

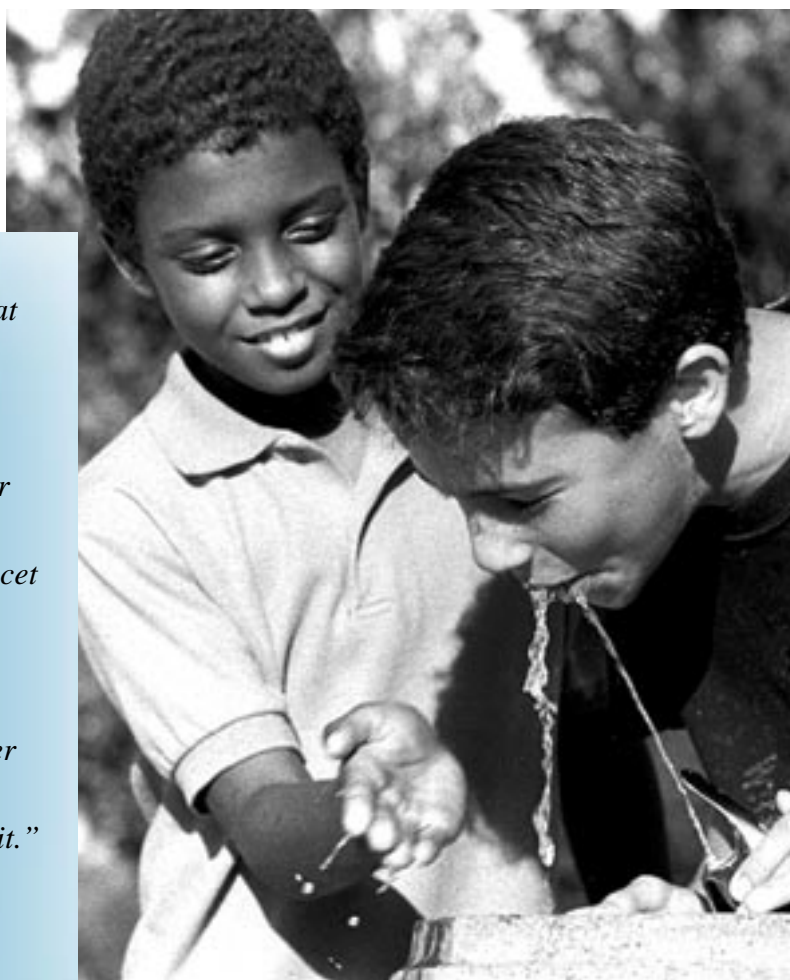
# *The Safe Drinking Water Act*

**- ONE YEAR LATER -**

## Success in Advancing Public Health Protection

*“Today we helped to ensure that every family in America will have safe, clean drinking water to drink every time they turn on a faucet or stop at a public water fountain. From now on our water will be safer and our country will be healthier for it.”*

President Bill Clinton's remarks at the signing of the Safe Drinking Water Act Amendment of 1996.



**O**n August 6, 1996, President Clinton signed amendments to the Safe Drinking Water Act, the primary statute for protection of our nation's public drinking water supply. Implementing this wide-ranging Act is challenging, but one year after enactment EPA and our partners in the drinking water community have laid the foundation for public health protection into the 21st century.

# THE 1996 SDWA Amendments

The Federal Safe Drinking Water Act (SDWA) was first enacted in 1974. The 1996 Amendments to SDWA were the first amendments in 10 years. The amendments strengthened the Act's public health protection by broadening its scope of action and level of public involvement. They also provided new tools to address changing demands and increased scientific and programmatic complexities. They embody the concept that flexibility (within a baseline of national public health protection) is appropriate, if triggered by sound information on relevant local conditions and based on good science.

*"We have a bill based on Clinton Administration recommendations that strengthens health standards for drinking water, protects the rivers, lakes and streams that are the sources of drinking water, and provides the public with a right to know about contaminants in tap water."*

EPA Administrator Carol Browner

## MAJOR THEMES of the 1996 Amendments

The SDWA amendments emphasize comprehensive public health protection through regulatory improvements, increased funding, prevention programs, and public participation. The amendments improve the existing regulatory framework in two important ways. First, a new focus on **risk-based priority-setting** means that EPA will decide which contaminants to regulate based on data about the adverse health effects of the contaminant, its occurrence in public water systems, and the projected risk reduction. The Act increased requirements for research and sensitive population analysis to give EPA more **sound data and science** on which to base those decisions. Public health protection remains the basis for decisions on what level to set drink-

ing water standards. Second, states now have greater flexibility to implement the Act responsibly to meet their specific needs.

