



# IOWA WATER QUALITY INITIATIVE

## 2016 Legislative Report

### 2015: Year Three Progress Through the WQI

We continue to see collaboration around the Iowa Nutrient Reduction Strategy build exponentially from its release in 2013. Iowans are engaged and we continue to see new partners participating and providing additional resources and expertise.

#### In 2015:

- IDALS was awarded an additional \$3.5 million in funding from NRCS to support 8 of 16 WQI watershed demonstration projects through the USDA-NRCS Regional Conservation Partnership Program (RCPP)
- Demand remains strong from farmers for incentives to try new water quality practices.
- \$3.5 million was made available statewide for participants to try a new practice on their farm.
- 3 new watershed demonstration projects were selected to bring the total number of projects to 16.
  - ◆ \$1.4 million of WQI funding was obligated to these demonstration projects over the next three years. An additional \$1.1 million in partner contributions will support water quality improvement efforts in these new demonstration projects.
- 4 new practice demonstration projects were selected to install and demonstrate innovative targeting and delivery of conservation practices that have a significant benefit to water quality.
  - ◆ \$3.06 million of WQI funding was obligated to these demonstration projects over the next three years, with additional \$2.59 million in partner contributions to support the projects



**Bill Northey**  
Iowa Secretary of Agriculture  
pictured near a pallet of cover  
crop seed headed for fields.

### Iowa Water Quality Initiative

The Water Quality Initiative was established during the 2013 legislative session to help implement the Nutrient Reduction Strategy (NRS). The NRS provides a road map to achieve a 45% reduction in nitrogen and phosphorus losses to our waters using an integrated approach that includes point and non-point sources working together for improvement.

The WQI seeks to harness the collective ability of both private and public resources and organizations to rally around the NRS and deliver a clear and consistent message to the agricultural community to reduce nutrient loss and improve water quality.

**Statewide Practices Cost-Share - FY 2016**

In July of 2015, \$3.5 million was obligated to applicants in all 100 Soil and Water Conservation Districts for cost share on conservation practices through the Water Quality Initiative (WQI). As in 2013 & 2014, farmers and landowners remain very interested in new water quality practices and all the funds were obligated quickly. Nearly 1800 farmers signed up for funding in 2015, committing at least \$3.5 million of their own money to implement these practices.

The funding was again targeted to first-time users of four practices: no-till, strip-till, N inhibitor, and cover crops. New this year was the expansion into offering a lower incentive for past users as a way to work with cover crops in additional years and weather patterns.

As in past years, the vast majority of the sign-ups were for cover crops. Surveys of applicants are being taken to provide farmer input and improve delivery of state programs. Of the surveys returned by the time of this report, over 75% of cover crop applicants through WQI in 2015 indicated they are planning to continue the use of cover crops as a conservation practice.

**WQI Statewide Practices FY2015 Recap**

WQI Statewide	FY2015 Application Totals	Nitrogen Reduction (tons)	Phosphorus Reduction (tons)
Cover Crops	42,055 acres	179.1	5.0
N Inhibitor	1,380 acres	1.9	NA
No-till/Strip-till	3,470 acres	NA	1.0
<b>Totals</b>		<b>181.0</b>	<b>6.0</b>

*This table represents calculated load reductions of nitrogen and phosphorus based on practices installed in FY2015 through Statewide WQI.*

*This does not include practices installed through other state/federal programs or privately funded efforts.*

**IDALS Awarded RCPP in 2015**

In 2015, IDALS was awarded \$3.5 million in federal, USDA-NRCS funding to increase the pace and scale of adoption of conservation practices in 8 of the 16 WQI demonstration projects. IDALS saw tremendous demand from farmers and landowners to install practices within the projects. The RCPP provided an opportunity to provide additional resources to expand upon the state investment.

Additionally, the City of Cedar Rapids successfully collaborated with 2 WQI demo projects, among multiple other groups, to receive their own RCPP supported project.



