

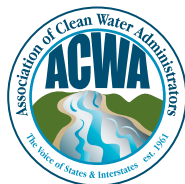
# Building a Water Quality Trading Program: Options and Considerations

Version 1.0 | June 2015: Point-Nonpoint Trades

A Product of the National Network on Water Quality Trading



The logos represent groups and organizations serving as National Network participants with the USDA as a technical advisor.



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The document would not have been possible without the hours and dedication of all the National Network participants listed on the front cover. Thank you! Also, U.S. EPA and USDA played an important role in providing comments on drafts of the document.

## WEBSITE AVAILABILITY

All information contained in this document is available at [www.wri.org/nn-wqt](http://www.wri.org/nn-wqt).

Information on the National Network is available at [www.willamettepartnership.org/nn-wqt](http://www.willamettepartnership.org/nn-wqt).

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# About the National Network on Water Quality Trading

This document was developed by the National Network (Network) on Water Quality Trading (WQT), a dialogue among 18 diverse organizations (listed below) representing agriculture, wastewater and stormwater utilities, environmental groups, regulatory agencies, and the practitioners delivering WQT programs. The purpose of the Network is to establish a national dialogue on how water quality trading can best contribute to achieving clean water goals. This includes providing options and recommendations to improve consistency, innovation, and integrity in water quality trading.

**The organizations below participated in the development of this document through a series of workshops and communications held between 2013 and 2015.**

National Network Participants	
<p><b>American Farmland Trust</b></p> <p><a href="http://farmland.org/">http://farmland.org/</a></p> <p>A national conservation organization dedicated to protecting farmland, promoting sound farming practices, and keeping farmers on the land.</p>	<p><b>National Association of Clean Water Agencies</b></p> <p><a href="http://www.nacwa.org/">http://www.nacwa.org/</a></p> <p>The leading advocate for responsible national policies that advance clean water whose members include publicly owned treatment works and municipal stormwater utilities.</p>
<p><b>Association of Clean Water Administrators</b></p> <p><a href="http://www.acwa-us.org/">http://www.acwa-us.org/</a></p> <p>A national, nonpartisan professional organization whose members are the state, interstate, and territorial officials responsible for the implementation of surface water protection programs throughout the nation.</p>	<p><b>National Association of Conservation Districts</b></p> <p><a href="http://www.nacdnet.org/">http://www.nacdnet.org/</a></p> <p>The nonprofit organization that represents America's 3,000 conservation districts and the 17,000 men and women who serve on their governing boards.</p>
<p><b>Chesapeake Bay Foundation</b></p> <p><a href="http://www.cbf.org/">http://www.cbf.org/</a></p> <p>The largest independent conservation organization dedicated solely to saving the Bay. Serving as a watchdog, it fights for effective, science-based solutions to the pollution degrading the Chesapeake Bay and its rivers and streams.</p>	<p><b>National Milk Producers Federation</b></p> <p><a href="http://www.nmpf.org/">http://www.nmpf.org/</a></p> <p>The voice of more than 32,000 dairy producers on Capitol Hill and with government agencies, NMPF develops and carries out policies that advance the well-being of dairy producers and the cooperatives they own.</p>
<p><b>Electric Power Research Institute</b></p> <p><a href="http://www.epri.com/">http://www.epri.com/</a></p> <p>EPRI conducts research, development and demonstration relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organization, it brings together scientists and engineers as well as experts from academia and the industry to help address challenges in electricity.</p>	<p><b>The Freshwater Trust</b></p> <p><a href="http://www.thefreshwatertrust.org/">http://www.thefreshwatertrust.org/</a></p> <p>Founded in 1983, The Freshwater Trust accelerates the pace and scale of freshwater restoration through the use of science, technology and market-based solutions to restore rivers on a timeline that matters. The nonprofit uses quantified conservation to fix more rivers faster and in 2013, received the U.S. Water Prize for its innovation.</p>
<p><b>Environmental Defense Fund</b></p> <p><a href="http://www.edf.org/">http://www.edf.org/</a></p> <p>A national nonprofit whose mission is to preserve the natural systems on which all life depends.</p>	<p><b>Kieser &amp; Associates, LLC</b></p> <p><a href="http://www.kieser-associates.com/">http://www.kieser-associates.com/</a></p> <p>A unique team of scientists, engineers, and economists who find creative solutions for environmental problems.</p>

