances, to increase Iowans involvement in the already strong partnerships promoting locally led conservation. An example of a successful locally led conservation effort is in Carroll County, where the local chapter of Pheasants Forever has aggressively promoted the Conservation Buffer program through one-on-one contacts with landowners. To date, there have been more than 290 miles of buffers added from 300 small projects averaging about 9.5 acres in size.

The Conservation Milestones campaign highlighted 100,000 acres of conservation buffers of grass and trees. Iowa has more farmers with continuous CRP (buffers) than any other state, with one of every 10 landowners participating.

The benefits of wetlands for water quality, flood control, and improved wildlife habitat has long been recognized. However, in recent years, wetlands have been more aggressively promoted through national programs such as the Wetlands Reserve Program (WRP).

In Iowa, wetlands are being promoted as a treatment system for field tile drainage. Projects, such as the Demonstration of Constructed Wetland Technology for Water Quality Enhancement in the Raccoon River Watershed. This project is designed to demonstrate the benefits of constructed wetland technology to remediate nitrates from tile drainage water.

A strong wetland restoration effort has reversed the trend from wetland loss to wetland gains. The Conservation Milestones campaign highlighted 50,000 acres of restored wetlands. In addition to the WRP, the US Fish and Wildlife Service, the IDNR and many local conservation groups have been instrumental in this successful wetland restoration.

H. Water Quality Monitoring

The I on IOWA provides resources for an expanded water quality monitoring program. Reliable information on the quality of the state's waters is necessary to identify needs, target resources, establish trends and document improvements. Citizen involvement is also a critical component of this process.

A Water Monitoring Plan was developed by IDNR with input from both a technical advisory committee as well as a water monitoring advisory force. The plan covers needed surface water monitoring, groundwater monitoring, citizen monitoring, data management, data coordination, data interpretation, and public information. The I on IOWA provided $1.95 million to expand the water quality monitoring program.

The citizen and local monitoring component emphasizes the importance of IDNR's support of individuals and groups as they learn about water quality and resources. Empowerment of local actions is a priority. Educational programs will be designed to assist individuals and groups monitor their local water resources. Programs such as IOWATER, will provide training to private individuals and representatives from groups that are forming for the purpose of protecting watersheds. The I on IOWA provided $70,000 for the volunteer monitoring effort.

I. Source Water Protection

The Source Water Assessment and Protection Program is designed to help public water supplies prevent pollution and protect their water resources at the local level. Through planning, identification of potential contaminant sources, and implementation of appropriate practices, public water supplies can prevent contamination of their drinking water resource.

IDNR has been given the authority of the Source Water Assessment and Protection Program through the Water Supply Section of the Environmental Protection Division. The goal established by IDNR is to have 60% of Iowa's citizens who are served by a public water supply, be provided drinking water from a system with a source water protection program in place by 2005. IDNR will assist in the development of the initial delineation and assessment phases, by providing information from a variety of databases. In addition, IDNR will provide funds to assist qualifying public water supplies in completing the assessments and delineations.

IDNR is working with NRCS and FSA to encourage enrollment of land around wellheads in the CRP. Currently FSA policy only allows land within a 2,000 ft. radius of the wellhead to be enrolled in CRP. IDNR intends to ask for EPA support of a proposal to allow the area of consideration for CRP enrollment to be based on the actual drainage area contributing to the well. Such a change in policy would increase the effectiveness of the land enrolled in CRP to protect the drinking water quality.

It is anticipated a significant impact from nonpoint pollution sources to drinking water resources may be identified during the delineation and assessment phases. Therefore, it is logical to tie implementation of practices to address nonpoint source issues to the assessments. Many funding programs, such as Section 319 and WPF, will be coordinated with the assessments to target and prioritize implementation of needed practices or corrective actions.

J. KEY ELEMENT #1

NONPOINT SOURCE PROGRAM GOALS AND OBJECTIVES

Key element #1 states "*The State program contains explicit short and long-term goals, objectives, and strategies to protect surface water and groundwater*."

Iowa Department of Natural Resources - Mission

To manage, protect, conserve, and develop Iowa's natural resources in cooperation with other public and private organizations and individuals so that the quality of life for Iowans is significantly enhanced by the utilization and enjoyment of those resources.

Environmental Protection Division – Mission

To promote stewardship of the air, land and water resources of Iowa by protecting and allocating these resources consistent with state and federal law, in the interest of preserving and enhancing public health and safety and quality of life for all persons and future generations. To ensure all persons in Iowa have clean air to breathe, surface waters meeting applicable designated uses, and groundwater and land resources free from harmful contamination. To protect public safety and property from the adverse effects of floods and ensure water resources are put to beneficial use.

Iowa Nonpoint Source Management Program - Vision

Preserve and protect the quality of the water resources of the state from nonpoint source impairments.

For Iowa to accomplish this vision, it will require that citizens understand their contributions to nonpoint source pollution and their responsibility to be actively involved in solutions. Our vision is to create a cooperative and coordinated effort by a variety of agencies and organizations to work with citizens to reduce adverse impacts to water quality from nonpoint sources.

The activities required to achieve this vision include:

- increasing public understanding of Iowa's water quality problems and control needs and encouraging greater public involvement and participation in water quality programs;
- periodically evaluating the status of the state's waters to ensure designated use criteria is being met;
- developing and implementing coordinated restoration and water quality improvement plans that help to preserve, protect and restore designated uses to

surface waters and groundwaters that have been impacted by nonpoint source pollution;

- providing technical assistance in the development of surface water and groundwater Best Management Practices;
- promoting the adoption of practices that reduce the impact agriculture has on the state's natural resources;
- reducing the impact of nonpoint source pollutants from urban lands;
- supporting surface water and groundwater monitoring efforts;
- integrating surface water and groundwater quality concerns within basins and watersheds to more effectively protect and restore surface water and groundwater uses;
- providing increased opportunities for citizens to participate directly in water quality projects;
- implementing measures to protect drinking water from the impacts of nonpoint source pollution; and
- evaluating, updating and revising the NPSMP in 2003 to reflect the most current Section 303(d) list of impaired waters, or every five years, as needed.

Iowa has developed long- and short -term goals, objectives and strategies designed to protect the state's surface water and groundwater from nonpoint source pollution. The long-term goals are consistent with the national State/EPA program vision to achieve and maintain beneficial uses of water. The short-term goals are linked to and support the long-term goals, and are designed to demonstrate progress towards accomplishing the long-term goals.

Many of these long- and short-term goals, objectives and strategies were developed with input from a variety of agencies and programs, and all are designed to facilitate and support implementation of the state's nonpoint source control activities and programs.

Long-term Goals (WSL) and Short-term Objectives (WSS) for Watershed and Water Quality Projects

			Schedule	Responsible Agency
WSL-1	Continue and increase water quality protection and restoration on a watershed basis		2015	
	WSS-1a	Develop 15 new water quality projects (annually) that address priority lakes, trout streams, surface or groundwater supplies or urban issues.	Annually 2000-2005	DNR, DSC, NRCS, local sponsors
	WSS-1b	Provide additional and improved technical assistance, in both the development of water quality projects and implementation of water quality projects, through the assignment of additional staff to work specifically on water quality issues/projects, through providing GIS and other related information to local sponsors/public and through providing assessment tools or specialized staff assistance.	Annually 2000-2005	DNR, DSC, NRCS, ISUE
	WSS-1c	Make reports available to public evaluating relationship between implemented BMPs and water quality changes, on a project basis (15/yr)	Annually 2000-2005	DNR, DSC, NRCS
	WSS-1d	Identify and integrate all ag NPS programs and partners through the revised NPSMP	2000	DNR
	WSS-1e	Support modifying Federal Farm Legislation to increase implementation of conservation practices as a condition of participating in programs	ongoing	DNR, DSC, NRCS
	WSS-1f	Establish 7 volunteer monitoring programs annually in priority watersheds through water quality projects.	Annually 2000-2005	DNR, DSC, NRCS
	WSS-1g	Develop interim report by Iowa Watersheds Task Force	2000	DSC
	WSS-1h	Develop final report by Iowa Watersheds Task Force, to address Iowa's needs in the areas of soil conservation, water quality protection, flood control, and other natural resource issues	2001	DSC
	WSS-1i	Begin implementation based on recommendations of 1g	2003	DSC, NRCS, DNR
	WSS-1j	Work with producers and/or landowners to adopt site specific conservation systems	2002	NRCS
	WSS-1k	Work with local stakeholders to develop resource management plans on a community watershed basis to reduce flood damages and improve water quality	2002	NRCS
	WSS-1l	Work with producers and/or landowners to install structural measures and develop non-structural measures to reduce flood damage and improve water quality	2002	NRCS

