

United States
Environmental Protection
Agency

EPA 816-R-00-012
April 2000

Office of Water (4606)



Report of the National Drinking Water Advisory Council Small Systems Implementation Working Group

**Report adopted May 2000 by the National
Drinking Water Advisory Council after
amendments were incorporated.**

Report of the National Drinking Water Advisory Council Small Systems Implementation Working Group

This document was prepared to support the deliberations of the National Drinking Water Advisory Council's Small Systems Implementation Working Group
(Members listed on page iv)

Prepared for:

Peter Shanaghan, United States Environmental Protection Agency
Designated Federal Official, Small Systems Implementation Working Group

Prepared by:

The Cadmus Group, Inc.
135 Beaver Street
Waltham, MA 02452

Beecher Policy Research Inc.
Indianapolis, IN 46236

Executive Summary

The mission of National Drinking Water Advisory Council's (NDWAC) Small Systems Implementation Working Group is to advise the full NDWAC on current and emerging challenges, as well as the strategic options that the Environmental Protection Agency (EPA) and the States should consider to assist small systems in meeting the public health protection objectives of the Safe Drinking Water Act (SDWA).

This report conveys the Working Group's recommendations, which are based on a series of analyses and deliberations organized into seven issue areas including water-system capacity development, public awareness and education, water-system governance, water-system organization, water service costs and affordability, unsustainable water systems, and water-policy institutions.

The Working Group presents consensus-based findings, conclusions, and recommendations for each of the seven issue areas. The central findings were as follows:

- # **Water System Capacity Development.** Capacity development for small water systems is essential and capacity can be achieved in a variety of ways.
- # **Public Awareness and Education.** Public awareness and education are essential tools of water-system capacity development.
- # **Water-System Governance.** Training at all levels of water-system management, including governing and oversight bodies, is essential for capacity development.
- # **Water-System Organization.** Organizational structure affects the ability of a water system to provide consistently safe and affordable water.
- # **Water Service Costs and Affordability.** The cost of providing service places significant pressure on small water systems because of lacking economies of scale and resources.
- # **Unsustainable Water Systems.** Under certain circumstances, water systems may be incapable of achieving capacity and considered by policymakers to be "unsustainable."
- # **Water-Policy Institutions.** Capacity development involves both internal improvement processes and external relationships with policy institutions.

Each finding is associated with a set of specific conclusions and recommendations. A total of 58 specific recommendations are provided for EPA and the States. The recommendations to the States contemplate the exercise of state authority, including but not limited to the authority of state drinking water primacy agencies.

Each specific recommendation touches upon *one or more* of six core principles that constitute the Working Group's hierarchy of core recommendations:

- # **Information.** EPA and the States can develop information resources, identify effective capacity development tools, and facilitate information sharing among agencies to promote the continuous improvement of water systems.
- # **Coordination.** EPA and the States can encourage and facilitate coordination among the policies and programs of the various federal, regional, and state agencies and among water systems.
- # **Outreach.** EPA and the States can establish and strengthen programs for active outreach to water systems, key stakeholders, governing bodies, and local agencies.
- # **Incentives.** EPA and the States can provide funding, and administrative and other strategic incentives, to complement market forces and promote beneficial changes in practices by governmental agencies and water systems.
- # **Funding.** EPA and the States can improve access to funding, target funding to specific goals, and consider the creation of a dedicated fund for priority needs and goals.
- # **Policy.** EPA and the States can develop and implement public policies, administrative procedures, and institutional arrangements that support beneficial changes in practices and continuous improvement.

Accountability is an essential aspect of each of the six core principles. The new flexibility provided by the 1996 Safe Drinking Water Act Amendments brings with it an increased focus on accountability. EPA and the States will need to carefully think through how to address accountability under each of the six core principles.

The Working Group recognizes that consideration of the recommendations by EPA and the States requires commitment and resources, particularly for the more complex, challenging, and potentially controversial measures. Some strategic options may not be feasible within existing institutional structures. However, the consensus of the Working Group is that implementation of the recommendations by EPA and the States can enhance achievement of the public health protection goals of the SDWA with respect to small water systems.

National Drinking Water Advisory Council Small Systems Implementation Working Group Members

Patrick Banegas	General Manager, Anthony Water and Sanitation District, New Mexico
Jerry C. Biberstine	Colorado Department of Public Health & Environment. Association of State Drinking Water Administrators (ASDWA)
Mark Bugher	West Virginia American Water Co., Huntington Division. National Association of Water Companies (NAWC)
Michael A. Dimitriou	Aquasource North America
Jim Dunlap	Owner, John Deere Dealership. National Rural Water Association (NWRRA)
Paul Felz	US EPA Region VIII, Denver, Colorado
Bruce Florquist	Public Works Director, City of Rawlins. American Public Works Association
Andrea Griese	Drinking Water Program, South Dakota Department of Environment and Natural Resources. ASDWA
J.W. Hellums, Jr.	Operations/Management Specialist, Community Resource Group
Christine Hoover	Office of the Consumer Advocate. National Association of State Utility Consumer Advocates (NASUCA)
Leon Jacobs, Jr.	Commissioner, Florida Public Service Commission
Kirk Leifheit	Ohio EPA, Division of Drinking & Ground Waters
Charles Maddox	Manager, Public Drinking Water Section, Texas Natural Resource Conservation Commission
Gary Morgan	Engineer and Environmental Staff Director USDA/RUS
Yvette DiPeiza	Massachusetts Dept. of Environmental Protection, Drinking Water Program
John Scheltens	City Engineer, City of Hot Springs, South Dakota. NDWAC
Peter E. Shanaghan	US EPA Headquarters. Working Group's Designated Federal Official
David R. Siburg	Manager, Public Utilities District (PUD) #1 of Kitsap County, Washington. American Water Works Association (AWWA)
Blanca Surgeon	Rural Community Assistance Corp., New Mexico. RCAP
Curtis L. Truss, Jr.	Assistant Director, Springfield, Ohio. AWWA
Michael Walsh	President, Shorelands Water. NAWC
Bob Wendelgass	Pennsylvania State Director, Clean Water Action

Contents

Executive Summary	ii
Statement of Purpose	1
Small Water Systems: Challenges, Opportunities, and Issues	3
Strategic Options	5
Findings, Conclusions and Recommendations	9
Table 1 Summary of Findings, Conclusions, and Recommendations by the Small Systems Implementation Working Group	26
Table 2: Recommendations and Core Principles	34
Appendix A: Detailed Inventory of Options	39

Statement of Purpose

Following the enactment of the 1996 SDWA Amendments, and to further its goals, the NDWAC has convened working groups to develop recommendations that the NDWAC can make to the EPA. In 1997, the NDWAC established a Small Systems Working Group to provide recommendations regarding the implementation of the SDWA capacity development provisions. In late 1998, the NDWAC established a follow-up Small Systems Implementation Working Group to develop additional analyses and recommendations related to small water systems.

The mission of this Working Group is to advise the full NDWAC on:

- # The specific challenges currently facing various types of small Public Water Systems (PWSs) (those systems serving fewer than 10,000 persons but with special emphasis on economically and socially disadvantaged systems serving fewer than 500 persons);
- # The challenges likely to face these systems over the next five to ten years; and
- # Strategic options that EPA and the States should consider to assist small systems in meeting the public health protection objectives of the SDWA.

The current Small Systems Implementation Working Group has contributed to the publication of two EPA documents: *National Characteristics of Drinking Water Systems Serving Populations Under 10,000* (EPA 816-R-99-010) and *Small System Regulatory Requirements Under the Safe Drinking Water Act as Amended 1996* (EPA 616-R-99-011).

The development of this document follows a full year of dialog and deliberation of the Working Group. It is the final report of the NDWAC Small Systems Implementation Working Group. The report consists of three parts. First, the report reviews the unique challenges, opportunities, and issues facing small water systems. Second, the report summarizes the analysis of strategic options that EPA and the States can implement to address the needs of small water systems and further the achievement of SDWA goals. Appendix A to this report provides a detailed inventory of the strategic options considered. Finally, the report provides the Working Group's findings, conclusions, and recommendations. The culmination of the specific recommendations is a set of six core principals that constitute the Working Group's core recommendations to the NDWAC.

The report reflects the collective input of the Working Group members and a general consensus about fundamental issues.¹ The Working Group recognizes that a greater level of consensus exists about the nature of the small system challenge and the range of strategic options for addressing it than about

¹ In accordance with NDWAC rules, working group members can file minority opinions.

specific recommendations for action. The policy recommendations are intended to shape and provide input to the policy debate, rather than to portend any particular strategy or approach.

Small Water Systems: Challenges, Opportunities, and Issues

No matter what their size, water systems provide a vital service to customers. Small water systems face the same challenges that all water systems face in providing the public with safe, reliable, and affordable water service. Additionally, small water systems face several unique challenges, opportunities, and issues.

Challenges

In the course of its deliberations, the Working Group identified the following challenges to small water systems:

- # Aging water delivery infrastructure.
- # Current and future compliance with treatment standards.
- # Source water quantity, quality, and protection.
- # Development of technical, managerial, and financial capacity.
- # Availability and affordability of financing.
- # Water affordability and related pricing issues.
- # Long-term and least cost planning.
- # Employee training and certification.
- # Local policies and parochial cultures.
- # Competing or differing agendas and priorities among agencies.
- # Changing demographics and service population growth or decline.
- # Availability of low cost and low maintenance technologies.
- # Isolation or lack of geographic accessibility.
- # Language or cultural barriers to effective communications.
- # Managing information and setting priorities.
- # Barriers to identifying and implementing effective solutions.

Opportunities

Despite the many challenges faced by small water systems, many opportunities also are present. Even very challenged small systems can succeed given the opportunities and resources to effect positive changes.

The Working Group identified the following opportunities for small water systems:

- # Increasing attention to small water systems.

- # Capacity development strategies for existing systems.
- # Drinking Water State Revolving Funds (DWSRF) and other funding programs.
- # Rising consumer awareness and expectations.
- # Training and technical assistance for water-system personnel.
- # Restructuring, including reorganization, consolidation, regionalization, cooperation, and ownership transfers.
- # Expanded regulatory flexibility to improve compliance.

Issues

The Working Group considered a wide range of issues. No issue was excluded from consideration and a high degree of consensus emerged about the most pressing concerns. The discussions coalesced around seven issue areas that were used to develop and organize the recommendations included in this report:

1. Water-system capacity development.
2. Public awareness and education.
3. Water-system governance.
4. Water-system organization.
5. Water-service costs and affordability.
6. Unsustainable water systems.
7. Water-policy institutions.

The following section provides an overview of the process for identifying strategic options within each of these areas.

Strategic Options

The principal charge of the Working Group was to develop strategic options for EPA and the States to consider in assisting small systems in meeting the public health protection objectives of the SDWA. This section describes the framework for the analysis and the general options considered. A detailed inventory of all of the options considered by the Working Group is provided in Appendix A.