The new law seeks to prevent drinking water problems by increasing states' and public water systems' capacity to provide safe water. **Funding** is significantly increased through higher state drinking water program grants and a new multi-year, multi-billion dollar Drinking Water State Revolving Fund (DWSRF) for infrastructure improvements for water systems. In addition, new state **prevention** initiatives were created and funded. First, a source water assessment program will give states and water suppliers information they need to prevent contamination of a community's drinking water source

through the amendments' source water protection authorities, thereby adding an extra layer of defense to the current treatment options. Second, the amendments require national minimum guidelines for states to certify operators of drinking water systems, that will reduce drinking water problems and boost consumers' confidence in the competent handling of their drinking water. Third, a water system capacity development program can expand states' tools to ensure that water systems have the managerial, technical, and financial ability to effectively protect drinking water supplies.

Finally, the amendments recognize that effective drinking water protection must be founded on a base of government accountability and public

understanding and support. The amendments embody the principle of greater **public involvement** in drinking water protection, and ensure that the choices made during implementation respond to the public's needs and concerns. Right-to-know provisions, such as the consumer confidence reports, will give consumers the information they need to make their own health decisions. These provisions will also promote accountability in decision-making.

Providing safe water is a comprehensive and integrated endeavor, involving EPA, states, Tribes, water suppliers, local governments, and the public in new roles and cooperative

*“Our bill improved public health, gave states and local governments the flexibility that they need to target their scarce resources on high priority health risks, and laid the foundation for a safe and affordable drinking water supply into the 21st century.”*

Senator Dirk Kempthorne

**partnerships.** The new Act recognizes that everyone has a stake in drinking water protection. EPA's challenge is to realize the principles of the Act, to create an environment where all stake-

holders can best utilize the tools provided to better protect drinking water and public health. One year into implementation, EPA and its partners have begun to create that environment.

## IMPLEMENTATION SUCCESS:

# *Institutionalizing Consultation & Partnership with Stakeholders & the Public*

**EPA** has spent much of this first year institutionalizing the new Act's ethic of consultation, involvement, and partnership. This ethic is consistent with the Administration's overall emphasis on public information and involvement. EPA is committed to close and regular consultation with stakeholders, and openness in decision-making, as a way of doing business. As we begin the second year of the new SDWA, local implementation issues will be emphasized along with national discussions. EPA will be working with states and water suppliers to ensure that they also incorporate public information and involvement into their implementation activities as the law directs.

First-year successes that we will build on include:

### **Institutionalizing early and frequent consultation with stakeholders**

While EPA is most directly accountable to Congress for implementation of SDWA, protection of our drinking water depends on a range of stakeholders, from our state and Tribal regulatory partners, to the suppliers of drinking water, to the general public who consume the water. These non-Federal participants will ultimately determine the success of SDWA implementation. The Agency is committed to frequent consultation with them.

An important vehicle for EPA's consultation process is the National Drinking Water Advisory Council (NDWAC). NDWAC is a Federal advisory group chartered under SDWA. Its function is to support EPA's drinking water program by providing advice and recommendations to EPA on drinking water issues. NDWAC represents the drinking water community, including the public. EPA has expanded NDWAC's role and established six working groups under the NDWAC framework to provide focused advice to EPA as it implements SDWA. Each of these groups is composed of a wide range of stakeholder interests. Although the tight deadlines and diversity of opinion have proven a challenge for all participants, the results

## Effective Stakeholder Consultation: The Small Systems NDWAC Working Group

Some small water systems lack the basic technical, managerial, or financial capacity to meet SDWA public health standards. These systems may be faced with a number of serious challenges such as a deteriorated system, customers on limited or fixed incomes, or too few households to share the costs of needed improvements. The SDWA amendments address this issue by requiring EPA to draft capacity development guidance that will ensure that any new public water system will be able to meet SDWA's public health requirements. EPA formed the small systems working group to provide recommendations on the guidance and other information needed. The diversity of the membership takes advantage of the expertise that already exists in this field among states, water suppliers, local governments, and environmental organizations. Although individuals on the working group had clear differences of opinion, they all recognized the need to ensure water system capacity. Due to the commitment of each of the stakeholders to work together on these provisions, the working group was able to reach near consensus. At its final meeting in July, the working group recommended the development of three guidance documents and five information documents, and provided recommended language for each to the full NDWAC, which will make recommendations to EPA.

justify the increased consultation. The Agency has received valuable and timely data and input, which has elevated the quality and accelerated finalization of EPA products. Stakeholders better understand EPA activities, and have increased early influence on products and decision-making.

In addition to the formal NDWAC working groups, EPA has held a number of public meetings with stakeholders on subjects ranging from the

development of a drinking water standard for radon to creation of the national occurrence data base. EPA has also held hundreds of one-on-one meetings with individual interest groups.