**USDA-NRCS Asst. Chief Kirk Hanlin announced RCPP selections along with Sec. Northey and (then) Iowa NRCS State Conservationist Jay Mar.**

**Iowa Leaders in Conservation**

Iowa Farm Environmental Leader Award recipient and family farmer, **Rob Stout**, is a recognized leader in **Washington County** and an integral part of the West Fork Crooked Creek WQI Watershed Demonstration Project. In addition to cover crops, no-till, terraces, among others conservation practices, Rob installed the first bioreactor in his watershed in 2014.

Through the WQI, Rob not only received technical and financial assistance to install the bioreactor, he was also able to monitor the water going in and out to confirm the positive results.

In 2015, the newly installed bioreactor removed about 64% of the nitrate leaving Rob's field. Rob said, "My contractor has been building terraces and installing tile for us for the past 30 years. He had never built one before. It was a learning process for all of us, but I'm very pleased with the results." - *Rob Stout*

Find out more about Iowa Leaders in Conservation at [CleanWaterIowa.org](http://CleanWaterIowa.org).



### Targeted Demonstration Watershed Projects

In 2015, IDALS funded 3 new WQI Targeted Demonstration Watershed Projects bringing the active total to 16. Their purpose is to help implement and demonstrate the effectiveness and adaptability of a host of conservation practices highlighted in the Nutrient Reduction Strategy on a watershed scale.

The 3 new projects include:

- Elk Run Watershed Water Quality Initiative
- Headwaters North Raccoon River
- Leading a New Collaborative Approach to Improving Water Quality in the Squaw Creek Watershed

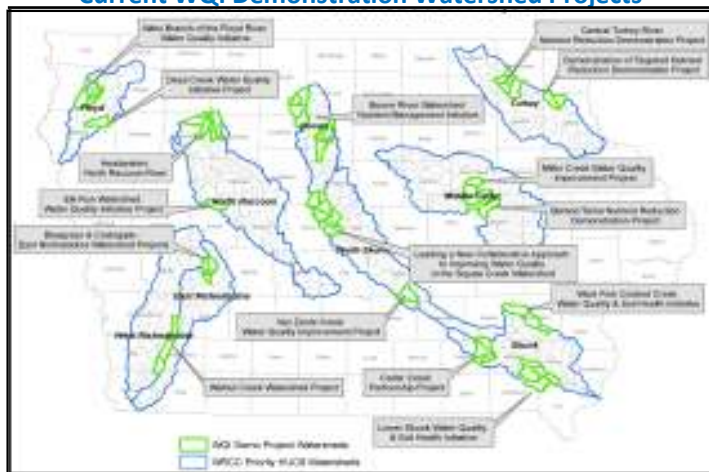
The \$7.4 million in state funding supporting these 16 projects is leveraged with \$11.7 million in additional funding provided by partners and landowners.

More than 95 organizations are participating in the watershed demonstration projects, including partners from agriculture organizations, institutions of higher education, private industry, and local, state, and federal agencies. All are working with the respective Soil and Water Conservation Districts (SWCD) and others as they serve as project leaders.

These projects will utilize the collective resources of their partners to demonstrate conservation practices paired with strong outreach and education components.

This effort will promote farmer to farmer interaction to increase awareness through and adoption of available practices and technologies. Successful projects will serve as local and regional hubs for demonstrating practices and providing practice information to farmers, peer networks, and local communities.

Current WQI Demonstration Watershed Projects



2015 WQI Demo Project Practice Summary			
	Installed to Date	Currently Obligated	Unit
Cover Crops	26,273	13,753	acres
Bioreactors	1	2	no.
Drainage Water Mgmt	126	-	acres
Extended Rotation	95	41	acres
Reduced/No-tillage	4,081	1,817	acres
N Application Mgmt	5,508	10,689	acres
P Application Mgmt	2,828	8,881	acres
Pasture & Hayland Planting	22	-	acres
Terraces	86,579	111,670	ft.
Water & Sediment Control Basins	1	-	no.
Wetlands	-	3	no.
Saturated Buffers	-	3,750	ft.

Summary of practices implemented since 2014 and obligated for funding in year 2 of the WQI Targeted Demonstration Watershed Projects.

