

Overview of State And Federal Water Quality Programs

ISSUE

This **Issue Review** provides an overview of programs related to water quality at the State and federal level and includes an overview of the Environment First Fund.

AFFECTED IOWA AGENCIES

Department of Agriculture and Land Stewardship (DALSS)
Department of Natural Resources (DNR)
Iowa Department of Public Health (IDPH)
Iowa Finance Authority (IFA)
Iowa Economic Development Authority (IEDA)
Iowa State University (ISU)
University of Iowa (UI)
University of Northern Iowa (UNI)

AFFECTED FEDERAL DEPARTMENTS AND AGENCIES

United States Department of Agriculture (USDA)
United States Environmental Protection Agency (EPA)
United States Department of Housing and Urban Development (HUD)
United States Code Authority

CODE AUTHORITY

Iowa Code sections [8.57](#), [455A.19](#), and [455B.171](#)
Iowa Code chapters [455E](#) and [466](#)

DEFINITIONS

Clean Water Act – The federal Clean Water Act (CWA) outlines the provisions to restore and maintain the quality of the country's water resources. One of these provisions is Section [303\(d\)](#), which establishes the Total Maximum Daily Load (TMDL) Program.

Demonstration Project – A field research project that is designed to provide estimates of a resource condition for a single factor. The project usually includes a new method for treating runoff water and the results of the project are shared with others.

Waterbody – A portion of water-covered land that is under the jurisdiction of the United States government. This includes river segments, streams, lakes, wetlands, coastal waters, and ocean waters.

Water Quality – Water quality refers to the chemical, physical, and biological factors of a waterbody and how they relate to the specific use for the waterbody. A waterbody that provides drinking water will be evaluated differently than a waterbody that provides water for industrial production. Water quality is reduced when waterbodies are contaminated by nutrients such as nitrogen and phosphorus.

Water Quality Standard – Water quality standards are provisions established by the State and approved by the EPA that describe the desired condition of a waterbody. The standards provide a legal basis for controlling pollution entering the waters of the United States from sources such as wastewater treatment plants, storm sewers, and industrial facilities.

Watershed – An area of land that drains into one stream, lake, or river, and affects the water quality in the waterbody that it surrounds. Rain water drains off this area of land into one body of water. Smaller watersheds can be combined to create larger watershed networks.

BACKGROUND

Enforcement

The United States Environmental Protection Agency (EPA) regulates and enforces the federal [Clean Water Act](#) and the federal [Safe Drinking Water Act](#). The [Clean Water Act](#) regulates discharges from wastewater, animal feeding operations, dredge or wetland fill materials, and pollution from oil or hazardous substances. The [Safe Drinking Water Act](#) ensures public drinking water and the sources of the water are protected.

Water Quality Standards

[Water Quality Standards \(WQS\)](#) are required by the EPA and developed by a state to describe the desired condition of a waterbody and create a legal basis for controlling pollution. Water quality standards include:

- The designated use of the waterbody: i.e., fish and wildlife, recreation, drinking water, agricultural use, or industrial use.
- The criteria to protect the designated uses. These can be numeric (for example, maximum amount of pollutant permitted in a waterbody) or a narrative that describes the condition of the waterbody.
- The antidegradation requirement provides the framework for maintaining the level of water quality that has already been achieved.

Each state has its own procedure for adopting WQS. However, the general process includes a workgroup that develops the standards; then, public hearings are held for input and modifications are made. The WQS include water quality criteria to protect the designated uses of a waterbody. This can include EPA-recommended criteria, adopting site-specific standards, or developing standards based on local criteria. The EPA must approve the WQS for each state and throughout the process revisions are made. See [40 C.F.R. §130.7](#).

Water Quality Assessment Impaired Waterbodies List

Each state is required by Sections [303\(d\)](#) and [305\(b\)](#) of the CWA to submit to the EPA a list of “impaired waters” that do not meet all state WQS. This document is referred to as the Impaired Waters List or the “Section 303(d)” List. The DNR refers to this report as Iowa’s 2014 Integrated Report. The list includes waterbodies that have impairments due to a point source or a nonpoint source. For each waterbody, a state is required to calculate the total maximum daily load (TMDL) for pollutants causing impairments. A TMDL calculation quantifies the source(s) of the

pollutant(s) and the local reduction necessary to meet the state's WQS. Each TMDL must account for seasonal variations and potential new sources and provide a margin of safety. The EPA must approve the TMDL.

Point source water impairments are caused by an identifiable source such as a pipe, drain, or conduit. An example of point source pollution would be discharge from a sewage treatment or industrial plant. Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage, or hydrologic modification and comes from many diffuse sources. Nonpoint source pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants. This runoff can be deposited into lakes, rivers, wetlands, coastal waters, and groundwater.

The EPA guidelines suggest all waterbodies be placed into one of these five general categories. The waterbodies that are included in the Category 4 or Category 5 are considered impaired.

- Category 1: All designated uses are met. Designated use examples include: water contact recreation, aquatic life, and/or drinking water.
- Category 2: Some of the designated uses are met but insufficient information exists to determine whether the remaining uses are met.
- Category 3: Insufficient information exists to determine whether any uses are met.
- Category 4: The waterbody is impaired but a TMDL is not required.
- Category 5: The waterbody is impaired and a TMDL is required.

The DNR submitted [Iowa's 2014 Integrated Report](#) in August 2015, and the EPA approved the listing on September 11, 2015. The Report included 1,307 assessed waterbodies and **Table 1** summarizes the waterbodies as identified on the [Integrated Report](#):

Table 1

Iowa Waterbodies					
Category	Streams/River Segments	Lake Segments	Flood Control Reservoir Segments	Wetland Segments	Total
Category 1	2	3	0	2	7
Category 2	187	66	1	66	320
Category 3	212	8	0	36	256
Category 4	101	41	0	11	153
Category 5	481	69	7	14	571
Total	983	187	8	129	1,307

Source: DNR

Table 2 summarizes the impairments of Iowa waterbodies as identified on the [Integrated Report](#):

Table 2

Top Impairments to Iowa Waterbodies			
Rivers/Streams		Lakes/Wetlands	
Impairment	#	Impairment	#
Bacteria	378	Algae	64
Biological	126	Turbidity	53
Fish kill	94	Indicator bacteria	38
Mercury in fish	30	pH	19
Low dissolved oxygen	21	Siltation	18
pH	17	Mercury in fish	13
Habitat/ammonia	16	Low dissolved oxygen	11
Ammonia	9	PCB* in fish	3
Temperature	7	Fish kill	2
Nitrate	5		
Total	703	Total	221

*polychlorinated biphenyl (PCB)

Hypoxia in the Gulf of Mexico

[Hypoxia](#) is a watershed condition in which nutrient-enriched waters coming from freshwater rivers and streams cause excess growth of plants. As these plants decompose, oxygen levels in the watershed are depleted. This creates an unsuitable habitat for animals living in the region. Iowa has been identified as a contributor of nutrient loads in rivers and streams that originate from row crop production.