Framework for Analysis

Deliberations of the Working Group were organized around seven issue areas. The areas and the topics within them evolved over the course of the analysis to reflect the input of the members. Each issue area is broad and interdisciplinary in scope and interrelated to the other areas, but distinct in terms of the specific policy questions that guided the development of the recommendations:

1. Water-System Capacity Development

Given available resources, how can the benefits of capacity development be maximized? What can be done to help States develop effective strategies and improve continuously over time?

Capacity development of small water systems is a fundamental SDWA goal. SDWA §1420(c) requires each State, by August 6, 2000, to begin developing and implementing a strategy to assist PWSs in acquiring and maintaining the capacity necessary to comply with the SDWA. Capacity is defined in technical, financial, and managerial terms. EPA and the States can implement a number of specific measures as part of their capacity development strategies. A commitment to continuous improvement and refinement of state strategies will help the States reap the greatest benefit from the SDWA's capacity development provisions.

2. Public Awareness and Education

How can customer awareness and education support the goals of capacity development? How can policymakers help water systems convey to customers the true cost and value of safe drinking water?

The service population of a water system can help or hinder capacity development. In the past, water suppliers believed that their performance and the quality of finished water spoke for themselves. These beliefs led to little communication between the industry and customers, resulting in the industry's reputation as a "silent service." In recent years, however, it has become apparent that public education is important to the water industry's success in providing

safe drinking water. Water utilities play a major role in developing public awareness, however, EPA and the States can conduct certain activities to contribute to these utility efforts.

3. Water-System Governance

What can be done to ensure that water-system governing bodies receive appropriate training and education to further the goals of capacity development?

Many water systems are accountable to external oversight or governing bodies that influence management and resources.

A water system's governing body is the legal entity responsible for overseeing a water system's management and operation or its duly authorized representative. Well trained or educated governing bodies will lead to improved system capacity because those responsible for making policy decisions will understand the present and future impacts of those decisions. This will lead to increased access to resources, assistance, and expertise, and ultimately will result in improved drinking water safety and public health benefits.

4 Water-System Organization

How can changes to the organizational structure of water systems, including changes in ownership or management, enhance public health protection, service provision, and affordability?

Organizational choices are influenced by internal forces (such as the preferences of managers) and external forces (such as markets and policymaking institutions). Organizational change includes restructuring through consolidation, regionalization, and privatization. Restructuring may require special incentives or the removal of institutional or political barriers.

5. Water-Service Costs and Affordability

What methods of assistance can be used to address the needs of low-income households that cannot afford to pay for water service? How can safe and affordable drinking water be provided to all people served by public water systems?

Infrastructure repair and replacement, compliance with regulatory standards, and source-water development and protection will place upward pressure on water costs and rates. As a consequence, more households may be unable to pay for water service. Cost-sharing mechanisms can ease the burden of water-service costs on low-income households, including options for direct assistance to households and to systems serving those households. Recommendations provided at the utility, state, and national level aim to further the national goal

of providing safe and affordable water service to all people served by public water systems. Programs to make water service more affordable, provide assistance to households, or ensure universal service can be funded internally by the utility (via rates or other sources of utility revenues) or externally via voluntary contributions or tax revenues. Tax revenues can be generated at the local, substate (county), state, or federal level and assessed through general purpose or targeted tax instruments.

6. Unsustainable Water Systems

What long-term policy options are available to regulators for systems that pose a potential risk to public health and cannot achieve self sufficiency, even after providing significant financial and technical assistance and maximum regulatory flexibility?

Capacity and sustainability are intrinsically related. Water systems that cannot achieve capacity might be considered unsustainable, although this determination is highly subjective. Generally, an unsustainable water system lacks the ability to achieve or maintain adequate technical, financial, and managerial capacity even after the provision of significant financial and technical assistance. Service abandonment is a possibility. The unsustainable system has exhausted all options for ensuring capacity and sustainability, including alternative central treatment methods, point-of-use or point-of-entry treatment, alternative sources of supply (including wholesale water purchases), and restructuring or consolidating with another water system (including satellite management, satellite ownership, and interconnection). Exhaustion of remedies is a state-specific determination.

7. Water-Policy Institutions

What changes to their respective institutional structures and processes should policymakers make to help water systems achieve capacity and provide maximum public health protection at the lowest possible cost?

The institutions affecting the water sector include decision-making bodies (executive, legislative, and judicial), public policies, and administrative practices at all levels of government. Institutional structures and processes affect the ability of EPA and States to help water systems develop capacity, remain sustainable, and improve service. Institutional structures and processes also affect how a system will be able to provide service. Water systems feel pressure from drinking water primacy agencies, rate setting bodies, and other resource agencies (for example, permitting and financing authorities). The lack of cohesion among regulatory bodies can make capacity development difficult. In addition, regulations can be complex both in substance and in form, which can compound the problem. Improved coordination, consolidation, simplification, and flexibility of regulatory authority will facilitate capacity development.

Development of Findings

For each of the seven issue areas, the Working Group developed specific findings as well as a series of related conclusions. Working Group members relied on EPA reports, issue papers, and presentations, as well as their own knowledge and experiences, to develop the findings. The findings and conclusions are a direct result of Working Group deliberations and reflect a general consensus of the challenges facing small water systems and the federal and state agencies that regulate them.

Identification of Strategic Options

Within each of the issue areas, the Working Group considered a range of strategic options, beginning with the “status quo” or no action alternative. Options are considered strategic if they help achieve stated policy goals. In no instance, however, does the Working Group simply choose the no action option or make no recommendation to the NDWAC. In every case, the consensus opinion was that feasible options are available to address the concerns raised in each issue area.

For each issue area, a number of recommendations were developed for the EPA and for the States. This system of organizing the options recognizes that the federal and state roles in drinking water are unique in terms of authority and responsibility. In several areas, however, parallel or complimentary options are found in the recommendations for the EPA and the States. Many recommended measures, such as those involving public awareness or cooperation, are potentially relevant for more than one issue area. Although governmental roles are emphasized, several of the recommended options also recognize that government policies, such as the strategic use of funding and other incentives, can compliment market forces.

The specific recommendations range from incremental changes to existing practices to emerging innovative approaches. Some of the recommendations can be implemented within the boundaries of existing authority, although their adoption may require the acquiescence of policymakers and the dedication of resources for implementation. Depending on existing authority, some recommendations may require statutory or other institutional policy reforms. Recognizing that some options are potentially more controversial, a few of the recommendations are less prescriptive and more suggestive in terms of calling upon EPA or the States to give consideration to the ideas.

The complete inventory of strategic options considered appears in Appendix A to this report. This preliminary listing was used to focus the deliberations and refine the recommendations.

Findings, Conclusions and Recommendations

The iterative deliberations of the Working Group resulted in a series of findings, conclusions, and recommendations for presentation to the full NDWAC. A total of 58 specific recommendations are provided for EPA and the States. The recommendations to the States contemplate the exercise of state authority, including but not limited to the authority of state drinking water primacy agencies.

The recommendations are provided across the seven issue areas: water-system capacity development; public awareness and education; water-system governance; water-service costs and affordability; water-System organization; unsustainable water systems; and water-policy institutions.

Core Principles

Each specific recommendation touches upon *one or more* of six core principles that constitute the Working Group's core recommendations:

- # **Information.** EPA and the States can develop information resources, identify effective capacity development tools, and facilitate information sharing among agencies to promote the continuous improvement of water systems.
- # **Coordination.** EPA and the States can encourage and facilitate coordination among the policies and programs of the various federal, regional, and state agencies and among water systems.
- # **Outreach.** EPA and the States can establish and strengthen programs for active outreach to water systems, key stakeholders, governing bodies, and local agencies.
- # **Incentives.** EPA and the States can provide funding, and administrative and other strategic incentives, to complement market forces and promote beneficial changes in practices by governmental agencies and water systems.
- # **Funding.** EPA and the States can improve access to funding, target funding to specific goals, and consider the creation of a dedicated fund for priority needs and goals.
- # **Policy.** EPA and the States can develop and implement public policies, administrative procedures, and institutional arrangements that support beneficial changes in practices and continuous improvement.

Accountability is an essential aspect of each of the six core principles. The new flexibility provided by the 1996 Safe Drinking Water Act Amendments brings with it an increased focus on accountability.

EPA and the States will need to carefully think through how to address accountability under each of the six core principles.

The ordering of the individual recommendations is meaningful. The Working Group recognizes that all of the recommendations require a commitment and resources. However, some of the suggested measures are more complex, challenging, and controversial than are others. At one end of the spectrum, the recommendations involving information and coordination generally constitute very basic measures that EPA and the States might be able to implement within the parameters of existing institutional frameworks. The recommendations involving outreach and incentives are more active and strategic. The funding and policy recommendations clearly are more challenging and may require more fundamental institutional changes over time.

Specific Findings, Conclusions, and Recommendations

This section provides the specific recommendations of the Working Group, organized according to the seven issue areas. Two summary tables are provided at the end of this section. Table 1 includes all of the findings, conclusions, and recommendations for each issue area. Table 2 identifies the core principles that generally correspond to specific recommendations.

1.0 WATER-SYSTEM CAPACITY DEVELOPMENT

Finding

Capacity development for small water systems is essential and capacity can be achieved in a variety of ways. No single or generic approach to developing system capacity is necessary or desirable. The exploration of alternative approaches will help target solutions to types of water systems, as well as identify methods that are most effective in achieving capacity development goals.

Conclusions

- 1A *Many small water systems lack the technical, managerial, and/or financial capacity to comply with standards and provide quality service.* A number of different factors can contribute to capacity problems. Often, deficiencies in one area of capacity are related to deficiencies in other areas.

- 1B *Capacity development can help water systems make the transition to a culture of continuous improvement.* Recognizing the value of continuous improvement is an appropriate goal for all water systems. Capacity development is best understood as a

process for continuous improvement over time and the goals of capacity development can be achieved in increments or phases.

- 1C *Water systems with greater capacity further the goals of public-health protection and require less regulatory oversight from resource constrained agencies.* Compliance with regulatory standards for ensuring the health and safety of the public is a central goal of capacity development. Improved compliance will lessen the need for costly and time-consuming enforcement actions and allow regulatory agencies to devote resources to other areas, including ongoing capacity development.
- 1D *Information resources, interagency coordination, and a broad-based stakeholder process can facilitate capacity development program success.* Effective capacity development is a function of effective program design. Attention to resource, coordination, and stakeholder participation issues can help build more effective programs, lower administrative costs, and avoid conflicts in the course of implementation.
- 1E *The DWSRF can be used more effectively as a strategic instrument of capacity development.* The goals of the DWSRF extend beyond simple fiscal assistance. The statutory and administrative authority for the DWSRF clearly supports the dedication of funds for capacity development. In practice, however, funding may not be adequately responsive or targeted to the needs of small water systems. The strategic use of DWSRF and other funding sources would further capacity development goals.

