Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

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SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Water Resources and Environment
FROM: Staff, Subcommittee on Water Resources and Environment
RE: Hearing on "The Role of Water Quality Trading in Achieving Clean Water Objectives"

PURPOSE

On Tuesday, March 25, 2014, at 2:00 p.m., in 2167 Rayburn House Office Building, the Water Resources and Environment Subcommittee will meet to receive testimony from several public and private sector stakeholders on the potential use of water quality trading as an innovative, market-based mechanism to cost-effectively achieve local water quality improvements.

BACKGROUND

The nature of water quality problems has changed substantially in the United States from the 1970s to today. Amendments made in 1972 and 1977 to the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), were passed by Congress in response to water pollution problems around the nation. At that time, the government wrote policies into the CWA to give state and federal agencies authority to control point sources of pollution. Since its enactment the CWA has led to the upgrading of a large portion of the country's private industrial and public wastewater facilities. These actions have led to major improvements in water quality around the nation, although the CWA's original goal of fishable, swimmable waters across the country has yet to be achieved in numerous waterbodies.

Achieving the next step in water quality improvements is proving to be more difficult, as many of today's remaining water quality problems are more dispersed or it is very costly to achieve the next increment of pollutant removal. Challenges surrounding pollution from urban stormwater and land runoff are rooted in how we build towns, landscape, grow food, and produce other economic activity. Removing additional pollutants from private industrial and

public wastewater facilities is becoming extremely expensive and difficult to achieve. With these challenges, neither the problems nor the solutions are easy. Addressing these remaining water quality problems will require new tools and new and innovative forms of implementation. Water quality trading is increasingly being looked at as an innovative, market-based mechanism to cost-effectively achieve local water quality improvements in some instances.

WHAT IS WATER QUALITY TRADING?

The CWA provides a two-tiered approach to water quality protection. At a minimum, all point source dischargers (e.g., industrial facilities and municipal sewage treatment plants) must attain technology-based requirements to limit pollutant concentrations in effluents. These requirements take the form of nationally uniform standards, which are incorporated in pollutant discharge permits issued to individual facilities. The CWA also requires that point sources meet more stringent effluent limitations in certain circumstances. If technology-based controls are insufficient to attain state-established ambient water quality standards for specific waterbodies, then these standards serve as the regulatory basis for developing more stringent effluent limitations to be applied to point sources through additional control measures. Since enactment of the CWA in 1972, the nation has made much progress towards the Act's water quality goals through its program of technology-based effluent limits for industrial and municipal point sources.

However, as the Environmental Protection Agency (EPA) and states have succeeded in regulating and reducing pollution from point sources, the relative importance of nonpoint sources of pollution to water quality has increased. Nonpoint sources (e.g., rainfall runoff from urban, suburban, and rural areas) are believed to be a significant cause of the remaining water quality impairments in many areas. Policymakers are now seeking new approaches to continue progress towards achieving water quality improvements.

Increasingly, many policymakers are interested in more cost-effective and market-based alternatives to traditional regulation. Water quality (or effluent) trading is one of the market-based innovations that is of growing interest. Water quality trading is an innovative approach that may enable water quality goals to be achieved more efficiently in some instances. The basic theory behind water quality trading is that certain dischargers or pollutant sources may be able to achieve the same degree of control as others in the same area, but at lower cost. Trading is based on the fact that sources in a watershed can face very different costs to control the same pollutant.

Trading programs allow facilities facing higher pollution control costs to meet their regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from another source at lower cost, thus achieving the same (or better) water quality improvement at lower overall cost. Under a trading program, some dischargers could avoid a costly treatment upgrade by paying for, or otherwise arranging, equivalent (or greater) reductions in discharges of pollutants from other facilities or sources that release the same pollutants into the same receiving waters. The trading arrangements could occur, among other ways, between two or more point sources (so-called "point-to-point" trades) or between two or more point and nonpoint sources (so-called "point-to-nonpoint" trades).

The attraction of trading is that it could reduce the total cost of compliance for the regulated community and provide monetary (or other) compensation for those who exceed minimum requirements for reducing pollutants. The common denominator is providing flexibility in allocating pollution control responsibilities so as to achieve water quality goals more cost-effectively.

HOW DOES WATER QUALITY TRADING WORK?

While trading can take many different forms, the foundations of trading are that a water quality goal is established and that sources within the watershed have significantly different costs to achieve comparable levels of pollution control.

The established water quality goal helps to determine the overall pollutant loads that may be allowed from multiple sources in the watershed so that the goal is achieved. Potential trades between individual loads among individual sources then may be evaluated to determine where and how load reductions could occur that meet the goal. Successful trading situations may occur when a trade takes advantage of the fact that the multiple sources face different costs when seeking to accomplish the load reductions. The differences in costs occur due to myriad factors ranging from an individual source's production processes to its location or size to available technologies for reducing the load.

Trading allows those sources with relatively low costs to generate "nutrient credits" by reducing loads by more than is required of them. The generator of the credits then can sell these credits to relatively high-cost sources, allowing the purchaser to, in effect, "reduce" its load at less cost. The combined result is an overall achievement of pollution load reductions at a lower total cost.

Permits or total maximum daily loads (TMDLs) under the CWA drive a lot of the current activity in water quality trading. (TMDLs are the maximum amount of a pollutant a waterbody can receive and still meet applicable water quality standards.) However, it is also possible to have trading driven by local water quality needs. Not all trades occur under permits and TMDLs.