	WSS-1m	Work with producers and/or landowners to reduce gully erosion damages to infrastructure and ag land by implementing 60 degrading stream control structures and 150 gully control structures within planned projects	2002	NRCS
	WSS-1n	Expand public information on successes of completed water quality projects and use to promote/encouraged additional projects (3 project brochures/year)	Annually 2000-2002	DNR, DSC, NRCS
	WSS-1o	Develop compilation of lake and lake watershed information into a single database, available to partnering agencies and public. Such information shall include water quality monitoring data, watershed statistics, water use, etc. This information will assist project sponsors in the development of comprehensive water quality proposals.	2002	ISU, DNR
	WSS-1p	Develop compilation of stream information into a single database, available to partnering agencies and public. Such information shall include, water quality monitoring data, watershed statistics, water use, etc. This information will assist project sponsors in the development of comprehensive water quality proposals.	2005	ISU,DNR
	WSS-1q	Develop field test for WHAT, a field useable tool for assessment of all resources on a small watershed basis.	2002	NRCS
	WSS-1r	Update Water Quality Projects brochure, including map of projects.	2000/Annually	DNR/NRCS
	WSS-1s	Create on the WWW, a public access site on conservation buffers, nutrient management, conservation tillage, and pesticide management.	2002	NRCS, ISUE
	WSS-1t	Establish ranking for inclusion of volunteer monitoring in EQIP proposals	2002	NRCS
	WSS-1u	Develop and conduct nutrient management, pest management, and residue management training.	2002	NRCS, ISUE
	WSS-1v	Provide three training sessions on stream management theories and practices for water quality project personnel.	2001	NRCS
	WSS-1w	Provide GIS maps for all water quality projects. GIS will be used to track BMPs installed and to calculate sediment reduction as a result of the BMPs installed.	Annually 2000-2005	DNR
	WSS-1x	Develop public awareness programs and technical training on the impact of sediment on waters of the State, using workshops, demonstration sites, brochures, various public I&E, etc.	Annually 2000-2005	DNR, NRCS, ISUE

Long-term Goals (TL) and Short-term Objectives (TS) for TMDLs

			Schedule	Responsible Agency
TL-1	To protect and restore waters identified by the 1998 Section 303(d) list impacted by Nonpoint Source Pollution, TMDLs will be developed and implemented.*		2009	
	TS-1a	Develop Iowa approach to preparing TMDLs, including technical procedures for TMDL establishment, public participation opportunities, public outreach, etc.	2000	DNR
	TS-1b	Develop 5 TMDLs for 3 waterbodies identified by the 1998 Section 303(d) list	2000	EPA/IDNR***
	TS-1c	Develop 17 TMDLs for 12 waterbodies identified by the 1998 Section 303(d) list	2001	EPA/IDNR***
	TS-1d	Develop 21 TMDLs for 13 waterbodies identified by the 1998 Section 303(d) list	2002	EPA/IDNR***
	TS-1e	Initiate implementation of TMDLs for 3 waterbodies Implementation of TMDLs includes: providing information/education/outreach and public participation mechanism to residents of in the watershed; and providing technical assistance and funding to local sponsors in plan development and implementation	2001	EPA/IDNR*** DSC, NRCS
	TS-1f	Initiate implementation of TMDLs for 5 waterbodies	2002	DNR, DSC, NRCS
	TS-1g	Initiate implementation of TMDLs for 10 waterbodies.	2003	DNR, DSC, NRCS
	TS-1h	Initiate implementation of TMDLs for 10 waterbodies.	2004	DNR, DSC, NRCS
	TS-1i	Complete implementation of 2 projects to address TMDLs and restore water quality to designated use.	2002	DNR, DSC, NRCS
	TS-1j	Complete implementation of 4 projects to address TMDLs and restore water quality to designated use.	2003	DNR, DSC, NRCS
	TS-1k	Complete implementation of 5 projects to address TMDLs and restore water quality to designated use.	2004	DNR, DSC, NRCS
	TS-1l	Develop revised 303(d) list of impaired waters and TMDL development schedule**	2002	EPA/IDNR***

* The 1998 303(d) list identifies 157 waterbodies as impaired with the proposed schedule for TMDL development requiring action through the year 2009 to address all listed waters. Iowa will be required to review and revise its 303(d) list and TMDL development schedule in 2002. As the 2002 revision may significantly change the number of waterbodies listed and the individual waters listed, goals have been identified only through the year 2002. These goals identified by Iowa's 2000 NPSMP will be updated in 2003 to reflect the 2002 Section 303(d) list.

** According to federal requirements, the 303(d) list shall be updated every 4 years beginning 2002.

*** EPA has committed to developing 5 of the TMDLs being prepared in year 2000. Negotiations for future TMDL development are currently underway.

Long-term Goals (NCL) and Short-term Objectives (NCS) for Nutrient Criteria/Standards

			Schedule	Responsible Agency
NCL-1	Develop and implement appropriate nutrient management plans on ag land in Iowa		2015	
	NCS-1a	Adopt nutrient criteria for total nitrogen, total phosphorus, Chlorophyll-a, and turbidity in Iowa's water quality standards	December 2003	DNR
	NCS-1b	Identify waterbodies impaired as a result of not meeting nutrient water quality standards	December 2003 biennially 2004-2015	DNR
	NCS-1c	Develop guidance and assistance for producers in developing nutrient management plans in new and ongoing water quality projects	Annually 2000-2005	NRCS,DSC, DNR, ISUE
	NCS-1d	Promote nitrogen management insurance and seek ways to reduce the cost of premiums to encourage use by producers.	2001	DNR, IDED*
	NCS-1e	Develop public awareness programs and technical training on the impact of nutrients on waters of the State, using workshops, demonstration sites, brochures, various public I&E, etc.	Annually 2000-2005	DNR, NRCS, ISUE
	NCS-1f	Evaluate ag-related nutrient mgt. issues and develop programs to address these issues. Evaluate alternative nutrient management programs and their effectiveness in maintaining crop yield and water quality – Publish report of findings	2000-2001 Report December 2001	DNR, NRCS, ISUE
	NCS-1g	Develop program to provide information, education and training to nutrient management service providers, to assure appropriate state and federal standards are utilized in their nutrient planning activities.	2001	NRCS, ISUE
	NCS-1h	Establish plan to develop a phosphorus index.	2000-2002	DNR, NRCS, ISUE

* IDED – Iowa Department of Economic Development

Long-term Goals (AL) and Short-term Objectives (AS) for Animal Feeding Operations

			Schedule	Responsible Agency
AL-1	To restore designated uses in streams/lakes where manure from confined animal operations is causing impairments		2015	
	AS-1a	Provide training for and maintain certification of commercial and large confinement site manure applicators	ongoing	ISU Training DNR- Cert.
	AS-1b	Receive manure management plans (MMPs) for confinement feeding operations required to submit MMPs by Iowa law.	Nov. 15, 1999	DNR
	AS-1c	Review and approve all submitted MMPs (approx. 2,200)	Dec. 31, 2000	DNR
	AS-1d	Provide a determination of what is needed in Iowa's AFO rules and program to implement EPA/USDA CAFO strategy	Dec. 2000	DNR
	AS-1e	Pursue necessary changes in Iowa law and IDNR rules to reflect AS-1d	Dec. 2001	DNR
	AS-1f	Issue NPDES permits to all over 1000 animal unit open feedlots	2003	DNR
	AS-1g	Issue NPDES permits to all AFOs contributing to water quality impairments in priority watersheds	2005	DNR
	AS-1h	Require submittal and approval of comprehensive Nutrient Management Plans for permitted operations	as permits are issued	DNR
	AS-1i	Developing Nutrient Management Plans for all other operations on a voluntary basis	Dec. 2009	NRCS
	AS-1j	Provide technical assistance to develop and implement 1200 MMPs	2002	NRCS
	AS-1k	Develop informational brochures on the regulatory program requirements of AFOs (5/yr)	Annually 2000-2005	DNR
	AS-1l	Assist the National Pork Producers Council by conducting 10 on-farm odor/environmental assessments	2002	NRCS
	AS-1m	Conduct 540 on-farm odor/environmental assessments	2002	IPPA