To address hypoxia, the [Mississippi River/Gulf of Mexico Hypoxia Task Force](#) was created in 1997. The Task Force consists of state, federal, and tribal agencies. Its mission is to understand the causes and effects of the hypoxic zone and to coordinate activities to address it. The Task Force developed a [2008 Action Plan](#), requiring member states to develop comprehensive nitrogen and phosphorus reduction strategies to reduce the contributions of nitrogen and phosphorus to the Gulf of Mexico. Iowa introduced the [Iowa Nutrient Reduction Strategy](#) in November of 2012, with the goal to reduce nitrogen and phosphorus discharge to surface water.

The Task Force includes the following members:

STATES		FEDERAL & TRIBAL AGENCIES
Arkansas	Minnesota	EPA
Illinois	Mississippi	USDA
Indiana	Missouri	United States Department of Interior
Iowa	Ohio	United States Army Corps of Engineers
Kentucky	Tennessee	National Oceanic and Atmospheric Administration
Louisiana	Wisconsin	National Tribal Water Council

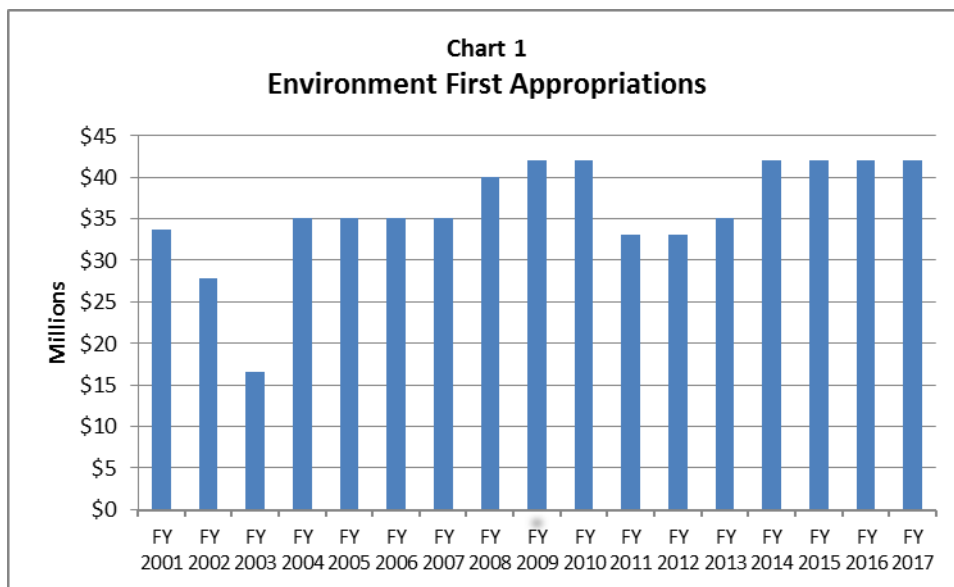
STATE PROGRAMS

Environment First Fund (EFF)

During the 2000 General Assembly, the Iowa Legislature enacted a \$35.0 million standing appropriation for the EFF with the passage of [SF 2453](#) (FY 2001 Infrastructure Appropriations Act). A total of \$605.5 million has been appropriated to the EFF from FY 2001 through FY 2017. The purpose of the EFF is to provide funding for protection, conservation, enhancement, and improvement of natural resources. Over time, the standing appropriation has changed, and is currently at \$42.0 million. In 2000, the General Assembly also enacted [SF 2371](#) (FY 2001 Initiative on Improving the Watershed Attributes Act) that creates several water quality programs that are still in effect. The goal of the legislation is to provide a comprehensive water quality initiative that provides a number of approaches for improving water quality. This legislation also started the discussion on collecting and using credible data for creating water quality standards.

The Legislature determines what programs receive funding from the EFF. The majority of the funds are appropriated to the DALs and the DNR; however, not all of the EFF programs funded are for water quality.

Chart 1 below summarizes the annual appropriation to the EFF. Refer to **Appendix A** for detailed funding appropriated for FY 2013 through FY 2017.



Water Quality Initiative

As previously discussed, Iowa's [Nutrient Reduction Strategy](#) is a science-based document that provides specific methods to assess and reduce nutrients discharged to Iowa waters that flow to the Gulf of Mexico. This includes reducing surface water nutrients from point and nonpoint sources. The first draft of the Nutrient Reduction Strategy was released in November 2012, and State agency partners included the Department of Agriculture and Land Stewardship (DALs), the Department of Natural Resources (DNR), and Iowa State University (ISU).

To provide funding to accomplish the goals of the Nutrient Reduction Strategy, the Water Quality Initiative (WQI) was created in [SF 435](#) (FY 2014 Agriculture and Natural Resources Appropriations Act). The WQI, administered by the DALs, is funded from the General Fund or the Rebuild Iowa Infrastructure Fund (RIIF). Senate File 435 also created the [Nutrient Research Center](#) at ISU. The following table summarizes appropriations for the WQI.

	Actual FY 2013	Actual FY 2014	Actual FY 2015	Actual FY 2016	Estimated FY 2017	Total
Agriculture and Land Stewardship						
Water Quality Initiative - General Fund	\$10,000,000	\$2,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$25,600,000
Water Quality Initiative - RIIF	0	0	0	5,200,000	5,200,000	10,400,000
Board of Regents						
ISU Nutrient Research Center - Gen. Fund	0	1,500,000	1,325,000	1,325,000	1,325,000	5,475,000
ISU Data Collection - Groundwater Prot.	0	0	0	1,230,000	0	1,230,000
Total	\$10,000,000	\$3,900,000	\$5,725,000	\$12,155,000	\$10,925,000	\$42,705,000

Other State Programs

Information on other State and federal programs can be found in **Appendix B**.