**National Network Participants** *(continued)*

<p><b>Maryland Department of Agriculture</b></p> <p><a href="http://mda.maryland.gov/">http://mda.maryland.gov/</a></p> <p>A state agency providing leadership and support to agriculture and the citizens of Maryland by conducting regulatory, service, and educational activities that assure consumer confidence, protect the environment, and promote agriculture.</p>	<p><b>The Ohio Farm Bureau Federation</b></p> <p><a href="http://ofbf.org/">http://ofbf.org/</a></p> <p>A federation of 87 county Farm Bureaus forging a partnership between farmers and consumers, advocating for Ohio’s farm families on issues that help them in business and, in turn, providing non-farmers a wide variety of food choices.</p>
<p><b>Mississippi River Collaborative</b></p> <p><a href="http://www.msrivercollab.org/">http://www.msrivercollab.org/</a></p> <p>A partnership of state, regional, and national environmental organizations and legal centers working on issues affecting the Mississippi River and its tributaries. The Collaborative harnesses the resources and expertise of its diverse organizations to reduce pollution entering the Mississippi River as well as the Gulf of Mexico.</p>	<p><b>Troutman Sanders</b></p> <p><a href="http://www.troutmansanders.com/">http://www.troutmansanders.com/</a></p> <p>An international law firm with more than 600 lawyers practicing in offices located throughout the United States and Asia. The firm’s clients range from large multinational corporations to individual entrepreneurs.</p>
<p><b>U.S. Water Alliance</b></p> <p><a href="http://www.uswateralliance.org/">http://www.uswateralliance.org/</a></p> <p>A nonprofit established to break down the “silos” and provide sector-wide leadership for building a national platform for holistic water policy. The Alliance is committed to uniting people and policy for water sustainability in a changing climate.</p>	

**Coordinators**

<p><b>Willamette Partnership</b></p> <p><a href="http://willamettepartnership.org/">http://willamettepartnership.org/</a></p> <p>A nonprofit working to expand the pace, scope, and effectiveness of conservation.</p>	<p><b>World Resources Institute</b></p> <p><a href="http://www.wri.org/">http://www.wri.org/</a></p> <p>A nonprofit global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.</p>
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**Technical Advisor**

<p><b>U.S. Department of Agriculture</b></p> <p><a href="http://www.usda.gov/">http://www.usda.gov/</a></p> <p>A federal agency providing leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on sound public policy, the best available science, and efficient management.</p>
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The document also draws from the last several decades of experience building WQT programs across the country. It does not represent a consensus opinion from all Network participants, but instead reflects a series of robust conversations during workshops, numerous conference calls, and a survey to gather feedback on the range of options presented in the document sections.

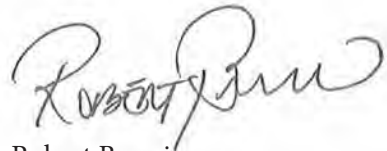
## Foreword: US Department of Agriculture

Water quality trading programs provide a catalyst for developing innovative, practical solutions for improving water quality, while generating environmental benefits at lower cost and providing a new source of revenue for farmers, ranchers and forest landowners. Trading complements existing conservation efforts by providing additional resources for water quality improvement and associated environmental benefits, such as air quality improvements and creating and enhancing wildlife habitat.

USDA is committed to advancing voluntary, market-based solutions to improve water quality, and supports the development of transparent, scientifically rigorous guidelines for water quality trading programs. We welcome efforts of the National Network on Water Quality Trading. While USDA cannot specifically endorse the proposals and alternatives discussed in this compendium, we believe *Building a Water Quality Trading Program: Options and Considerations* incorporates the most complete discussion of water quality trading program development to date. The effort can serve as an instructive tool for states, members of the agricultural community and others as they look to learn from past experiences to develop effective water quality trading programs.