Recommendations to EPA

- 1.1 *EPA should continue to provide capacity development information and technical assistance to States.* While most of the responsibility for capacity development rests with the States, EPA can continue to provide a supporting role in terms of information and assistance through a variety of means.
- 1.2 *EPA should facilitate information sharing across EPA Regional Offices and among States through various media, including meetings, conferencing, teleconferencing, electronic publications, and Internet resources.* EPA can serve as a repository for information about capacity development. Methods for information sharing will help lower administrative costs, improve coordination, and foster collaboration.
- 1.3 *EPA should increase direct personal interaction with local decision makers and field-based technical-assistance providers.* EPA can augment state efforts by increasing its local presence through training and assistance. EPA's interaction with

local decisionmakers can enhance understanding of and support for capacity development goals at the local level.

Recommendations to States

- 1.4 *States should use all available resources, authorities, and outreach methods to develop the technical, managerial, and financial capacity of systems.* States implement a variety of administrative and assistance programs that affect water systems. Attention to the various state programs and their role of capacity development would be useful.
- 1.5 *States should coordinate institutional connections among state agencies that regulate water quality, quantity, rates, and funding and consider developing an integrated drinking water policy.* Coordination among state agencies can help States optimize use of expertise, avoid duplication of effort, and enhance program effectiveness. An integrated drinking water policy could provide a framework for further coordination.
- 1.6 *States should invite broad-based stakeholder involvement in program development.* Involvement of stakeholders will promote interest in and commitment to programs. Some stakeholders also can play valuable implementation roles in terms of technical and other forms of assistance.
- 1.7 *States should provide information on how water systems can optimize the use of all available assistance and resources, including DWSRF set-aside funds.* Many water systems may be eligible for more than one assistance program or funding source. Combining various types of assistance could be particularly beneficial to disadvantaged water systems and systems that are striving to achieve capacity.

2.0 PUBLIC AWARENESS AND EDUCATION

Finding

Public awareness and education are essential tools of water-system capacity development. A well-informed public can support a water system and its goals. Water systems can benefit by engaging the public through various outreach and educational efforts. Public awareness and education programs can be supported and enhanced through resource development and technical assistance.

Conclusions

- 2A *An aware and informed public plays an important role in water-system capacity development.* Water systems should actively inform the public and other stakeholders about drinking water issues and involve them in decision making processes.
- 2B *Building public awareness can be accomplished through collaboration among water systems, State and Federal regulatory agencies, industry associations, and technical-assistance providers.* Water systems and governmental agencies should send a clear and consistent message to the public. Coordination can help avoid duplication or contradiction, and reinforce the message.
- 2C *Strategies to improve water-system capacity to inform and engage customers are needed.* Water systems should recognize that members of the public are principal water system stakeholders. Various strategies can be developed to help water systems communicate with customers and involve them in capacity development efforts.

Recommendations to EPA

- 2.1 *EPA should continue public awareness activities, including the development of timely generic informational products, such as public-service announcements and brochures.* By providing information resources, EPA can lower the cost of implementing an effective public-awareness strategy and allow water systems to focus attention on system-specific issues. Materials should be timely and generic, and easily adapted to system needs.
- 2.2 *EPA should engage in broader partnerships with various stakeholder groups, including the States, the water industry, and the environmental community, to disseminate public-service information and address specific subject areas.* A broad-based approach will ensure that stakeholders have an opportunity to shape the process and provide input to the message. Involvement of various stakeholders also will help water systems identify multiple outlets for disseminating information to the public.
- 2.3 *EPA should encourage the National Drinking Water Clearinghouse (currently funded by the Rural Utilities Service of U.S. Department of Agriculture) to develop a bank of resource materials for building public awareness, including educational programs for schools.* A central repository for information will benefit systems by expanding access to low-cost materials. School education plays a special role in public outreach. Information can be developed using various media and programs can be targeted to various age groups.

Recommendations to States

- 2.4 *States should use available resources and partnerships to develop generic public outreach materials that water systems can customize for their own use.* States can build on federal or other clearinghouse resources or develop additional resources to assist systems in public outreach.
- 2.5 *States should include a public awareness component in capacity development efforts and coordinate technical assistance in this area.* The goal of building public awareness can be explicitly addressed in a comprehensive capacity- development strategy. Technical-assistance providers can help train system personnel in public outreach and provide a conduit for resource material.
- 2.6 *States should coordinate the public-awareness activities of various agencies.* Ongoing coordination will help States send a consistent message, avoid duplication, and optimize the use of available resources for furthering public-awareness goals. One agency may be willing and able to play a leading role in this area and facilitate activities in other agencies.
- 2.7 *States should encourage partnerships among utilities for the purpose of promoting public awareness.* A well-educated public is in the common interest of all water systems. Individual systems can lower the cost of building public awareness by working together to develop and implement a program. Agreements can be developed to share information, strategies, and even personnel, as well as to co-sponsor public-service messages.
- 2.8 *State should consider providing grants to systems for the purpose of public outreach.* For some water systems, resource constraints present a barrier to building an effective public-outreach program.. Funding might be directed to systems, as well as to community organizations, to assist in the development of an educational strategy.
- 2.9 *States should consider developing a statewide message and conducting direct public-education activities.* Public-service announcements and other vehicles can be used effectively to raise awareness and provide information. A statewide message can be coordinated with system-level public-outreach efforts.

3.0 WATER-SYSTEM GOVERNANCE

Finding

Training at all levels of water-system management, including governing and oversight bodies, is essential for capacity development. A water system's governing board usually controls its financial resources, including the ability to raise rates or incur debt, as well as major capital and operating expenditures. Board members can thwart capacity development or play an active role in its achievement. Training can help build board-member awareness of the goals of capacity development and the tools available for building capacity.

Conclusions

- 3A *All levels of water-system management can benefit from training and educational opportunities.* Training sometimes is focused exclusively on system operators or managers. Training of governing boards and oversight bodies, however, is equally important for many water systems.
- 3B *The use of state incentives or requirements for participation in training programs for governing-board members is appropriate.* Some States actively encourage board-member training by providing specific requirements or incentives. These programs can help ensure that governing bodies are responsive to water-system needs over time.

Recommendations to EPA

- 3.1 *EPA should conduct an assessment of training needs for water-system governing bodies.* A needs assessment could be used to develop a general training strategy, as well as identify needs for targeted training. The assessment also could facilitate the development of suitable training materials and programs.
- 3.2 *EPA should develop case studies, models, tools, and other resources for training purposes.* A repository of training materials would lower the implementation costs for training programs, as well as promote proven approaches.
- 3.3 *EPA should encourage States to develop and implement board-member training policies and programs.* A commitment to board-member training is appropriate and less complex than a mandatory approach.
- 3.4 *EPA should consider providing incentives for state training programs for board members, including DWSRF allocations and flexibility in the use of funds for*

operator certification. Incentives could encourage States to focus attention on their training efforts and accelerate implementation. Incentives also could help offset the cost of developing training materials and programs.

Recommendations to States

- 3.5 *States should establish programs for board-member training on a reasonable and flexible timetable.* Training programs should be designed in accordance with state-specific needs and priorities. Flexibility in the timetable may be necessary in order to develop quality programs that address state goals.
- 3.6 *States should identify training needs and priorities based on chronic compliance, financial, or other problems.* Training should focus on the governing bodies for the systems most in need of capacity development. Various indicators can be used to prioritize systems and target training efforts.
- 3.7 *States should coordinate and build upon existing training efforts to avoid duplication.* A number of training opportunities are available in many States. Coordination among existing programs can help States lower costs, reach more board members, and provide consistent information.
- 3.8 *States should use credible trainers and educators in their board-training programs.* Members of governing and oversight boards are more likely to respond to trainers viewed as knowledgeable and credible. Credible trainers will bring appropriate education and experience, as well as a positive presence, to the training process.
- 3.9 *States should consider providing financial and other incentives for participation in board-member training and education.* Performance and compliance rates can be improved through training and educational opportunities. Financial and other incentives can get the attention of board members, add credence to the state's commitment to training, and increase participation rates in training programs.

4.0 WATER-SYSTEM ORGANIZATION

Finding

Organizational structures will affect the ability of a water system to provide consistently safe and affordable water. A wide range of organizational structures, including both ownership and management alternatives, is available to water systems. Organizational improvement and change can play an important role in water-systems capacity development.

Conclusions

- 4A *Water system restructuring, including changes in ownership or management, can help some water systems achieve public-health and water-affordability goals.* The existing organizational structure of a water system may pose a barrier to capacity development. More effective organizational structures, including public and private options, are available to many water systems.
- 4B *Water-system organizational choices are influenced by institutional incentives, as well as by market forces.* Market forces shape organizational structures, including the options for system ownership and management. However, institutional incentives also affect organizational choice. Regulatory and other public policies and incentives can make some options more attractive or feasible.
- 4C *Water systems should be empowered to make use of internal and external resources for achieving capacity.* Water-system owners and operators should understand that organizational improvement can be achieved through internal means, external means, or both. For some systems, financial and other resources for building capacity can be generated internally. Other systems need external resources, including financial or managerial assistance.
- 4D *Local solutions that achieve capacity can help water systems retain local control.* For some communities, local control over the water system is a high priority. Some organizational structures and methods of capacity development can provide local solutions.

Recommendations to EPA

- 4.1 *EPA should continue to provide information and policy research related to changing market conditions affecting the water industry and organizational alternatives for water systems, including regionalization, consolidation, and privatization.* Many organizational options are available to water systems. Information resources can improve planning, decisionmaking, and implementation related to organizational choice and change. Research can improve understanding of market forces, industry structure, and related policy issues.

Recommendations to States

- 4.2 *States should help systems achieve maximum public-health protection at the least cost by strengthening the organizational structures of water systems.* Alternative models of ownership and management can help water systems achieve compliance with regulatory standards, as well as improve the overall quality of service. Least-cost alternatives can be identified through long-term comprehensive planning.
- 4.3 *States should provide training and technical assistance to enhance system efficiency and effectiveness.* The organizational structure of water systems can be strengthened and improved in a variety of ways. Training and technical assistance can help water systems more effectively address organizational, management, and planning issues, as well as evaluate structural options.
- 4.4 *States should facilitate and encourage partnerships among water systems and remove barriers to strategic regionalization and consolidation.* Regional solutions among water systems can help lower costs and improve performance. Financial and regulatory disincentives for regionalization should be addressed and strategic consolidation that achieves capacity development should be encouraged.
- 4.5 *States should consider the innovative use of policy tools, such as financial assistance and penalty forgiveness, to encourage organizational improvement.* State policy tools can be used strategically to encourage or require water systems to participate in training programs, adopt management practices, or implement organizational changes needed for capacity development.
- 4.6 *States should recognize the role of market forces in restructuring, as well as the potential need for state incentives or intervention under some circumstances.* The marketplace in which water systems exist is changing. While the market may provide solutions to the capacity development needs of some systems, States may need to provide special incentives to facilitate market solutions or to intervene when markets fail.