PARTNERSHIPS

Various State and federal programs have employees that provide planning or technical assistance in implementing the programs discussed. However, there are numerous organizations, commissions, and boards that also assist in implementing water quality programs. Many of these groups do not receive compensation. The following are examples of these types of groups:

[Water Resource Coordinating Council \(WRCC\)](#). The Council was created to preserve and protect Iowa's water resources, and to coordinate the management of those resources in a sustainable and fiscally responsible manner. The Council uses an integrated approach to water resource management and recognizes there are insufficiencies with current practices and funding sources.

[Watershed Planning Advisory Council \(WPAC\)](#). The Council was established by the Iowa Legislature to assemble a diverse group of stakeholders that make recommendations to State and federal agencies regarding water resource protection.

[Soil and Water Conservation Districts \(SWCD\)](#). There are 100 SWCDs that support soil and water conservation projects. Each SWCD has five Commissioners elected by local constituents. The Commissioners develop comprehensive water quality plans for each District

that identify where conservation practices will be implemented. The Commissioners also determine how funding will be distributed for the various practices.

[Watershed Management Authorities \(WMA\)](#). Currently, there are 17 WMAs that were created under Iowa Code chapter [28E](#). Each Authority has at least two or more eligible political subdivisions and is located in a specific hydrologic unit code ([HUC 8\) watershed](#). A board of directors governs a WMA and activities include:

- Assessing the watershed to reduce flooding and improve water quality.
- Monitoring federal flood risk activities.
- Educating watershed residents about flood risks and water quality.
- Allocating funding for water quality and flood mitigation projects.

[Iowa Nutrient Research and Education Council](#). The Council was formed to determine how to measure the reduction of nutrients on Iowa farms. This includes:

- Environmental progress tracking, in which the Council encourages agronomy retailers to encourage farmers to use a progress measurement system to track the reduction of nutrients in Iowa's water.
- Nutrient research projects that implement new products, practices, and services that are currently in the marketplace but have not been tested for environmental benefits. The Council will collaborate with suppliers to implement innovative projects and new technologies.
- Educational opportunities such as workshops and field days that provide information to other farmers and agricultural retailers.

[Iowa Agriculture Water Alliance](#). The Alliance began in 2014 when three agriculture associations formed the Iowa Agriculture Water Alliance. This included the Iowa Soybean Association, Iowa Corn, and Iowa Pork Producers. The Alliance works with farmers and other partners to adopt conservation practices and other innovations that will improve water quality.

[Pheasants Forever](#). Members of the Pheasants Forever organization have been actively contacting landowners to review practices that would increase habitat and improve water quality.

[The Nature Conservancy](#). The Nature Conservancy in Iowa has the goal to preserve the natural landscapes in the State through the advancement of land and water conservation. Project managers across the State work to protect and conserve private lands and work with agricultural producers and companies on best management practices.

PROGRAM FUNDING

Funding Issues

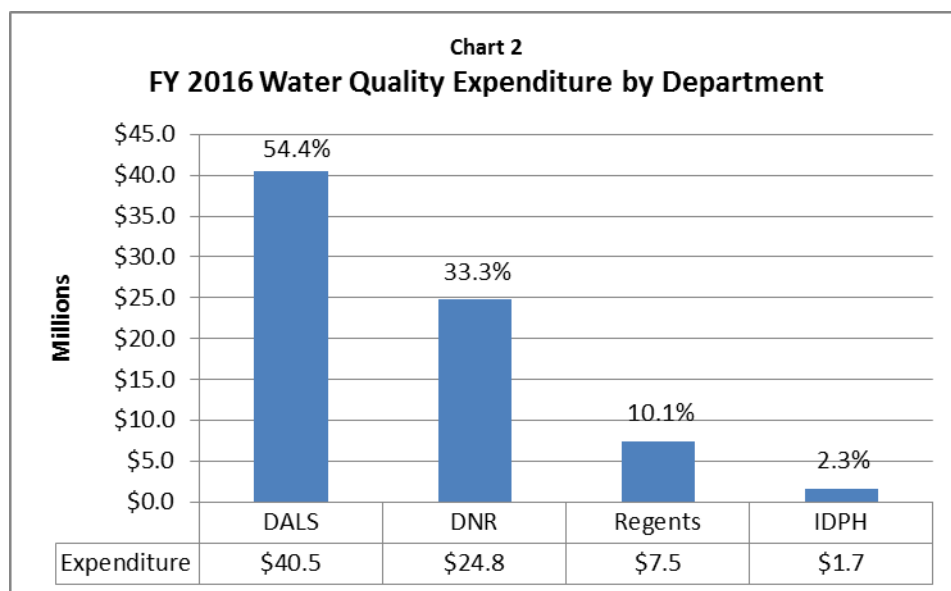
There are challenges when determining how much money is expended in Iowa for water quality management. Some of the challenges in establishing a definitive figure include:

- Projects are funded with State and federal funds, creating timing issues for a project. State funds are appropriated on a fiscal year that runs from July 1 to June 30. Federal funds are appropriated on a fiscal year that runs from October 1 to September 30.

- Federal funds can be received as grants but often federal funding is reimbursed. This means the project is completed with other funds and the expenses are reimbursed by the federal government.
- Accurate accounting for water quality programs is difficult due to the number of hours of volunteer labor. Although State and federal programs employ persons who provide technical assistance, there are a number of people involved in water quality projects who do not receive compensation. This includes Soil and Water Conservation District Commissioners as well as other project volunteers.
- Private funding is used to complete some water quality projects and there is no requirement for a landowner or person providing the funds to report these expenditures to a public agency.
- Double counting can occur, as funding can be appropriated to one agency and then a portion of that appropriation is transferred to another agency. Also, some programs receive funding from different funds or the program is supplemented with fees.

State Funding

Expenditures by the State for water quality programs totaled \$266.5 million for FY 2016. This includes \$192.0 million in State Revolving Fund (SRF) loans made for water quality projects by the IFA. **Chart 2** provides a summary of State water quality expenditures for FY 2016 but does not include the \$192.0 million in IFA loans. **Appendix C** provides a summary of 2016 State expenditures for water quality programs.



NOTE: Excludes \$192.0 million in IFA loans.

