TESTIMONY OF
THE HONORABLE G. TRACY MEHAN, III[1]
BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
OF THE
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
ON
SUSTAINABLE WASTEWATER MANAGEMENT

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Madame Chairwoman and Members of this Subcommittee, I am G. Tracy Mehan, III, formerly Assistant Administrator for Water at the United States Environmental Protection Agency. Prior to that, I served as Director of the Missouri Department of Natural Resources and the Michigan Office of the Great Lakes. I am presently employed as an environmental consultant at The Cadmus Group, Inc. I am testifying today in my individual capacity. My testimony and the views expressed herein are entirely mine and not those of my company or its clients.

Good morning and thank you for this opportunity to discuss the opportunities and challenges of "Sustainable Wastewater Management" which, in my understanding, tries to address, in a comprehensive way, point and nonpoint source pollution; surface and groundwater protection; the nexus between water, energy and Greenhouse Gas (GHG) emissions; and cost-effectively restore the chemical, physical and biological integrity of the nation's waters.

This is an exciting, albeit daunting topic. So let me start by describing the results from a study done in the area of source water protection (SWP), a concept derived from the 1996 amendments to the Safe Drinking Water Act but analogous to the concept of watershed protection under the Clean Water Act.

The idea behind SWP is to prevent contamination of drinking water supplies as part of a multi-barrier approach which includes treatment. Increasingly, land conservation is seen as a fundamental part of source water protection. In fact, funds for land purchases can be obtained from the State Revolving Loan Funds for drinking water.

A study of 27 water suppliers conducted by the Trust for Public Land (TPL) and the American Water Works Association (AWWA)[2] in 2002 found that more forest cover in a watershed results in lower treatment costs. For every 10 percent increase in forest cover

[1] Contact information: c/o The Cadmus Group, Inc., 1600 Wilson Boulevard, Suite 500, Arlington, VA 22209. Phone: 703-247-6106. E-mail: gmehan@cadmusgroup.com.
[2]This study is described in *Protecting The Source: Land Conservation and the Future of America's Drinking Water* (2004) published by TPL and AWWA. This is a follow-up study to the original one completed in 1997.

in the source area, treatment and chemical costs decreased approximately 20 percent. Almost 50 to 55 percent of the variation in treatment costs can be explained by the percentage of forest cover in the source area.

In other words, the natural infrastructure, if you will, is a least-cost approach to protecting water quality which can generate multiple benefits such as habitat, carbon sequestration and aesthetics. Utilizing such green or natural infrastructure means less hard or gray infrastructure and reduced energy intensity, too.

We are seeing a similar trend in the realm of waste and stormwater management in more and more utilities and communities across the country. This is especially true with respect to "urban wet weather" issues, a constellation of problems including Combined Sewer Overflows (CSOs), stormwater runoff, and conventional point-source or end-of-the-pipe discharges. More and more, they are addressing these challenges through a watershed approach which employs green or nonstructural approaches in tandem with traditional hard or gray infrastructure.

At the heart of these urban wet weather problems is the degree of imperviousness or hardening of the landscape throughout the watershed with a concomitant disruption to the natural flow regime. Roads, sidewalks, parking lots, roofs and tightly compacted building sites allow water to run off, carrying with it pollution into nearby streams and rivers while also elevating water temperatures and increasing the velocity of the flow which scours stream and destroys biological diversity. The resulting condition is sometimes called the "urban stream syndrome."

In cities such as Philadelphia, Chicago, Portland (OR) and Milwaukee, water managers are trying to implement green infrastructure solutions or low-impact development (LID) practices. A number of these techniques are well known to this Committee such as green roofs, rain barrels, rain gardens, vegetated curb extensions, porous pavement, urban reforestation, and even constructed or restored wetlands or wet meadows. The aim of these practices is to retain water on site, allowing for infiltration and evapotranspiration, thereby reducing runoff and allowing for removal of unwanted pollutants.

