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# Collaborative Conservation and Impacts on Water Quality

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Environmental Policy Innovation Center

Northeast-Midwest Institute Congressional Briefing  
July 23, 2019

# Nutrients and Algal Blooms



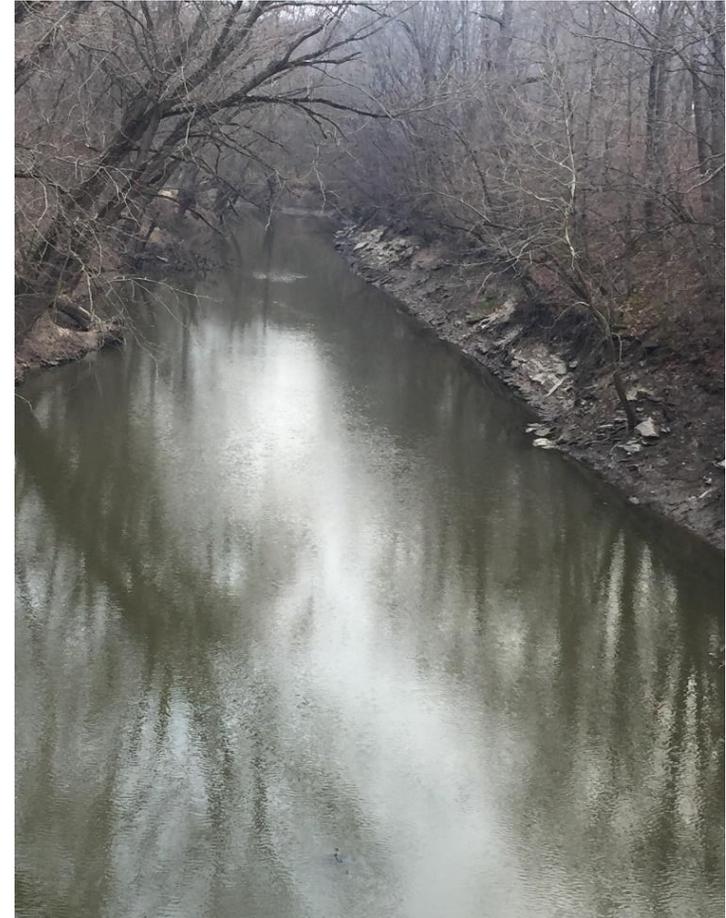
# Conservation: Questions

- Tackling problems upstream is appealing, but Qs remain
  - Extent of nutrient loss/WQ improvement
  - Impact of voluntary programs
  - Moderate compensation to make long-lasting changes
  - Scaling up from farm- to watershed-scale



# Why RCPP?

- A structure for collaborative engagement
- Stakeholders with divergent interests come together
- Monitoring is emphasized
- Potential to form community bonds that outlast program length



# RCPP Locations



# Project Attributes

<b>Project Location</b>	<b>State</b>	<b>Fiscal Year (FY)</b>	<b>NRCS Funding (\$ million)</b>	<b>Project Leader</b>
Baraboo River	WI	2014-2015	1.3	Sauk <b>County</b> Conservation, Planning, & Zoning Department
Middle Cedar River	IA	2014-2015	2.1	<b>City</b> of Cedar Rapids
Minnesota, <i>with emphasis on Middle Cannon River</i>	MN	2014-2015	9.0	Minnesota <b>Department</b> of Agriculture
Oconomowoc River Watershed	WI	2014-2015	0.5	Tall Pines Conservancy; City of Oconomowoc
Upper Macoupin Creek	IL	2017	1.0	American Farmland Trust
Otter Lake	IL	2018	0.8	Otter Lake Water Commission; Illinois Corn Growers Association