Nutrient Reduction Strategy Funding

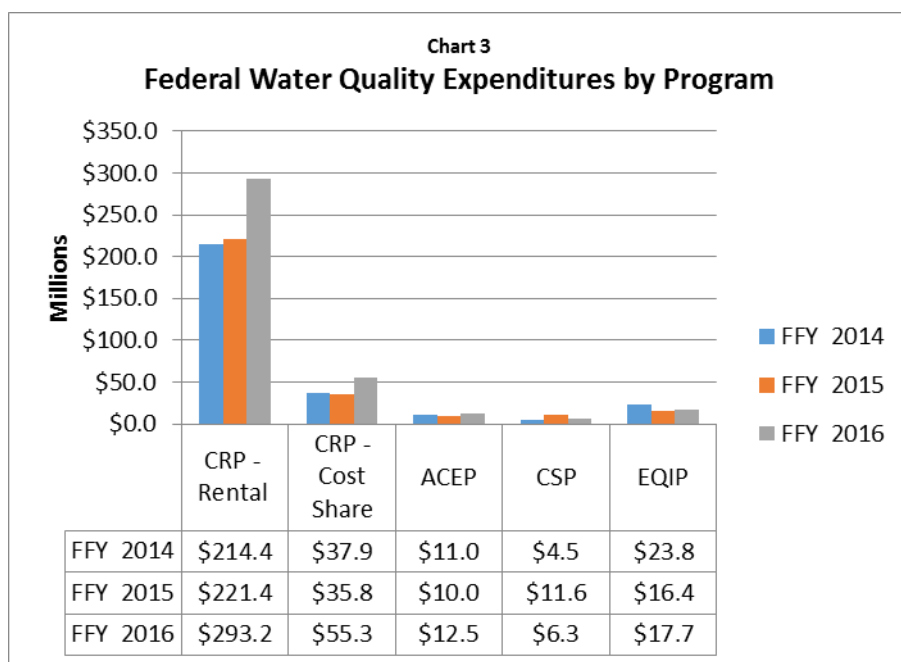
Another way to review State moneys that support water quality programs is to include funding information from the [annual progress report for the Nutrient Reduction Strategy](#) that was released in September 2016. The report stated that \$122.7 million in funding supported the

WQI for 2016. The information was generated through coordination between WRCC and WPAC members as reported to the Measures Coordinator at ISU. This included:

- Public appropriations (\$115.7 million).
- Public grants (\$3.5 million).
- Private funding (\$2.3 million).
- Sustained funding (\$700,000).
- Private grants (\$500,000).

Federal Funding

Chart 3 provides a summary of the \$385.0 million in federal funding for water quality programs for FFY 2016. **Appendix D** provides a list of federal program funding.



Additional Federal Funding Information

Other programs have provided federal funds to Iowa for water quality programs, including the following:

[Regional Conservation Partnership](#). The Partnership promotes coordination among partners to deliver conservation assistance to producers and landowners. Projects are awarded federal funds with the goal of leveraging additional project funding from other sources. Projects funded in Iowa for 2016 include:

- The Upper Cedar Watershed Urban-Rural Partnership located near Charles City. Federal funds of \$1.6 million were awarded.

- The Midwest Agriculture Water Quality Partnership in the DALS that received \$9.5 million in federal funds. The Partnership has over 40 partners that have contributed \$38.0 million in nonfederal funds for an innovative public-private collaboration to improve water quality.
- The Improving Working Lands for Monarch Butterflies Partnership that received \$6.0 million in federal funds. Iowa is participating in restoring habitats for monarch butterflies on agricultural land.

[National Disaster Resilience Competition](#). Housing and Urban Development awarded a \$96.7 million grant to Iowa to reduce flooding and advance water quality. The grant will be administered by the Economic Development Authority. Funding will be available to nine watershed sites that have an established Watershed Management Authority. These sites will develop a water assessment and watershed plan and implement projects that reduce downstream flooding and improve water quality during and after flood events.

OTHER STATE PROGRAMS

Every state is required to implement programs as directed by the EPA and the federal Clean Water Act. However, every state has different approaches and programs related to water quality. The following provides information on programs in other states that vary from programs in Iowa.

Nutrient Reduction Strategy Reports

Members of the Mississippi River/Gulf of Mexico Hypoxia Task Force developed a 2008 Action Plan that required all states in the hypoxia area to develop comprehensive plans to reduce nitrogen and phosphorus discharge into waterbodies. Iowa was the second state to complete the plan, known as the [Nutrient Reduction Strategy](#). Below are links to the plans of other states.

Arkansas	Indiana	Illinois	Iowa
Kentucky	Louisiana	Minnesota	Mississippi
Missouri	Ohio	Tennessee	Wisconsin

[Illinois](#). The Right to Know law requires an owner/operator of a community water supply to notify all users when the water is contaminated or there is a threat of contamination. The law has monetary penalties and also specifies that providing false information to environmental officials is a felony under Illinois law.

[Kansas](#). The Clean Water Neighbor Program, a state Program funded by the Kansas Department of Health and Environment, is funded by the EPA. The Program promotes state and local partnerships to develop management practices that protect water resources. The Program provides funding for planning and implementing projects involving nonpoint source pollution prevention. Project areas include source water protection, nonpoint source pollution management, green infrastructure, local environmental protection, and other related projects.

[Minnesota](#). Project Water Education for Teachers (WET). The Program is being used by educators to provide hands-on, interactive lessons that are focused on water quality. There are