### Establishing the microbial and disinfectants/disinfection byproducts advisory committee

In its 1996 drinking water redirection effort, EPA identified microbial contaminants, such as *Cryptosporidium* and *Giardia*, and byproducts of disinfection as the highest potential drinking water risk to human health. The 1996 amendments ratified this priority, and require EPA to issue several rules to control microbial contaminants and disinfectants/disinfection byproducts (DBP) in drinking water. EPA is required to issue the first of these rules – an Interim Enhanced Surface Water Treatment Rule and a Stage 1 DBP Rule – by November 1998.

In March 1997, EPA established a committee under the Federal Advisory Committee Act (FACA) to assist the Agency in evaluating new data and information that has become available since the rules were proposed in 1994, and to recommend regulatory approaches. Committee members represented a broad range of interests, including water suppliers, regulators, local government, manufacturers, and environmental, consumer, and public health groups. In July, following four months of intensive discussions and analysis of new data on several challenging issues, the committee successfully produced consensus recommendations that address the eight highest priority elements of the two rules. The agreements would broadly strengthen public health protection through new limits for disinfection byproducts in drinking water, removal requirements for *Cryptosporidium*, and tighter standards for the cloudiness in suppliers' incoming water that can indicate both microbial contamination and the potential to generate DBPs.

### Holding regional source water protection stakeholder meetings

Between April and June, EPA regional offices hosted 22 meetings

*“These [regional source water] meetings really show that EPA has taken a change in direction. Their willingness to listen to our concerns, the concerns of small towns, and others gives us confidence that we are all working on solutions.”*

Rubin Miller, Former Mayor,  
Fairfield, Idaho

### Working Groups of the National Drinking Water Advisory Council

- Consumer Confidence Reports
- Source Water Protection
- Drinking Water State Revolving Fund
- Small Drinking Water Systems
- Water System Operator Certification
- Contaminant Selection

around the country to get input on source water protection. EPA's Regional offices sent thousands of invitations with the goal of bringing together a broad representation of stakeholders including state ground water, drinking water, and Clean Water Act personnel, water systems, watershed managers, environmental and public health advocates, agricultural interests, local governments, and others. As a result, nearly 2000 people around the country took the opportunity to participate directly in development of EPA guidance and policy.

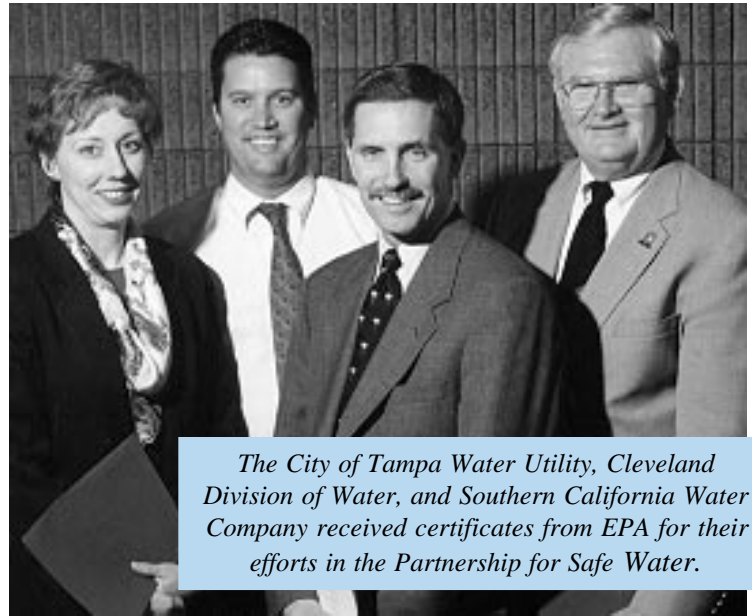
### ■ Creating implementation partnerships

Partnerships are essential for implementation. EPA has established partnerships with other Federal agencies (e.g., Centers for Disease Control for waterborne disease occurrence studies), drinking water utilities (e.g., Partnership for Safe Water), and non-profit organizations such as the National

Sanitation Foundation (for protocols for small system treatment technologies).

One example of a successful partnership is the Partnership for Safe Water. The Partnership for Safe Water is a voluntary joint venture formed in early 1995 among EPA, states, and several

national organizations representing drinking water systems. A phased program was developed to accelerate enhanced public health protection from *Cryptosporidium* and other microbial contaminants by improving filtration plant performance. Water utilities that complete phases of the program receive recognition from their peers and EPA for these voluntarily activities to



*The City of Tampa Water Utility, Cleveland Division of Water, and Southern California Water Company received certificates from EPA for their efforts in the Partnership for Safe Water.*

pursue water quality goals more strict than those required by regulation. Working closely together, the water supply industry and EPA have developed tools for systems to evaluate water filtration operations and identify needed quality improvements. Over 200 utilities that provide water to approximately 85 million persons are members of the Partnership.