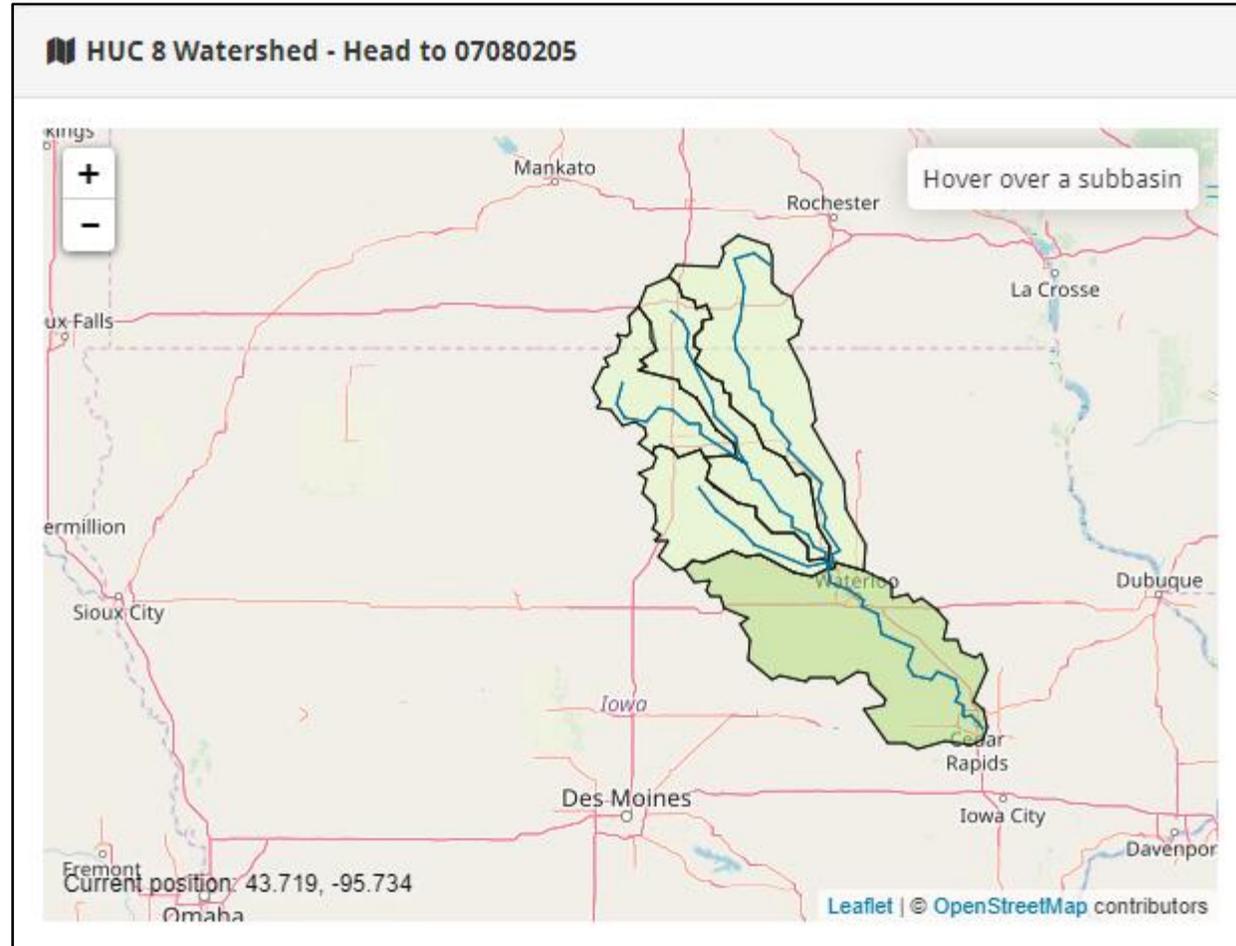
# Evaluation Criteria

- Review of project background
- Objectives and progress achieved
- Monitoring plan and observed improvements
- Economic benefits and project viability
- HAWQS model – historical and projected WQ data



Unique element

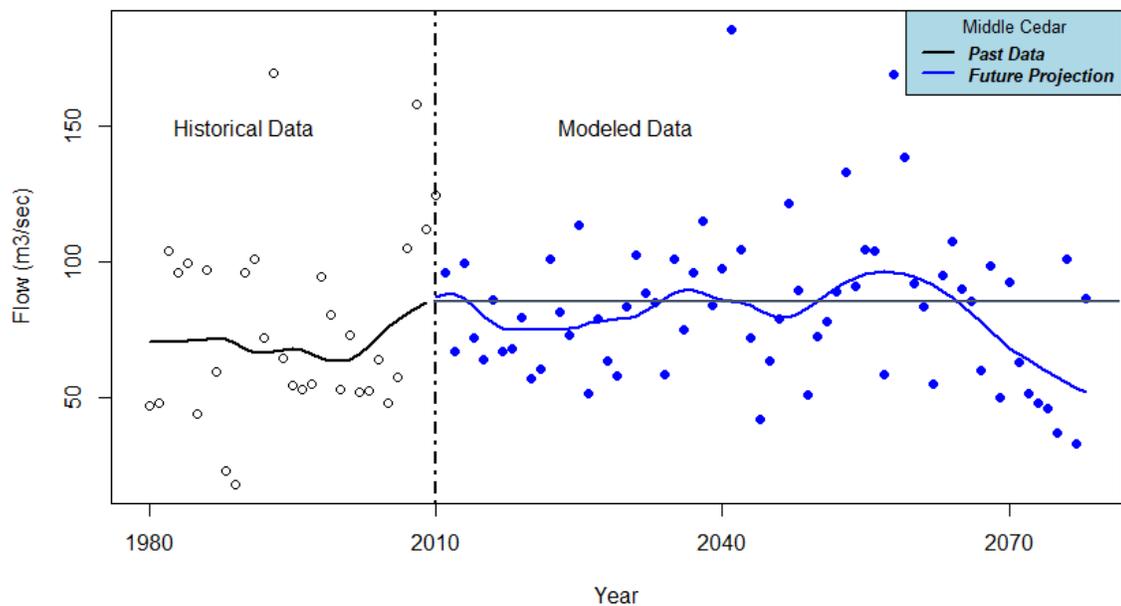
# Middle Cedar Watershed



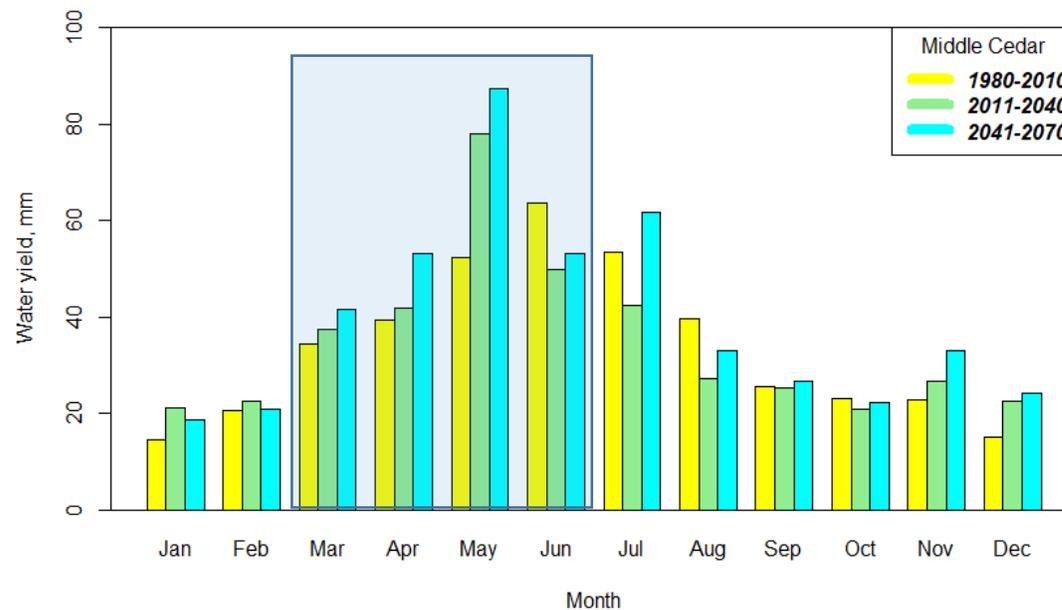
Middle Cedar River Watershed, as visualized in HAWQS