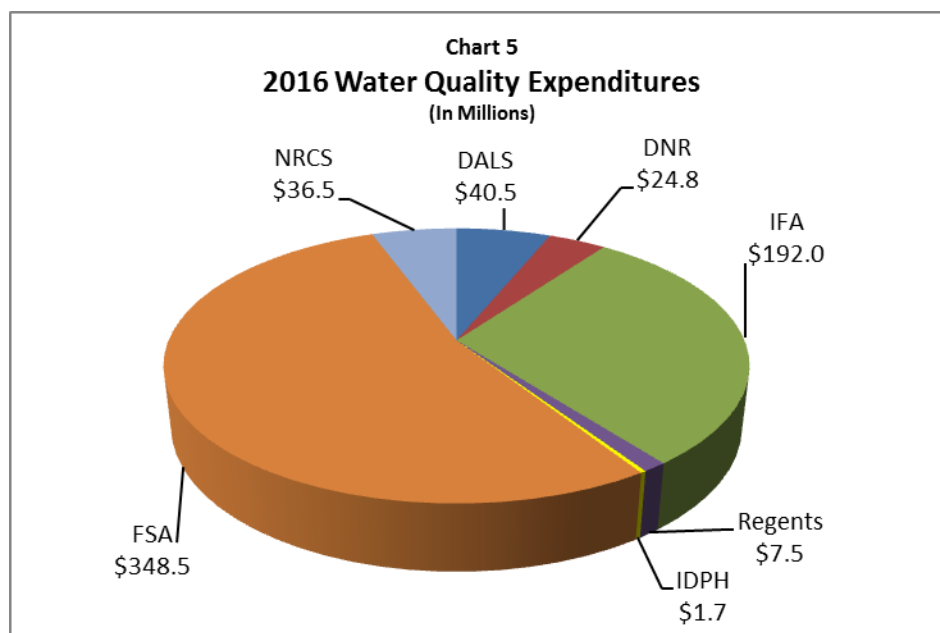
over 90 interactive water activities that address water quality issues such as chemical and physical properties, quality and quantity issues, ecosystems, and management strategies.

[Missouri](#). The Missouri Department of Natural Resources has created the Guide to Green Infrastructure that takes a comprehensive approach to storm water management by developing storm water management practices that can be applied by a region, a district or neighborhood, or at a smaller-scale site.

[Nebraska](#). The Nebraska Department of Environmental Quality administers the Chemigation Program, responsible for protecting source water when irrigation systems are used to apply fertilizer or pesticide. There are 23 Natural Resource Districts in Nebraska, and each District is responsible for permitting and inspecting the safety equipment that is installed on an irrigation system for application. The Nebraska Department of Environmental Quality certifies the applicators are trained by the University of Nebraska Cooperative Extension system.

SUMMARY

This overview summarizes the various programs related to water quality at the State and federal level and compares these efforts to those of other states. Although it is difficult to determine the exact amount of money expended in Iowa for water quality programs, based on the information presented, State spending is estimated at \$266.5 million, and federal spending is estimated at \$385.0 million for a total of \$651.5 million for FY 2016. **Chart 5** details the spending by Program.



The State [2015 Agriculture Review](#) estimated there are 30.5 million acres of farmland in Iowa. The average expenditure for water quality programs is \$21.36 per acre when you divide \$651.5 million by 30.5 million acres.

SOURCES

[Clearwater Iowa](#)

[Federal EPA Water Information](#)

[EPA Water Quality Standards Handbook](#)

[Federal Clean Water Act on Water Quality Standards](#)

[Summary of the federal Clean Water Act](#)

[EPA Water Quality Assessment and 303\(d\) List](#)

STAFF CONTACT: Deb Kozel (515)281-6767 deb.kozel@legis.iowa.gov

Appendix A

Environment First Fund					
Appropriations for FY 2013 - FY 2017					
	Actual FY 2013	Actual FY 2014	Actual FY 2015	Actual FY 2016	Estimated FY 2017
Agriculture and Land Stewardship					
Conservation Reserve Enhancement	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Watershed Protection Fund	900,000	900,000	900,000	900,000	900,000
Farm Management Demonstration	625,000	625,000	625,000	625,000	625,000
Soil & Water Conservation	2,550,000	2,550,000	2,550,000	2,700,000	2,800,000
Conservation Reserve Program	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Ag Drainage Wells	550,000	0	0	0	0
Soil and Water Cost Share	6,650,000	6,650,000	6,750,000	6,750,000	6,750,000
Loess Hills	525,000	525,000	600,000	600,000	600,000
Total Agriculture and Land Stewardship	<u>\$13,800,000</u>	<u>\$13,250,000</u>	<u>\$13,425,000</u>	<u>\$13,575,000</u>	<u>\$13,675,000</u>
Natural Resources					
Volunteers and Keepers of Land	\$ 100,000	\$ 100,000	\$ 100,000	\$ 0	\$ 0
Park Operations & Maintenance	3,710,000	6,360,000	6,135,000	6,135,000	6,235,000
GIS Information for Watershed	195,000	195,000	195,000	195,000	195,000
Water Quality Monitoring	2,955,000	2,955,000	2,955,000	2,955,000	2,955,000
Water Quality Protection	500,000	500,000	500,000	500,000	500,000
Animal Feeding Operations	620,000	1,320,000	1,320,000	1,320,000	1,320,000
Ambient Air Quality Monitoring	425,000	425,000	425,000	425,000	425,000
Water Quantity	495,000	495,000	495,000	495,000	495,000
Geological and Water Survey	200,000	200,000	200,000	200,000	200,000
Keep Iowa Beautiful	0	200,000	200,000	200,000	0
REAP	12,000,000	16,000,000	16,000,000	16,000,000	16,000,000
Forestry Health Management	0	0	50,000	0	0
Total Dept. of Natural Resources	<u>\$21,200,000</u>	<u>\$28,750,000</u>	<u>\$28,575,000</u>	<u>\$28,425,000</u>	<u>\$28,325,000</u>
Total EFF	<u>\$35,000,000</u>	<u>\$42,000,000</u>	<u>\$42,000,000</u>	<u>\$42,000,000</u>	<u>\$42,000,000</u>

STATE PROGRAM OVERVIEW

DALS Programs

[Agricultural Drainage Wells Water Quality Assistance Program](#). Agricultural drainage wells were constructed in the early 1900s in the north central part of Iowa. The purpose was to provide water drainage from land that had limited access to streams or ditches. During the 1980s, researchers found pollutants in the groundwater that were from the agricultural drainage wells. The Assistance Program began in 1997 to provide cost-share funds to landowners to close agricultural drainage wells. Closure projects may be administered with drainage districts and the drainage wells may be closed in conjunction with creating alternative drainage outlets. There were 300 agricultural drainage wells registered in 1997, and there are currently 18 agricultural drainage wells that have not been closed. The estimated cost to close the remaining wells is between \$7.0 and \$10.0 million. This Program has been funded with appropriations from the General Fund and the RIF.

[Soil and Water Conservation Cost Share](#). The Program began in 1973 to provide financial assistance (e.g., cost-share funds) to Soil and Water Conservation Districts with the intent to protect water and control soil erosion. There are 100 Soil and Water Conservation Districts that implement the conservation projects and distribute funds across Iowa. This Program has been funded with General Fund moneys and appropriations from the EFF.