\*This summary only accounts for practices installed through State WQI funding and does not account for practices installed through other programs or by landowners themselves.

### 2016 IDALS Regional Conservation Partnership Program (RCPP): Leveraging State and Partner Investment

In an effort to continue to leverage and expand the resources available to support the NRS, IDALS partnered with the Iowa Agriculture Water Alliance (IAWA) and 45 other partners to submit an RCPP proposal to USDA-NRCS. The proposal seeks to leverage partner contributions and WQI funding to access federal resources to increase practice adoption in targeted watershed projects. This proposal is seeking the maximum allowed, \$10 million, in NRCS funding over the next 5 years. Award notifications will be made in early 2016.

## Practice Demonstration Projects

In 2015, IDALS awarded funding to 4 new projects in targeted locations and/or cropping systems that lend themselves to expanded adoption of specific NRS practices and/or practices that have a larger impact on water quality. These projects are also focused on innovative delivery and new methods/partnerships to build the capacity to deliver technical and financial assistance. The increase in assistance leads to the installation of practices on a broader scale. A short summary of each project is given below.

**Advancing Nutrient Reduction in the Rock Creek Watershed-Iowa Soybean Association:** This project will enhance existing collaborative efforts the Rock Creek Watershed, part of the Upper Cedar River Watershed, in portions of Mitchell, Floyd, and Worth counties. The effort will deliver installation assistance for edge-of-field practices, specifically bioreactors and saturated buffers. Once complete, the watershed will have the largest concentration of these practices in Iowa.



Photo Credit: Black Hawk SWCD

Water control box being installed as part of a Saturated Buffer installation.  
 - Miller Creek Watershed -

**Don't Farm Naked: Integration of Ruminant Livestock and Cover Crops to Meet Iowa's Nutrient Reduction Goals-Practical Farmers of Iowa:** PFI will work with livestock producers in the Floyd, North Raccoon, and Turkey River Watersheds to demonstrate the value of incorporating cover crops into row crop production in operations with ruminant livestock. Cover crops can significantly reduce nitrogen and phosphorus loss while also providing a high-quality, low-cost livestock feed. This presents an opportunity for rapid expansion of this practice across this particular type of farming system.

**Driving Cover Crop Adoption through Education and Technical Assistance and Showing Environmental Benefits-Conservation Technology Information Center (CTIC):** CTIC will lead this effort to integrate cover crops into the operations of farmers who are recognized as leaders by their production methods for raising corn and soybeans. These farmers participate in the "Sustainable Soy" program led by Unilever and Archer Daniels Midland. Farmers will be able to integrate cover crops onto their operation to further continuous improvement of their production practices. This project will leverage investments of farmers and partners to provide assistance to create a deeper understanding in order to continue the trend of expanding the use of cover crops in Iowa.

**Optimized Water Quality Wetlands Integrated with In-Field Nutrient Management Practices-Soil & Water Conservation Society (SWCS):** This project will deliver new and innovative methods for delivering wetlands in the Cedar River Watershed. SWCS is partnering with the Agribusiness Association of Iowa to coordinate efforts with CCAs and ag retailers working with farmers to deliver in-field management practices in the contributing watersheds. Iowa State University will partner on the monitoring and optimization of wetlands for water quality improvement. This approach will help inform expansion of wetlands in other areas of the state.

IDALS is in the process of awarding new practice demonstration projects. An announcement will be made in early 2016.

## Iowa Nutrient Research & Education Council (INREC)

[www.iowanrec.org](http://www.iowanrec.org)

INREC was formed in late 2014 to support environmental stewardship efforts under the NRS through science-based solutions and strategic missions. INREC is the only formal organization in Iowa that brings together agricultural businesses, crop advisors, farm and commodity organizations, and the crop production industry to address nutrient issues. INREC is explicitly focused on three specific missions to increase impact.