5.0 WATER-SERVICE COSTS AND AFFORDABILITY

Finding

The cost of providing service places significant pressure on small water systems because they lack resources and economies of scale. All water systems face similar cost pressures, but for small systems, revenues and access to funding can be very constrained. Scale economies in production and management work to the advantage of larger water systems.

Conclusions

- 5A *The investment and funding needs for small water systems continue to be significant due to infrastructure replacement, regulatory compliance, and source-water development and protection. The effects of rising costs on small water systems can be especially challenging. Escalation in the cost of providing water service will place significant pressure on rates, which in turn raises issues of affordability.*
- 5B *Cost-allocation and rate-design strategies and policies can further the goals of capacity development. Allocating the cost of water service to customers through rates plays a central role in ensuring financial capacity. Rate design also affects water-service affordability. Various methods for allocating costs among customers can be used, although options for very small systems may be limited, particularly if they operate on a stand-a-alone basis.*
- 5C *Strategies for reducing costs and mechanisms for sharing costs can help improve the affordability of safe drinking water for customers. Least-cost solutions can enhance affordability for all water customers. Cost-sharing mechanisms can help stabilize revenues and mitigate the effect of rising rates.*

Recommendations to EPA

- 5.1 *EPA should continue to provide information and policy research on costs and affordability. Research and information resources will facilitate the development and use of techniques for addressing cost and affordability issues.*
- 5.2 *EPA should coordinate efforts and activities of various federal funding programs for drinking water. Various federal programs provide funding for drinking water infrastructure. Combined funding may be available for some systems. Coordination among programs could improve access to funding and optimize the use of funds by small water systems.*

- 5.3 *EPA should facilitate water-system access to public-private partnerships and commercial markets.* The private sector can provide some of the infrastructure funding needed by the water industry. EPA can facilitate commercial solutions by providing information to water systems, as well as to private-sector lenders and other market participants.
- 5.4 *EPA should consider providing States with incentives to address water-system costs and affordability.* Incentives could be provided through federal funding and regulatory programs to encourage the States to develop solutions that help contain rising costs or mitigate deleterious effects. An incentive-based program provides the greatest level of flexibility to the States in addressing these issues.
- 5.5 *EPA should explore additional dedicated federal funding for drinking water infrastructure targeted to the neediest water systems.* The DWSRF can provide some of the funding needed by small water systems and also earmarks funding for disadvantaged communities. However, additional funding sources may be needed to fully address the neediest systems.

Recommendations to States

- 5.6 *States should help water systems lower costs by assisting systems in identifying and implementing least-cost options for service provision.* Improvements in water system management, organization, and planning can help identify cost-effective methods for complying with standards and meeting infrastructure needs. Training and technical assistance can help systems in these areas.
- 5.7 *States should encourage and provide incentives to systems for the use of progressive water rate policy.* A progressive rate policy can mitigate rising costs and improve water-service affordability. Rates considered progressive may include lifeline rates, increasing-block rates, conservation-oriented rates, rates that allocate costs to peak users, and consolidated rates. States can remove disincentives for the use of progressive rate policies, as well as provide positive encouragement and incentives for their adoption in keeping with capacity development goals.
- 5.8 *States should provide incentives for strategic regionalization and consolidation that improves capacity and lowers costs.* The achievement of scale economies may be one of the most important means available for mitigating cost impacts. Structural change through regionalization and consolidation can help small water systems achieve scale economies, even without physical interconnection.

- 5.9 *States should consider establishing a dedicated fund, such as a special drinking water fund supported by a statewide water-usage tax, to provide direct support to water systems for certain types of costs. Special funding can be supported through a variety of mechanisms. Eligible costs might include monitoring and testing, as well as infrastructure improvement costs.*
- 5.10 *States should consider establishing a fund to provide bill-payment assistance to water customers through public programs and community charities. Direct assistance to water consumers can mitigate cost impacts and improve affordability. Coordination with community organizations and existing programs can lower the administrative cost of providing assistance.*

6.0 UNSUSTAINABLE WATER SYSTEMS

Finding

Under certain circumstances, water systems may be incapable of achieving capacity and considered by policymakers to be “unsustainable.” Unsustainable refers only to water systems in the most dire circumstances. The magnitude of the unsustainable systems problem is uncertain. Determining that a system is unsustainable can be highly subjective and no single criterion or measure can be used to make this determination.

Conclusions

- 6A *Unsustainable water systems are systems for which all regular avenues of assistance have been exhausted and special incentives or intervention may be required. The available remedies for troubled systems vary from state to state. Once the available methods of assistance are exhausted, the State may need to intervene or provide special incentives for solutions.*
- 6B *Markets generally are unresponsive to the needs of unsustainable systems and market forces could result in service abandonment. Other water systems will not assume responsibility for an unsustainable system without extraordinary incentives. Market forces alone, including rising costs, could force the abandonment of water service and lead to potentially undesirable economic, social, and public-health consequences.*
- 6C *Unsustainable water systems constitute a small but important problem for EPA and the States to address. The needs of many small water systems can be met with available resources and programs. The number of systems that truly are unsustainable*

may not be large but the implications associated with unsustainability pose significant public policy issues at federal and state levels.

Recommendations to EPA

- 6.1 *EPA should provide information, policy research, and potential tools for addressing unsustainable water systems.* Policy research is needed to refine the concept of unsustainability and understand the magnitude of the problem. Tools for addressing the unsustainable systems can be identified.

Recommendations to States

- 6.2 *States should assess the degree to which systems appear to be unsustainable and the potential impacts on customers.* States are in the best position to evaluate water systems within their jurisdictions and identify the systems most at risk. The availability and use of existing remedies will factor into the evaluation. Implications of service abandonment for customers, in particular, should be considered.
- 6.3 *States should consider all possible long-term solutions to the problem of unsustainable water systems including incentives, subsidies, and takeovers.* States can provide the extraordinary measures and incentives to address the needs of unsustainable systems. Ideally, the solution will help achieve capacity over the long term.
- 6.4 *States should establish a procedure for temporary receivership of exceptionally troubled systems that pose a public health threat for the purpose of achieving system capacity or identifying alternative solutions.* Receivership can be used as a temporary or transitional strategy for unsustainable systems. States may need to examine their receivership authority and consider its potential use in a capacity development strategy.

7.0 WATER-POLICY INSTITUTIONS

Finding

Capacity development involves both internal improvement processes and external relationships with policy institutions. States can encourage, and water systems can implement, a variety of capacity development techniques within existing institutional frameworks. Long-term success, however, might also require institutional reforms. Water policy can be improved to further the goals of water-system capacity development.

Conclusions

- 7A *The institutional structures and processes of regulatory agencies can impose significant burdens on water systems, making it difficult for systems to build long-term capacity and seek continuous improvement.* It may become increasingly important to reduce institutional burdens on water systems, without sacrificing essential regulatory oversight and public-health protection. The goals of capacity development and continuous improvement provide a unifying theme for institutional reform.
- 7B *Regulatory processes can be improved in terms of efficiency, simplicity, and flexibility and institutional roles among agencies can be better coordinated.* Water policy continues to be highly fragmented. The lack of coordination increases regulatory costs and may thwart the identification and achievement of effective solutions. Improved institutional efficiency will benefit both governmental agencies and water systems.

Recommendations to EPA

- 7.1 *EPA should continue the valuable process of engaging stakeholders in the development of regulatory policy.* Stakeholder input has made the regulatory process more responsive to the needs of the water industry and small water systems. Broad-based participation also helps build support for institutional improvement.
- 7.2 *EPA should disseminate information about innovative technologies.* Technological innovation may become more important for compliance with standards. EPA can play a more active role in technology transfer by providing information about new water treatment technologies and other methods for compliance as they emerge.
- 7.3 *EPA should reassess the relationship between EPA Headquarters and Regional offices in order to promote consistent policy and coordinated implementation.* State agencies and water systems will benefit from a clear and consistent message from federal policymakers. Coordination will improve the implementation process and ease administrative burdens.
- 7.4 *EPA should seek administration support for a national drinking-water policy to promote a coordinated and integrated statement of goals and objectives for federal drinking water activities.* The Clean Water Action Plan provides a possible model. Developing a national drinking-water policy obviously poses a significant challenge. However, a national policy would promote the establishment of clear goals, consistent decisions, and coordination among agencies.

- 7.5 *EPA should promote federal-level consideration of a dedicated federal "trust-like" or "universal-service" fund for drinking water.* National funds to promote universal and affordable service have been established in the energy and telecommunications sectors and may be appropriate for the water sector as well. A feasibility study may be beneficial.

Recommendation: Recognizing the needs of small systems, EPA and the States, as partners, should be provided appropriate resources to implement these recommendations.

Recommendations to States

- 7.6 *States should increase coordination among federal, regional, and state drinking-water agencies.* States have primacy for many facets of water policy, including quality, quantity, and pricing. Coordination among state agencies, and between states and the regional and federal agencies with which they interact, can improve the policymaking and implementation processes.
- 7.7 *States should address various barriers to water-system restructuring, including acquisitions, regionalization, consolidation, and partnerships.* For some water systems, structural options may be avoided for institutional reasons. State financing, taxation, regulatory and other policies can present barriers or provide incentives for restructuring activities.
- 7.8 *States should address barriers to funding for some types of water systems.* Access to funding for very small systems, very troubled systems, and privately owned systems may be inadequate. Both the capacity of systems to apply for funding and institutional barriers to funding availability should be addressed.
- 7.9 *States should adopt plain-language regulations and improve processes for reviewing new technologies.* Institutional reforms that address regulatory processes can improve a water system's understanding of the regulations and enhance compliance over the long term. Expedited approval of new technologies can encourage innovation and the development of least-cost compliance options.
- 7.10 *States should address personnel and resource needs at drinking-water agencies and administrative impediments to effective programs.* The effectiveness of state programs depends on adequate resources. Investment in drinking water programs and capacity development can provide significant returns in terms of public-health protection, as well as avoidance of regulatory-enforcement costs.