# HAWQS Model – Middle Cedar Watershed

Average Yearly Flow



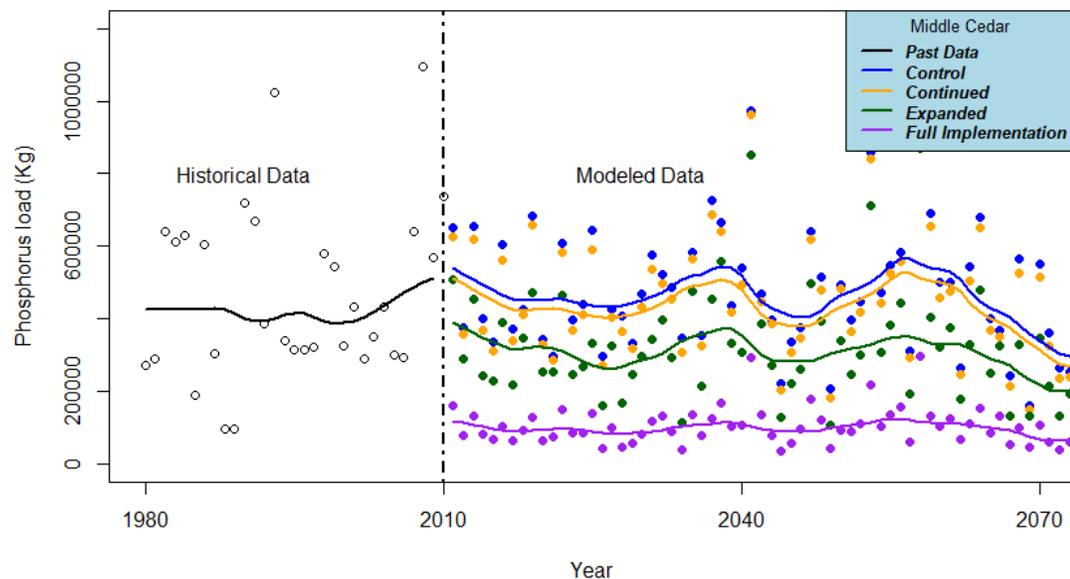
Average Monthly Water Yield



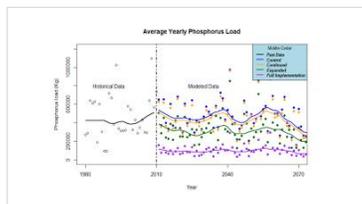
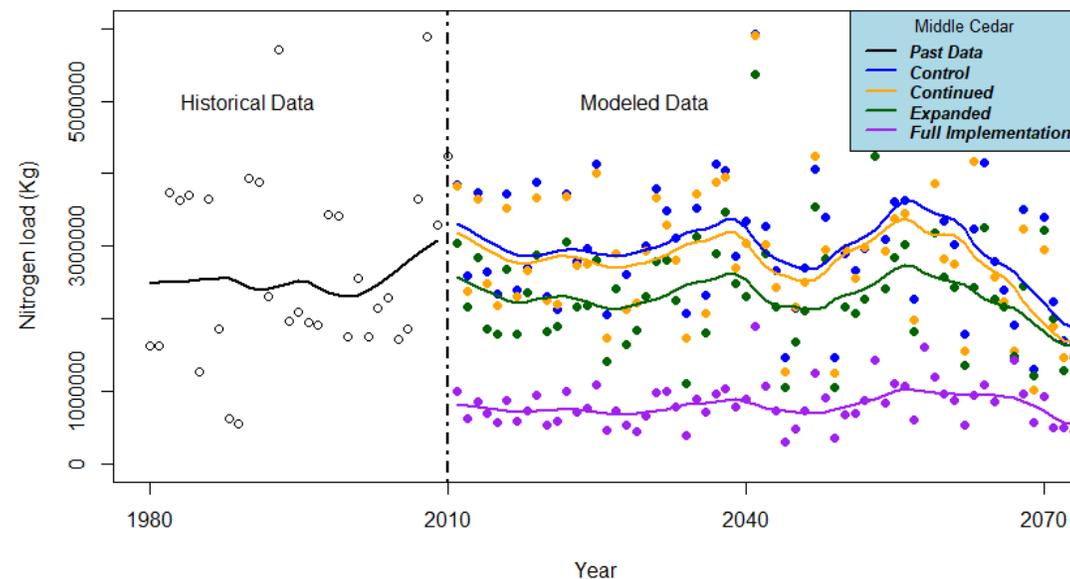
Time-period	Near-term	Long-term
Annual	3%	18%
Winter (Dec-Feb)	32%	27%
Spring (Mar-Jun)	25%	44%