In fact, Portland has actually incorporated LID solutions into its long-term control plan for addressing its CSO issues. Unfortunately, this may be the only instance where LID practices have been incorporated into the formal regulatory structure. EPA, specifically the Offices of Water (OW) and Enforcement and Compliance Assistance (OECA) should continue to facilitate the incorporation of the green solutions into CSO permits, not just consent decrees. Our understanding and knowledge of these techniques are getting better every day. It is time to incorporate them into the fabric our regulatory programs.

The Milwaukee Metropolitan Sewerage District is working with the Conservation Foundation, a national land conservancy, to purchase and restore 1800 acres of floodplain area to date. This is both to meet the District's flood plain management responsibilities, but also to ameliorate its CSO and stormwater problems.

Recently, the National Research Council of the National Academies released a landmark study on the nation's stormwater program in which it recommended managing stormwater on a watershed basis and using water flow as the common metric of regulation, as opposed to a pollutant by pollutant scheme. Such an approach could include multiple agencies or jurisdictions with stormwater responsibilities in a given basin. Indeed, EPA has already promulgated guidance on watershed-based permitting which allows for a comprehensive, watershed approach which could fold in all urban wet weather issues if the permitted entities wanted to do so, and the federal and state regulators gave their approval.

Both federal and state regulators need to encourage and facilitate such holistic and cost-effective steps to managing urban wet weather issues so as to reduce reliance on grey solutions and encourage greener ones which are less costly and generate multiple environmental benefits.

State Clean Water Revolving Loan Funds should also begin to recognize-and reward-the efficacy of green or LID techniques in dealing with urban wet weather issues. A few states are starting to recognize the cost-effectiveness and multiple benefits of these approaches, but the number is not large.

The goal of sustainable wastewater management also requires that we begin to pay greater attention to the nexus or inter-relationship between water, energy and GHG emissions. Clearly, a shift to green infrastructure or LID is in line with this goal. It is cheaper, less energy intensive and has the potential even to promote biological sequestration of carbon and mitigate urban heat island effects.

Global pressures on energy prices and environmental concerns have moved the issue of energy management to the top of the agenda for all utilities, especially wastewater and water systems. The water sector is estimated to consume 3 percent of the total electricity generated by the U.S. electric power industry. Energy is also used in individual homes to access water and wastewater services. And in some areas of the country, where water must be transported over large distances with daunting topography, the percentage is certainly higher. Finally, some experts are predicting that energy consumption at water and wastewater utilities will grow by more than 20 percent in the next 15 years.

Whether it be capturing and reusing methane from a wastewater system or adopting various renewable energy sources, the water industry continues to embrace energy management as a key pillar of sustainable water and wastewater management.

Recently, the Oregon Association of Clean Water Agencies (ACWA) issued a new report documenting how two wastewater treatment plants can become energy independent. Funded by the Energy Trust of Oregon, Gresham and Corvallis, Oregon were able to take steps to optimize energy efficiency and use renewable resources. Again, this report shows that many treatment plants can generate a substantial portion of their power by using methane gas.

Gresham's use of methane gas to generate clean power cut costs by $240,000 annually. It also purchases 17 percent of its electricity from wind farms.

Given the rise of carbon cap-and-trade programs on the West Coast and in the Northeast, as well as the possibility of a similar federal program coming on line, there may be opportunities for water and wastewater utilities to participate in emerging carbon markets.

Imagine a wastewater system selling carbon credits generated by its methane capture program.

What if a number of drinking water utilities in any given watershed might pool resources to reforest a groundwater recharge area. In the process they may be able to demonstrate substantial biological sequestration of carbon to participate in these new markets.

If water and wastewater utilities are able to generate an income stream from their participation in a new carbon or GHG market, that would enhance their economic and environmental sustainability simultaneously.

This is not your parents' water or wastewater sector! Green infrastructure now supplements gray infrastructure. The land and water interface requires that it be managed on a watershed scale. Finally, the nexus between energy, water and carbon necessitates new approaches which recognize the importance of this interrelationship.

Policy, regulation and financing should support these shifts in water management and allow for the implementation of those practices which deliver the most cost-effective solutions to the broad array of environmental challenges facing us now, some 36 years after passage of the Clean Water Act.

Thank you for your attention.