On behalf of the USDA Environmental Markets Council, we thank those who contributed to the effort, and congratulate the participants in the National Network on Water Quality Trading for initiating the collaborative and stakeholder-driven dialogue that led to the development of this thoughtful, instructive and comprehensive resource for water quality trading.

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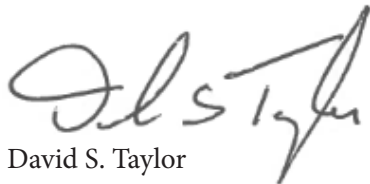


# Foreword: National Association of Clean Water Agencies

Successful water quality trading programs involving point source discharges have demonstrated that trading can provide much-needed flexibility, while generating more cost-effective environmental benefits than traditional regulatory approaches. Faced with an ever-growing crisis on nutrient pollution and an environmental statute in need of updating to allow for more holistic, watershed-based approaches, the nation must look to further broaden the use of water quality trading and similar management approaches to find more opportunities for collaboration between point and nonpoint sources, including agriculture.

By providing point source dischargers with more flexibility to meet pollutant load reduction requirements, water quality trading can help incentivize wider participation from nonpoint sources in ongoing efforts to address the nutrient challenge. Water quality trading programs, by their very nature, cannot conform to a one-size-fits-all model, and the sometimes daunting task of assembling a trading program from scratch has been an impediment to more widespread use of this important tool. Stakeholders at the local and state level need to develop the water quality trading programs that will best meet the needs of a particular watershed.

*Building a Water Quality Trading Program: Options and Considerations* incorporates a wide range of perspectives on how water quality trading programs can achieve their goals. That diversity, and the depth of information presented, will make the document that the National Network on Water Quality Trading produced a valuable resource to inform new and evolving trading programs across the country.



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# EXECUTIVE SUMMARY

The United States has made significant progress in cleaning its rivers, lakes, and oceans. Investment in wastewater treatment plant technology, conservation practices with land managers, and restoration of natural systems is working in many places. The public supports clean water, yet there is still a long way to go in achieving the vision of fishable, swimmable waters. More than half of the country's streams, lakes, and estuaries are not meeting the water quality standards established under the Clean Water Act to provide clean drinking water, recreation, fish and wildlife habitat, and other designated uses.<sup>1</sup>

The work that lies ahead to achieve clean water will require additional tools and new approaches that can account for watershed dynamics, allow flexibility on how to achieve clear, enforceable goals, and target investment where it can most effectively improve water quality. Water quality trading, under the right conditions, can fit these criteria.

## Water Quality Trading Programs: Potential & Key Dilemmas

Water quality trading (WQT) is a flexible approach that provides one source the choice of installing onsite technology or practices or working with other sources offsite to generate equal or greater pollutant reductions. However, moving a WQT program forward can be challenging for several reasons:

- The Clean Water Act does not apply evenly to all sources of pollution within a watershed, generating debate about who is responsible for reducing what pollution and when;
- Where watershed science is incomplete, it can be difficult to build an effective, efficient WQT program. It can be more challenging to set clear water quality goals and determine the contribution of individual projects toward those goals;



*When designed well and combined with other tools, water quality trading can help achieve water quality goals in a way that is beneficial for landowners, communities, and the environment. Photo courtesy of Willamette Partnership.*

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<sup>1</sup> U.S. Environmental Protection Agency, *National Summary of State Information*, (March 2015), available at [http://ofmpub.epa.gov/waters10/attains\\_nation\\_cy.control#STREAM/CREEK/RIVER](http://ofmpub.epa.gov/waters10/attains_nation_cy.control#STREAM/CREEK/RIVER).