# HAWQS Model – Conservation Scenarios

Average Yearly Phosphorus Load

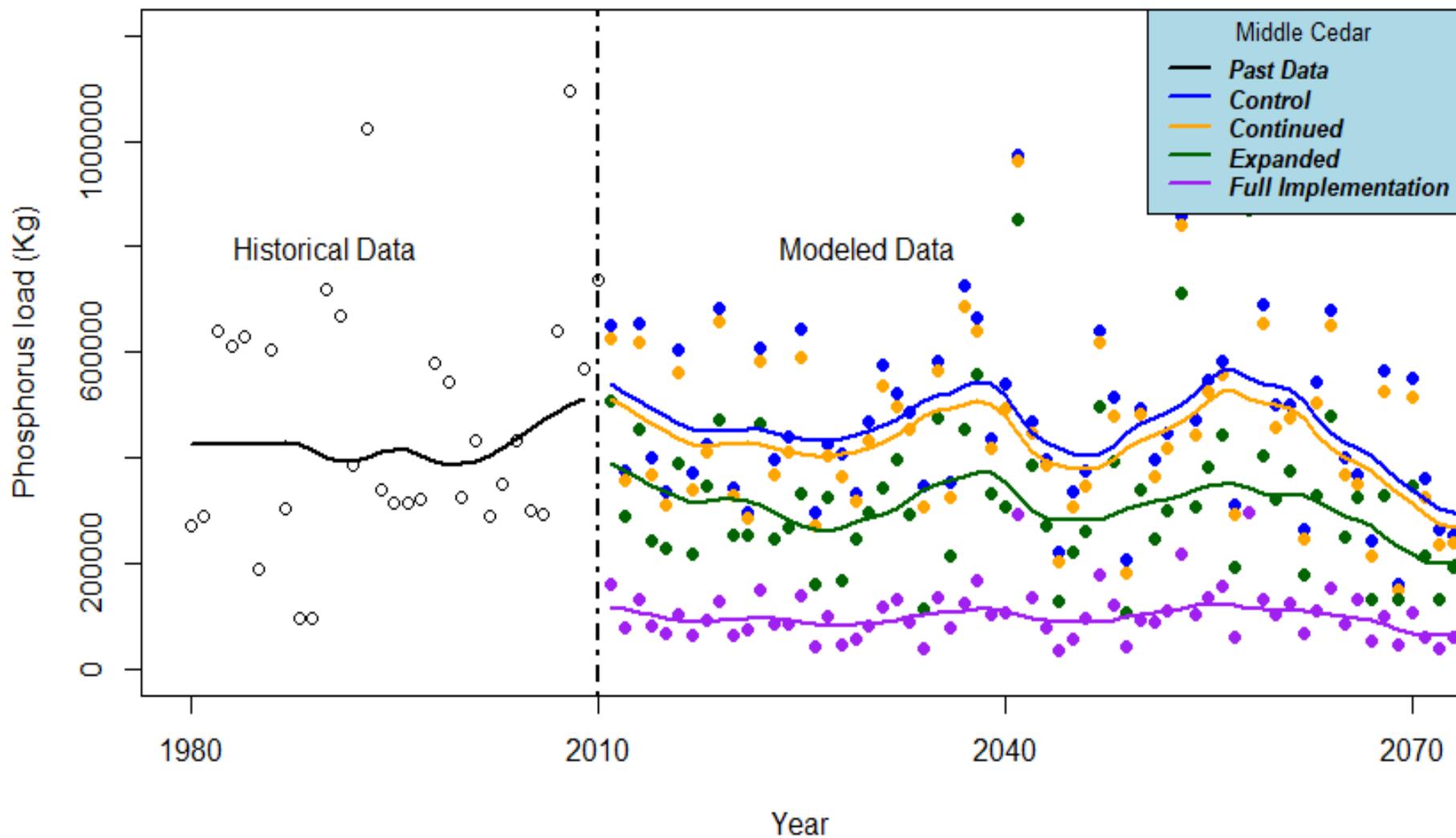


Average Yearly Nitrogen Load



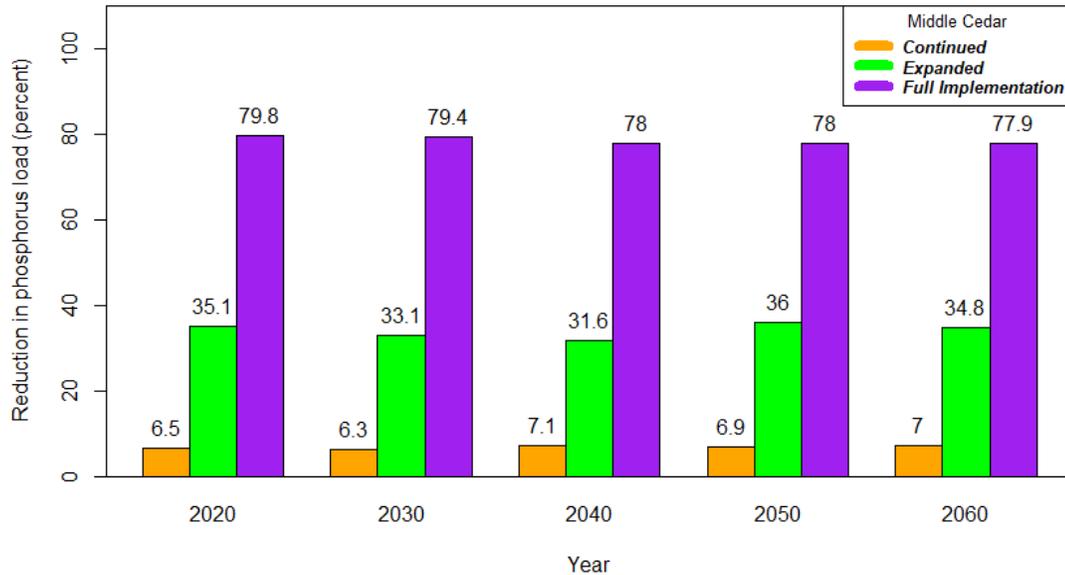
Control	Simple projection of current conditions; no RCPP
Continued	RCPP in current form; no scale-up
Expanded	BMPs implemented in current ratio; 10x expansion
Full implementation	BMPs implemented in all farmland in the watershed