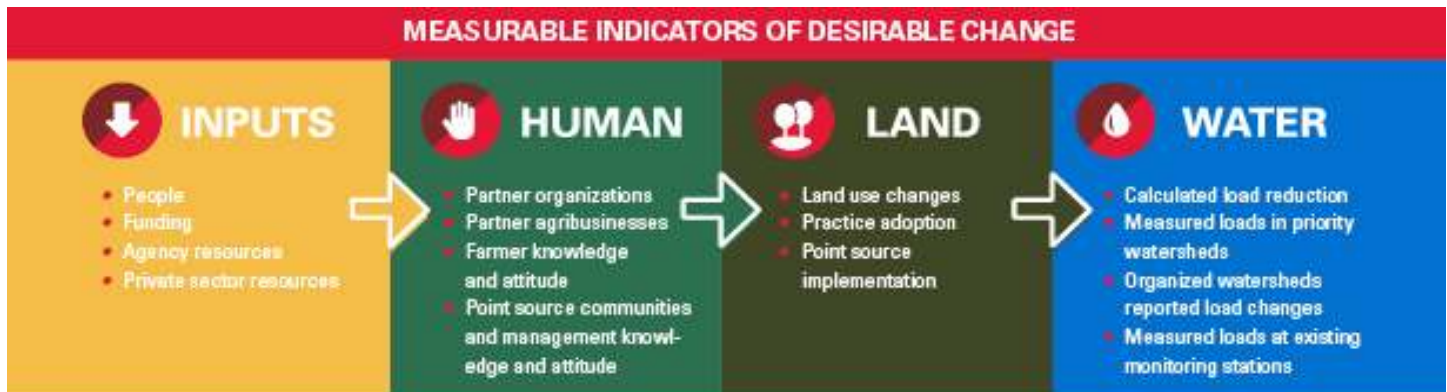
1. Environmental Progress, Measurement, & Demonstration
2. Validation of Environmental Products/Practices/Services .
3. Enhance Environmental Impact of Ag Retailers & Certified Crop Advisors (CCAs)

Through these efforts, INREC will serve to demonstrate progress, foster innovation of new technologies, and enhance CCA and Ag Retailer roles as "change agents" working with Iowa farmers to achieve goals.

### Tracking/Accountability

IDALS, IDNR and ISU continue to work on development of a robust and qualitative framework through the Measures Subcommittee of the WRCC. The development of a logic model type framework is being employed to collect and report on progress made through the NRS. The first annual report using the logic model framework was completed and presented to the WRCC in the summer of 2015.

This report is available at: [nutrientstrategy.iastate.edu/documents](http://nutrientstrategy.iastate.edu/documents)



The logic model looks at a variety of parameters to assess a reasonable chronological order that can be applied to cumulative efforts being conducted throughout the state involving multiple groups and individuals. The subcommittee will assess the pertinent information currently available and make suggestions for areas that need to be augmented or possibly created if they don't exist. The vision for the logic model will be to act as a dashboard for advancing the NRS and will allow more responsiveness and feedback in investing resources and programming. The subcommittee continues to work on developing recommendations on the information to be collected as part of the logic model, where to access the information from existing resources, and what resources are not yet available and should be developed.

For example, after collecting information from WRCC & WPAC members, it was discovered that over \$100 million in state, federal, and local funding was invested in 2015 for soil and water conservation practices.

- \$17.8 million through programs operated by the IDALS, including the WQI, Iowa Financial Incentives Program (IFIP), and others.
- \$16 million through programs operated by the Iowa Department of Natural Resources include EPA Section 319, Lakes Restoration and Water Quality Monitoring.
- \$34 million by the USDA-NRCS through programs such as Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Conservation Technical Assistance and the Regional Conservation Partnership Program (RCPP).
- \$35.7 million through the Iowa State Revolving Loan Fund (SRF), which is a water, wastewater and water quality infrastructure low interest loan program jointly managed by the Iowa DNR and Iowa Finance Authority.
- This did not include Conservation Reserve Program (CRP) funding for buffer strips, perennial land use, etc. through USDA-FSA which was \$220M in 2015. This number also doesn't include the investment by farmers and landowners needed to match these programs or their investment for practices installed outside of the purview of government programs.