Long-term Goals (SL) and Short-term Objectives (SS) for Storm Water

			Schedule	Responsible Agency
SL-1	Implement stormwater programs to reduce NPS impacts from stormwater and construction site runoff			
	SS-1a	Initiate development of Phase II Stormwater rules	2001	DNR
	SS-1b	Adopt final Phase II stormwater rules	2002	DNR
	SS-1c	Develop public I/E materials to assist developers, municipal officials, regulators, etc. on impacts of rules	2002	DNR
	SS-1d	Initiate implementation of rules	2003	DNR
	SS-1e	Increase working relationship with SWCDs to assist in identifying land disturbing activities	2001	DNR
	SS-1f	Increase inspection/enforcement of construction site rules to such that no area of the state has less than 50% compliance	2003	DNR
	SS-1g	Develop proactive inspection program, utilizing GIS, GPS, PDAs, etc., to identity permit status	2000	DNR
	SS-1h	Develop GIS database of all appropriate permits	2002	DNR
	SS-1i	Establish criteria and initiate review of Pollution Prevention Plans (PPPs)	2003	DNR
	SS-1j	Provide review of all developed PPPs	2005	DNR
	SS-1k	Develop and provide recommended ordinances to communities reflecting Phase II rules	2004	DNR

Long-term Goals (WWL) and Short-term Objectives (WWS) for On-site Wastewater Treatment Systems

			Schedule	Responsible Agency
WWL-1	Reduce NPS pollution impacts from on-site wastewater treatment systems		2015	
	WWS-1a	Revise State SRF plan to include use of funds for on-site wastewater system replacement or renovation	2000	DNR
	WWS-1b	Finalize rules to provide SRFs to renovate or replace on-site wastewater treatment systems	2000	DNR
	WWS-1c	Obtain state appropriation to meet matching fund requirement	completed	DNR
	WWS-1d	Provide mechanisms to make SRFs available statewide, including assignment of FTE for program	2001	DNR
	WWS-1e	Improve or replace 60 on-site wastewater systems	2001	DNR, County Sanitarians
	WWS-1f	Improve or replace 600 on-site wastewater systems	2003	DNR, County Sanitarians
	WWS-1g	Modify Iowa's groundwater hazard statement to include wastewater systems and provide to County Sanitarians	2001	DNR
	WWS-1h	Develop on-site wastewater treatment system training center	2004	DNR
	WWS-1i	Develop on-site wastewater treatment association with membership to include county sanitarians/engineers, system installers, contractors, etc.	2002	DNR, County Sanitarians and other
	WWS-1j	Develop an intensive I/E and training effort regarding on-site ww systems including operation and maintenance requirements	2001	DNR
	WWS-1k	Solicit support and develop state rules to require inspection/upgrade of on-site ww systems at time of sale.	2003	DNR, County Sanitarians

Long-term Goals (WBL) and Short-term Objectives (WBS) for Wetlands and Buffers

			Schedule	Responsible Agency
WBL-1	Protect waters of the State through installation and/or establishments of buffers and other riparian area improvements and through restoration and enhancement of wetlands			
	WBS-1a	Establish 500,000 acres in riparian buffers	2005	DNR, DSC, NRCS
	WBS-1b	Establish 32,500 acres of wetlands	2005	IDALS
	WBS-1c	Stabilize eroding streambank in water quality projects	ongoing	DNR, DSC, NRCS
	WBS-1d	Promote livestock exclusion from stream corridors including enrolling marginal pastures into continuous CRP	ongoing	NRCS, DNR, DSC
	WBS-1e	Revise and distribute state streambank erosion control booklet	2001	DNR
	WBS-1f	Establish wetlands to reduce nitrate levels in the tile drainage in the tile drainage regions of Iowa	ongoing	DNR, DSC, NRCS
	WBS-1g	Promote cleanup of sinkholes on private lands that have been used as dumps and support establishment of permanent vegetated buffers around sinkholes.	ongoing	DNR, DSC, NRCS
	WBS-1h	Develop booklet for landowners on tips to properly manage land in CRP, particularly buffers, including riparian buffers.	2002	NRCS, DNR, DSC

Long-term Goals (SWL) and Short-term Objectives (SWS) for Source Water Protection

			Year	Responsible Agency
SWL-1	To ensure 85% of the Iowa citizens are served by water systems with source water protection programs		2015	
	SWS-1a	Ensure 60% of the Iowa citizens served by public water systems obtain water from a system with a source water protection programs	2005	DNR, Water Supplies
	SWS-1b	Ensure 75% of the Iowa citizens are served by water systems with source water protection programs	2010	DNR, Water Supplies
	SWS-1c	Obtain commitments from at least 3 of Iowa's 30 largest PWS to develop and implement source water protection programs	2005	DNR, Water Supplies
	SWS-1d	Utilize a portion of the state's Drinking Water State Revolving Fund (DWSRF) set-aside funds to assist the largest systems in initiating source water protection plans	Annually 2001-2005	DNR
	SWS-1e	Provide technical assistance to water supplies and public officials for wellhead/SWP plan development	ongoing	DNR, NRCS
	SWS-1f	Ensure at least 110 PWS complete and implement wellhead/SWP plans	2001	DNR
	SWS-1g	Assist in the development of emergency plans for 110 PWS	2001	DNR
	SWS-1h	Ensure an additional 30 PWS complete and implement wellhead/SWP plans	2003	DNR
	SWS-1i	Assist in the development of emergency plans for 30 PWS	2003	DNR
	SWS-1j	Ensure an additional 30 PWS complete and implement wellhead/SWP plans	2005	DNR
	SWS-1k	Assist in the development of emergency plans for 30 PWS	2005	DNR
	SWS-1l	Encourage a shift in public perception toward water quality protection through workshops, public meetings, and the distribution of educational materials (ongoing)	Annually 2001-2005	DNR
	SWS-1m	Provide waiver of monitoring requirements based on adequate SWP plan and demonstrated reduction in pollutant loads	2003	DNR
	SWS-1n	Hold 2 informational meetings in each region of the state as SWP plans are completed (total of 12)	2003	DNR

	SWS-1o	Provide technical assistance to water supplies and public officials in the area of best management practices to address NPS issues for PWS	ongoing	DNR
SWL-2	Achieve implementation of SWP plans for PWS that will ensure 85% of the Iowa citizens are served by water systems protected by a SWP plan		2017	
	SWS-3a	Initiate implementation of 5 SWP plans	2001	DNR, Water Supplies
	SWS-3b	Achieve implementation of SWP plans for PWS that will ensure 60% of the Iowa citizens are served by water systems protected by a SWP plan	2007	DNR, Water Supplies
	SWS-3c	Initiate implementation of 5 SWP plans	2003	DNR, Water Supplies
	SWS-3d	Achieve implementation of SWP plans for PWS that will ensure 75% of the Iowa citizens are served by water systems protected by a SWP plan	2012	DNR, Water Supplies
	SWS-3e	Assist PWS with an established SWP plan in the development of local ordinances to provide adequate protection to the PWS	2005	DNR, Water Supplies
SWL-4	SWS-4a	Work with FSA/NRCS to gain approval for enrollment into CRP around wellhead based on contributing area considerations rather than standard 2,000 ft. radius	2001	DNR, EPA

K. KEY ELEMENT# 2

NONPOINT SOURCE PARTNERSHIPS

Key element #2 states that the state will build "*Strong working partnerships and collaboration with appropriate State, tribal, regional, and local entities (including conservation districts), private sector groups, citizens; groups, and Federal agencies.*"

As the description of existing nonpoint source programs in Chapter 3 show, Iowa has developed comprehensive partnerships in both the public and private sector to coordinate, develop and implement the state's nonpoint source activities. Although chiefly conducted on an informal basis, contracts or memorandums of understanding are developed when a transfer of funds is involved or the agencies and/or organizations involved believe a more formal agreement is needed. A major feature of Iowa's approach is that it remains effective and has proven flexible enough to adapt to the changing nature of the state's nonpoint concerns. In the future, Iowa intends to continue and improve its partnerships as well as adding partners as issues change or progress is dealing with nonpoint sources is made. The recently formed NPS Program Advisory Committee, to review and provide input on the NPSMP is an example of the multiple-agencies and organizations that are working in Iowa towards the goals of reduced impacts from nonpoint sources and improved water quality.

DNR's process for the selection of Section 319 projects includes use of a joint request for applications with DSC's Water Protection Fund and Watershed Protection Fund programs and the use of an inter-agency review team that reviews and recommends application direction. As a result of this approach, many of the SWCD sponsored projects end up being jointly funded by both IDNR and DSC. In addition, projects often receive funding from EQIP or other programs, allowing implementation of more comprehensive project workplans. Since 1997, Section 319 and EQIP have provided joint funding for 4 projects totaling $300,000 and EQIP funds earmarked for statewide concerns regularly enhance 319 funded projects. WRP funds are also frequently used to develop wetlands in project areas, allowing development of larger wetland areas since more funding is available through the combination of funding programs.

Individual water quality projects generally involve equally diverse partnerships that typically include local groups and organizations as well as state-level groups. In most projects, local partners may provide hard money, in-kind contributions or volunteers to complete various components (see Appendix 6, Project Summary, for an example of project partners).