[Soil and Water Conservation Administration](#). Funding pays for the administration of soil and water conservation programs and supports soil and water conservation district expense reimbursement. Each Soil and Water Conservation District has five elected Commissioners. They do not receive a salary but may be reimbursed for their expenses. This Program has been funded with appropriations from the EFF.

[Farm Management Demonstration Program or Integrated Farm and Livestock](#). Funding is used for voluntary demonstration practices that provide environmental benefits for water quality improvement. Beginning in FY 2008, there has been an allocation of \$400,000 to the Iowa Soybean Association for its Agriculture and Environmental Performance Program. Recently, remaining funds have been allocated to the [Iowa Learning Farms](#). This Program has been funded with appropriations from the EFF.

[Watershed Protection Fund](#). The funding is used to support watershed assessments and expenditures for watershed projects. The Soil and Water Conservation Districts can apply for funding to offset costs for watershed projects. This Program has been funded with appropriations from the EFF.

[Conservation Reserve Enhancement Program \(CREP\)](#). The Program funds construction of wetlands that remove nitrates in 37 counties in north central Iowa. Landowners that install wetlands receive funding for a portion of the project as well as an incentive payment from the federal Farm Service Agency (FSA). The DALS provides easement payments and a portion of the construction expense. This Program has been funded with appropriations from the EFF.

[Conservation Reserve Program or District Initiatives](#). Projects that receive funding are developed by the Soil and Water Conservation Districts in cooperation with the USDA's Natural Resources Conservation Service (NRCS). Funding is used to provide technical assistance to install soil protection and water quality practices. This Program has been funded with appropriations from the EFF.

[Watershed Improvement Review Board \(WIRB\)](#). The WIRB was established during the 2005 Legislative Session. In addition to the WIRB, the General Assembly also created a Watershed Improvement Fund for Watershed Improvement Grants. The purpose of the Board was to review grant applications and award grants for projects that enhance the State's water quality, improve the State's water resources, and encourage public participation and input for improving water quality. This Program has been funded with General Fund moneys and appropriations from the RIF.

[Resource Enhancement and Protection \(REAP\) Fund Allocation](#). The DALS receives an annual allocation of 20.0% from the REAP appropriation for soil and water conservation projects. For example, the appropriation to REAP for FY 2017 is \$16.0 million; however, only 20.0%, or about \$3.1 million, is allocated to the DALS for soil and water conservation projects.

[Loess Hills and Hungry Canyons](#). The 1993 General Assembly established the Loess Hills Development and Conservation Authority to protect natural resources in 23 western Iowa counties. A portion of the funding is for the Hungry Canyons Program that implements infrastructure projects intended to mitigate stream channel erosion. The other portion of the funding is for the Loess Hills Alliance that completes projects to protect the natural and cultural resources of the area. This Program has been funded with appropriations from the General Fund and from the EFF.

[Southern Iowa Development and Conservation Authority](#). The Southern Iowa Development and Conservation Authority is a nonprofit organization that serves counties in southern Iowa. The Authority implements projects to protect unique natural resources, enhance rural development, and implement needed infrastructure. Although currently not funded by the State, in the past this Program has been funded with appropriations from the EFF.

DNR Programs

[Animal Feeding Operations \(AFO\)](#). The DNR regulates AFOs to protect surface and groundwater resources. This includes regulations that specify how much manure can be applied to land and when it can be applied. The construction of a new AFO is also regulated by the DNR.

[Water Quality Monitoring](#). The DNR is responsible for the design, implementation, and management of Iowa's Ambient Water Monitoring Program. The Program provides consistent and unbiased information about the condition of Iowa's surface and groundwater resources. This Program has been funded with appropriations from the EFF.

[National Pollutant Discharge Elimination System \(NPDES\) Permits](#). This is a federal program administered by the DNR that issues NPDES permits. The Program regulates the direct discharge of wastewater to surface waters and is funded by the General Fund, fee revenue, and federal grants. Permits issued include:

- State operation permits for the disposal of wastewater by land application.
- Individual permits and three general permits that cover storm water discharges.
- Four general permits that cover sewage disposal systems, mining and processing facilities, construction activities, and application of pesticides.
- Wastewater construction requires the one-time payment of a construction permit application fee and the funds are deposited into the NPDES Fee Account.

[Lake Restoration Program](#). The DNR created a Lake Restoration Program that is similar to the federal [Clean Lakes Program](#). The Program restores lakes that meet specific criteria, including

that the lake is not the primary water source for a community. This Program has been funded with appropriations from the RIIF.

[Watershed Improvement – Section 319 Funds](#). Although the bulk of the nonpoint source pollution programs are in the DALs, the DNR also has a Watershed Improvement Program. The Watershed Improvement approach is a collaborative effort between State departments, federal agencies, Soil and Water Conservation Districts, universities, and other stakeholders with the goal of improving the water quality in the watershed. This is a federal Program and funding is often called [Section 319](#) money. This refers to the [Section 319 Nonpoint Source Management Program](#), which is a part of the federal [Clean Water Act](#). Some of the Section 319 funding is transferred to the DALs for nonpoint source programs.

[IOWATER](#). This is a volunteer program in which Iowa citizens take water samples. Volunteers are trained to take basic water chemical, physical, and biological measurements. The goal is to protect and improve Iowa's water quality by educating citizens about watersheds. The Program receives minimal funding from DNR operations.

Iowa Finance Authority Program

[State Revolving Fund](#). The SRF is a federal-state Program administered by the Iowa Finance Authority (IFA) and the DNR. Funding is used for the construction of drinking water and wastewater facilities. There are two funds:

- The Clean Water State Revolving Fund (CWSRF), which provides funds for implementing or improving wastewater treatment, reliable sewer rehabilitation, storm water improvements, and nonpoint source projects.
- The Drinking Water State Revolving Fund (DWSRF), which provides funding for construction of new water treatment plants or for improvements to existing facilities. Other projects include extension of water lines to existing unserved properties, water storage facilities, wells, and source water protection projects.

The SRF receives federal grant funds from the EPA which require a 20.0% State match. The Iowa SRF programs provide the match by issuing bonds. The SRF is similar to a bank that provides loans to eligible participants for water infrastructure projects. Money is loaned out at low interest rates and the borrower pays back the loan into the SRF for new projects. The DNR works with potential borrowers to provide technical assistance and determines if they qualify for the funding, and the IFA works with the potential borrowers to complete the loan process.