In 2015, the Nutrient Research Center received funding from the Iowa Legislature to establish a Measurement Coordinator position at ISU. The coordinator will be responsible for managing the information collected from agencies and organizations to document progress and ultimately guide implementation of the Iowa NRS.

**Iowa Nutrient Research Center**

[cals.iastate.edu/nutrientcenter](http://cals.iastate.edu/nutrientcenter)

The [Iowa Nutrient Research Center](http://cals.iastate.edu/nutrientcenter) at Iowa State University has funded 11 new projects related to water quality.

Researchers from Iowa State, the University of Iowa, and the University of Northern Iowa will collaborate on the projects with those from the U.S. Department of Agriculture, Iowa Department of Natural Resources, the Iowa Soybean Association, The Nature Conservancy, and AgSolver Inc. This is the third year the center has funded research.

The projects address critical needs or gaps in nitrogen and phosphorus research identified in the science assessment that was part of the Iowa Nutrient Reduction Strategy. The strategy is a science and technology-based approach to assess and reduce nutrients delivered to Iowa waterways and the Gulf of Mexico.

Below is a list of the awarded projects through the Nutrient Research Center in 2015:

- Evaluation of Stacked Conservation Practices on Phosphorus and Sediment Loss.
- Linking Nutrient Reduction Practices with Biomass Energy: Quantifying Thermal Energy Demand and Supply Capacity for Representative Farms in Eastern Iowa.
- Scientific and Technological Tools to Implement Iowa Nutrient Reduction Strategy.
- Identifying and Quantifying Nutrient Reduction Benefits of Restored Oxbows.
- Water Quality Performance of Prairie Strips.
- Quantification of Nutrient Reduction Practices Benefits from the Hillslope to the Watershed Scale.
- Quantifying Temporal and Spatial Variability in NO<sub>3</sub>-N Leaching Across Iowa.
- Reducing Nutrient Losses While Increasing Farm Profit Through Precision Conservation.
- Impacts of Cover Crops on Phosphorus and Nitrogen Loss with Surface Runoff.
- Cover Crops Influence Nutrient Cycling, Yield and Diseases of Corn and Soybean.
- Woodchip Bioreactors for Improved Water Quality.

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More information on the projects and the researchers involved are listed on the center's web site: [www.cals.iastate.edu/nutrientcenter/project](http://www.cals.iastate.edu/nutrientcenter/project). The site also includes previous projects and quarterly progress reports of each study.

The Iowa Nutrient Research Center was established in 2013 as a result of legislation passed by the Iowa Legislature and Gov. Branstad. The center receives funding for research to evaluate the performance of current and emerging nutrient management practices, to make recommendations on the implementation practices and development of new practices.



Photo Credit: Iowa State University  
Pictured with Dr. Matt Helmers (second from left) are three generations of the Lynch family from Gilmore City who farm in the area. The Gilmore City farm celebrated its 25th anniversary in 2015.

**Iowa Leaders in Conservation**

Research at the Gilmore City research farm provided much of the basis for the Iowa NRS. This research has also led to the development of multiple new and emerging practices to reduce nutrient losses from Iowa farm fields. Perhaps the most important recent finding, confirmed by long-term collection of research data at the site, is that nitrate loss in Iowa farmland is primarily due to the absence of nitrate uptake by plants in the fall and spring of the year. Iowa soils are naturally rich in nitrogen. Nitrate not taken up by plants, whether naturally present in the soil or added for crop growth, moves with water.

Find out more about Iowa Leaders in Conservation at [CleanWaterIowa.org](http://CleanWaterIowa.org).

### Point Source (Iowa DNR)



The point source portion of the nutrient reduction strategy established a process to achieve significant reductions in the amounts of nitrogen and phosphorus discharged to Iowa's rivers and streams by the largest industrial and municipal wastewater treatment plants. Major point sources will be required to assess the feasibility and reality of reducing the amounts of nitrogen and phosphorus discharged to Iowa surface waters. Practices determined to be feasible and affordable will be required to be implemented.