The Johnson County Urban Water Quality Project is an example of a project which is effectively making use of partnerships. The project has partnered with the City of Iowa City to fund a part-time staff position over a 3-year period to assist landowners in agricultural areas of the project's watersheds construct "roll-over" BMPs on land that will be converted to non-cropland uses. These agricultural BMPs will be designed to continue to function as water quality BMPs when the land is converted to urban uses. The City of Solon is also working with the project to develop stormwater and recreational facilities including wetland and prairie areas. The project is also working with the Solon Community School system to develop an area into an outdoor

classroom area and will work with neighborhood associations on the Backyard Habitat Program. In addition, the project, through the SWCD, is assisting in developing a county Sensitive Area and Conservation Subdivision Ordinance.

An example of successful partnerships in an agricultural water quality project is the Three-Mile Water Quality project in southern Iowa. This project was undertaken to install needed BMPs in the watershed of Three Mile Lake, a new public water supply and recreational lake for which construction was completed in 1998. Under the water quality project, nutrient, animal waste, sediment control and other water quality BMPs were installed in the lake's watershed prior to lake construction to protect it from NPS pollution. Originally funded as a USDA HUA, Section 319 and Water Protection funds were also used in the water quality project. Leadership for the overall project, including both the lake construction and water quality project, was provided by the Three Mile Reservoir Agency (consisting of two SWCDs, two county boards of supervisors, IDNR, the City of Afton, the Union County Conservation Board, and the Southern Iowa Rural Water Association). The now completed lake project shows what can be accomplished through use of resource management partnerships, with the end result being a high quality lake and state park serving multiple uses, including fishing, hunting, water supply, swimming, boating, camping and wise land use.

In recent years, IDNR has more aggressively pursued joint efforts with private sector partners. These efforts have resulted in several Section 319 funded projects being carried out by such groups as: Iowa Farm Bureau Federation – county minigrant and Farm*A*Syst projects; Trees Forever – Iowa Buffer Initiative; and Iowa Cattlemen's Association - Grassland Management and Water Quality project.

Several IDNR staff serve as members of the NRCS State Technical Committee and work closely with NRCS technical staff and management on wetland, woodland, fish and wildlife, livestock manure management, and water quality issues. Many of the agencies and organizations on the NRCS technical committee are also partners with IDNR in other environmental programs.

DNR provides for public participation and input in the above programs and in Iowa's water quality efforts through a variety of mechanisms. Specifically, the Section 305(b) report, 303(d) list, water quality standards (or any process covered in IDNR rules) and TMDL development are open for a formal public comment period. Public comments are solicited through open meetings/hearing, written comments, and via e-mail. Notification of such is provided through a variety of mechanisms as the department attempts to inform all interested parties. Examples include use of IDNR's home page, maintenance and use of comprehensive databases to provide appropriate mailings, regular press releases, notification through outside agencies/organizations newsletters or other means, etc. ecoNews Wire is a mechanism by which IDNR provides, on a weekly basis, news media with a variety of information regarding programs within IDNR, both regulatory and informational. IDNR intends to provide public access to the final NPSMP through IDNR's home page. Announcement of the approved NPSMP and its location will be made through ecoNews Wire.

In addition, IDNR supports both financially and in planning, an annual conference which deals with nonpoint source and water quality issues in Iowa. This conference is held in the spring of each year at Iowa State University, and is sponsored by a variety of organizations and agencies. Typical programs include Section 319 water quality projects, Section 319 program updates and requirements, and the direction water quality programs (including the Section 319) NPSMP are going. Through this conference, the public is informed and provided opportunity for input for the state's nonpoint source issues.

Advisory committees are becoming an integral part of many of the programs within IDNR. As has been previously stated, an advisory committee has been established to provide additional input on revision of the NPSMP. This advisory committee has a role in the development of the final plan upgrade, as well as in future revisions of the plan. As Iowa's NPSMP will need to be revisited in 2003, as per the goals stated to address TMDLs, the advisory committee will be provided any addendums and opportunity for comment.

A variety of state level efforts have been established and utilized to assist Iowa in dealing with nonpoint source pollution issues. These include participation on the State Technical Committee, the IOWATER Advisory Committee, the Inter-Agency Review team for Section 319/WPF water quality projects, and Farm*A*Syst Advisory Committee. In addition, IDNR supports, through Section 319 funding, a NRCS/DNR liaison position to work with both agencies in assisting and implementing the goals and objectives of both, as nonpoint source issues are addressed. Local buy-in for the majority of water quality projects can be documented, ensuring these projects are not just an agency level priority or goal. Appendix 6 gives an example of a water quality project with the variety of local groups providing financial support.

In addition to the above mechanisms for public input, Iowa law has established the Environmental Protection Commission (EPC). The EPC is a panel of nine citizens who provide policy oversight on Iowa's environmental protection efforts. EPC members are appointed by the Governor and confirmed by vote of the Senate for four year terms. The EPC is informed of nonpoint source issues through presentations by IDNR staff, requests for approval of all Section 319 funded contracts, and receipt of information on Iowa's annual work plans submitted to Region VII EPA. The EPC meetings are open to the public and, to encourage public participation, are moved to various locations throughout the year. A role of the EPC is to be a voice for the citizens of Iowa while assuring compliance with the law.
In 1999, the Iowa Legislature created the Iowa Watershed Protection Task Force to study the condition of watershed protection in the state. The Task Force is to provide recommendations regarding soil erosion, water quality protection, flood control and other watershed related natural resource conservation issues to IDALS, and eventually to the Governor and Legislature, by January 2001. This comprehensive multi-agency activity is a first-of-its-kind effort in the state to work with diverse agencies such as agriculture, natural resources, transportation, emergency management, county conservation boards, and SWCDs on watershed management issues. The legislation also calls for working with other appropriate stakeholders, including federal and private sector groups, on this effort. It is expected the Task Force efforts and recommendations will provide a more complete framework for overall watershed efforts in Iowa. When complete, appropriate recommendations from this effort will be incorporated into the state NPSMP.

Within the same legislation, DSC was provided funding for two staff positions to assist SWCDs and other partners in developing watershed protection projects and preparing water quality project applications. These positions should result in development of improved water quality project applications for all water quality programs in Iowa, including those programs managed by IDNR.

The Unified Watershed Assessment (UWA) was developed jointly by NRCS and IDNR, with review and comment provided by a subcommittee of the State Technical Committee. The UWA priorities will be considered in selecting projects for funding under the EQIP, WPF, and Section 319 programs.

Developing issues which are expected to require even greater interagency and private sector involvement in the future include establishment of total maximum daily loads for nonpoint source impaired waters and adoption of nutrient criteria in Iowa water quality standards. IDNR and EPA negotiated as to what waters would be included on Iowa's 1998 303(d) list of impaired waters, and developed a list including 157 waters. The scope of Iowa's TMDL activities is still developing. However, successful development and implementation of TMDLs for the waters on this list will require significant interagency and private sector involvement.

As TMDLs are developed, local involvement and input will critical to the successful implementation of the required activities to address the causes of the impairment. IDNR and other agencies' staff will work closely with local landowners and organizations within a watershed throughout the TMDL process to assure cooperation and understanding of the necessary actions.

Similarly, since EPA is currently developing recommended regional nutrient criteria for states to adopt, the exact impact of such criteria on Iowa's nonpoint pollution control efforts is unknown. However, considering the high nutrient levels found in many of Iowa's streams and lakes, it is reasonable to expect that the adoption of nutrient standards will have major impacts. Again, for the state's efforts to reduce nutrient levels in its waters to be successful, significant interagency and private sector involvement is essential.

L. KEY ELEMENT #3

ACHIEVING A BALANCE

Key element #3 states "*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*".

In Iowa, the major water quality impact from NPS pollution originates from agricultural-related activities. However, to provide a balanced approach statewide to all NPS concerns, programs and activities have been initiated to address NPS issues other than agricultural. Such areas of concern include urban, construction site erosion control, on-site wastewater treatment, etc.

Previously detailed programs (Chapter 3) address a variety of NPS activities. The following matrix identifies the major programs and characterizes the types of NPS activities carried out by each program.

	Regulatory	Information Education	Voluntary Implementation	Financial Incentives
Section 319		X	X	X
EQIP		X	X	X
WPF		X	X	X
CRP		X	X	X
WRP		X	X	X
EWP			X	X
No-Interest Soil Conservation Loan		X	X	X
Iowa Financial Incentive Program		X	X	X
Manure Management and Applicator-ISUE	X	X		
ISUE Information/education priority programs		X		
USDA's HUAs		X	X	X
NE Iowa Demonstration Project		X	X	X
Storm Water	X	X		
Construction Site Runoff	X	X		
Section 401 Certification	X			
Source Water Protection	X	X	X	X
Streambank Stabilization and Habitat Improvement		X	X	X
On Site Wastewater Treatment Disposal	X	X	X	X
IOWATER		X		
Water Quality Monitoring		X		X

Ag-Drainage Wells	X	X		X

As the above illustrates, many of agencies and organizations work collaboratively to conduct a variety of activities with regard to water quality and more specifically to address NPS pollution.