## IMPLEMENTATION SUCCESS:

# *Institutionalizing a Strong Science Base*

*SDWA emphasizes the need for solid scientific foundations for EPA's rulemakings.*

*The research being conducted on arsenic and microbial contaminants and disinfectants/disinfection byproducts are examples of efforts to strengthen the scientific basis for decisions.*

*EPA successes in this area:*

### ■ Initiated studies to support development of the microbial and disinfectants/disinfection byproducts (M/DBP) rules

■  
In this first year of implementation, EPA has bolstered the scientific underpinnings for its statutorily required

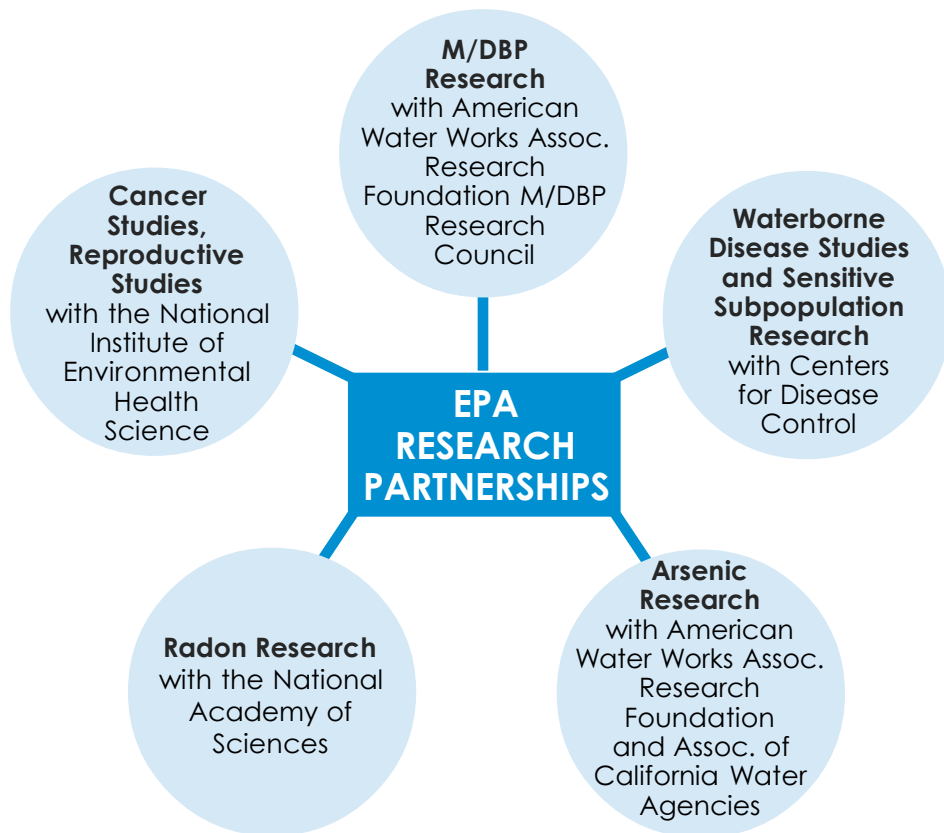
rulemaking. EPA met its February 2, 1997, deadline to develop a comprehensive study plan outlining the research needed to support the development of the M/DBP rules, and has begun the more than 200 studies identified in the plan. The studies will provide information on disinfection byproducts and microbial pathogens in several critical

areas: health effects of contaminants, exposure data, the effectiveness of treatment technologies, and assessments of risk – including studies on the threats to sensitive populations such as children and the elderly. In addition, EPA has begun working with other organizations such as the National Institutes of Health (NIH) and

the American Water Works Association Research Foundation to develop joint research efforts that will support the M/DBP rules. For example, the NIH has agreed to conduct almost \$25 million of research on characterizing the health effects from selected DBPs over the next 5 years. EPA also developed a research tracking system that will ensure strong management of the multi-million dollar M/DBP research effort. Finally, EPA has directed to critical projects the \$10 million specified in the 1996 amendments to strengthen the health effects research program at EPA. As an example, EPA has allocated over \$1 million to begin work, in collaboration with the Centers for Disease Control, on characterizing the national occurrence of water-borne disease from microbial pathogens.

■  
**Initiated studies  
 to support development of  
 the arsenic rule**  
 ■

In the 1996 SDWA amendments Congress recognized the need for additional research to better assess the health risks of exposure to low levels of arsenic. The amendments specified that EPA develop a plan of study to support arsenic rulemaking that would decrease the uncertainty of arsenic-induced health risks. EPA met its statutory deadline of February 2, 1997, by developing a comprehensive plan for instituting these studies. When completed, the arsenic studies, along with existing research, will provide the foundation for setting a new arsenic standard.