The process is unique and innovative. In the traditional approach, limits are established in a permit and treatment facilities are constructed to meet those limits. In this approach, nutrient reduction facilities are constructed, sampling is performed and technology-based limits are developed using actual treatment plant performance data.

Sixty-eight (68) National Pollutant Discharge Elimination System permits have already been issued with provisions to implement the strategy with intent to issue 20 permits per year.

Treatment plants in Iowa are planning, building, and implementing nutrient removal practices.



The City of Clinton constructed and began operating a new wastewater treatment plant in 2013 designed to remove nitrogen and phosphorus. Monitoring data shows the facility is meeting the nutrient reduction targets specified in the strategy. Iowa City and Sioux City both operate new wastewater treatment plants designed to remove nitrogen and will be evaluating opportunities to reduce phosphorus as part of their feasibility studies.

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Find out more about Point Sources at [CleanWaterIowa.org](http://CleanWaterIowa.org).

### Urban Conservation



IDALS began the Urban Conservation Program in 2008. The program provides technical assistance to communities in developing programs and specific projects to address stormwater runoff following well established criteria and procedures detailed in the Iowa Stormwater Management Manual.

IDALS and partners fund five Urban Conservationists in the State to serve as technical resources for communities and individuals interested in implementing storm water protection practices. In 2015, efforts expanded in the urban conservation area through some new and unique partnerships.

One new partnership was the establishment of 9 projects funded through WQI for urban conservation demonstration projects:

- Ames: South Skunk River Basin Watershed Project
- Calmar: Demonstration Urban Conservation Projects at Northeast Iowa Community College
- Calhoun County Urban Project – Calhoun Soil and Water Conservation District (Lake City, Rockwell City and Twin Lakes)
- Cedar Falls: Permeable Alley Project 2015
- Des Moines: Water Quality Initiative for Waveland Park Neighborhood
- Granger: Oxley Creek Watershed Improvements
- Storm Lake: Restoring Storm Lake Storm Water
- Webster City: Riverside Stormwater Wetlands
- West Des Moines: West Des Moines School Pond Improvements



Biocells in West Union, IA.

IDALS is in the process of selecting more Urban Demonstration projects with an anticipated funding announcement to be made in April of 2016.

## FY2017 Funding Request

Iowa Secretary of Agriculture Bill Northey has requested \$10 million for the Iowa Water Quality Initiative as part of the Iowa Department of Agriculture and Land Stewardship’s fiscal year 2017. These funds would continue to support the implementation of the Iowa Nutrient Reduction Strategy.

The Department received a total of \$9.6 million for the current fiscal year for the initiative to support conservation and water quality improvements in Iowa.

In addition to the projects detailed in this report, the Department has put into motion new initiatives that will leverage partner resources and increase the capacity to deliver conservation practices in the state. These initiatives include a focus on edge of field practices, streamside and in-field buffers, and demonstrating urban non-point source practices. The funding requested for the Water Quality Initiative would allow the Department to continue and expand its work to address the quality of our streams and water resources in a scientific, reasonable, and cost effective manner.

As demonstrated in 2014 & 2015, the Department is committed to leveraging state resources to expand the program and increase implementation of practices, including partnering with private and public institutions to quantify the results, and maximize the return on investment with state funding. Additional state funding will increase the leveraging power to bring in additional resources to increase the pace and scale of implementing the practices needed to meet the goals of the Iowa Nutrient Reduction Strategy.



Installation of denitrifying bioreactor.

“As we have implemented the Iowa Water Quality Initiative our focus has always been on working collaboratively to get more practices on the ground that have been proven to help protect water quality. These efforts have leveraged state investments to match farmer, landowner and other sources. We have done this through a combination of statewide efforts along with 29 demonstration projects located across the state to help implement and demonstrate water quality practices. We are excited to have more than 100 organizations participating in these projects. We appreciate the strong support we have received from the Governor and Legislature for the Water Quality Initiative and look forward to continuing to build on the momentum that has been generated,” Northey said.

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