To further illustrate the cooperation of agencies in addressing the nonpoint source pollution concerns in Iowa, the following identifies the agencies having a role in the previously defined programs (Chapter 3):

Program	DNR	DSC	NRCS	EPA	ISUE	SWCD
Section 319	X	X	X	X	X	X
401 Water Quality Certification	X		X	X		
Combined Sewer Overflows	X			X		
Ag-Drainage Wells	X	X	X	X	X	X
Animal Feeding Operations	X		X	X	X	
Floodplain management	X	X	X			
Household Hazardous Material	X			X		
IOWATER	X	X	X	X	X	X
Landfill Regulation	X			X		
On-site Wastewater Treatment	X		X	X		X
Protected wetlands	X					
Protected Water Areas	X					
State Comprehensive Outdoor Recreation Plan	X					
Sewage Sludge Regulation	X			X		
Storm Water Discharges	X			X		
Source Water	X	X	X	X	X	X
Property Tax Incentive	X		X			X
Streambank Stabilization and Habitat Improvement	X					
Sport Fish Restoration	X					
Contaminated Site	X			X		
Water Quality Standards	X			X		
Water Quality Protection Projects	X	X	X	X	X	X
Construction Site Runoff	X	X	X	X	X	X
Fertilizers	X	X	X	X	X	X
Iowa Watershed Protection Program	X	X	X			X
Iowa Financial Incentive Program		X	X			X
No-Interest Soil Conservation Loan		X	X			X
Organic Agriculture		X	X		X	X
Pesticides	X	X	X	X	X	X
Wetlands and Riparian Areas	X	X	X		X	X
EQIP	X	X	X		X	X
CRP	X	X	X		X	X
Program (cont.)	DNR	DSC	NRCS	EPA	ISUE	SWCD
WRP	X	X	X	X		X

EWP		X	X			X
Atmospheric Deposition		X	X			
Little Sioux Flood Prevention	X	X	X			X
Watershed Protection and Flood Prevention		X	X			X
Manure Management	X	X	X	X	X	X
Manure Applicator Certification	X	X	X		X	X
IMMAG	X	X	X		X	X
Maquoketa River Monitoring	X	X	X	X	X	X
Information Education Programs (ISUE)	X	X	X	X	X	X
NPS HUCs	X	X	X		X	X
NE Iowa Demonstration	X	X	X		X	X

In Iowa, the statewide approach includes two general categories of activities. The first category includes those activities necessary to conduct program coordination, public information/education, and program administration/management essential to the effective implementation of the NPS management program. In addition, activities designed to address significant widespread issues that are prevalent across Iowa (i.e., animal feeding operations, nutrient management, etc.) are included under this designation. Types of activities conducted statewide include: regulatory programs for animal feeding operations, BMP demonstrations to address specific NPS issues, and public information and education programs.

The NPS pollution control program and project activities of federal, state and local agencies and organizations are coordinated to achieve implementation of the BMPs needed to control NPS pollution in Iowa. In addition, activities conducted under programs whose primary purpose is something other than NPS but which can provide secondary NPS benefits are coordinated with state NPS activities, and efforts are made to identify and implement ways by which the effectiveness of these programs in controlling NPS can be increased. (See Chapter 3 for coordination with other programs.)

Program coordination efforts encompass all aspects of the state's NPS program (including BMP implementation in targeted watersheds and state-wide, public information and education programs, technical assistance, financial assistance, and enforcement of regulatory requirements). Major emphasis of these efforts is on improving existing programs and projects, encouraging programs to give greater emphasis to water quality, identifying new directions and developing new programs (where necessary) and institutionalizing the state NPS management program.

A comprehensive database of pertinent information on ongoing NPS control projects/activities is being maintained, through an agreement which supports a staff position in the Division of Soil Conservation, Iowa Department of Agriculture and Land Stewardship. The database covers all aspects of ongoing projects, and assists in the tracking and evaluation of ongoing projects and the prioritization and planning of proposed and/or prospective projects. This database also facilitates the efficient allocation and use of resources and serve to detect areas of possible duplication of efforts or resources. (A copy of the information provided by this data base has been included as Appendix 1)

Goals WSS-1o and WSS-1p reference databases to be developed of lake and stream information. A component of these databases will be the identification what is happening in specific watersheds. These databases will provide an effective and efficient mechanism to track and monitor progress towards the long-term goals of watershed protection.

A comprehensive statewide public information and education program has been developed and is being implemented through the efforts of an Information Specialist located at IDNR. This program, which is coordinated with the information and education activities of other agencies and organizations, is designed to inform Iowa's citizens about the sources of NPS pollution, the contaminants involved, the effects of NPS pollution on water quality, and the consequent health and water use implications; to make available the information and technology necessary to enable the implementation of improved practices and NPS pollution control measures; to publicize existing NPS programs and to encourage and assist individuals and organizations to utilize these programs to address water quality protection and water quality improvement needs Additional information regarding this position and activities conducted can be found in Chapter 3 under the program description of Section 319.

The use of the watershed approach in addressing NPS issues is not new to Iowa, since the state has utilized the watershed approach in its nonpoint control projects for a number of years. However, many of Iowa's projects may more appropriately be classified as subwatershed projects, since they normally encompass much smaller land areas than those frequently defined by federal agencies as being a watershed. The state's decision to carry out projects on these smaller subwatershed units is based on experience which has shown that smaller projects allow for more appropriate local input, ownership and buy-in, and as a consequence generally result in more successful projects. In addition, in smaller watersheds, project accomplishments are more easily identified and required funding levels are kept at a more reasonable level.

The 1992 State Nonpoint Source Management Program identifies priority waterbodies. These priority waterbodies, both general and specific are identified in Appendix 2. The IDNR still considers these to be the priorities in addressing nonpoint source pollution. However working in conjunction with other agencies (NRCS, DSC, etc.) these priorities have been refined to include the addition of water supply wells and reservoirs, areas in proximity to ag-drainage wells and sinkholes, ongoing agricultural and urban NPS projects and, other threatened publicly owned waterbodies which can demonstrate a local importance (to include 303(d) listed waters). In addition to these being identified as Section 319 priorities, they have been incorporated into other natural resource protection programs (EQIP, WPF, etc.).

The UWA identifies the watersheds needing restoration and those needing preventative action to sustain water quality, (attached as Appendix 3). In developing the UWA, the state identified previously established priorities as Iowa's UWA priorities. These watersheds, or subwatersheds within the identified watersheds, will be considered, in addition to the above identified priorities, in the evaluation of proposed projects for funding.

Iowa has developed guidance documents identifying the specific information that should be provided in project proposals (previously named Project Implementation Plan, PIPs). The

guidance documents, entitled Iowa, Application Procedures are attached in Appendix 4. The use of this document is intended to ensure all project applications provide all the information needed for a high quality project, as well as to enable review agencies to better determine the relative merits of individual project applications. Use of this guidance should also ensure that project applications provide all of the information that EPA now requires be included in Watershed Restoration Action Strategies (WRASs).

Appendix 5 provides information regarding all projects funded by Section 319 since the first grant award of FFY90. The projects are all identified by either the statewide or watershed approach. In addition, IDNR staff prepare project summaries, and enter project information into GRTS. Appendix 6 provides an example of a project summary.

As Iowa balances the approach to dealing with nonpoint source pollution issues with multiple partners, a variety of state level efforts have been established and utilized. These include participation on the State Technical Committee, the IOWATER Advisory Committee, the Inter-Agency Review team for Section 319/WPF water quality projects, and Farm*A*Syst Advisory Committee. In addition, IDNR supports, through Section 319 funding, a NRCS/DNR liaison position to work with both agencies in assisting and implementing the goals and objectives of both, as nonpoint source issues are addressed. Local buy-of the majority of water quality projects can be documented, ensuring these projects are not just an agency level priority or goal. Appendix 6 gives an example of a water quality project with the variety of local groups providing financial support.

M. KEY ELEMENT #4

NONPOINT SOURCE ABATEMENT AND PREVENTION

Key element #4 states that *"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 activities."*

Historically, Iowa has developed and implemented a comprehensive and balanced nonpoint source management program that is designed to be flexible enough to meet the changing needs of projects and to address new and emerging nonpoint issues. Through its various programs, Iowa has addressed all significant agricultural nonpoint source pollution: sediment, nutrients, pesticides, grazing, and animal waste.

