

## Highlights

- Total Maximum Daily Load (TMDL)
- PRASA Extends Contract
- U.S.E.P.A. Reports on Drinking Water
- Discharging in Impaired Waters
- EPA Website Provides Environmental Information

## Inside

1. TMDL: A Major Step to Restoring Our Water
2. Puerto Rico Aqueduct and Sewer Authority Extends Contract
3. U.S. EPA Reports on Drinking Water Compliance Record
4. EPA is Considering Proposals that Calls for Discharging in Impaired Waters
5. EPA Website Gets Down to the Local Level to Provide Environmental Information

# PR WRRI Newsletter

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*Puerto Rico Water Resources and Environmental Research Institute ...  
Dedicated to the Research and Sustainable  
Development of Water Resources in Puerto Rico*

## Total Maximum Daily Load (TMDL): A Major Step To Restoring Our Waters

Over the past several decades, the U.S. Environmental Protection Agency (EPA) and state water quality programs have successfully focused on reducing pollution in our nation's waters from point sources such as factories and municipalities. In fact, environmentalists have cited the Clean Water Act (CWA) established in 1972 as one of the most successful major federal environmental laws in almost 30 years. Still, they also note that approximately 40 percent of our nation's waters do not meet basic water quality standards.

A key program in the nation's continuing battle against polluted waters is the Total Maximum Daily Load (TMDL) program. Established in 1972 under section 303(d) of the CWA, TMDL focuses on restoring and protecting the physical, chemical, and biological integrity of the nation's waters on a watershed basis.

According to an EPA established TMDL advisory committee, a TMDL can be described as "a written, quantitative assessment of water quality problems and contributing pollutant sources. It specifies the amount a pollutant needs to be reduced to meet water quality standards, allocates pollutant load reduction among pollutant sources in a watershed, and provides the basis for taking actions needed to restore a waterbody. It can identify the need for point sources and nonpoint sources control.

Under the TMDL program, point sources of pollution implement wasteload allocations within TMDLs through enforceable, water quality-based discharge limits in National Pollutant Discharge Elimination System (NPDES) permit authorized under section 402 of the CWA. Nonpoint sources implement the load allocations within TMDLs through numerous regulatory, nonregulatory, and incentive-based state, local, tribal, and federal programs. These programs are further supported through voluntary action by committed citizens.

## Section 303(d) Listing Requirements

The initial step in the TNML program is for states to identify bodies of water that do not meet nor are expected to meet water quality standards, even after all required pollution controls are applied. The state then lists these polluted waters on a Section 303(d) list. Although not a requirement, EPA encourages the states to solicit public participation in preparing Section 303(d) lists. Listing requirements include:

- identifying all pollutants for each body of water,
- ranking each body of water for restoration based on the severity of its pollution and its designated use,
- identifying waters targeted for TMDL development in the ensuing two years, and
- submitting the lists to the EPA regional administrator for approval by April 1 of each even-numbered year.

Beginning with the 1998 lists, EPA asks, as a policy matter, that states give EPA their long-term schedules for developing TMDLs for all the listed waters.

The EPA regional administrator has 30 days from the time a state submits a list to approve or disapproves the list. If EPA disapproves a state's list, the agency is responsible for establishing its own list. If the state's list is approved, the state is ready to go on to TMDL development.

### TMDL Development Requirements

State requirements for TMDL development include:

- developing TMDLs for listed waters according to the priority ranking established when the list was developed,
- giving the public the opportunity to review TMDL calculations, and
- submitting TMDLs to EPA for review.

EPA has 30 days to approve or disapprove a TMDL once it has been submitted. If EPA disapproves the TMDL, the agency is responsible for establishing the TMDL for the state. If EPA approves a TMDL, the agency will provide states with technical assistance, training, support, and funding.

Since TMDLs include pollution from natural sources such as decaying organic matter and nutrients in the soil, runoff from farms, forests, and urban areas, and drainage from abandoned mines, it is common for a lake, river, or stream to have multiple TMDLs. The TMDL process is so flexible that states can even develop TMDLs for nonchemical stressors such as temperature and habitat alteration as well as for traditional pollutants. For these latter situations, however, the methods used for reducing the loading may sometimes rely on ecological restoration.

### What is included in a TMDL calculation?

A TMDL calculation sets the ceiling for the total sum of pollutant loads that a body of water can receive and still meet water quality standards. The TMDL calculation include:

- wasteload allocation for point sources,
- load allocations for nonpoint sources,
- seasonal variations
- a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality, and
- critical conditions for stream flow, loading, and water quality parameters.

Analyzing data collected about pollutants is further complicated by many states lack of numeric water quality standards for some pollutants, such as phosphorous and nitrogen. Still, these pollutants must be included in the calculation of a TMDL for the TMDL to be approved by EPA.

*(Source: Extracted from Small Flows, Fall 1198; Vol. 12, No. 4)*

### Puerto Rico Aqueduct & Sewer Authority Extends Contract

Generale des Eaux and Air & Water Technologies extended their contract with the Puerto Rico Aqueduct & Sewer Authority (PRASA) for three more years. According to the new contract, which began on September 1, 1998, revenues will reach approximately \$125 million per year with an increased scope.

The PRASA system serves the 3.6 million residents of Puerto Rico.