- 7.11 *States should clarify and communicate their expectations to technical-assistance providers to ensure consistency with capacity development strategies.* Technical-assistance providers provide an important interface between state policy and water systems. Training, communication, and resources can ensure that water systems receive a consistent message about capacity development.
- 7.12 *States should consider modifying the jurisdiction, policies, and procedures of public utility regulators.* Public utility commission expertise in evaluating the cost of water service, financing options, and rate design can be very useful in a capacity development strategy. The present jurisdiction of the commissions is limited, but potentially could be expanded. Commission policies and procedures should be evaluated in terms of barriers and incentives for capacity development, including structural change.
- 7.13 *States should more effectively address regional concerns, such as water transfers and water rights both on an intrastate and interstate basis as appropriate, with adjoining States.* Regional solutions for water systems may cross state boundaries. Coordination at the regional level may become increasingly important for addressing the common concerns of the states within a region, particularly with respect to source-water issues.

Table 1 Summary of Findings, Conclusions, and Recommendations by the Small Systems Implementation Working Group

Findings	Conclusions	Recommendations	
Water System Capacity Development			
Capacity development for small water systems is essential and capacity can be achieved in a variety of ways.	<p>1A Many small water systems lack the technical, managerial, and/or financial capacity to comply with standards and provide quality service.</p> <p>1B Capacity development can help water systems make the transition to a culture of continuous improvement.</p> <p>1C Water systems with greater capacity further the goals of public health protection and require less regulatory oversight from resource constrained agencies.</p>	<p>1.1 EPA should continue to provide capacity-development information and technical assistance to States.</p> <p>1.2 EPA should facilitate information sharing across EPA Regional Offices and among States through various media, including meetings, conferencing, teleconferencing, electronic publications, and Internet resources.</p> <p>1.3 EPA should increase direct personal interaction with local decision makers and field-based technical-assistance providers.</p>	
	<p>1D Information resources, interagency coordination, and a broad based stakeholder process can facilitate capacity-development program success.</p>		<p>1.4 States should use all available resources, authorities, and outreach methods to develop the technical, managerial, and financial capacity of systems.</p> <p>1.5 States should coordinate institutional connections among state agencies that regulate water quality, quantity, rates, and funding and consider developing an integrated drinking water policy.</p> <p>1.6 States should invite broad-based stakeholder involvement in program development. Involvement of stakeholders will promote interest in and commitment to programs. Stakeholders also can play valuable implementation roles.</p> <p>1.7 States should provide information on how water systems can optimize the use of all available assistance and resources, including DWSRF set-aside funds. Many water systems may be eligible for more than one assistance program or funding source. Combing various types of assistance could be particularly beneficial to disadvantaged water systems.</p>
	<p>1E The DWSRF can be used more effectively as a strategic instrument of capacity development.</p>		

Findings	Conclusions	Recommendations	
Public Awareness and Education			
Public awareness and education are essential tools of water system capacity development.	2A An aware and informed public plays an important role in water-system capacity development.	EPA 2.1 EPA should continue public awareness activities, including the development of timely generic informational products, such as public-service announcements and brochures.	
	2B Building public awareness can be accomplished through collaboration among water systems, State and Federal regulatory agencies, industry associations, and technical-assistance providers.		2.2 EPA should engage in broader partnerships with various stakeholder groups, including the States, the water industry, and the environmental community, to disseminate public-service information and address specific subject areas.
	2C Strategies to improve water-system capacity to inform and engage customers are needed.		2.3 EPA should encourage the National Drinking Water Clearinghouse (currently funded by the Rural Utilities Service of US Department of Agriculture) to develop a bank of resource materials for building public awareness, including educational programs for schools.
	States 2.4 States should use available resources and partnerships to develop generic public outreach materials that water systems can customize for their own use. 2.5 States should include a public awareness component in capacity-development efforts and coordinate technical assistance in this area. 2.6 States should coordinate the public-awareness activities of various agencies. 2.7 States should encourage partnerships among utilities for the purpose of promoting public awareness. 2.8 State should consider providing grants to systems for the purpose of public outreach. 2.9 States should consider developing a statewide message and conducting direct public education activities.		

Findings	Conclusions	Recommendations				
Water System Governance						
<p>Training at all levels of water system management, including governing and oversight bodies, is essential for capacity development.</p>	<p>3A All levels of water-system management can benefit from training and educational opportunities.</p> <p>3B The use of state incentives or requirements for participation in training programs for governing-board members is appropriate.</p>	<table border="1"> <tr> <td data-bbox="989 258 1050 665" style="text-align: center; vertical-align: middle;">EPA</td> <td data-bbox="1050 258 1957 665"> <p>3.1 EPA should conduct an assessment of training needs for water-system governing bodies.</p> <p>3.2 EPA should develop case studies, models, tools, and other resources for training purposes.</p> <p>3.3 EPA should encourage States to develop and implement board member training policies and programs.</p> <p>3.4 EPA should consider providing incentives for state training programs for board members, including DWSRF allocations and flexibility in the use of funds for operator certification.</p> </td> </tr> <tr> <td data-bbox="989 665 1050 1136" style="text-align: center; vertical-align: middle;">States</td> <td data-bbox="1050 665 1957 1136"> <p>3.5 States should establish programs for board member training on a reasonable and flexible timetable.</p> <p>3.6 States should identify training needs and priorities based on chronic compliance, financial, or other problems.</p> <p>3.7 States should coordinate and build upon existing training efforts to avoid duplication.</p> <p>3.8 States should use credible trainers and educators in their board-training programs.</p> <p>3.9 States should consider providing financial and other incentives for participation in board-member training and education.</p> </td> </tr> </table>	EPA	<p>3.1 EPA should conduct an assessment of training needs for water-system governing bodies.</p> <p>3.2 EPA should develop case studies, models, tools, and other resources for training purposes.</p> <p>3.3 EPA should encourage States to develop and implement board member training policies and programs.</p> <p>3.4 EPA should consider providing incentives for state training programs for board members, including DWSRF allocations and flexibility in the use of funds for operator certification.</p>	States	<p>3.5 States should establish programs for board member training on a reasonable and flexible timetable.</p> <p>3.6 States should identify training needs and priorities based on chronic compliance, financial, or other problems.</p> <p>3.7 States should coordinate and build upon existing training efforts to avoid duplication.</p> <p>3.8 States should use credible trainers and educators in their board-training programs.</p> <p>3.9 States should consider providing financial and other incentives for participation in board-member training and education.</p>
EPA	<p>3.1 EPA should conduct an assessment of training needs for water-system governing bodies.</p> <p>3.2 EPA should develop case studies, models, tools, and other resources for training purposes.</p> <p>3.3 EPA should encourage States to develop and implement board member training policies and programs.</p> <p>3.4 EPA should consider providing incentives for state training programs for board members, including DWSRF allocations and flexibility in the use of funds for operator certification.</p>					
States	<p>3.5 States should establish programs for board member training on a reasonable and flexible timetable.</p> <p>3.6 States should identify training needs and priorities based on chronic compliance, financial, or other problems.</p> <p>3.7 States should coordinate and build upon existing training efforts to avoid duplication.</p> <p>3.8 States should use credible trainers and educators in their board-training programs.</p> <p>3.9 States should consider providing financial and other incentives for participation in board-member training and education.</p>					

Findings	Conclusions	Recommendations							
Water System Organization									
Organizational structures will affect the ability of a water system to provide consistently safe and affordable water.	4A Water system restructuring, including changes in ownership or management, can help some water systems achieve public-health and water-affordability goals.	<table border="1"> <tr> <td data-bbox="989 261 1045 509" rowspan="2">EPA</td> <td data-bbox="1045 261 1957 509">4.1 EPA should continue to provide information and policy research related to changing market conditions affecting the water industry and organizational alternatives for water systems, including regionalization, consolidation, and privatization.</td> </tr> </table>	EPA	4.1 EPA should continue to provide information and policy research related to changing market conditions affecting the water industry and organizational alternatives for water systems, including regionalization, consolidation, and privatization.					
	EPA			4.1 EPA should continue to provide information and policy research related to changing market conditions affecting the water industry and organizational alternatives for water systems, including regionalization, consolidation, and privatization.					
		4B Water-system organizational choices are influenced by institutional incentives, as well as by market forces.							
	4C Water systems should be empowered to make use of internal and external resources for achieving capacity.	<table border="1"> <tr> <td data-bbox="989 509 1045 1039" rowspan="4">States</td> <td data-bbox="1045 509 1957 602">4.2 States should help systems achieve maximum public-health protection at the least cost by strengthening the organizational structures of water systems.</td> </tr> <tr> <td data-bbox="1045 602 1957 695">4.3 States should provide training and technical assistance to enhance system efficiency and effectiveness.</td> </tr> <tr> <td data-bbox="1045 695 1957 787">4.4 States should facilitate and encourage partnerships among water systems and remove barriers to strategic regionalization and consolidation.</td> </tr> <tr> <td data-bbox="1045 787 1957 880">4.5 States should consider the innovative use of policy tools, such as financial assistance and penalty forgiveness, to encourage organizational improvement.</td> </tr> <tr> <td data-bbox="432 683 989 1039">4D Local solutions that achieve capacity can help water systems retain local control.</td> <td data-bbox="1045 880 1957 1039">4.6 States should recognize the role of market forces in restructuring, as well as the potential need for state incentives or intervention under some circumstances.</td> </tr> </table>	States	4.2 States should help systems achieve maximum public-health protection at the least cost by strengthening the organizational structures of water systems.	4.3 States should provide training and technical assistance to enhance system efficiency and effectiveness.	4.4 States should facilitate and encourage partnerships among water systems and remove barriers to strategic regionalization and consolidation.	4.5 States should consider the innovative use of policy tools, such as financial assistance and penalty forgiveness, to encourage organizational improvement.	4D Local solutions that achieve capacity can help water systems retain local control.	4.6 States should recognize the role of market forces in restructuring, as well as the potential need for state incentives or intervention under some circumstances.
	States			4.2 States should help systems achieve maximum public-health protection at the least cost by strengthening the organizational structures of water systems.					
				4.3 States should provide training and technical assistance to enhance system efficiency and effectiveness.					
4.4 States should facilitate and encourage partnerships among water systems and remove barriers to strategic regionalization and consolidation.									
4.5 States should consider the innovative use of policy tools, such as financial assistance and penalty forgiveness, to encourage organizational improvement.									
4D Local solutions that achieve capacity can help water systems retain local control.	4.6 States should recognize the role of market forces in restructuring, as well as the potential need for state incentives or intervention under some circumstances.								