# Average Yearly Phosphorus Load

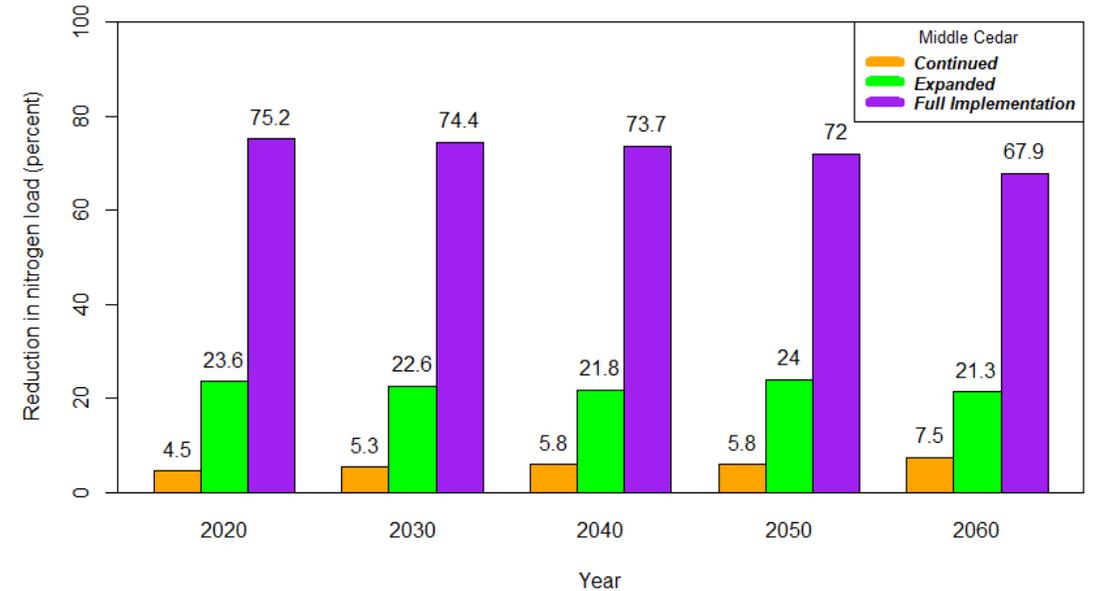


# HAWQS Model – Load Reductions

Reduction in Phosphorus Load Across Conservation Scenarios



Reduction in Nitrogen Load Across Conservation Scenarios



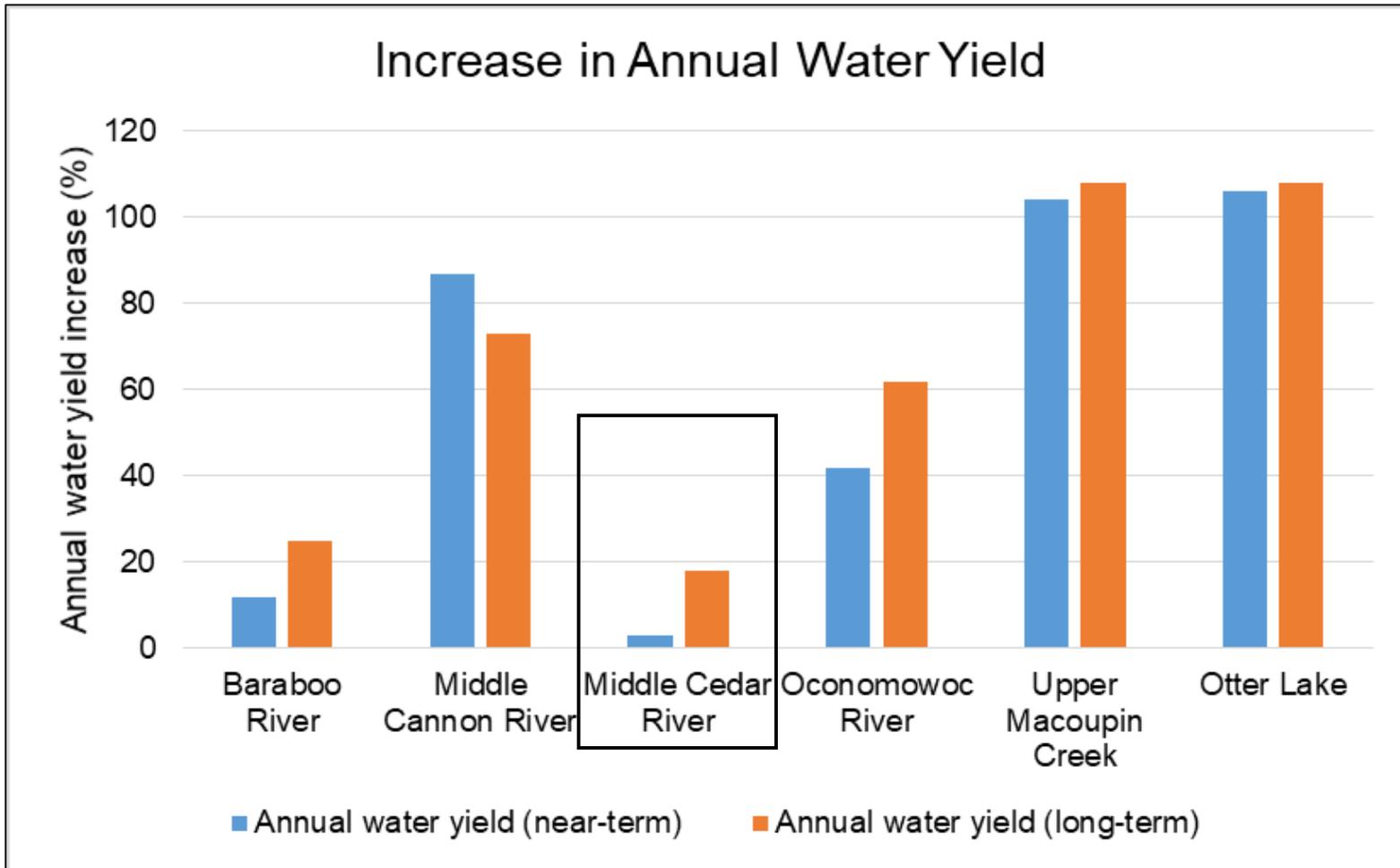
# Discussion

- Role of federal funding
- Diversity of institutions
- RCPP in response to WQ issues
  - P major concern
- Cover crops are a popular conservation practice
- Producer outreach and engagement
  - Underserved communities – beginning, Black, women, NOL
- Project viability