## Arsenic Research Partnership

In March 1997, EPA issued a joint research proposal solicitation for additional research to better assess the health risks of exposure to low levels of arsenic. Pursuant to Congress' directive, this was done in cooperation with public water utility associations. The American Water Works Association Research Foundation and the Association of California Water Agencies provided funds and agreed to a common, independent review of proposals. The organizations blended their research grant methods, using scientific experts of each group to develop appropriate arsenic topics for funding. Although each group made independent funding decisions, the cooperation avoids redundancy and maximizes the effectiveness of scarce public and private research dollars. Through these collaborative efforts EPA and the drinking water utilities are funding several high-priority projects worth almost \$3 million.

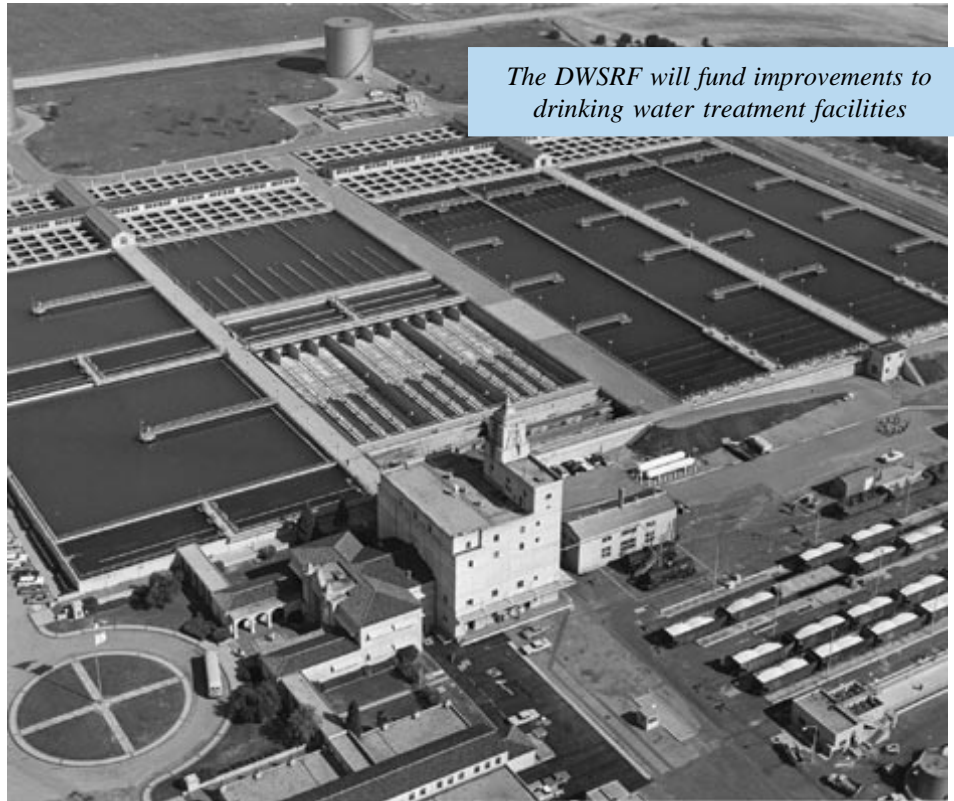
## IMPLEMENTATION SUCCESS:

# *Developing Implementation Tools*

*The new Act gave EPA many short deadlines to produce tools to help states, water suppliers, and the public protect drinking water. We have met all of our statutory deadlines to date, and have laid the groundwork for future successes. EPA's achievements in this area:*

### Released the Drinking Water State Revolving Fund (DWSRF) guidelines

The DWSRF provides states and water suppliers with funding to improve their drinking water infrastructure, and with options to fund source water protection and enhanced water system management. Congress authorized \$9.6 billion through 2003. This funding will be a key to state implementation success. While Congress did not provide a deadline for developing guidelines, EPA recognized that these funds are central to states' and water systems' capabilities to meet the demanding requirements of the amended SDWA, and quickly moved to develop and release interim guidelines in October 1996. This was only two months after passage of the Act. EPA released final DWSRF guidelines February 28, 1997. The first state capitalization grant was awarded to Georgia in March 1997, and the first loan was given to a local water system (Williamsburg, PA) in May 1997. EPA's recent Needs Survey shows that the costs to make drinking water infrastructure improvements to protect public health fall most heavily on customers of small public drinking water systems. These systems' problems result from a lack of economies of scale, remoteness, poor source water quality, and decades of neglect. For this reason, the DWSRF emphasizes assistance to small systems.



*The DWSRF will fund improvements to drinking water treatment facilities*

### Released Drinking Water Infrastructure Needs Survey

EPA's Needs Survey provided local, state, and national policy-makers with comprehensive information on the infrastructure needs of the nation's community drinking water systems. The statute also directed EPA to develop its state allotment formula for DWSRF funds for FY'98 and beyond based on the Needs Survey. After considering public comment and consultation with the states, EPA released its allotment formula March 12, 1997.

