



Iowa Nutrient Reduction Strategy

2016-2017 Executive Summary

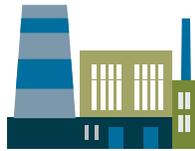
The Iowa Nutrient Reduction Strategy directs efforts to reduce nutrients in surface water from both point and nonpoint sources in a scientific, reasonable, and cost-effective manner. The Strategy was prompted in an effort to reduce nutrient loads that are transported to the Gulf of Mexico. The plan established a goal of 45 percent reduction of total nitrogen and total phosphorus loads.

INPUTS

- At **\$420 million** in the 2017 reporting period, funding for NRS efforts increased by \$32 million compared to the previous year.



- Of the 151 **municipal wastewater plants** and **industrial facilities** required to assess their nutrient removal capacity, 105 have been issued new permits. Of those, 51 have also submitted feasibility studies on potential technology improvements.



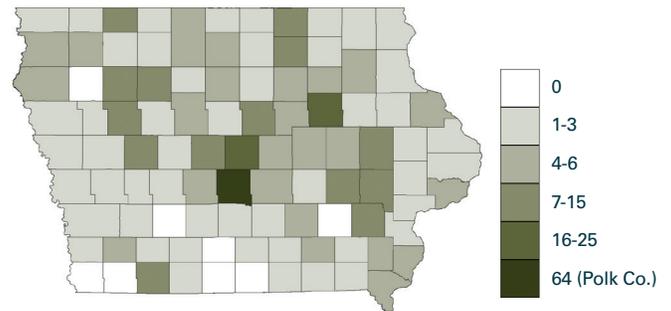
- ▶ Twelve cities and seven industries met the NRS point source reductions targets for nitrogen removal this year (66% removal).
- ▶ Five cities and three industries met the NRS point source reduction targets for phosphorus removal this year (75% removal).
- ▶ Thirteen wastewater treatment plants have committed to construct upgrades to remove nitrogen and phosphorus.

- Through its competitive grants program since 2013, the Iowa Nutrient Research Center has funded over 30 projects with a primary focus on evaluating the performance of conservation practices in reducing nutrient loss from agricultural landscapes.

HUMAN

- **Outreach events** effectively **doubled** in the last year. In the latest reporting period, partner organizations reported 474 events with 54,500 total attendees.

Number of Outreach Events – 2017 Reporting Period



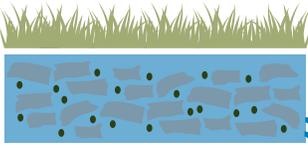
- In 2017, 77% of farmers surveyed in selected watersheds reported that they are knowledgeable about the NRS. This is a 9% increase from 2015.





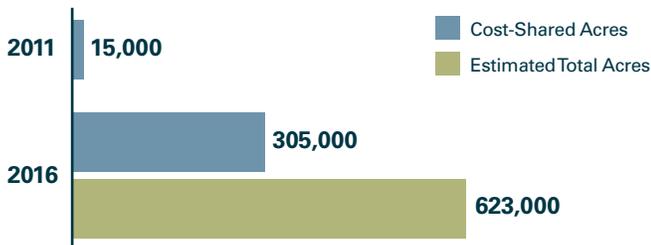
LAND

- Historically, government conservation programs have focused strongly on practices that reduce phosphorus loss, such as terraces, and on practices that address both **phosphorus** and **nitrogen**, such as cover crops and land-use change. Practices that address only nitrogen, such as **bioreactors** and nitrate-treating **wetlands**, are receiving increased focus from conservations programs.



- Government cost-share programs enrolled 300,000 **cover crop** acres in 2016. Iowa has experienced a steady increase in cover crop acres since 2011, and statewide estimates (beyond just cost-share) indicate **600,000** acres were planted in 2016.

Iowa Cover Crops Acres

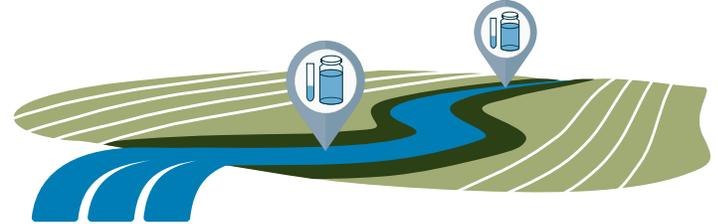


- Installations of structural practices continue on an even trend. **Terraces** and **water** and **sediment control basins** that have been constructed since 2011 treat approximately **250 thousand acres** through government programs to reduce soil and phosphorus loss. Meanwhile, 36 nitrogen removal **wetlands**, treating **42,000 acres**, have been installed since 2011. Approximately 100,000 total acres benefit from all 85 nitrogen-removing wetlands in the state.
- Land retirement** through the Conservation Reserve Program increased by 200,000 acres between 2015 and 2016 (excluding buffers and CRP wetlands). At **1.4 million acres**, CRP land retirement is currently at about the same level as in 2011.



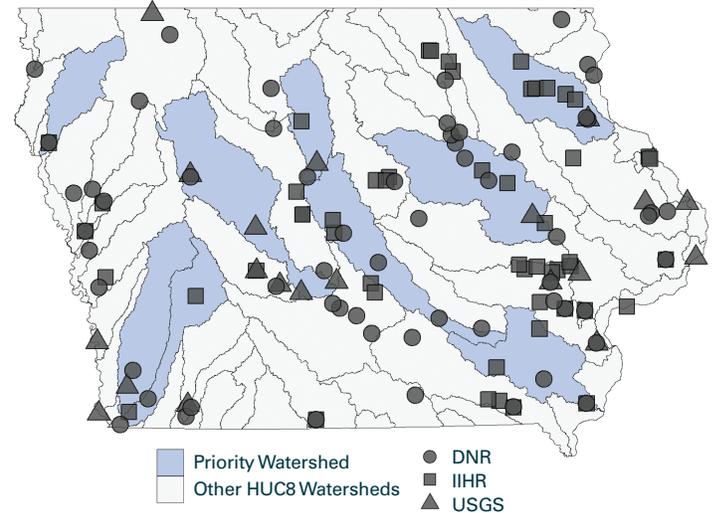
WATER

- At least **88%** of **Iowa's land** drains to a location with **water quality sensors** installed and maintained mainly by the Iowa Department of Natural Resources, University of Iowa IIHR-Hydroscience & Engineering, and the US Geological Survey. Water monitoring occurs at various scales, from **edge-of-field to large watersheds**. Long-term data collection will contribute to our understanding nutrient export over time.



- In addition, grab samples of surface water are collected regularly by the Iowa Soybean Association and Agriculture's Clean Water Alliance in 187 locations, plus 435 edge-of-field sites.

Iowa Surface Water Monitoring Sites



- A method has been developed and evaluated for efficiently **estimating Iowa's annual nitrogen export** using empirical monitoring data. A similar method for phosphorus has been researched and is currently under development.