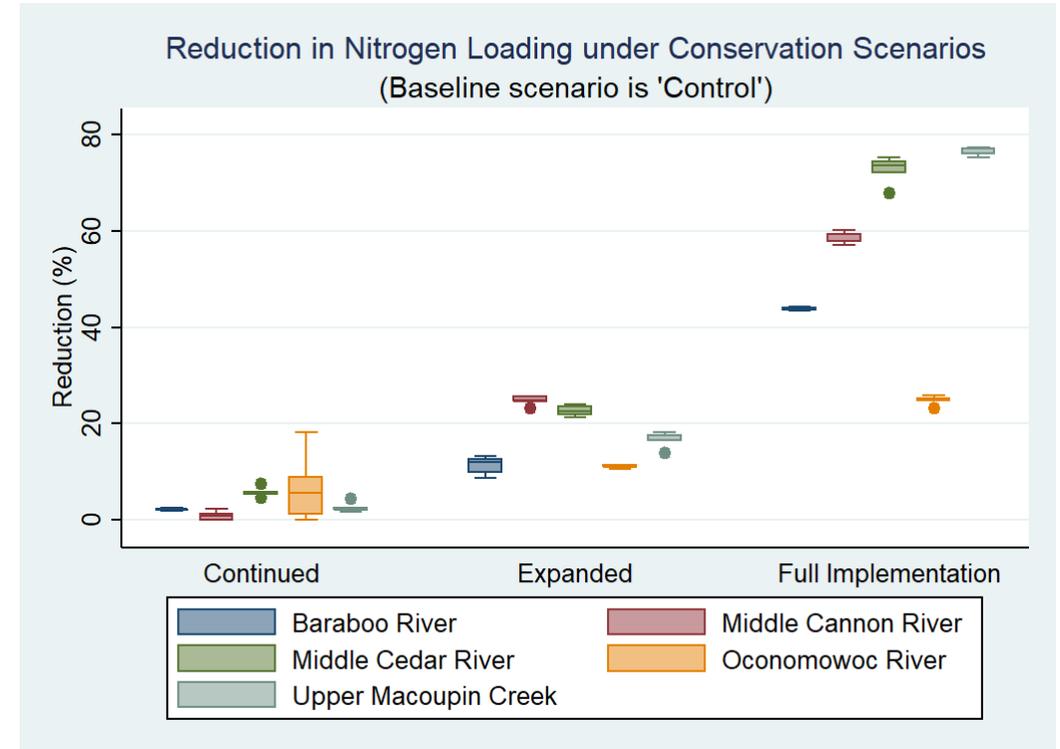
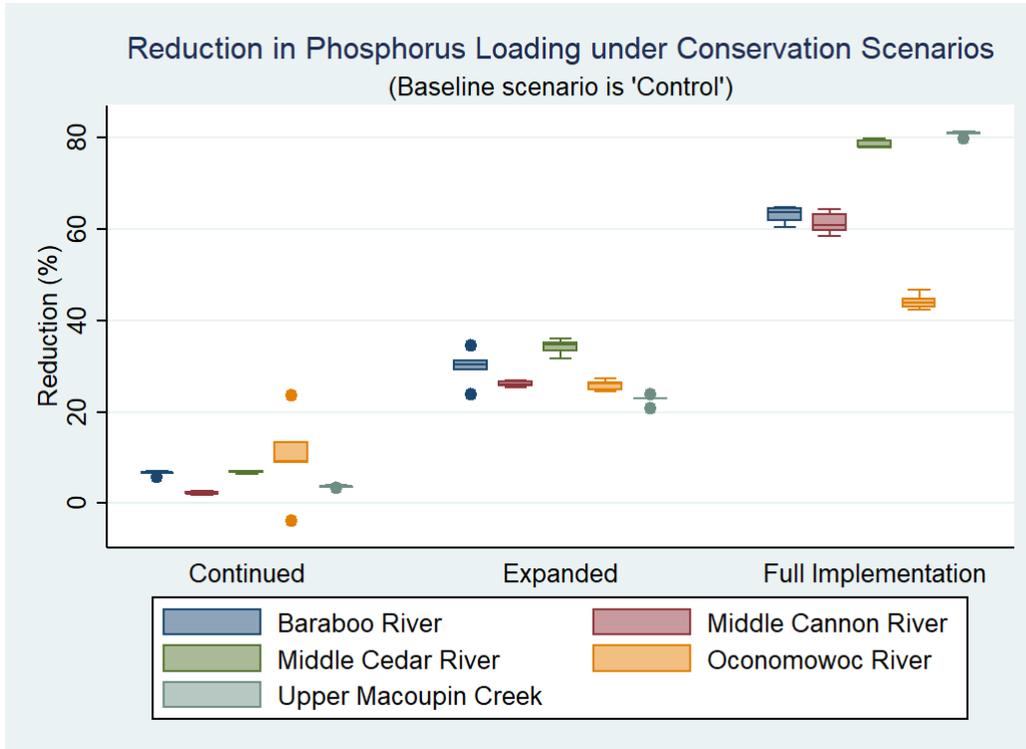
# Discussion

- Unique elements
  - Computer models to target priority farms
  - State programs – Oconomowoc and Minnesota
  - Targeting NOL/women through learning circles – Upper Macoupin
  - Industry and landowner synergies – Middle Cedar and Minnesota
- All projects validate RCPP approach
- Climate change is a major variable

# Annual Water Yield Increase



# Contaminant Loading Reduction



Scenario	Reduction range (%)
Continued	3 – 6
Expanded	17 – 27
Full Implementation	55 – 66

# Policy Implications

- Expand conservation funding
  - Expand select projects 5-10x on pilot basis
- Incorporate climate change projections
- State efforts to complement federal support
- Streamline monitoring standards
- Address long-term viability
- Enable limited transfer of funds
- Citizen activism