The SRF also provides funding for nonpoint source projects through a variety of programs. This includes low-interest loans to landowners for conservation practices, livestock producers for manure management practices, and homeowners for on-site septic system improvements. These funds are provided through a linked deposit with over 400 community banks throughout Iowa. Many of these projects are co-funded with State cost-share funds or federal [Environmental Quality Incentives Program](#) (EQIP) funds.

Iowa Department of Public Health (IDPH) Program

[Grants to Counties to Support Water Wells](#). The Program is administered by the IDPH. Grants are available to each participating county health department to provide financial assistance to homeowners for private well services. These services include testing the homeowners' wells for nitrates, coliform, and arsenic; plugging abandoned wells and cisterns; and reconstructing wells. There is also funding allocated for administration of the Program with a portion allocated to the IDPH and another portion allocated to the DNR.

Board of Regents Programs

[Iowa State Nutrient Research Center](#). Created in [SF 435](#) (FY 2014 Agriculture and Natural Resources Appropriations Act) to pursue science-based approaches and evaluate the performance of current nutrient management practices. The Center, located at ISU, provides funding for projects with researchers from ISU, UI, and UNI.

[Iowa State In-Field Data Collection](#). One-time funding from the Agriculture Management Account in the Groundwater Protection Fund was allocated to the College of Agriculture and Life Sciences to collect data for in-field practices. This was appropriated in [SF 494](#) (FY 2016 Agriculture and Natural Resources Appropriations Act). The overall goal was to track progress of reducing nutrients to water from nonpoint sources within watersheds. A database will analyze the in-field practices data in the aggregate. These findings will be used to develop a system of watershed practices that can measure the impact of various nutrient management decisions.

[Extension and Outreach Service](#). The Service, located at ISU, provides educational research and resources for educators and landowners. This includes resources related to water quality, research practices, and watershed information.

[Leopold Center for Sustainable Agriculture](#). The Leopold Center, located at ISU, was created to identify and reduce negative environmental and social impacts caused by farming. The Center develops new ways to farm profitably while conserving natural resources.

[Iowa Hygienic Laboratory](#). The Laboratory provides numerous services related to public health. This includes testing of drinking water and water quality monitoring. The Laboratory works with the DNR to monitor waterways throughout the State for contaminants.

[Iowa Flood Center](#). The Center, located at UI, was created in response to the 2008 flood damage to the campus. As researchers collected flood data, they realized there was no dedicated center that maintained this information. The goals of the Center include:

- Developing models that estimate real-time forecasting of floods to be used for floodplain inundation mapping.
- Establishing community-based programs that enhance flood monitoring and prediction in Iowa.
- Providing assistance and sharing the expertise and resources of the Iowa Flood Center.
- Developing a knowledgeable workforce that understands flood research, prediction, and mitigation strategies.
- Cooperating with various State and federal agencies.

[Iowa Institute of Hydraulic Research \(IIHR\) - Hydroscience & Engineering](#). The IIHR, located at UI, provides education, research, and public services related to hydraulic engineering and fluid mechanics. Students, faculty members, and research engineers work together to understand and manage water resources. This includes basic fluid mechanics, laboratory experimentation, and computational approaches.

[Tallgrass Prairie Center](#). The Center, located at UNI, restores native vegetation through research, education, and technology. The Center provides technical assistance to implement the Integrated Roadside Vegetation Management Program that was established and funded from the Living Roadway Trust Fund. The Center also implements Prairie on Farm to share knowledge of prairie construction and management techniques with rural landowners and

technical service providers. Planting prairie strips in a field can stop erosion, reduce nutrient loss, improve soil quality, and support monarch butterflies and other wildlife.

[Iowa Waste Reduction Center](#). The Center, located at UNI, has been working with Iowa businesses since 1987. The Center offers free and confidential assistance to Iowa small businesses, including on-site compliance and pollution prevention audits, industrial spray painter training, food waste reuse/reduction projects, and an advanced website containing pollution prevention strategies and educational information for a wide variety of business operations.

FEDERAL PROGRAM OVERVIEW

USDA's Farm Service Agency (FSA) and Natural Resource Conservation Services (NRCS) distribute funding and technical assistance for the majority of conservation programs. The FSA administers federal farm programs and each state is managed by a State Executive Director. Counties that participate elect members to a county committee that decide how to apply the federal programs. The NRCS provides technical and financial assistance to farmers and other private landowners. The mission is to improve, protect, and conserve natural resources on private lands through a cooperative partnership with state and local agencies. Each state is managed by a State Conservationist who is advised by the State Technical Committee. The following is a list of various programs administered by the agencies.

FSA Programs

[Conservation Reserve Program \(CRP\)](#). This Program is also funded at the state level and is the largest private-land conservation program that targets high-priority conservation areas. Rental payments are made to landowners that remove environmentally sensitive land from production over a period of 10 to 15 years. The FSA administers the Program, the NRCS provides technical assistance to landowners, and the states provide financial incentives. The Farmable Wetlands Program is part of the CRP and is a voluntary program that restores wetlands and buffers that can be farmed, but not for commercial purposes.

[Conservation Reserve Enhancement Program \(CREP\)](#). This Program is also funded at the state level. The CREP targets high-priority conservation areas as identified by local, state, and tribal government agencies, or nongovernmental organizations. The sensitive land is removed from farm production and those operations are replaced with conservation practices. The owner receives an annual rent payment for a period of 10 to 15 years. This is a voluntary program.

[Emergency Conservation Program](#). The Program provides assistance by repairing damage to agricultural land caused by natural disasters. The repair process includes installing water conservation practices.

[Emergency Forest Restoration Program](#). The Program provides financial assistance to landowners of nonindustrial private forests to restore forest areas after they have been damaged by natural disasters.

[Source Water Protection Program](#). The Program is designed to prevent pollution of surface water and groundwater used as a primary source of drinking water for rural residents. This Program is a joint effort between the FSA and the National Rural Water Association (NRWA).

NRCS Programs and Initiatives

[National Water Quality Initiative \(NWQI\)](#). The NWQI provides funding and technical assistance for watershed efforts to improve water quality. The NRCS technicians provide technical assistance to determine which conservation practice will provide the best results for improving water quality.

