# Bond Case Briefs

*Municipal Finance Law Since 1971*

---

## Building Demand in US Water Quality Trading Markets.

IN BRIEF

- WATER QUALITY TRADING MARKETS ALLOW THE OPERATORS OF POINT SOURCES OF WATER POLLUTION — such as sewage treatment plants or factories — to offset that pollution by purchasing credits representing reductions elsewhere.
- BUT DESPITE THE PRESENCE OF FUNCTIONING PROGRAMS ACROSS THE COUNTRY, the overall volume of trading remains low.
- TO EXPAND TRADING, STAKEHOLDERS NEED TO ADDRESS THE LACK OF NUMERIC DISCHARGE LIMITS, transaction costs, risk aversion, and the absence of empirical data on programs.

Environmental credit trading programs have gained traction for pollutants like carbon emissions, at least in concept. Is water quality trading the next frontier? The mechanism offers the possibility of more flexible and cost-effective water quality control, but in contrast to some environmental credits, markets have struggled to gain momentum.

Water quality trading markets allow the operators of point sources of water pollution — such as sewage treatment plants or factories — to offset that pollution by purchasing credits representing reductions elsewhere. Just as the purchase of a carbon offset gives its buyer credit for reducing their carbon footprint, a water quality trading market allows participants to buy and sell the credit for reduction of water pollution into a given water body.

Trading is a tool that may be well-suited to address the evolving nature of water pollution in the United States.

“The Clean Water Act was written at a time when the major pollution in our waterways was coming from pipes,” said Kristiana Teige Witherill, clean water project manager at the Willamette Partnership, a nonprofit focused on market-based conservation in the American West. “Today, depending on what watershed you’re looking at, 80 to 90% of pollution is coming from non-point sources, not coming from the end of a pipe.”

After establishing parameters for water quality trading in 2003, the Environmental Protection Agency (EPA) reiterated its support for the tool in a statement in February. A 2017 Government Accountability Office (GAO) report tallied 19 water quality trading programs operating in 2014 in a diverse set of 11 U.S. states, from California to Idaho to Florida.

But despite the presence of functioning programs across the country, the GAO noted that the overall volume of trading remains low. “According to stakeholders, two key factors have affected participation in nutrient credit trading — the presence of discharge limits for nutrients and the challenges of measuring the results of nonpoint sources’ nutrient reduction activities,” the report stated.

Now, proponents of water quality trading are working to bring more participants into the fold. What

can be done to scale up use of trading?

**How Water Quality Trading Works**

Under the U.S. Clean Water Act, states are responsible for regulating the quality of water discharged into water bodies. Water quality trading markets provide an alternate way for any point source regulated by the National Pollutant Discharge Elimination System to meet requirements set by states through the act.

Water quality trading credits most often deal with nitrogen and phosphorus pollution, but they can be generated for other purposes as well. To protect temperature-sensitive salmon species, for example, Oregon has a functioning trading market for water temperature, according to Witherill. Less commonly, markets can also facilitate trades for credits that represent reduced stormwater quantity.

Credits are frequently generated through reduced pollution from agricultural land, but can also come from point-source sites that have exceeded pollution-reduction requirements. States are responsible for approving and verifying credits.

Water quality trading has the potential to provide massive increases in the cost-effectiveness of pollution reduction. According to the World Resources Institute, reducing nitrogen pollution through water treatment plant upgrades costs an average of about $15 per pound of nitrogen, but under $5 per pound through planting cover crops on farms.

**Generating Demand**

The GAO's 2017 report stated that in the year they surveyed, 2014, the majority of trading occurred in Connecticut, Pennsylvania and Virginia. In those states, most point sources didn't purchase credits, resulting in a substantial share of generated credits going unused. State officials told the GAO, however, that trading programs still provided other benefits, like flexibility in complying with water quality regulations.

"I would say that there are a number of programs across the country that are working well, like here in Oregon where we have a number of facilities and municipalities that are successfully using water quality trading," Witherill said. "But I think we haven't yet reached a tipping point where water trading becomes a mainstream solution for meeting water quality regulations."

Often, the issue centers around the question of bringing buyers to the table.

In October 2018, the National Network on Water Quality Trading — facilitated by the Willamette Partnership — published its report "Breaking Down Barriers: Priority Actions for Advancing Water Quality Trading." The group aimed "to diagnose why, in contrast to other environmental markets, interest in water quality trading and demand for water quality credits has been slow."