Since 1992, Iowa has addressed also urban and other non-agricultural nonpoint source pollution concerns. Activities conducted since 1992 include the use of 319 funding to support three water quality projects that addressed only construction site erosion and other urban issues, including coordinating NPS activities with activities of other state environmental programs. In addition to those three projects, many other water quality projects have included an urban component as part of a comprehensive watershed protection effort.

Iowa will continue to maintain a balanced program in the future, and intends to expand, improve and modify its programs as needs occur, including continuing to review other programs and activities for compatibility with the NPSMP. Additional details on Iowa's current programs are given in Chapter 3 of this NPSMP.

DNR recognizes there are several emerging issues that are currently not adequately addressed by the state's nonpoint programs. Many of these issues will require further program development and integration, both within IDNR as well as with outside agencies and organizations. As programs continue to evolve and expand, specific concerns such as AFOs will be addressed. The adoption of numeric nutrient criteria will place a large number of waters on the 303(d) list. Future development in a watershed for which there is a 303(d) listing must be considered with this designation and could possibly be restricted.

In late 1999, EPA adopted a 303(d) list of impaired waters and a TMDL development schedule for Iowa. At this time, EPA has committed to developing five TMDLs for three of the listed waterbodies in 2000. IDNR will develop TMDLs and implementation plans according to the schedule in Key Element #1.

Except for ammonia, water quality standards for nutrients are not part of Iowa's current water quality standards. However, Iowa will be required to adopt nutrient standards and establish TMDLs for nutrient impaired waters, once EPA completes development of regional nutrient criteria. The nutrient criteria expected to be of greatest concern to Iowa are those for total nitrogen and total phosphorus, due to the high levels at which these are found in many of Iowa's surface waters. Due to the importance of these nutrients in maintaining yields on Iowa's

agricultural lands, it is expected that the agricultural community will be reluctant to accept nutrient management practices designed to reduce nutrient levels in Iowa's surface waters, unless it can be shown that such practices will not adversely impact farm yields or profitability.

Current Iowa animal feeding operation laws and rules only allow the state to consider nitrogen in establishing maximum manure application rates on cropland. Since the recently adopted federal AFO strategy requires that both phosphorus and nitrogen be considered in determining manure application rates, Iowa will need to consider changing its state laws and rules to maintain consistency with the federal requirements. Since considerable opposition to such a change can be expected, state agencies will need to work closely with private sector organizations and other affected parties to create the understanding and support needed to enable the needed changes to be adopted and implemented.

The adequacy of existing on-site wastewater treatment systems for individual rural homes or for residences located in any of the 350 Iowa communities without a wastewater treatment plant present a potential, but generally unknown, water quality concern. As some southern Iowa counties have no soil mapping units suitable for septic system leach fields and other counties have a high percentage of unsuitable land, development of suitable alternative treatment systems will need to be part of any solution to this problem. While some efforts to address these problems have been made, much remains to be done. To address this issue, IDNR has proposed allowing SRF funds to be used to upgrade or replace faulty onsite treatment systems. If adopted, this program would allow county sanitarians to work with and provide funding assistance to owners of faulty on-site systems to upgrade their systems, thereby reducing the pollution hazards associated with this pollution source.

N. KEY ELEMENT #5

IDENTIFYING IMPACTED WATERS

Key element #5 states "*The State program identifies water and watersheds impaired or threatened by nonpoint source pollution and a process to progressively address these waters*".

The Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) requires each state to develop a program to monitor the quality of its surface waters (streams, lakes, and wetlands). Section 305(b) of the Clean Water Act requires states to prepare, every two years, a report that describes the status of water quality and the extent to which state waters meet the following goal of the Act:

> *attainment of a level of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water.*

Iowa's biennial Section 305(b) report summarizes the status of water quality in Iowa during the previous two-year reporting period. Results of water quality monitoring, special water quality studies, and other assessments of the quality of Iowa's waters conducted and/or published during the previous two federal fiscal years are used to determine the degree to which Iowa's rivers, streams, lakes, wetlands, and groundwaters are impaired or polluted. In addition, the report describes state and federal programs to control pollution from point sources, such as outfalls of wastewater treatment facilities, and from nonpoint sources, such as occurs when runoff from precipitation transports pollutants from agricultural and urban areas to the state's waterbodies.

A major objective of the Section 305(b) report is to describe the current quality of Iowa's surface water in relation to the national CWA goal that is commonly referred to as "fishable/swimable". Iowa's water quality standards describe the extent to which various lakes and streams are expected to achieve the fishable/swimable goal. All surface waters must meet certain general conditions at all times. More specific standards of chemical and bacterial quality are applied to waters that have been designated in state water quality standards as having to support such uses as swimming, fishing, boating, and serving as a source of drinking water.

Iowa's Section 305(b) report provides the most recent data regarding the specific water quality of the state's waters. Appendix 7 provides a 305(b) summary of the condition of Iowa water during the 1996-1997 biennial period. The failure of the assessed waterbodies of all types to fully support their designated uses was attributed primarily to nonpoint sources of pollution. These nonpoint source impacts include modification of stream habitat or hydrology, delivery of sediment and plant nutrients from agricultural sources to water bodies, and natural sources such as natural shallowness of lakes.

During 1999, the IDNR will be reviewing Iowa's water quality standards to identify needed changes. There are a number of reasons for this review. First, the Clean Water Act requires that states periodically conduct a comprehensive review of their WQS. The last time Iowa performed such a review was in 1990. Second, it is important that Iowa's WQS reflect the most up-to-date

data and methodology. Since the last time Iowa's WQS were revised, the EPA has updated guidance for establishing state WQS for some pollutants (e.g. ammonia) and published new guidance for developing water quality-based permit limits. Third, the EPA has suggested that some portions of Iowa's WQS need to be strengthened to achieve the goals of the federal CWA. If the EPA determines a state's WQS are not sufficiently protective, the EPA has authority to promulgate WQS for that state. Fourth, two consultants and a trade group have recommended specific changes to Iowa's WQS.

The Department has formed a Technical Advisory Committee to assist in developing proposed changes to the Water Quality Standards. This committee is comprised of a diverse group representing agencies, organizations, and universities. Changes to the standards must be approved by the Iowa Environmental Protection Commission and the U.S. EPA. It is anticipated that draft changes will be ready for public comment in May 2000.

Section 303(d) of the CWA requires each state to identify waterbodies for which technology-based effluent limits or other pollution control measures required by federal, state, or local regulations are not stringent enough to achieve applicable water quality standards. For the identified waterbodies, priorities must be established and total maximum daily loads (TMDLs) are to be calculated for the pollutant(s) causing or potentially causing the impairment. As explained previously, the IDNR and EPA negotiated an acceptable 1998 303(d) list of waters (attached as Appendix 8).

A list of waters (approximately 100 waterbodies), separate from the Section 303(d) list, has been prepared for waters that require additional monitoring or investigation to document a suspected impairment. For such waters, there may be preliminary, circumstantial, or undocumented evidence of impairment but the information available is not conclusive. Iowa will maintain such a list of waters target such waters for follow-up investigations to document the impairment. If an impairment is documented, the water will be evaluated for inclusion on the 2002 Section 303(d) list.

There are also waters listed on the Section 303(d) list where impairment has been clearly documented but for which additional monitoring or investigation is needed to document the nature of the pollutant causing the impairment and to provide information necessary for the calculation of TMDLs.

Under Section 303(d) of the CWA, water that will not meet state WQS after implementation of technology-based point source effluent limits or other required pollution control programs must be identified and a TMDL developed and established for the pollutant of concern. A TMDL is an estimate of the maximum loading for a pollutant or pollutants from all sources that can enter a waterbody and not violate state water quality standards. TMDLs must account for all sources of pollutant, determine the maximum loadings allowed, and allocate the maximum loads among the various sources with a margin of safety. The TMDL issue has been litigated extensively over the past five years in many states and currently there are two lawsuits pending in federal court that would require the EPA or IDNR to develop and establish TMDLs for Iowa 303(d) listed waters. Additional information on Iowa's TMDL process and status can be found in Chapter 3.

The Iowa Unified Watershed Assessment, Restoration Priorities, and Restoration Action Strategy (UWA) was developed in response to requirements of the Clean Water Action Plan. Iowa's UWA indicates all of the state's 8 digit HUC watersheds fall into Category I, Watersheds in Need of Restoration. This categorization is based on the percentage of waters not meeting water quality goals, as prescribed by the Framework Guidance, as well as other pertinent factors, such as intensity of row crop production, high livestock numbers, and other potential water quality threats. Although the Iowa UWA identifies all watersheds as Category I, the 8 digit watersheds were further prioritized into 3 additional groupings (Priority 1, 2 and 3). Additional information on Iowa's UWA can be found in Chapter 3, Unified Watershed Assessment and Appendix 3

In administering Iowa's Section 319 program, IDNR will give priority to those projects that meet the criteria based on Iowa's UWA, dated September 29, 1998. Project applications in Priority One HUCs will be given funding priority over similar projects in Priority Two or Priority Three HUCs. Projects in lower priority HUCs may be considered by IDNR for funding if it is determined they are superior to similar projects proposed in a higher priority HUC. Selection criteria used in making this determination will include nature and severity of the water quality problems to be addressed, adequacy of the project application, and the potential for success.