- A successful trading program involves multiple stakeholders who bring different perspectives and vocabularies. The lack of a common vocabulary can hinder communication and development of shared understanding;
- Different stakeholders have different tolerances for risk and uncertainty. There needs to be a holistic look at risk management in WQT. If every program design decision is the lowest risk option from an ecological perspective, WQT may not be cost effective. Conversely, if every decision entails ecological risk, WQT may not achieve water quality objectives;
- It can be easy to lose sight of the bigger water quality vision when talking about the details of a WQT program, but talking about WQT at a high level without going into detail may limit confidence in a program's ability to succeed; and
- There are no easy ways to share the lessons learned from two decades of experience with new trading programs, so opportunities for reducing start-up costs and effort may be lost.

These challenges can lead to long discussions or disputes around:

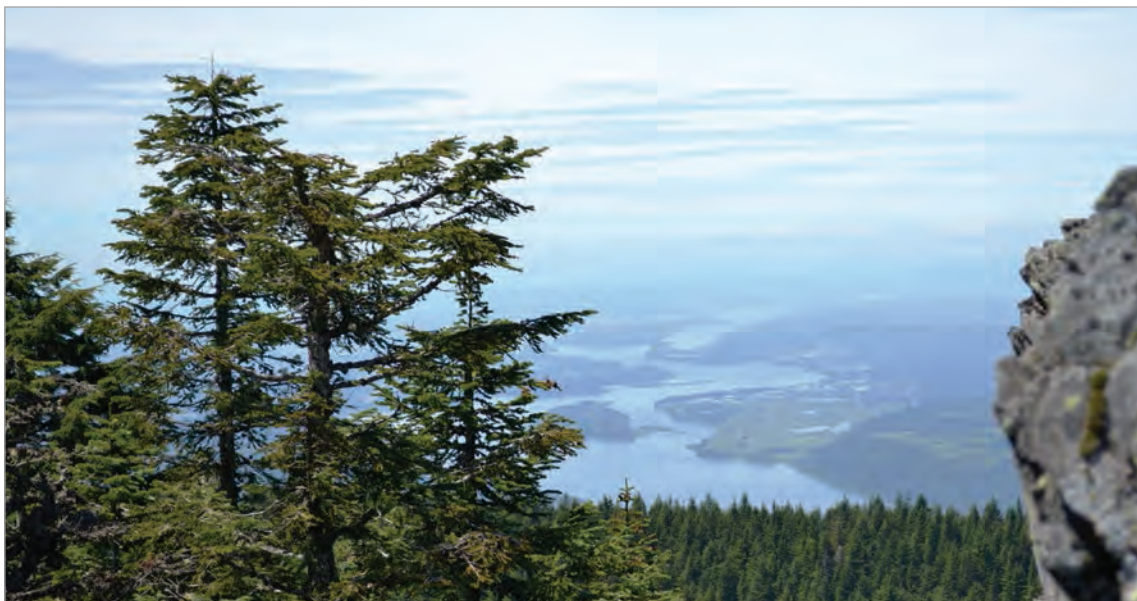
- The pollution reductions expected from market participants prior to buying and selling credits (i.e., baseline requirements);
- How to manage uncertain science or other risks (e.g., selecting credit quantification methods or setting the right trading ratio); and
- How to engage the public to provide comments and shape how trades will work.

## A National Network Forms to Discuss These Dilemmas

The National Network on Water Quality Trading was established in 2013 to discuss these challenges and to develop information resources for others interested in building trading programs that meet clean water goals. The Network's 18 initial participating organizations represent a diversity of agricultural operations, wastewater utilities, environmental groups, regulatory agencies, and practitioners delivering trading programs. This diversity is similar to that found in most emerging programs in the country. Over the past two years, the Network's dialogue has focused on identifying common trading issues and the options, considerations, and examples important to building a trading program.

This publication, *Building a Water Quality Trading Program: Options and Considerations*, is the product of that dialogue. The document focuses on trades wherein permitted wastewater and/or stormwater facilities (point sources) purchase water quality benefits from nonpoint sources (often agriculture) that reduce pollution above and beyond what they are required to do. It provides some essential tools for new and evolving water quality trading programs, including:

- A vision and set of guiding principles to anchor trading program decisions;
- Options with pros/cons and examples for each of the 11 elements common to trading programs across the country;
- Consistently defined and used terminology; and
- A depth of references and dialogue supporting the reasoning behind the Network's choices of options and considerations.