Along with discharge limits, the "Breaking Down Barriers" report points to transaction costs, risk aversion, and the absence of empirical data on programs as deterrents to trading. When it comes to discharge limits, the regulatory structure of a given state plays a big role. Under the Clean Water Act some states, but not others, have set specific quantitative limits on pollution.

"In places like Wisconsin that have numeric criteria for nutrients, they have a really strong driver for cities and municipalities to be looking at options like water quality trading," Witherill said. "It's kind of a precondition for it to have some kind of regulatory driver."

Wisconsin has a statewide trading program for the variety of pollutants regulated by the state Department of Natural Resources, but the difficulty of conducting trades has limited its use, according to Wisconsin Public Radio. Critics of the program's current design have blamed low participation on inflexible rules and trouble connecting buyers and sellers.

In the absence of a "regulatory driver" like quantitative pollution limits, water quality trading programs have limited options for attracting buyers.

The Ohio River Basin Trading Program, run by the Electric Power Research Institute (EPRI), manages a trading market in Ohio, Indiana and Kentucky. The program aims to address nutrient pollution into the Ohio River — and ultimately, the Gulf of Mexico — by generating credits from conservation practices on agricultural land. According to Program Manager Jessica Fox, the Ohio River Basin Trading Project has over 100,000 of the $12 to $14 credits — each representing a pound of verified reduced nitrogen or phosphorus discharge — "on the shelf" waiting to be sold.

EPRI has sold credits to power companies, a university and individuals, Fox said, but not at the volume necessary to make the program self-sustaining. "When every transaction requires me to take a business trip," she said, "that's not going to work. It has to be more liquid than that."

There are other preconditions needed for water quality trading in addition to quantitative criteria, the "Breaking Down Barriers" report argues. First, unless the technology required for polluters to meet limits is expensive or nonexistent, managers of point sources are unlikely to turn to trading. Regulatory agencies must also support purchasers interested in pursuing credits. "We've also seen that the utilities who pursue water quality trading often have a champion supporting the program within their own organization," the report stated.

**Building Markets and Confidence**

Through stakeholder interviews and other research, the "Breaking Down Barriers" authors identified seven steps that stand to increase use of trading. They advocate for simplifying trading programs; making sure state regulators have the capacity and resources they need; clarifying the policies of EPA and states; reducing buyer risk, real and perceived; addressing the legal risk that stems from a lack of case law on trading; developing more direction for stormwater trading; and building relationships.

For its part, the Ohio River Basin Trading Program is looking to stimulate more demand of its own accord. In May, EPRI announced a partnership with First Climate, a firm that specializes in selling environmental credits, to sell credits on international markets and make them available to a wider range of domestic buyers. Before, the trading program wasn't able to accommodate transactions of less than $25,000, according to Fox. Through First Climate, however, the program is taking a more retail approach to trading.

"You can go on now, and you can buy one credit with a credit card or Paypal account," Fox said. The program has a calculator online that individuals can use to determine their personal nitrogen footprint, and provides buyers a photo of the farmer who generated their credit. It even sells t-shirts.

"It's kind of like 'adopt a sea lion,'" she said. "It's getting it to be a more publicly accessible thing."

First Climate and EPRI are also pitching large corporate buyers on water quality credits as a way to meet voluntary sustainability commitments.

But as trading programs continue to try to break into the mainstream, Willamette's Witherill cautioned that they are just one tool in the toolbox for "expanding the number of options utilities

have to invest in their watersheds," she said. "Maybe that doesn't necessarily look exactly like water quality trading, maybe that looks like a source water protection program or some kind of groundwater irrigation management."

On the policy front, Fox also wonders if EPA could do more to support markets. The agency's February memo was "a huge signal that the administration is strongly behind water quality trading," she said, but it doesn't actually change implementation on the ground.

One possibility worth exploring, Fox said, would be whether EPA could allow states to use their own share of funds from joint federal-state programs — such as Clean Water State Revolving Funds, for example — to buy credits.

"Any way to incent the buyer side is a great solution," she said.

**Conservation Finance Network**

Chris Lewis

September 25, 2019

Copyright © 2026 Bond Case Briefs | bondcasebriefs.com