### 2/97 Statutory Deadlines Met

Released Needs Survey

Developed  
Arsenic Study Plan

Developed  
M-DBP Study Plan

Published Review of  
State Capacity  
Development Efforts

Initiated Operator  
Certification Partnership

The 1996 amendments required that EPA submit a report to Congress on the Needs Survey. The Administrator submitted this report January 29, meeting the February 1997 statutory deadline.

### Published survey of state capacity development efforts

As required by the 1996 amendments, EPA published by February 2, 1997, a survey of existing state water system capacity development efforts. This survey will provide a baseline for EPA as it drafts program guidelines and information to help states ensure that all new water systems have the technical, financial, and managerial ability to provide safe drinking water to their customers.

### Initiated partnership for water system operator certification

The amendments required EPA by February 1997, to initiate a partnership with states, water suppliers, and the public to develop information for states on recommended water system operator certification standards. This partnership is currently working to develop this information.

### Released state source water assessment and protection program guidance

Source water assessments are the centerpiece of the new SDWA's prevention focus. They give states and communities the tools they need to prevent contamination in the source of the drinking water supply, and thus comprise one of the multiple barriers to drinking water contamination, along with treatment. Source water assessments identify the source(s) of a community's drinking water and the potential threats to which a source is susceptible. The assessments also provide a "good science" basis for regulatory flexibility. EPA released to the states its assessment guidance and its source water petition program guidance by the SDWA deadline of August 6, 1997. The petition program defines how states can assist in the development of local incentive-based partnerships, and is one option among a wide range of approaches the SDWA amendments authorize for funding to protect a community's source water.

### Released alternative monitoring guidance

SDWA gives states and localities flexibility to reduce monitoring costs in areas that good science identifies as being of low vulnerability. States with an approved source water assessment program may adopt alternative monitoring requirements for many contaminants if they follow guidance that ensures that the alternative monitoring will still

protect public health. Because states may want to design their source water assessment programs in part to provide the scientific information base to support alternative monitoring, EPA was required to (and did) release this guidance on August 6, 1997, as well.

### Published list of technologies that small drinking water systems can use to meet the requirements of the Surface Water Treatment Rule

In some cases small systems have difficulty affording the treatment technologies required to comply with national drinking water regulations. Because the Surface Water Treatment Rule is so fundamental to public health protection, the SDWA amendments required that, by August 6, 1997, EPA was to identify a list of high quality, cost-effective treatment technologies that will allow small systems to meet the requirements of this rule. EPA published such a list, and is conducting a pilot program on verification testing of packaged treatment systems with the National Sanitation Foundation to enable states to approve additional technologies.

### Released guidance establishing procedures for state application for ground water protection grants

EPA was required to develop a guidance for ground water protection grants by August 6, 1997. The guidance identifies the key elements of state ground water protection programs and establishes grant application procedures should funds become available in the future. It clearly emphasizes EPA's continuing encouragement to states for the development and implementation of Comprehensive State Ground Water Protection Programs.

## 8/97 Statutory Deadlines Met

Released Source Water Assessment Guidance

Released Source Water Petition Program Guidance

Released Alternative Monitoring Guidelines

Released List of Alternative Technologies for Small Systems

Released Guidance for State Ground Water Protection Grants



# State Implementation Activities

The states are EPA's regulatory partners. 49 states have primacy, or primary responsibility for running the public drinking water protection program. The Act assigns states the challenging job of establishing several important and complex new programs. But it also provides them much flexibility and substantial Federal funding to do so, and a public participation framework to win support for their efforts. Below is a brief sampling of some initial state implementation activities.

In March, Georgia became the first state to receive its capitalization grant for the new Drinking Water State Revolving Fund, and has awarded its first infrastructure development loan. 44 states have established the necessary legislative authorities for their DWSRF.

For its capacity development program, Texas has passed the necessary authorizing legislation, and is working with an Environmental Finance Center to formulate its capacity devel-

opment strategy. Two stakeholder meetings have been held to gather input on the capacity problems of small water systems and on how those problems may be addressed.

In anticipation of the extensive source water assessment work required by SDWA, Massachusetts undertook a preliminary assessment project for surface water suppliers. This included updating Geographic Information System maps that cover 213 surface water sources, and contain surface water supply protection zone delineations, land use information, open space parcels, and some information on land uses regulated by the state that may threaten source waters. Massachusetts made over 200 corrections to these maps through this project, which will make them more useful for assessments. In addition, the state gained valuable information on the most effective ways to display this data for use by local officials in their protection efforts. The state of California has developed a draft

source water assessment guidance, drawing on the initial draft Agency guidance, to advance the assessment process in the state.