Where watershed circumstances favor trading, it can be a useful tool for achieving pollutant reductions faster and at lower cost. However, water quality trading will not work everywhere. Trading may be most encouraged when there is a "driver" that motivates facilities to seek pollutant reductions. This might be a TMDL or a more stringent water quality-based requirement in an NPDES permit. Trading also may be encouraged when various sources within the watershed have significantly different costs to control the pollutant of concern, or the necessary levels of pollutant reduction are not so large that all sources in the watershed must reduce as much as possible to achieve the total reduction needed. Otherwise, there may not be enough surplus reductions to sell or purchase. Trading should be voluntary, and watershed stakeholders and the regulatory agency must be willing to try an innovative approach and be flexible in designing and implementing the trade.

HISTORY OF WATER QUALITY TRADING

Trading is viewed as a supplement to, and not a substitute for, core regulatory programs. Water quality or effluent trading concepts have long been advocated by academics and economists as a means of achieving environmental objectives cost-effectively. A few projects were initiated in the 1980s by local groups who were searching for a means to avoid additional, and increasingly expensive, restrictions on point source discharges.

One of the first pilot trading programs started in Wisconsin's Fox River in the 1980s. Since the 1980s, there has been a number of trading programs or activities (including studies and pilots) in the United States. Trades have been approved for some of these, but actual trades had occurred in only a limited number of instances. Interest in trading programs increased in the latter 1990s and early 2000s as state water quality agencies began issuing TMDLs for impaired waterbodies. Trading is viewed as offering flexible approaches to improving water quality in the many areas where TMDLs will be required.

Water quality trading programs are emerging in an increasing number of states, such as Virginia, Pennsylvania, and Wisconsin. A first of its kind multi-state trading pilot project for nitrogen and phosphorus was launched by the Electric Power Research Institute (EPRI) with support from Ohio River state and interstate agencies in the Ohio River Basin in 2012. Currently the pilot program spans Ohio, Indiana, and Kentucky, but the same trading program structure and tools could expand to include all Ohio River Basin states and could potentially create credit markets for dozens of power plants, thousands of wastewater facilities and other industries, and over a couple of hundred thousand farmers in the region.

In March 2013, the first interstate water quality credits were generated and sold through the Ohio River Basin pilot program, and will be managed through the program. The water quality credits are being created through contracts between EPRI and the three state agriculture agencies participating in the pilot period (the Ohio Department of Natural Resources, Kentucky Division of Conservation, and Indiana State Department of Agriculture). These contracts commit each state to removing a specified number of pounds of total nitrogen and of total phosphorus over a five-year period. Each state is contracted to receive funds, which they will pass to soil and water conservation districts, which will then contract with farmers to implement approved best management practices to reduce pollution runoff from their land. The credits under the pilot are not being used to fulfill a regulatory obligation at this time, but the purchasers are entities that will likely be interested in purchasing credits to meet their permit requirements in the future if the program gets off the ground.

EPA POLICY STATEMENTS

In January 1996, EPA issued a policy statement to encourage effluent trading in watersheds. Soon thereafter, EPA issued a draft framework to implement the Agency's trading policy. It identified a series of conditions necessary for trading and a template of regulatory, economic, and technical issues to facilitate evaluation of trading opportunities. Although this document was never released as a final framework, it served to encourage the development of a number of new trading projects around the country, some partly supported with EPA grant funding and technical assistance. In 2002, EPA proposed a new water quality trading policy,

building on the 1996 policy statement and lessons learned from activities over the previous two decades. The final policy, superseding the 1996 statement and 2002 draft, was issued in 2003.

The 2003 EPA policy is intended to guide and encourage states, interstate agencies, and tribal governments in developing trading programs and projects. It identifies a number of objectives, such as to establish economic incentives for voluntary pollutant reductions from point and nonpoint sources within a watershed and to reduce the cost of compliance with water quality-based requirements. It describes several basic characteristics for trades that occur under the policy.

For example, the policy states that trading must be consistent with the CWA and should not result in violations of water quality standards. Trading must occur within the same watershed. EPA supports trading of nutrients and sediments as well as cross-pollutant trading of oxygen-demanding pollutants. EPA may consider supporting trades of other pollutants, but believes that these trades require a higher level of scrutiny. EPA does not support trading of persistent bioaccumulative toxics except potentially on a pilot basis. EPA supports trading in unimpaired waters to maintain water quality standards as well as in impaired waters. EPA supports both pre-TMDL trading and trading under a TMDL. Trading scenarios include point source-point source trades, point source-nonpoint source trades, nonpoint source-nonpoint source trades, pretreatment trades, and intra-plant trades. EPA does not support trading that results in an impairment of an existing or designated use, adversely affects drinking water systems, or exceeds a cap established under a TMDL. In addition, the trading policy does not allow trading to meet a technology-based effluent limit. Trading can be used to meet water quality based effluent limits only.

In 2004, EPA supplemented the policy by releasing a Water Quality Trading Assessment Handbook to help water quality managers and watershed stakeholders determine if, when, and where trading can be used in their watershed to make cost-effective pollutant reductions that achieve water quality standards. Then, in 2007, EPA issued a Water Quality Trading Toolkit for Permit Writers Handbook.

WITNESSES

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