Findings	Conclusions		Recommendations		
Water Service Costs and Affordability					
<p>The cost of providing service places significant pressure on small water systems because they lack resources and economies of scale.</p>	5A	<p>The investment and funding needs for small water systems continue to be significant due to infrastructure replacement, regulatory compliance, and source-water development and protection.</p>	EPA	5.1	EPA should continue to provide information and policy research on costs and affordability.
	5B	<p>Cost-allocation and rate-design strategies and policies can further the goals of capacity development.</p>		5.2	EPA should coordinate efforts and activities of various federal funding programs for drinking water.
	5C	<p>Strategies for reducing costs and mechanisms for sharing costs can help improve the affordability of safe drinking water for customers.</p>		5.3	EPA should facilitate water-system access to public-private partnerships and commercial markets.
	5.4	EPA should consider providing States with incentives to address water-system costs and affordability.			
	5.5	EPA should explore additional dedicated federal funding for drinking water infrastructure targeted to the neediest water systems.			
	States	5.6	States should help water systems lower costs by assisting systems in identifying and implementing least-cost options for service provision.		
		5.7	States should encourage and provide incentives to systems for the use of progressive water rate policy.		
		5.8	States should provide incentives for strategic regionalization and consolidation that improves capacity and lowers costs.		
		5.9	States should consider establishing a dedicated fund, such as a special drinking water fund supported by a statewide water-usage tax, to provide direct support to water systems for certain types of costs.		
		5.10	States should consider establishing a fund to provide bill-payment assistance to water customers through public programs and community charities.		

Findings	Conclusions	Recommendations		
Unsustainable Water Systems				
Under certain circumstances, water systems may be incapable of achieving capacity and considered by policymakers to be “unsustainable.”	6A Unsustainable water systems are systems for which all regular avenues of assistance have been exhausted and special incentives or intervention may be required.	<table border="1"> <tr> <td data-bbox="989 261 1050 431" rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">EPA</td> <td data-bbox="1050 261 1957 431">6.1 EPA should provide information, policy research, and potential tools for addressing unsustainable water systems.</td> </tr> </table>	EPA	6.1 EPA should provide information, policy research, and potential tools for addressing unsustainable water systems.
	EPA	6.1 EPA should provide information, policy research, and potential tools for addressing unsustainable water systems.		
		6B Markets generally are unresponsive to the needs of unsustainable systems and market forces could result in service abandonment.	<table border="1"> <tr> <td data-bbox="989 431 1050 586" rowspan="3" style="writing-mode: vertical-rl; transform: rotate(180deg);">States</td> <td data-bbox="1050 431 1957 521">6.2 States should assess the degree to which systems appear to be unsustainable and the potential impacts on customers.</td> </tr> </table>	States
	States	6.2 States should assess the degree to which systems appear to be unsustainable and the potential impacts on customers.		
6C Unsustainable water systems constitute a small but important problem for EPA and the States to address.		<table border="1"> <tr> <td data-bbox="989 586 1050 768" rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">States</td> <td data-bbox="1050 586 1957 659">6.3 States should consider all possible long-term solutions to the problem of unsustainable water systems including incentives, subsidies, and takeovers.</td> </tr> </table>	States	
States		6.3 States should consider all possible long-term solutions to the problem of unsustainable water systems including incentives, subsidies, and takeovers.		
	6.4 States should establish a procedure for temporary receivership of exceptionally troubled systems that pose a public health threat for the purpose of achieving system capacity or identifying alternative solutions.			

Findings	Conclusions	Recommendations
Water Policy Institutions		
<p>Capacity development involves both internal improvement processes and external relationships with policy institutions.</p>	<p>7A The institutional structures and processes of regulatory agencies can impose significant burdens on water systems, making it difficult for systems to build long-term capacity and seek continuous improvement.</p> <p>7B Regulatory processes can be improved in terms of efficiency, simplicity, and flexibility and institutional roles among agencies can be better coordinated.</p>	<p style="text-align: center;">EPA</p> <p>7.1 EPA should continue the valuable process of engaging stakeholders in the development of regulatory policy.</p> <p>7.2 EPA should disseminate information about innovative technologies.</p> <p>7.3 EPA should reassess the relationship between EPA Headquarters and Regional offices in order to promote consistent policy and coordinated implementation.</p> <p>7.4 EPA should seek administration support for a national drinking-water policy to promote a coordinated and integrated statement of goals and objectives for federal drinking water activities.</p> <p>7.5 EPA should promote federal-level consideration of a dedicated federal “trust-like” or “universal-service” fund for drinking water.</p> <p>Recommendation: Recognizing the needs of small systems, EPA and the States, as partners, should be provided appropriate resources to implement these recommendations.</p>

Findings	Conclusions	Recommendations
		<p data-bbox="1003 646 1035 716" style="text-align: center; writing-mode: vertical-rl; transform: rotate(180deg);">States</p> <p data-bbox="1058 266 1871 326">7.6 States should increase coordination among federal, regional, and state drinking-water agencies.</p> <p data-bbox="1058 363 1885 423">7.7 States should address various barriers to water-system restructuring, including acquisitions, regionalization, consolidation, and partnerships.</p> <p data-bbox="1058 461 1923 488">7.8 States should address barriers to funding for some types of water systems.</p> <p data-bbox="1058 526 1919 586">7.9 States should adopt plain-language regulations and improve processes for reviewing new technologies.</p> <p data-bbox="1058 623 1871 683">7.10 States should address personnel and resource needs at drinking water agencies and administrative impediments to effective programs.</p> <p data-bbox="1058 721 1881 805">7.11 States should clarify and communicate their expectations to technical-assistance providers to ensure consistency with capacity-development strategies.</p> <p data-bbox="1058 842 1919 902">7.12 States should consider modifying the jurisdiction, policies, and procedures of public utility regulators.</p> <p data-bbox="1058 940 1892 1024">7.13 States should more effectively address regional concerns, such as water transfers and water rights, both on an intrastate and interstate basis as appropriate, with adjoining States.</p>

Table 2: Recommendations and Core Principles

			CORE PRINCIPLES						
			Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY
1.0 WATER-SYSTEM CAPACITY DEVELOPMENT									
EPA	1.1	EPA should continue to provide capacity development information and technical assistance to States.	T		T				T
	1.2	EPA should facilitate information sharing across EPA Regional Offices and among States through various media, including meetings, conferencing, teleconferencing, electronic publications, and Internet resources.	T	T					T
	1.3	EPA should increase direct personal interaction with local decision makers and field-based technical-assistance providers.			T				T
STATES	1.4	States should use all available resources, authorities, and outreach methods to develop the technical, managerial, and financial capacity of systems.			T			T	T
	1.5	States should coordinate institutional connections among state agencies that regulate water quality, quantity, rates, and funding and consider developing an integrated drinking water policy.		T				T	T
	1.6	States should invite broad-based stakeholder involvement in program development.			T				T
	1.7	States should provide information on how water systems can optimize the use of all available assistance and resources, including DWSRF set-aside funds.	T				T		T
2.0 PUBLIC AWARENESS AND EDUCATION									
EPA	2.1	EPA should continue public awareness activities, including the development of timely generic informational products, such as public-service announcements and brochures.	T		T				T
	2.2	EPA should engage in broader partnerships with various stakeholder groups, including the States, the water industry, and the environmental community, to disseminate public-service information and address specific subject areas.			T				T
	2.3	EPA should encourage the National Drinking Water Clearinghouse (currently funded by the Rural Utilities Service of US Department of Agriculture) to develop a bank of resource materials for building public awareness, including educational programs for schools.	T		T				T

CORE PRINCIPLES

		Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY
STATES	2.4	States should use available resources and partnerships to develop generic public outreach materials that water systems can customize for their own use.	T		T			T
	2.5	States should include a public awareness component in capacity development efforts and coordinate technical assistance in this area.		T	T			T
	2.6	States should coordinate the public-awareness activities of various agencies.		T				T
	2.7	States should encourage partnerships among utilities for the purpose of promoting public awareness.		T				T
	2.8	State should consider providing grants to systems for the purpose of public outreach.					T	T
	2.9	States should consider developing a statewide message and conducting direct public-education activities			T			T

3.0 WATER-SYSTEM GOVERNANCE

EPA	3.1	EPA should conduct an assessment of training needs for water-system governing bodies.			T			T
	3.2	EPA should develop case studies, models, tools, and other resources for training purposes.	T					T
	3.3	EPA should encourage States to voluntarily develop and implement board-member training policies and programs.	T				T	T
	3.4	EPA should consider providing incentives for state training programs for board members, including DWSRF allocations and flexibility in the use of funds for operator certification.				T	T	T
STATES	3.5	States should establish programs for board-member training on a reasonable and flexible timetable.		T				T
	3.6	States should identify training needs and priorities based on chronic compliance, financial, or other problems.	T				T	T
	3.7	States should coordinate and build upon existing training efforts to avoid duplication		T				T
	3.8	States should use credible trainers and educators in their board-training programs.			T			T

CORE PRINCIPLES

		Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY
3.9	States should consider providing financial and other incentives for participation in board-member training and education.				T	T	T	T

4.0 WATER-SYSTEM ORGANIZATION

		Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY
EPA	4.1	EPA should continue to provide information and policy research related to organizational alternatives for water systems; regionalization, consolidation, and privatization; and changing market conditions affecting the water industry.	T					T
	4.2	States should help systems achieve maximum public-health protection at the least cost by strengthening the organizational structures of water systems.			T		T	T
STATES	4.3	States should provide training and technical assistance to enhance system efficiency and effectiveness.			T			T
	4.4	States should facilitate and encourage partnerships among water systems and remove barriers to strategic regionalization and consolidation.			T	T	T	T
	4.5	States should consider the innovative use of policy tools, such as financial assistance and penalty forgiveness, to encourage organizational improvement.				T	T	T
	4.6	States should recognize the role of market forces in restructuring, as well as the potential need for state incentives or intervention under some circumstances.				T	T	T

5.0 WATER-SERVICE COSTS AND AFFORDABILITY

		Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY
EPA	5.1	EPA should continue to provide information and policy research on costs and affordability.	T					T
	5.2	EPA should coordinate efforts and activities of various federal funding programs for drinking water.		T				T
	5.3	EPA should facilitate water-system access to public-private partnerships and commercial markets.					T	T
	5.4	EPA should consider providing States with incentives to address water-system costs and affordability.				T		T
	5.5	EPA should explore additional dedicated federal funding for drinking water infrastructure targeted to the neediest water systems.					T	T

CORE PRINCIPLES

		Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY	
STATES	5.6	States should help water systems lower costs by assisting systems in identifying and implementing least-cost options for service provision.			T			T	T
	5.7	States should encourage and provide incentives to systems for the use of progressive water rates.				T		T	T
	5.8	States should provide incentives for strategic regionalization and consolidation that improves capacity and lowers costs.				T		T	T
	5.9	States should consider establishing a dedicated fund, such as a special drinking water fund supported by a statewide water-usage tax, to provide direct support to water systems for certain types of costs.					T	T	T
	5.10	States should consider establishing a fund to provide bill-payment assistance to water customers through public programs and community charities.			T		T		T

6.0 UNSUSTAINABLE SYSTEMS

EPA	6.1	EPA should provide information, policy research, and potential tools for addressing unsustainable water systems.	T						T
STATES	6.2	States should assess the degree to which systems appear to be unsustainable and the potential impacts on customers.			T			T	T
	6.3	States should consider all possible long-term solutions to the problem of unsustainable water systems including incentives, subsidies, and takeovers.				T	T	T	T
	6.4	States should establish a procedure for temporary receivership of exceptionally troubled systems that pose a public health threat for the purpose of achieving system capacity or identifying alternative solutions.						T	T