The first loan under the DWSRF program was awarded to the Williamsburg (PA) Municipal Authority, a small water supplier serving 855 customers. The system had old and deteriorated distribution lines and was having frequent and severe water outages, but did not have the funds needed to make infrastructure improvements. This threatened public health because deteriorated pipes make disinfectants less effective in controlling microbiological growth. Through the DWSRF program, the system received a 20-year loan at 1% interest to fix the problem. Approximately 62% of Pennsylvania's loans from its first grant will be provided to systems serving communities with fewer than 10,000 people.

## Implementation for the Future

The amendments contain vital linkages among the different parts of the law, together creating a tapestry of interwoven provisions. Activities within SDWA's new prevention programs, and the public involvement to help direct them, are integrated with and essential to the success of the law's new regulatory flexibilities, particularly for small systems, its risk prioritization in setting standards, and its addressing special risks to children and other sensitive groups.

Thus, the first year activities do more than simply meet statutory re-

quirements of individual provisions in the SDWA amendments. They begin to weave together the strong threads of this tapestry, ensuring that the law will function effectively to protect public health in the future, and that all Americans will have drinking water that is clean and safe.

### *A New Role for the Public*

In the 1996 amendments, President Clinton and Congress adopted extensive provisions for consumer

information and involvement that herald a new era of public participation in drinking water protection. These provisions are founded on the principle that accountability to the public and the understanding and support of the public will be vital to address and prevent the growing threats to drinking water quality in the years ahead. EPA has tried to facilitate public involvement both in our processes to develop implementation tools, and in the operation of those tools in states and water systems.

The 1996 amendments provide un-

precedented opportunities for the public to participate in drinking water protection activities. If the public uses them, these opportunities can ensure that the choices made during implementation – particularly by EPA and the states, but also by water suppliers – respond to the public’s needs and concerns. A number of provisions specifically discuss the need for public involvement. These include the consumer confidence reports that will be provided by public water suppliers. In addition, there are requirements for states to form citizen advisory committees to develop their source water assessment program, and for states to involve the public in the development of their capacity development strategy and the Intended Use Plans for the DWSRF. The statute also requires that the public have access to the completed source water assessments, the national contaminant occurrence data base, and early information on state variance decisions (including the right to object). All of this information will give consumers a picture of the condition of their drinking water supply.

With this information consumers can make decisions for themselves and their families. Consumer confidence reports are the centerpiece for public information about their drinking water. Beginning in 1999, water systems will have to prepare and distribute annual reports to their customers. These reports will contain information on the source of the drinking water, information on the quality of that source, information on any detected contaminants in the drinking water, and a plain-language explanation of the health effects of these contaminants. Revisions to the public notification

## Areas for Public Participation and Information in the 1996 SDWA Amendments

- Consumer Confidence Reports
- DWSRF Intended Use Plans
- Source Water Assessments
- State Capacity Development Strategy
- National Occurrence Data Base
- Variations
- State Annual Compliance Reports

rule, which requires water systems to notify consumers when violations occur, are also underway.

### *Preventing Drinking Water Problems*

The 1996 amendments’ most innovative departures from past practice are in the new prevention provisions – in capacity development, to increase public water systems’ capacity to provide safe drinking water, and in source water protection, to prevent contamination of the ground water and the rivers, lakes, and streams from which we draw our drinking water.

Source water assessment and capacity development strategies are core prevention requirements, on which states have substantial discretion in their formulation and implementation. To help them achieve success, states may “set aside” substantial amounts, up to 10% or more, from their annual Drinking Water State Revolving Fund (DWSRF) allocation to pay for each of these activities. That is why EPA was so concerned to lay the foundation through the timely guidances released within the first year for these several tasks, and will provide additional guid-

ance and continuing support to ensure states have the analyses and resources they need to complete them.

Prevention activities are not only vital in themselves, they are essential to the implementation success of the new regulatory flexibilities in the amendments. For instance, states can provide monitoring flexibility to water systems, but the flexibility must be based on (among other things) data from the source water assessments of each system’s susceptibility to contamination.

Similarly, the capacity development strategy will be necessary for most states to generate the information and analysis needed to equip them to decide on restructuring and water supply alternatives, which are prerequisites to offering variance or exemption flexibility to small systems. And systems themselves can more readily achieve capacity if source water protection can help provide cleaner source water that requires little or no costly treatment, and less frequent monitoring. As in the source water guidance, EPA will continue to make an extra effort to describe and analyze these linkages in order to maximize public health protection under SDWA, make the most efficient use of taxpayers’ investments in other, related environmental programs, and assist states to identify the program coordination options that work best for them.

### *Improved and Cost-Effective Drinking Water Contaminant Standard Setting*

The new risk-based contaminant selection process and increased research will lead to more effective regulations

focused on the contaminants that pose the greatest threat to human health. EPA will select contaminants to regulate based on answers to questions such as: Where does a contaminant occur? In what concentration, and from what types of sources? What is the potential risk reduction? Who is likely to be exposed to this contaminant in their drinking water? What are the potential health effects of exposure to the contaminant, and who is most vulnerable?