Iowa's UWA calls for priority for Section 319 to be given to projects which fall within the project categories listed below:

- 118 significant publicly owned lakes (Appendix 9)
- 25 priority coldwater streams (Appendix 10)
- municipal wells (public water supplies that can demonstrate a need for protection or improvement)
- surface water supplies from surface reservoirs and river intakes
- groundwater protection projects addressing contamination by agricultural drainage wells and/or sinkholes
- ongoing agricultural and urban NPS projects that are making significant progress in addressing nonpoint problems and can demonstrate a need to extend or expand the scope of the project
- other publicly owned surface water or groundwater that are locally important

EPA's guidance for Section 319 funding calls for priority to be given to waters that require development and implementation of a TMDL and/or to waters identified by the UWA. IDNR expects in the future, Section319 funding will be used more intensively to support projects to address TMDLs and identified by the UWA.

The water quality monitoring programs conducted by various agencies are previously described in Chapter 3. As indicated, a variety of programs are utilized and evaluated to obtain necessary information regarding Iowa's surface water and groundwater quality. The water quality data obtained is considered, as appropriate, as Iowa addresses various nonpoint source issues, i.e., development of water quality projects, establishing priority areas, development of information and education programs, etc. Additional information regarding the above programs or detail on

the state's surface water and groundwater assessment can be found in the most current Section 305(b) report.

O. KEY ELEMENT # 6 –

NONPOINT SOURCE PROGRAM APPROACH

Key element #6 states that 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) a mix of water quality-based and/or technology-based programs designed to achieve and maintain beneficial uses of water; and (b) a mix of regulatory, non-regulatory, financial and technical assistance as needed to achieve and maintain beneficial uses of water as expeditiously as practicable."*

Iowa's existing programs currently contain a mix of both water quality and technology-based approaches. Although it is currently weighed heavily towards technology-based programs, recent allocations from the Iowa legislature provide $1 million towards developing a more extensive water monitoring program which will provide a more extensive database to develop more water quality-based programs like TMDLs.

The technology-based programs are largely voluntary when addressing both agricultural and urban nonpoint source concerns with most of the approved BMPs found in the NRCS Field Office Technical Guide (FOTG). Iowa has established realistic long and short- term goals for agriculture that emphasizes voluntary efforts yet will use regulations as the law requires (see Key Element #1). Both technical and financial assistance will be offered to participating landowners utilizing existing programs, as well as any new state programs that may result from the Iowa Watersheds Task Force. An example of such is the use of the SRF to provide remediation of on-site waste water treatment systems. A comprehensive listing and description of existing programs, both voluntary and regulatory, can be found in Chapter 3 of the Nonpoint Source Management Plan.

Iowa's use of diverse existing programs includes not only technical and financial assistance to implement water quality BMPs, but also includes an extensive information and education program. NRCS, ISUE and IDNR have staff dedicated to informing the public of existing programs and highlighting voluntary implementation programs. Brochures, newsletters, multi-media, field demonstrations, news releases and other methods of disseminating information are typically used not only at the state level, but also at the project level.

In addition, non-governmental organizations provide their membership, and the public, with information. Iowa Environmental Council has a quarterly newsletter; the Iowa SWCS Chapter has newsletters, field demonstrations and conferences like the 1998 Manure Management Conference in 1998. The Iowa Farm Bureau Federation has developed a Mini-Grant program, similar to the Section 319 project, using only their funds.

Staff training related to nonpoint issues is an ongoing process and efforts are underway to improve understanding between IDNR and NRCS. For example, a manure management training session with both staffs of NRCS and IDNR will be held latter this year to help coordinate and

understand agency roles and responsibilities and to enhance inter-agency cooperation. Also, initial efforts have been made to inform and educate IDNR, NRCS, DSC and ISUE staff on the anticipated shift from nitrogen to phosphorus and the limiting nutrient for manure and nutrient management plans. At the same time, further efforts will be to work with the entire partnership to inform and educate and develop a proactive voluntary approach to changing nutrient management needs based on the AFO Strategy and the anticipated changes to Iowa's Water Quality Standards.

The success of Iowa's approach will be measured by an expanded water monitoring program with $2 million in funds provided by the 1999 legislative session. Iowa is developing a Water Monitoring Plan under the leadership of the Geological Survey Bureau of IDNR. A technical advisory committee consisting of various governmental agencies and private organizations will assist IDNR design the program. As part of the process a Water Monitoring Advisory Task Force was created consisting of stakeholders and co-chaired by the head of a major water supplier and a statewide environmental group. The efforts of the monitoring program will enable Iowa to develop more extensive baseline data.

In 1997, Iowa created a statewide, citizen-based volunteer water monitoring program. Educational materials were developed to assist volunteers collect water samples and interpret results. The ensuing program is called IOWATER and a full-time IDNR staff person provides training and statewide coordination. IOWATER is a cooperative effort of Iowa Environmental Council, Izaak Walton League, Iowa Farm Bureau Federation, NRCS, Iowa UHL and IDNR along with the many volunteers. Funding is provided by a Section 319 grant.

Selection of watershed based projects reflect the priorities in Iowa's 1999 Unified Watershed Assessment (see Appendix 3). In addition to the UWA, selection will also be based on the likelihood that implementation efforts will help achieve and maintain Iowa's beneficial uses of water.

While much of Iowa's efforts in program implementation are technology-based, water quality based efforts will be increased as water monitoring data become more available. It is expected that at least some of the increased monitoring will be in watersheds listed on Iowa's 303(d) list. As such, future program efforts will be focused on establishing and implementing TMDLs..

P. KEY ELEMENT #7

FEDERAL CONSISTENCY

Key element #7 requires the *"identification of Federal lands and objectives which are not managed consistently with State program objectives"*.

Approximately 0.51% of Iowa is held as Federal lands. This limited number of acres does not cause a significant impact in terms of nonpoint source pollution to the waters of the state. The cooperative effort established and maintained in Iowa with partnering federal agencies allows for productive communication and the resolution of identified problems associated with the Federal lands.

Appendix 11 provides a map of Iowa with Federal lands indicated. These lands include:

Federal Lands	Acres	Use
Neal Smith Wildlife Refuge	8,600	Wildlife refuge and recreation
Desoto Wildlife Refuge	7,800	Wildlife refuge and recreation
Rock Island Arsenal		
Effigy Mounds National Monument	1,475	Indian burial mounds

A portion of these Federal lands includes the Neal Smith Wildlife Refuge, which is a Section 319 National Nonpoint Source Monitoring Project. This project involves the conversion of the Walnut Creek watershed from row crops to native prairie, and will provide data on water quality impacts of this conversion.

To assure consistency between state and federal programs, IDNR has established a process to review a number of federal programs. The following are federal programs subject to consistency reviews:

Agency	**Program**
Rock Island and Omaha District Corps of Engineers	Streambank and Lake Shoreline Construction
	Dredging and Filling in Rivers/Adjacent Wetlands
	COE Operations/Management Programs
	Public Utility Stream Crossings
	General Permits on Nationwide Permits
	Public/Private Access/Loading and Unloading Facilities
	Flood Control Projects
Federal Home Administration	Construction of Rural Water Systems
	Construction/Maintenance of Telephone and Electric Lines

U.S. Department of Defense	Communications program
	Expansion of Military Bases
U.S. Environmental Protection Agency	Wastewater Treatment Facilities
Federal Energy Regulatory Commission	Hydro-Power Projects
USDA Farm Services Agency	ACP Water Quality Special Projects
USDA Natural Resources Conservation Service	Resource Conservation and Development
	P.L. 566 Watershed Planning and Operations
	River Basin (studies and floodplain management)
	Rural Abandoned Mine Program
U.S. Fish and Wildlife Service	Endangered Species Programs
	Fish and Wildlife Enhancement Projects
Federal Highway Administration	Public Transportation Systems, including maintenance and new construction

The IDNR's current review process considers not only the nonpoint pollution control and water quality impacts of proposed projects, but also takes into account fish and wildlife habitat losses, other environmental concerns, and public safety concerns and benefits. The review process may include participation from staff of IDNR's Environmental Protection; Fish and Wildlife; Parks, Recreation and Preserves; and Forestry Divisions; and from the Information and Education Bureau.