Generale des Eaux, a subsidiary of Vivendi, provides water related services to over 73 million people worldwide. AWT, an affiliate of Vivendi provides a comprehensive range of services and technologies for the operation, maintenance and management of water and wastewater systems: engineering, design and construction of water and wastewater facilities and the remediation of contaminated soil.

*(Source: Water Online Newsletter, Vol. 1, No. 9, Oct. 2, 1998)*

### U.S. EPA Reports on Drinking Water Compliance Record

The U.S. Environmental Protection Agency (EPA) has released its first annual national assessment of drinking water system compliance. Based on information provided by the states, the report shows that 86% of all Americans are served by water systems with no reported violations of health standards and that most violations of those standards occurred in the very smallest systems, based on 1996 data, the most recently available. The report also describes the steps the Clinton Administration is taking to improve the safety of the nation's drinking water.

Among the 1996 compliance report's major findings, 91% of community water systems, serving approximately 213 million people (86% of the population) had no reported violations of health-based standards, known as maximum contaminant levels (MCLs), or of treatment techniques for treating certain contaminants. Most problems occurred in small systems: 82% of systems with health-based violations were small community water systems that serve a small number of people. Of the large community water systems, which serve the majority of the nation's population, nine percent violated health or treatment technique standards. Nationwide, 87% of all violations were for significant monitoring and reporting requirement lapses, not for health-based standards. Failure by public water systems to monitor is an important violation because it can mask public health problems. The report also contains data provided by each individual state on its compliance.

Reliable data are critical to measure progress against the nation's drinking water goals. The 1996 Amendments recognized the need for better data in 1999. The EPA, along with its state and local partners, is initiating several steps to improve the quality of drinking water

data to ensure that it will be of higher quality and, increased reliability in the future.

The report recommends that EPA continue efforts to address violations of health standards, treatment techniques and significant monitoring and reporting requirements, using compliance assistance, compliance monitoring and enforcement. It further recommends that the Agency and the states work cooperatively to improve the quality of compliance data. It is already acting on those recommendations.

Between the new information on national compliance with drinking water standards and the many new tools provided under the new Safe Drinking Water Act Amendments, the public will continue to have better drinking water and better knowledge of its quality. (Source: *Water Online Newsletter*, Vol. 1, Issue 5, Sept. 11, 1998)

## **EPA is Considering Proposal that Calls for Discharging in Impaired Waters**

The U.S. Environmental Protection Agency (EPA) is considering a proposal that would allow new and modified facilities to discharge effluent into impaired waters as long as the releases are offset by reductions in effluent that are coming from nearby facilities.

Environmentalists are split on the issue. Some are in favor of allowing new discharges while others have concerns about any policy that would allow new discharges into impaired water.

Although the EPA is in favor of this proposal, it wants that it is still trying to determine what types of rules will govern the use of offsets. The agency is currently in the process of rewriting

rules for identifying and restoring impaired water according to the total maximum daily loads (TMDL) program. Some agency officials feel that the new proposal is somewhat analogous to the Clean Air Act's new source review program, which basically requires new polluters to take measures to counteract new pollution. According to the air program, a company can either create an emissions offset by reducing emissions at one of its plants or buying emissions credit from a nearby plant.

Some environmentalists are deeply concerned by this development, with some objecting that the use of offset plans could further complicate efforts to restore impaired waterbodies. For instance, environmentalists point out that companies will have trouble reducing their effluent by enough to offset new discharges and bring a waterbody into compliance with state water quality standards. (Source: *Water Online Newsletter*, Vol. 1, Issue 9 Oct. 2, 1998)

## **EPA Website Gets Down to the Local Level to Provide Environmental Information**

U.S. Environmental Protection Agency Administrator Carol M. Browner has unveiled a new Website that will allow citizens to obtain up-to-date, comprehensive, accurate environmental information about their communities by entering a zip code. The Website is part of the Clinton Administration's right-to-know program that is designed to provide Americans with needed information about local pollution problems.

This Website can be found at: <http://www.epa.gov/ceis>. The source of the new site, the Center for Environmental Information and Statistics (CEIS), was set up in March 1998 by Browner to

improve public access to reliable information that would aid citizens in protecting their health and environment. It is a national resource containing data and information on the state of and trends in environmental quality. Unlike other Websites, the CEIS site is formatted in an interpretive manner for individual counties rather than as a line-by-line listing of data.

CEIS represents an important step in providing the American people with accurate, timely, and easy-to-understand, easy-to-access environmental and public health information, according to Browner. She said, "Anyone can quickly obtain a snapshot of air and water quality, hazardous waste and toxic chemicals in their own community, all on a single web page which can become a focal point for community partnerships, an education tool for young people, and an invaluable reference tool in libraries.

Volumes of EPA air, water, toxics and waste information that are available but often inaccessible to the average citizen, is now available to anyone using a computer and a modem. The user can pinpoint the search to his or her community and even create a map of their own area using the "community mapper" feature. Users can access other subject-specific EPA Websites through the CEIS Website. Most important, the CEIS Website provides contextual information that explains the meaning of the secured data.

The profiles include: information on air and water quality, drinking water, and hazardous wastes and toxic releases county by county; a digital library that allows users to search more than 100 EPA reports on environmental quality, along with a number of other environmental reports at the community, state, regional and national levels; and an atlas of maps covering a wide range of environmental topics.

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## CALENDAR OF EVENTS

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