The Act gives us the tools to develop these answers. For example, the



*Microbials such as Cryptosporidium are a focus of EPA's research effort*

National Contaminant Occurrence Database, required to be operational by August 1999, will store data on contaminants occurring in finished, raw, and source waters. Research is being conducted, in conjunction with the National Academy of Science, the Centers for Disease Control, and other organizations, as well as our partners in the drinking water industry, to determine health effects of various contaminants, and ascertain who is most at risk. The 1996 amendments authorize expanded consideration of costs in regulatory decision-making. The Agency is collecting the data and developing

new tools, models, and protocols to appropriately exercise this new flexibility. Peer review ensures that our science is strong and our data is sound. Providing the tools to make better risk-management decisions in contaminant selection and control is one of SDWA's primary means to achieving the Act's fundamental goal – protecting our nation's public health by assuring clean, safe drinking water.

### *Greater Protection for Customers of Small Water Systems*

Implementation of the 1996 SDWA Amendments will lead to improved health protection for Americans who receive their drinking water from small water systems. Small water systems are sometimes unable to meet safe drinking water standards for a variety of reasons, including limited technical, financial, and managerial ability; a lack of well-trained system operators; or a lack of funding. The 1996 amendments address these issues by giving states a menu of provisions and resources to apply in a comprehensive small systems program. The provisions include the DWSRF, a capacity development program, an operator certification program, alternative small systems technology, source water assessment and protection, and variances and exemptions.

The state capacity development strategy can be the mechanism for a state to equip, coordinate, and focus all of its small systems efforts. The strategy allows states to target use of the range of resources and authorities provided in the Act. It can also be the catalyst for broad stakeholder collaboration to address small systems issues. State capacity development strategies

will assist systems in acquiring and maintaining technical, financial, and managerial capacity. States will also ensure that proposed new systems demonstrate adequate capacity before they begin to provide drinking water to customers.

Many small systems do not have the resources to repair or upgrade their water distribution lines, treatment facilities, and other infrastructure. A state can use the financial resources of the DWSRF to assist small systems. 15% of a state's DWSRF grant must be used to provide infrastructure loans to small systems. 2% of the state's grant may be used to provide technical assistance to small systems. For small systems that are disadvantaged, up to 30% of a state's DWSRF may be used for increased loan subsidies.

Small systems that cannot afford to comply with drinking water requirements will have options. Exemptions may provide systems with extra time to come into compliance. Affordability based variances will be available in certain cases to allow systems to use less costly technology and other means to protect public health. SDWA allows states to use these alternatives only after fully evaluating all possible compliance options for a system, including a new source and restructuring. Conditions for these alternatives will be based in part on the source water assessments that will be completed by the state for its public water systems.

### *Improved Protection for Our Children*

New tools found in the 1996 SDWA Amendments will enable us to better protect our children from contaminants in the drinking water. Children's health is a high priority of

the Administration. On April 21, 1997, President Clinton issued an executive order directing agencies to reduce environmental health and safety risks to children. Also, a priority for the United States at the recent environmental summit held in conjunction with the G-8 economic summit was to ensure microbiologically safe drinking water for our children.

The executive order complements the 1996 SDWA amendments, and both will aid EPA to protect children. Under the amendments, EPA identifies subpopulations at greater risk than the general public of experiencing adverse health effects from exposure to drinking water contaminants. These sensitive subpopulations include infants, children, pregnant women, the elderly, and immunocompromised persons. Drinking water standard setting and contaminant selection processes consider sensitive subpopulations, in-

cluding children, in two ways. First, through its ongoing health risk assessment, EPA sets Maximum Contaminant Levels (MCLs) for drinking water with the goal of protecting those most sensitive to contaminant exposure. This assures that children's health will be protected by the regulation.

Second, the Act calls for better regulatory science, including an analysis of the health effects to sensitive subpopulations. EPA is conducting several studies to determine the health effects of drinking water contaminants on children. These include: 1) compiling data that identifies subpopulations, including children, at greater risk of adverse health effects from contaminant exposure, especially *Cryptosporidium*, *Giardia* and enteric viruses, 2) analyzing Centers for Disease Control data to determine the effects of age and sex on morbidity and mortality from waterborne diseases,

and 3) estimating consumption of tap and bottled water in terms of population demographics, including age, gender, race, socioeconomic status, and geographical region. This work will allow EPA to better document the susceptibility of children to microbial diseases and respond appropriately.

### *For More Information*

For more information on EPA's SDWA implementation activities, please call EPA's Safe Drinking Water Hotline at 1-800-426-4791. EPA's Office of Ground Water and Drinking Water also maintains an Internet home page, which has information on public meetings and SDWA implementation events, and text of key documents. The Internet address is [www.epa.gov/OGWDW](http://www.epa.gov/OGWDW)



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