7.0 WATER-POLICY INSTITUTIONS

EPA	7.1	EPA should continue the valuable process of engaging stakeholders in the development of regulatory policy.			T				T
	7.2	EPA should disseminate information about innovative technologies.	T						T
	7.3	EPA should reassess the relationship between EPA Headquarters and Regional offices in order to promote consistent policy and coordinated implementation.		T				T	T

CORE PRINCIPLES

		Information	Coordination	Outreach	Incentives	Funding	Policy	ACCOUNTABILITY	
STATES	7.4	EPA should seek administration support for a national drinking-water policy to promote a coordinated and integrated statement of goals and objectives for federal drinking water activities.	T				T	T	
	7.5	EPA should promote federal-level consideration of a dedicated federal “trust-like ” or “universal-service” fund for drinking water.				T	T	T	
	7.6	States should increase coordination among federal, regional, and state drinking-water agencies.		T				T	
	7.7	States should address various barriers to water-system restructuring, including acquisitions, regionalization, consolidation, and partnerships.					T	T	
	7.8	States should address barriers to funding for some types of water systems.				T	T	T	
	7.9	States should adopt plain-language regulations and improve processes for reviewing new technologies.					T	T	
	7.10	States should address personnel and resource needs at drinking-water agencies and administrative impediments to effective programs.				T	T	T	
	7.11	States should clarify and communicate their expectations to technical-assistance providers to ensure consistency with capacity development strategies.			T			T	
	7.12	States should consider modifying the jurisdiction, policies, and procedures of public utility regulators.					T	T	
	7.13	States should more effectively address regional concerns, such as water transfers and water rights, with adjoining States.		T				T	T

Appendix A:

Detailed Inventory of Options

The purpose of this Appendix is to provide a general record of the broad range of options considered by the Working Group in the course of its deliberations. Many, but not all, of the options are reflected in the final recommendations.

1.0 Strategic Options for WATER-SYSTEM CAPACITY DEVELOPMENT

§Options for EPA

1. Develop information and resources for States.
 - # Provide examples of effective state strategies.
 - # Expand the capacity development web site.
 - # Develop a hypothetical state strategy paper (similar to the hypothetical new system program paper).
 - # Clarify existing information.
2. Provide expert assistance to the States.
 - # Contract assistance.
 - # Environmental Finance Centers.
 - # Other technical assistance programs and providers.
3. Coordinate and facilitate information sharing among the States.
4. Develop information and resources for States and systems.
 - # Provide case studies of successful small systems.
 - # Enhance the capacity development web site so that information is easily and widely accessible.
 - # Provide additional training for stakeholders.
 - # Develop guidance documents that focus on regional planning to encourage systems to look within their own communities for resources and assistance with their strategies.
 - # Provide options for addressing particular issues so that systems can refer to them before making decisions.
5. Conduct policy and program research.
 - # Convene expert panels for discussion of and suggestions for capacity development strategies.
 - # Provide research, documentation, and direct assistance for pilot studies for innovative policy approaches, such as:
 - S Rate consolidation (single-tariff pricing).
 - S Cooperative management of systems.
 - S Supervisory Control and Data Acquisition (SCADA) systems.
 - S Primacy Agency and Public Utility Commission (PUC) collaboration.
 - S Restructuring.
 - S Improvements to the regulatory process.

S Programs that take a systematic approach to problems arising within distinct socioeconomic, environmental, and regulatory constraints.

6. Facilitate partnerships among major national stakeholders.
 - # Coordinate financial assistance among federal agencies.
 - # Coordinate activities of Technical-assistance providers funded by federal and non-federal sources (for example, National Rural Water Association (NRWA), Rural Community Assistance Program (RCAP), and the American Water Works Association (AWWA)).
 - # Provide information on other potential funding and assistance programs.

B. Options for States

1. Encourage broad and extensive stakeholder participation, such as advisory panels or boards made up of key stakeholders.
 - # Form advisory panels or boards made up of diverse groups of stakeholders.
 - # Hold meetings and send participants information to review for background and increased participation during meetings.
 - # Seek feedback from interested stakeholders and publicly respond to questions and comments.
2. Identify and explore all available resources and authorities.
 - # Federal funding: DWSRF; U.S. Department of Agriculture (USDA)/Rural Utilities Service (RUS); the Department of Housing and Urban Development (HUD) Community Development Block Grants (CDBG); Federally funded technical-assistance providers.
 - # State funding: State agricultural departments, water-resource agencies, Public Utility Commissions (PUCs), SRFs, community development agencies.
 - # Local resources.
3. Fully explore opportunities for coordination/cooperation among different agencies of state and local government
 - # Promote coordination with state agencies.
 - # Promote coordination with local governments.
4. Consider how market forces influence the structure of the water industry in the State.
 - # Examine trends in the structure of the State=s water industry.
 - # Assess the positive and negative impacts of market forces.
 - # Develop options for enhancing the positive effects of market changes, for example, possible financial or regulatory incentives.
 - # Develop options for mitigating the negative effects of market forces, particularly for systems not able to benefit from market-driven restructuring.
 - # Examine the current and future role of the private sector.
5. Carefully consider how to integrate stakeholder participation, coordination/cooperation, and evaluation of market-driven changes in the industry.
6. Facilitate and actively promote education and public awareness.
7. Encourage self-sufficiency and individual system responsibility, and provide self-assessment tools to water systems.
8. Explore innovative approaches.

- # Encourage strategic and integrated business planning.
 - # Use incentives and commendations.
 - # Promote public-awareness programs.
 - # Encourage regional planning.
 - # Consider restructuring options.
 - # Consider satellite ownership or management.
9. Take full advantage of all available authorities and resources.
 - # Expedite rate cases.
 - # Pass growth-management legislation.
 - # Issue variances and exemptions.
 - # Relax or reduce small system requirements to allow small systems to use innovative or experimental treatment technologies.
 - # Develop affordability criteria to target financial assistance.
 10. Encourage partnerships among systems or with nongovernmental organizations (NGOs).
 - # Encourage Big Brother or Buddy systems.
 - # Encourage partnerships with NGOs.
 - # Conduct joint water quality or quantity studies.
 - # Share certified operators.
 11. Review and refine strategy during and after implementation.

2.0 Strategic Options for PUBLIC AWARENESS AND EDUCATION

A. Options for EPA

1. Encourage public-outreach efforts.
 - # Encourage States to use the CCR requirements to further public education effort.
2. Maximize resource effectiveness.
 - # Coordinate existing education efforts.
 - # Encourage consideration of economic considerations into current curricula, programs, or training activities (for example, true cost, value, and affordability).
 - # Develop a school curriculum and encourage States to incorporate it into their existing curriculum.
3. Support public outreach.
 - # Provide funding through direct grants or encouraging the use of DWSRF set-asides.
 - # Develop resources for local communities trying to create public education programs.
 - # Compile examples of successful public education efforts.

B. Options for States

1. Help systems develop educational efforts and activities.
 - # Assist systems with holding public meetings to answer questions and provide information.

- # Engage in community involvement programs (for example, sponsor science fairs, etc.).
 - # Encourage managers to join the local chamber of commerce, serve on the board of a local charity, sponsor a community event, etc.
 - # Discuss water conservation issues with customers.
 - # Discuss affordability issues with customers.
 - # Sponsor an “open house” to educate the public on Consumer Confidence Reports.
2. Encourage public outreach by water systems.
- # Develop an awards program recognizing systems with exceptional or innovative public outreach programs.
 - # Create programs and publications that educate customers about the true value and cost of safe drinking water.
 - # Conduct multigenerational public-education programs.
 - # Identify water-system opportunities for public participation.
 - S Public meetings.
 - S Citizen participation in public hearings.
 - S Community advisory councils.
 - S School programs and community events.
 - S Fact sheets or flyers about how to get involved in water-system activities.
 - S Bill inserts to explain how water rates compare them to other utility rates.
 - S Customer contributions to a “Good Neighbor” fund.
 - S Letter writing campaigns concerning regulations, funding, policy, etc.
3. Provide resources for public education and awareness.
- # Make grants available for public-outreach efforts.
 - # Provide outreach materials to systems, teachers, and citizens.
 - # Create a guidance document or conduct training on how to create an effective public outreach program.

3.0 Options for WATER-SYSTEM GOVERNANCE

A. Options for EPA

1. Promote voluntary programs.
 - # Develop a model training and education program .
 - # Expand the Drinking Water Academy (DWA) to include all levels of government
 - # Coordinate training materials and encourage existing organizations to develop training materials for governing bodies.
 - S National Drinking Water Clearinghouse (NDWC).
 - S National Environmental Training Center for Small Communities (NETCSC).
 - S American Water Works Association (AWWA) QualServe program.
 - S Rural Community Assistance Program (RCAP).
 - S National Rural Water Association (NRWA).
 - # Create a training website for connections to and information about existing training resources.
 - # Organize and maintain a centralized database of tools and opportunities available to States and individual systems.
2. Develop incentive programs.
 - # Modify the set-aside or matching provisions of SDWA §1452 to fund training.
 - # Assess a State’s inclusion of training requirements or provision as part of the annual review of State capacity development programs.
 - # Provide grant money to States for creation of training centers.
3. Consider mandatory programs.
 - # Include in the next SDWA Amendments requirements for States to adopt training programs for governing bodies. Model requirements after the drinking water operator certification program.

B. Options for States

1. Promote voluntary programs.
 - # Create centralized training and resource centers to collect and disseminate information.
 - S Compile a list of available resources to share with interested governing bodies.
 - S Develop a training hotline, website, etc., providing a constant source of information and links to available training resources.
 - S Provide “traveling trainers” available upon request to train local entities.
 - # Develop and mail training materials to all local governing bodies and to new managers.
 - # Create partnerships with private training companies or non-profit NGOs to facilitate training.
 - # Create a voluntary rating process for systems based on the demonstration of adequate water-system management expertise.
 - # Encourage at least one member of each governing body to become a certified operator at the minimum level.
2. Develop incentive programs.

- # Use DWSRF set-asides to offer free training; reimburse those that receive training, or provide other financial incentives.
 - S Establish training programs and provide classes free of charge to governing bodies. Classes could be offered throughout the State to reduce traveling costs.
 - S Reimburse those who receive training from other organizations.
 - S Provide financial incentives for governing bodies to receive training.
- 3. Consider mandatory programs.
 - # Include training requirements in State rules and regulations (for example, Mississippi program).
 - # Require training for system managers as a condition of SRF loans.