The Information and Education Bureau coordinates the review process for many of the projects reviewed by IDNR. For those projects, this bureau circulates pertinent project notices and information to other IDNR divisions for review and comment, compiles the various division comments, and integrates them into a departmental response. Problems identified through the review process are communicated to the appropriate federal agencies, along with a request for cooperation in resolving them.

For certain types of projects, such as those involving only Section 401 permits, the review process may involve only one or two IDNR divisions. For those projects, the division most involved with the project is responsible for seeing that coordination with other divisions occurs.

An example of the types of review IDNR staff completes is the review of activities involving channel changes, filling or dredging of wetlands, dredging of stream/lake/wetland beds by hydraulic means, or construction activities where material will be temporarily or permanently placed in a stream/lake/wetland as under Army Corps of Engineers permitting authority. Additionally, IDNR staff provides a water quality evaluation of Army Corps dredging activities on the Missouri and Mississippi Rivers when the removal or placement of dredged material occurs with Iowa, and evaluates potential water quality impacts of federal projects for which an Environmental Impact Statement/Assessment Review has been prepared.

A copy of the NPSMP will be provided to all Federal agencies which have significant land holdings or roles in nonpoint source control programs. IDNR will take steps to work with these agencies to identify activities that have NPS impacts and establish review criteria protocol if it doesn't already exist. However, it should be noted, in many program areas, such as the 401 certification program, a multi-agency review process is currently in existence and proven successful

In addition to the above mechanisms to deal with Federal lands and activities, the Unified Federal Policy is designed to enhance watershed management to protect water quality and the health of aquatic systems on Federal lands. This policy provides a framework for ensuring Federal land and resource management demonstrates good stewardship and protects the health of Federally managed aquatic ecosystems. Implementation of this national policy will improve water quality and aquatic ecosystems on Federal lands and will ensure the use of a watershed approach to Federal land and resources management activities. All of the implications to Iowa's nonpoint source programs can not be addressed, however Iowa intends to remain current with the development of this policy and incorporate as appropriate.

Q. KEY ELEMENT #8

EFFICIENT and EFFECTIVE NONPOINT SOURCE PROGRAM MANAGEMENT

Key element #8 states that the nonpoint source program include an *"efficient and effective management and implementation of the State's nonpoint source program, including necessary financial support"*.

Congress provides limited grant funds to those states with approved Nonpoint Source Management Programs. Iowa is eligible for these monies and makes these monies available to various local, county, and state governments as well as various organizations and universities, etc., for 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.

Program coordination efforts encompass all aspects of the state's nonpoint pollution control program (including BMP implementation in targeted watersheds and statewide, public information and education 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, identifying new directions and developing new programs (where necessary), 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, FSA, IDALS/DSC,IDNR, ISUE, and SWCDs.

Iowa has developed and is utilizing a multi agency process for development and approval of water quality projects. Through this process, project applications are solicited by a joint letter of invitation from both DSC and IDNR, for those projects eligible for both Section 319 funds and WPF. Project sponsors not eligible for WPF receive a letter of invitation from IDNR, however, the review process applications undergo is the same for all. Iowa will continue to use this process in development and implementation of future water quality projects.

The details of the application process has previously been described in Chapter 3, Section 319 Program, however the highlights of this are as follows:

- invitation for project proposals for both Section 319 funds and WPF
- developed model for project applications
- developed guidance for I&E, demonstration projects, reporting, calculating soil loss , etc.
- balance of statewide programs and watershed projects
- inter-agency review of project applications
- developed Plan of Operations format for project tracking and reporting

Areas in which future developments or improvements are being made include:

- focus on better measures of success
- additional emphasis on use of sediment delivery
- appropriate use of bio and chemical water quality monitoring
- GIS mapping and tracking of BMP/activities
- record keeping for ICM, providing better evaluation not just acres

As part of the program coordination effort, the responsibilities of individual agencies in nonpoint pollution control, as well as the inter-relationships between various agencies, will be further defined and memorandums of understanding or other interagency agreements will be developed, as appropriate.

Administration and management activities essential to the implementation of the state NPS management program, but not provided for by another management plan component, are conducted. Ongoing projects and projects entering the implementation phase are supported by these activities.

Agencies that play a major role in implementing non-agricultural NPS control projects include those listed in the prior paragraph plus municipal and county governments, private organizations, and contractor and developer associations.

A more detailed description of activities carried out to address this key element are identified in the Iowa FY99 Project Implementation Plan, Staffing of the State NPS Program, which is attached as Appendix 12. Included in Appendix 12 is a schedule of activities conducted by IDNR's NPS staff for state level program implementation.

DNR's NPS staff utilizes the Grants Tracking and Reporting System to report to EPA the required information regarding Section 319 funded projects.

DNR's Budgets and Grants staff tracks financial status of Section 319 funded projects. Appendix 13 provides an example of the detail of information provided to IDNR's NPS staff based on grant year and project expenditures. This information allows NPS staff to effectively manage the financial aspect of the program, while assuring the technical integrity of the water quality projects.

R. KEY ELEMENT #9 –

PROGRESS, EVALUATION, REVIEW AND REVISION

Key element #9 states that the State: *periodically reviews and evaluates its nonpoint source management program using environmental and functional measures of success, and revise its nonpoint source assessment and its management program at least every five years."*

Iowa will continue to refine and modify its current method of program review and evaluation of its nonpoint source program. Annual progress reports which evaluate progress and accomplishment of program goals and objectives will be prepared and submitted to EPA.

Iowa has 2 monitoring projects on the EPA Section 319 National Monitoring Program list – Walnut Creek Watershed Restoration and Water Quality Monitoring Project and Sny Magill National Monitoring Project.

The Walnut Creek monitoring project began in 1995 and is a component of a comprehensive effort of restoring an agricultural watershed to native prairie, savanna, and wetlands as a national wildlife refuge. Results from the monitoring will provide decision-makers with information to establish a baseline relationship between land use changes and improvements in water quality.

Sny Magill is one of the original national monitoring projects and began in 1991 with seven full years of monitoring completed. Results show some indication of improved water quality with fewer pesticide detections and improving benthic macroinvertabrates but fish and habitat assessments give no indication of improving water quality. Sediment load discharge has not been reduced due to the large historical sediment load in the network. Monitoring efforts will continue in Sny Magill to provide data that are useful when determining future program direction based on ambient-water monitoring.

DSC and IDNR require Section 319 and WPF funded projects to submit reports that reflect project activities during the reporting period. Reports include monthly, quarterly and annual along with an annual meeting in the watershed area. Information provided includes BMPs installed, I&E efforts, planning accomplishments, and reduction of pollutants to the waterbody. These data are then compiled in a database at DSC and tracked in a system available to both agencies. The DSC position is funded entirely with Section 319 funds.

An NRCS developed sediment delivery worksheet was funded in part with Section 319 funds. Projects are able to estimate sediment delivery to a waterbody and use it as a tool to determine priority areas in the watershed.

Nutrient and pest management efforts include a determination of the reduction in use of the product either on a field, farm or watershed basis.

Projects are encouraged to develop a pre- and post-project survey to determine the attitudes of the landowners in the watershed to determine the success of the project in changing attitudes of decision-makers.

Bigalk Creek Water Quality Project in northeast Iowa is an example of a successful cold-water stream project that the stream corridor was heavily grazed and was a degraded stream. The project was able to convince landowners to install various BMPs with a vital one being streambank and corridor protection which removed cattle from the stream. This resulted in 75% of the coldwater portion of the stream being protected from cattle. The end result is that Bigalk Creek is now one of only three coldwater streams in Iowa with naturally reproducing Rainbow trout.

Iowa's resource agencies are coordinating efforts to expand the use of GIS, as well as other technologies, for resource and project assessment. NRCS, ISU, and IDNR are working cooperatively to expand pre-project efforts to determine resource concerns and problems, prioritize project efforts towards critical areas and determine the effectiveness of project efforts towards reducing nonpoint source impacts.

Iowa will utilize the biennial 305(b) report, Source Water Protection progress, and the 303(d) list of impaired waters to determine progress in improving State waters. In addition, results from Iowa's expanded water monitoring program will also be used to focus current and future efforts in the nonpoint source program.

Iowa's goals have been established in Key Element #1 of this Nonpoint Source Management Plan and will be the guiding document to develop an ongoing strategy to provide improvement in Iowa's waters.

Success of the program will be determined by progress towards accomplishing the goals rather than improvement in ambient water monitoring since the response time of nonpoint source pollutants may indicate no improvement in water quality when, in reality, sources may actually have been reduced.

Once monitoring data have established a baseline for a waterbody, the revised Nonpoint Source Management Plan will use these data, as well as other acceptable data, to establish new priorities. A complete review will be initiated within five years of the development of this management plan. IDNR will use partners to review and provide recommendations in the plan revision.