*As trading programs have developed, they have been guided by the same goals as those set out in the Clean Water Act—to restore fishable, swimmable waters in ways that eliminate harmful pollution and support clean water as an important part of healthy communities and healthy economies. Photo courtesy of Willamette Partnership.*

## Characteristics of Successful Trading: Guiding Principles

As trading programs have developed, they have been guided by the same goals as those set out in the Clean Water Act—to restore fishable, swimmable waters in ways that eliminate harmful pollution and support clean water as an important part of healthy communities and healthy economies. Along the way, trading program developers have had to wrestle with tough ecological, economic, and social tradeoffs and face the reality that trading often represents one small, though potentially important, part of meeting those larger CWA goals cost effectively.

A water quality trading program should be consistent with the 2003 U.S. EPA Trading Policy and the CWA<sup>2</sup> and consider the following guiding principles:

1. Accomplish regulatory and environmental goals;
2. Be based on sound science;
3. Provide sufficient accountability, transparency, accessibility, and public participation to ensure that promised water quality improvements are delivered;
4. Produce no localized water quality problems;
5. Be consistent with the CWA regulatory framework; and
6. Include appropriate compliance and enforcement provisions to ensure long-term success.

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<sup>2</sup> See U.S. Environmental Protection Agency, *Water Quality Trading Policy*, 68 Fed. Reg. 1608, p. 1610, (“CWA Requirements. Water quality trading and other market-based programs must be consistent with the CWA.”) (Jan. 13, 2003) (final policy) (hereafter “2003 U.S. EPA Trading Policy”), available at <http://www.gpo.gov/fdsys/pkg/FR-2003-01-13/pdf/03-620.pdf>.

## Characteristics of Successful Trading: Common Elements

The Network has identified 11 elements common to many trading programs to consider when designing and implementing WQT programs. Regarding each of these elements, there is no “one size fits all” solution. Instead, considerations can make different options more or less viable under different conditions. The elements that should be considered in the design of a new trading program include:

1. Identifying and establishing regulatory instruments to support trading;
2. Defining who is eligible to trade, where trading can occur, and what is being traded;
3. Determining eligibility for participants in the trading program;
4. Quantifying water quality benefits;
5. Managing risk and uncertainty in the trading program;
6. Defining credit characteristics;
7. Establishing project implementation and assurance guidelines;
8. Establishing procedures for project review, certification, and tracking;
9. Ensuring compliance and enforcement;
10. Establishing adaptive management guidelines for ongoing program improvement and performance tracking; and
11. Defining roles, responsibilities, transaction models, and stakeholder engagement processes.

## Prospects for Trading in the Future

National Network participants immediately recognized that trading programs are built to fit the unique ecological, social, and other conditions of a watershed, and emphasized the importance of sensitivity to local needs. *Building a Water Quality Trading Program: Options and Considerations* therefore does not provide explicit recommendations. It provides options and considerations intended to facilitate easier and more consistent decision-making across a range of new and evolving trading programs.

There is a growing interest in trading programs. Several states are contemplating new statewide trading statutes or rules, and more wastewater utilities are using trading approaches. However, not everyone is persuaded that trading programs are being designed in ways consistent with the Clean Water Act and other environmental goals. Further growth in trading, and its success in improving water quality, will depend on:

- Clear and consistent documentation of assumptions and decisions underlying trading program development and operations;
- Serious consideration of watershed science and goals in guiding the practical workings of trading programs;
- Incorporation of WQT into a suite of water quality protection goals and tools; and
- Regular, informative communications to the public to build confidence that progress is being made toward clean water goals in a timely way.

New and emerging trading programs can use this document to help meet some of these future challenges by using the information to:

- Provide consistent language for new trading programs;
- Speed decisions through the options and examples to frame local dialogue; and
- Understand how different stakeholder groups may perceive different trading program design choices.

The Network and its participants will continue to build the tools and information resources needed to support water quality trading programs as they emerge and evolve, including information targeted for stakeholder groups, issues, and places.