4.0 Options for WATER-SYSTEM ORGANIZATION

A. Options for EPA

1. Encourage modifications to internal system structures and processes.
 - # Examine the issue of internal restructuring and provide information on internal restructuring options that offer greater access to capital and promote operating efficiency (i.e., changing rate structures).
 - # Encourage or require training programs for governing bodies or other water-system managers.
 - # Provide financial assistance for training programs.
 - # Develop self-assessment tools that will help improve system capacity.
2. Encourage modifications to external system structures and processes.
 - # Examine the trends influencing water systems (i.e., competition, convergence of utilities, public vs. private ownership, privatization of municipal systems) and develop a guidance document that States could use when developing policies.
3. Facilitate exploration of alternatives and innovative solutions.
 - # Provide information about recognizing barriers and identify possible options within the current framework that may not have been considered.
 - # Encourage stakeholder meetings to identify barriers and provide forums for brainstorming solutions.
 - # Reduce legal or regulatory barriers to encourage innovative solutions outside the current framework.
 - # Encourage pilot programs and provide incentives for their development.
 - # Conduct public-education campaigns to increase awareness of the true cost of water, reduce parochialism, and influence public opinion and attitudes.
 - # Combine traditional solutions and innovative ideas and use pilot programs.

Options for States

1. States can encourage modifications to internal system structures and processes.
 - # Encourage and facilitate changes in management, staffing, and training. For example, through their capacity development strategies, States could require systems to develop training programs for

system personnel, require that all system managers have previous experience managing or operating a water system, or provide information on alternative management structures.

- # Provide low-cost technology options.
 - # Use DWSRF set asides to provide efficiency training to streamline or standardize institutional processes.
 - # Require the use of standard processes (i.e., generally accepted accounting principals) to streamline water-system management.
 - # Identify barriers to internal restructuring options (i.e., cumbersome rate approval processes) and working to break down the barriers to provide greater access to capital and improve efficiency in operation.
2. States can encourage modifications to external system structures and processes.
 - # Encourage a wide range of partnerships among systems to achieve economies of scale, reduce costs of services and materials, and reduce system inefficiencies.
 - # Reduce financial disincentives and provide incentives for consolidation.
 - # Identify opportunities for cooperation.
 - # Identify opportunities for the formation of partnerships among systems.
 - # Identify opportunities for consolidation.
 3. Facilitate exploration of alternatives and innovative solutions.
 - # Provide information about recognizing barriers and identify possible options within the current framework that may not have been considered.
 - # Encourage stakeholder meetings to identify barriers and provide forums for brainstorming solutions.
 - # Reduce legal or regulatory barriers to encourage innovative solutions outside the current framework.
 - # Encourage pilot programs and provide incentives for their development.
 - # Conduct public-education campaigns to increase awareness of the true cost of water, reduce parochialism, and influence public opinion and attitudes.
 - # Combine traditional solutions and innovative ideas and use pilot programs.

5.0 Options for WATER-SERVICE COSTS AND AFFORDABILITY

A. Options for EPA

1. Develop a national program for providing affordable water service to aid low-income households served by PWSs. The program could function as a grant program, perhaps with State matching funds. States could work with their own local partners and utilities for program implementation.
2. Fund a national program through tax instruments. In addition to general taxes, other taxes are conceivable, including taxes on water utilities, bottled (“luxury”) water, private operations companies, and the chemical industries. Revenues collected from the sources of water pollution also could be used to fund water affordability programs.
3. Model a national program for assistance after programs in the energy (the Low-Income Energy Assistance Program) or telecommunications (the Universal Service fund) sectors.

B. Options for States

1. Develop a policy for the provision of affordable water service to those unable to pay for it and consider various funding mechanisms (similar to the universal service fund for telecommunications). Assistance could be provided directly to customers in the form of payment to the utility in the customer's name, a voucher, a coupon, or some other form. Assistance could also be provided directly to water systems serving low-income households.
2. Remove barriers to progressive rate setting and/or the provision of aid to low-income households.
3. Facilitate the creation of regional utilities or authorities.
4. Establish a direct payment program (to utility in form of vouchers, coupons, etc.).
5. Encourage community-based solutions.
 - # Encourage communities (towns and counties) to establish assistance programs funded by local tax instruments, such as property, utility, and sales taxes. Assistance to customers could take the form of direct payment to the utility in the customer's name, a voucher, a coupon, or some other form.
 - # Encourage incorporated towns to create lifeline rates or other discounts and assistance programs fund through a bond issuance.
6. Encourage water-system solutions.
 - # Encourage utilities to bill monthly and increase rates incrementally to ease the financial burden on households.
 - # Encourage utilities to institute payment plans and/or debt forgiveness programs for low-income households.
 - # Encourage utilities to help households lower their water bills by reducing usage through targeted water conservation programs. (See discussion on conservation rates below)
 - # Encourage utilities to coordinate with local nonprofit and community-based organizations to raise contributions to enable the utility to offer lower rates and to aid with ratepayer arrearages.
 - # Encourage utilities to institute voluntary contribution fund programs (developed in conjunction with shareholders and other ratepayers) to help low-income customers.
 - # Encourage utilities to institute lifeline rates for low-income customers.
 - # Encourage utilities to pursue long-term consolidation strategies to increase the customer base, lower costs, and broaden the range of rate options.
 - # Encourage utilities to provide assistance to low-income households through rate structures, as allowed by State regulations and feasible based on system characteristics.

6.0 Options for UNSUSTAINABLE WATER SYSTEMS

A. Options for EPA

1. Ensure that all States have access to and are informed about existing grant and loan programs and work to ensure the availability of financial assistance to water systems of all ownership types.

2. Develop documents that would provide information to States on programs that have been successful in addressing the issue of unsustainable systems and examples of success stories.
3. Encourage the development of new small system treatment technologies by providing funds for pilot programs and for the provision of technologies to small systems at reduced rates.
4. Encourage the use of pilot studies to demonstrate possible restructuring options.
5. Work to ensure that States are aware of and have access to the assistance of NGOs.
6. Create a special federal financial assistance fund (i.e., a national trust or universal service fund) to address the needs of unsustainable systems.

B. Options for States

1. Provide options to ease compliance requirements.
 - # Simplify regulatory processes.
 - # Provide variances and exemptions.
 - # Allow for other regulatory flexibility as allowed by federal rules.
2. Use NGOs and encourage systems to use NGOs.
 - # Develop partnerships with NGOs.
 - # Encourage formation of new partnerships between unsustainable systems and NGOs.
 - # Coordinate and organize resources for systems interested in seeking help from NGOs.
3. Work with drinking water equipment manufacturers and suppliers.
 - # Encourage the development and distribution of low-cost POU devices.
 - # Encourage the use of contractual operation and maintenance services.
4. Provide financial assistance to the water system.
 - # Provide substantial tax relief to increase system resources.
 - # Establish a universal-service fund to provide low-cost loans or grants to systems with special needs.
5. Provide incentives for voluntary acquisitions.
 - # Offer substantial tax relief for utilities that assume responsibility for unsustainable systems.
 - # Create financing opportunities for acquiring water utilities.
 - # Provide economic regulatory incentives for acquiring utilities including acquisition adjustment, valuation at fair market value, consideration of contributions, bonus rates of return, allowances for system-wide cost recovery, consolidated rate structures, phase-in costs and rates, etc.
6. Provide incentives for the formation of regional water utilities, districts, or authorities.
 - # Encourage regional utilities through tax and financing advantages.
 - # Establish publicly owned cooperatives covering broad geographic areas.
 - # Encourage the use of consolidated rates or single-tariff pricing for larger and more sustainable regional systems.
 - # Address tax and financing differences between publicly and privately owned regional systems and their effect on incentives for acquisitions.
7. Implement more extreme transfers of responsibility.
 - # Allow service abandonment and let market forces prevail.
 - # Mandate the takeover of an unsustainable system by another utility.

- S Establish authorities and procedures to mandate receivership or takeover by another water system.
- S Identify and designate willing receivers.
- # Assume responsibility for the system (government-level takeover).
- S Establish a statewide management authority that identifies, assists, or manages unsustainable systems.
- S Operate the system directly through a state agency or through a contract for operations with a local agency or private firm.

7.0 Options for WATER-POLICY INSTITUTIONS

A. Options for EPA

1. Reduce internal institutional barriers.
 - # Consult with States to re-examine regulatory flexibility.
 - # Continue toward striking an effective balance between enforcement and assistance.
2. Reduce external institutional barriers.
 - # Coordinate financial programs among federal agencies.
 - S USDA RUS provides loans and grants
 - S USDA RUS also provides technical assistance for the operation
 - S HUD Rural Community Block Grant Program
 - # Coordinate federal programs that regulate water.
 - S Develop and enter into memorandums of understanding or agreement (MOU/MOA) that define respective roles and responsibilities and describe a unified purpose.
 - # Facilitate the coordination of programs with non-federal agencies. A number of NGOs offer support programs that range from direct financial assistance to on-site training assistance.
 - S Facilitate the coordination of the activities of technical-assistance providers funded by federal and non-federal sources (for example, NRWA, RCAP, and AWWA).
 - # Facilitate the coordination of educational and training materials and programs of federal and non-federal sources (for example, Drinking Water Academy, AWWA, RCAP, and the National Training Center for Small Communities at West Virginia University).

B. Options for States

1. Reduce State-level internal institutional barriers.
 - # Clarify and consolidate authorities for the regulation of drinking water systems.
 - S Provide a consolidated proceedings process resulting in “one-stop shopping” for approving and financing a water system.
 - S Develop and enter into MOUs and MOAs that define respective roles and responsibilities and describe a unified purpose.

- # State Public Utility or Service Commissions should work to reduce regulatory lag time and decrease the burden created by the rate approval process for certain types of systems (for example, significant non-compliers, unsustainable systems etc.), or certain kinds of rate changes (for example, change sought because of the acquisition of a failing system).
 - # Public Utility or Service Commissions should remove barriers to voluntary acquisitions of water systems. Many incentives have proven very effective in encouraging voluntary acquisition activity, which has the potential to create a more efficient and smooth merging of systems.
 - S Acquisition adjustment.
 - S Valuation at fair market value.
 - S Consideration of contributions.
 - S Bonus rate of return.
 - S System-wide cost recovery.
 - S Consolidated rates.
 - S Phase-in costs and rates.
 - S Surcharges.
 - S Cost-recovery techniques.
2. Reduce external institutional barriers.
- # Coordinate primacy agency activities with other State agencies that regulate water (for example, water-resource agencies).
 - S Develop and enter into MOUs and MOAs that define roles and responsibilities and describe a unified purpose. Clear lines of jurisdiction and authority are essential to a successful coordination and implementation of newly defined responsibilities.
 - # Foster relationship with the State Small Business Administration (or similar agency or program).
 - # Coordinate with of NGO programs to avoid duplication of effort and maximize resources.
 - # Reduce barriers to incorporating by reference regulations written in plain language.