# Thank You

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# Improving Conservation Program Effectiveness and Water Quality Outcomes



**Aviva Glaser**  
**National Wildlife Federation**  
**July 23, 2019**

# Scale of Problem

- We have a serious water quality crisis
  - ▣ Harmful Algal Outbreaks
  - ▣ Dead zone in the Gulf of Mexico
  - ▣ Unsafe drinking water
- Agricultural non-point source pollution is the leading source of water quality degradation in rivers and streams



Jordan Lubetkin/NWF



**Iowa could need hundreds, potentially thousands of years to reach nutrient goals under current approach**  
*Des Moines Register (7-17-19)*

**There's an environmental disaster unfolding in the Gulf of Mexico**  
*Huffington Post (7-11-2019)*

**Near-record dead zones forecast for Chesapeake Bay, Gulf of Mexico**  
*Daily Press (6-27-19)*

**Nitrates in drinking water may be tied to 300 cases of cancer in Iowa each year, study shows**  
*Des Moines Register (6-20-19)*

**Every Mississippi Beach Is Closed Due to Toxic Algae**  
*EcoWatch (7-8-19)*

# Major steps forward

- Growing concern and awareness about agricultural water pollution
- States have been stepping up with nutrient reduction strategies, state laws and actions
- Private sector initiatives – supply chain driving change
- 2018 Farm Bill took significant steps forward for water quality:
  - Maintains conservation title funding
  - New incentives for cover crops, other practices
  - Increased funding and significant changes to the Regional Conservation Partnership Program (RCPP)
  - Increased funding for easements
  - Source water protection provisions
  - New CLEAR initiative in the Conservation Reserve Program

# But not enough

- Despite billions of dollars invested in conservation practices on working lands, we still face significant water quality challenges
- Need to scale up, be creative to drive more conservation
- No one silver bullet solution

Report: “The funding allocated for conservation is not enough to meet the scale and severity of the water quality challenge facing the Mississippi River Basin and the nation at large”

# Need for More Funding

- Increase conservation funding
  - ▣ Demand far outpaces supply for both working lands and easement/retirement programs
  - ▣ Resource needs far outpace supply
- Leverage private sector funding
- Create and leverage partnerships

\* But, we'll never be able to have enough funding to pay farmers indefinitely to adopt conservation practices \*

# Targeting Conservation Funding

- Target funding to:
  - ▣ Most effective practices
  - ▣ Practices with multiple natural resource benefits
  - ▣ Practices with high environmental benefits but low return to farmers (buffer strips, wetlands, bioreactors)
  - ▣ Transition assistance, but not indefinite payments, for adoption of practices with high return to farmers (cover crops, nutrient management, etc.)
- Focus on long term conservation strategies
- Increase technical assistance capacity, education, outreach

# Better aligning crop insurance and conservation

How can we make sure that crop insurance helps to encourage low-risk practices that provide benefits for soil health and water quality?

- The 2018 Farm Bill took a major step forward by making it easier for farmers who adopt cover crops to maintain their crop insurance coverage.
- Iowa has started providing farmers with a \$5/acre crop insurance premium reduction for cover crops
- Can crop insurance be tweaked to make it easier to take the most unproductive areas out of production and into permanent cover?
- Are there other ways to remove disincentives for conservation practices and provide incentives for risk-reducing conservation practices?

# Need for improved monitoring and evaluation

Report: Provide funding specifically for water quality monitoring, so the impacts of conservation are easily identified.

- 2018 Farm Bill included some provisions related to data collection and monitoring, but much more is needed
  - Ag Data Act (Klobuchar/Thune, S. 2487)
  - Healthy Fields and Farm Economies Act (Fudge/Faso, HR 4751)
- USDA has currently has the authority to do more monitoring and evaluation of conservation programs.

# Concluding Thoughts

- We need to move quickly and boldly to address the water quality crisis
- Although we just passed a Farm Bill with wins for water, there is still a huge opportunity to influence implementation of the bill
- Voluntary conservation programs alone are not enough – they must complement Clean Water Act, Swampbuster, and other important regulatory programs, as well as state laws and initiatives
- Growing role of supply chain, food companies
- All solutions need to be on the table





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American Water Works  
Association

*Dedicated to the World's Most Important Resource®*

# Laying the Foundation for Partnerships Between Water Utilities and Agriculture

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July 23, 2019

# What are Source Waters?

“Source water is a raw, untreated supply of water – typically surface water or groundwater – used for current or potential future drinking water.”

– *AWWA Source Water Committee*



# What is Source Water Protection?

“Source water protection is a proactive approach to safeguard, maintain, or improve the quality and/or quantity of drinking water sources and their contributing areas.”

– *AWWA Source Water Committee*

AWWA's [G300 Source Water Protection Standard](#)



# Why Source Water Protection?

- Long-standing issue across sector, recent renewed focus
  - Toledo, OH (2014)
  - Salem, OR (2018)
- Opportunity to reduce risk, instill public confidence, and reduce treatment cost and complexity



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# AWWA's Initiative

1. *Recognition and focus* on source water protection in 2018 Farm Bill
2. *Building awareness* across the water sector
3. *Advocating for utilities to partner* for mutual benefit
4. *Incorporating source water protection* across programs



# 2018 Farm Bill Focus on Source Water Protection

1. Source water protection is now a goal of the conservation programs
2. NRCS directed to work with utilities and state technical committees to inform the programs
3. Authority to increase cost share of measures that help to protect source waters
4. Spending at least 10% of conservation funding on source water protection



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# How Does it Work for Utilities?