[Agricultural Conservation Easement Program \(ACEP\)](#). This Program provides financial and technical incentives to conserve agricultural lands and wetlands. There are two components: Agricultural Land Easements and Wetlands Reserve Easements. The [Farm and Ranch Lands Protection Program](#) and the [Grassland Reserve Program](#) have been merged into this Program.

[Agricultural Water Enhancement Program \(AWEP\)](#). This was a voluntary conservation program that provided funding and technical assistance to agricultural landowners to implement agricultural water enhancement activities that conserve surface and groundwater and improve water quality. There was one AWEP project in Iowa in 2009 in the Lake Rathbun watershed. This Program was repealed in February 2014, and remaining projects are administered by the Regional Conservation Partnership Program (RCPP).

[Conservation Innovation Grants](#). The Program is a competitive application process and projects are awarded grants to stimulate the development and adoption of innovative approaches and technologies for conservation on agricultural land. The grants are funded with federal EQIP funds and awarded to nonfederal governmental organizations, nongovernmental organizations, or individuals.

[Conservation Security Program](#). This was a voluntary program that provided financial and technical assistance to promote conservation and improvement. The authorization for the Program ended in Federal Fiscal Year (FFY) 2008, but active contracts can receive payments through FFY 2017.

[Conservation Stewardship Program \(CSP\)](#). The Program assists agricultural landowners with maintaining and improving existing conservation systems and implementing additional conservation practices. Participant payments are based on the level of conservation performance.

[Conservation Technical Assistance](#). These funds provide landowners with conservation planning assistance from federal NRCS technicians to improve soil health and reduce soil erosion and damage from excessive water, sediment, or drought. Other conservation practices enhance water quality and habitat for fish and improve the long-term sustainability for all landscapes.

[Environmental Quality Incentives Program](#). A voluntary program that provides financial and technical assistance to agricultural landowners with contracts that can last up to 10 years. These contracts provide assistance to implement conservation practices and address natural resource concerns.

[Regional Conservation Partnership Program \(RCCP\)](#). The Program promotes coordination among partners to deliver conservation assistance to producers and landowners. Funding is primarily through the EQIP and the CSP. The NRCS is facilitated through partnership agreements, program contracts, or easement agreements.

[Watershed and Flood Prevention Operations Program](#). The Program provides technical and financial assistance for conservation practices that include authorized watershed project plans. Practices include but are not limited to watershed protection, flood mitigation, and soil erosion reduction.

[Watershed Rehabilitation Program](#). The Program assists local sponsors in repairing and restoring aging dams that are reaching the end of their 50-year design lives. The rehabilitation addresses critical public health and safety concerns.

[Emergency Watershed Protection Program](#). The Program conserves natural resources that are damaged due to natural disasters such as floods, fires, or drought.

EPA Programs

[Section 319 Nonpoint Source Management Program](#). As previously discussed, there are federal funds available to address nonpoint source pollution problems in watersheds. This watershed approach is a collaborative effort between state departments, federal agencies, Soil and Water Conservation Districts, universities, and other stakeholders with the goal of improving the water quality in the watershed. The funding is often called Section 319 moneys, as this refers to the [Section 319 Nonpoint Source Management Program](#), which is a part of the federal [Clean Water Act](#).

[State Revolving Fund \(SRF\)](#). As previously discussed, SRF is a federal program that is administered by the IFA and the DNR that provides financing for the construction of drinking water and wastewater facilities.

Department of Housing and Urban Development (HUD)

[National Disaster Resilience Competition \(NDRC\)](#). In 2015, 40 states and communities were invited to compete in the second and final phase of the National Disaster Resilience Competition. The competition is sponsored by HUD with collaboration from the Rockefeller Foundation. Grants were awarded to assist communities to recover from prior disasters and increase resilience in facing future disasters or hazards.

FY 2016 State Water Quality Expenditures State Programs	Appendix C Expenditures
DALS:	
Water Quality Initiative	\$ 6,442,000
Agricultural Drainage Wells	3,864,000
Soil and Water Conservation Cost Share	4,955,000
Soil and Water Conservation Administration	2,496,000
Farm Management Demonstration Program	776,000
Watershed Protection Fund	624,000
Conservation Reserve Enhancement Program	2,047,000
Conservation Reserve Program	1,338,000
Watershed Improvement Review Board	1,877,000
Resource Enhancement and Protection - Water Quality Protection	2,933,000
DALS Operations	12,621,000
Loess Hills Conservation and Development Authority	600,000
Total DALS	\$ 40,573,000
DNR:	
Animal Feeding Operations	\$ 3,606,000
Clean Water State Revolving Loan Fund	3,722,000
Water Quality Monitoring	3,541,000
Storm Water	923,000
National Pollutant Discharge Elimination System (NPDES) Permit	745,000
Section 319 Funding	4,226,000
Lake Restoration Program	8,001,000
Total DNR	\$ 24,764,000
IFA:	
Clean Water State Revolving Fund	\$ 138,000,000
Drinking Water State Revolving Fund	33,000,000
Nonpoint Source Projects	21,000,000
Total IFA	\$ 192,000,000
Board of Regents:	
Iowa Waste Reduction Center at UNI	\$ 838,000
Iowa Hygienic Laboratory at UI	740,000
Agricultural Experiment Station at ISU	1,616,000
Iowa State Nutrient Research Center at ISU	1,453,000
Iowa State In-Field Data Collection at ISU	410,000
Iowa State Extension and Outreach at ISU	664,000
Leopold Center for Sustainable Agriculture at ISU	864,000
Iowa Flood Center -- Iowa Institute of Hydraulic Research (IIHR) at UI	917,000
Total Board of Regents	\$ 7,502,000
IDPH	
Grants to Counties to Support Water Wells	\$ 1,702,000
Total IDPH	\$ 1,702,000
Total State Water Quality Programs	\$ 266,541,000

Appendix D			
Federal Funding Water Quality Expenditures (Dollars in Millions)			
Program	FFY 2014	FFY 2015	FFY 2016
CRP - Rental Payments	\$ 214.4	\$ 221.4	\$ 293.2
CRP - Cost Share Funding	37.9	35.8	55.3
Agricultural Conservation Easement Program	11.0	10.0	12.5
Conservation Stewardship Program	4.5	11.6	6.3
Environmental Quality Incentives Program	23.8	16.4	17.7
Total	\$ 291.6	\$ 295.2	\$ 385.0