- Identify source water protection challenges with agricultural connection
- Work with NRCS on ways to focus conservation programs to address issues
- Apply for relevant program(s)
- Work with conservation districts and other established partners



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*Not always linear!*



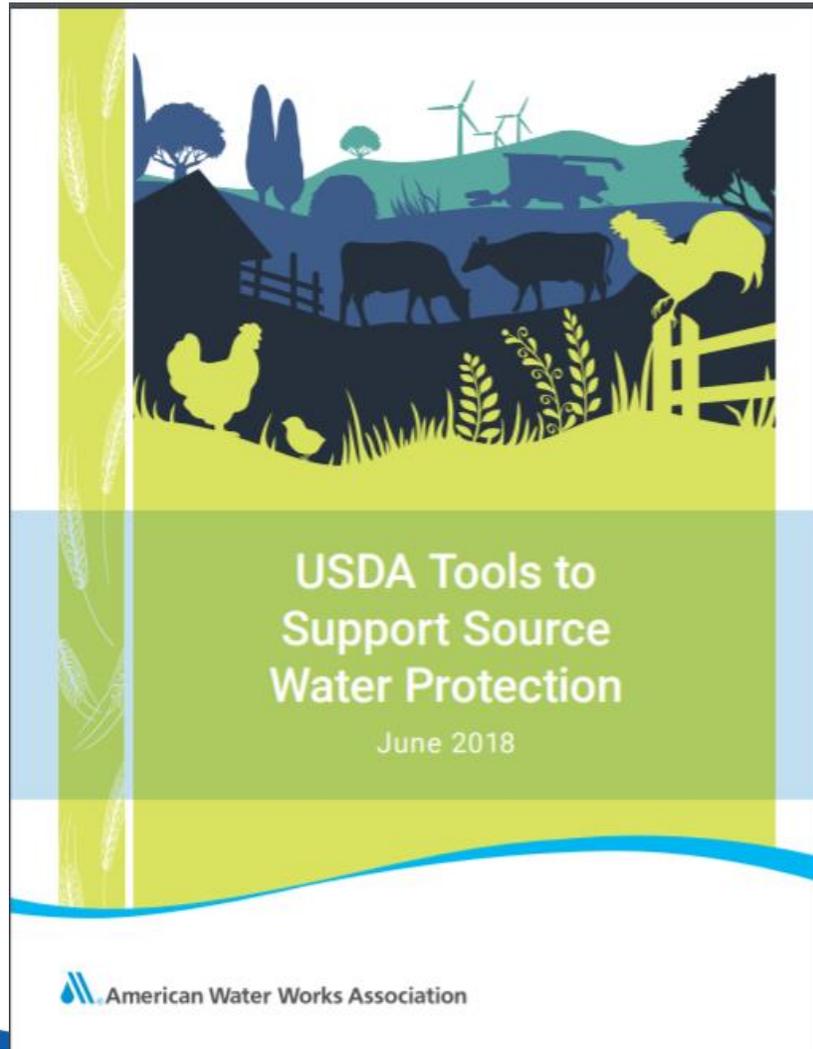
# Educating the Sector



You can watch the *Farm Bill Key in Protecting Drinking Water* video on [AWWA's YouTube channel](#)



# Educating the Sector



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## Working with the NRCS for Source Water Protection

### Why work with the Natural Resources Conservation Service (NRCS)?

On December 20, 2018, the President signed the Agriculture Improvement Act of 2018, commonly known as the Farm Bill. That date marked the culmination of an extensive, long-term, and successful effort by AWWA to make source water protection a priority within U.S. Department of Agriculture conservation programs – and to designate significant funding towards those efforts.

Under the new Farm Bill, ten percent of spending on Conservation Title programs is to be directed to source water protection, *providing at least \$4 billion over the next 10 years*. These programs assist farmers, ranchers, and forest landowners protect and enhance environmental outcomes that have benefits both on and off-farm. Moreover, there is now a directive for USDA to work closely with utilities to identify and prioritize areas that need source water protection.

In addition to the funding and prioritization successes, AWWA was also successful in gaining utilities a seat at the table in the state and local groups that decide how, where, on what, and how much of the conservation funds go toward SWP. The NRCS administers most of USDA's conservation programs and working with the Agency is vital if utilities wish to address nonpoint sources such as nutrients, sediment, and chemicals.

*In order to assure the successful deployment of these funds to protect source waters, utilities need to come to the table locally with NRCS state technical committees and local work groups to help discuss and prioritize source water protection needs.* In-depth information can be found in *USDA Tools to Support Source Water Protection* on [AWWA's Source Water Protection resource page](#) and the Source Water Collaborative's [Protecting Drinking Water Sources through Agricultural Conservation Toolkit](#).

### Background on NRCS

The NRCS was created in the 1930s to bring the Dust Bowl under control and restore the Nation's agricultural productivity. Concurrent with the Agency's creation was the establishment of local Soil and Water Conservation Districts who help provide direction to the NRCS. Today there are some 11,000 NRCS employees in 3,000 small offices around the country; most of which are co-located with local soil and water conservation districts.

If you need more information, contact your state NRCS office, or Adam Carpenter ([acarpenter@awwa.org](mailto:acarpenter@awwa.org)) or Tracy Mehan ([trmehan@awwa.org](mailto:trmehan@awwa.org)) at AWWA

These and other source water protection resources are available on the [AWWA Source Water Protection page](#)



# Building Case Studies

Three new RCPP projects recently begun:

- Illinois (\$1.7 Million Including Match)
  - Reduce nutrients and sediment inputs into Otter Lake
- North Carolina (\$1.5 Million Including Match)
  - Streambank restoration and safer agricultural mixing into Mills River
- Kansas (>\$8 Million Including Match)
  - Reducing risk of cyanobacterial blooms (nutrient reduction) in Milford Lake



# Key Take-Aways (Utility Perspective)

1. Get to know the NRCS state, area, and district [conservationists](#).
2. Sign up for [state technical committees](#) and local workgroups and contribute their knowledge of source water issues and concerns.
3. Partner with their [conservation districts](#) and others with established track records in their watersheds.
4. When/where ready and appropriate, be part of [RCPP](#), [NWQI](#), [CIG](#), or other projects.
5. AWWA's [Source Water Protection Page](#) has materials to assist





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# QUESTIONS?

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