

# Re-Energizing the Capacity Development Program

Findings and Best Practices from the  
Capacity Development Re-Energizing Workgroup

*April 2011*



Office of Water (4606M)  
EPA 816-R-11-004  
April 2011  
<http://water.epa.gov/drink>

## Table of Contents

<b>Acknowledgements .....</b>	<b>ii</b>
<b>Introduction .....</b>	<b>3</b>
Re-Energizing the Capacity Development Program .....	3
The Capacity Development Re-Energizing Workgroup .....	4
Recognizing Differences Among Public Water Systems .....	4
Document Overview .....	5
<b>Chapter 1: Continue to Enhance Water System Capacity .....</b>	<b>6</b>
Recommendation 1.1: Improve assessment and measurement of managerial and financial capacity .....	7
Recommendation 1.2: Implement efforts to address public water systems with continuing non-compliance .....	9
Recommendation 1.3: Continue to enhance operator trainings and support.....	11
<b>Chapter 2: Re-focus on Education and Outreach.....</b>	<b>12</b>
Recommendation 2.1: Educate potential and existing public water system owners and board members on their roles and responsibilities .....	13
Recommendation 2.2: Raise public awareness on the value and cost of water services .....	15
Recommendation 2.3: Increase awareness and access to resources and useful tools.....	16
Recommendation 2.4: Emphasize trainings for public water system managers, owners, and technical staff on environmental sustainability .....	17
<b>Chapter 3: Strengthen Implementation through Collaboration.....</b>	<b>18</b>
Recommendation 3.1: Increase collaboration for all state and federal staff working on drinking water issues .....	19
Recommendation 3.2: Increase coordination and communication among funding groups ...	20
<b>Conclusion .....</b>	<b>22</b>
<b>Appendix A: EPA's Initiatives for Re-Energizing Capacity Development and Promoting Sustainable Systems .....</b>	<b>23</b>
EPA's Approach for the Equitable Consideration of Small System Customers (Small Systems Approach) .....	23
2010 National Capacity Development and Operator Certification Workshop.....	24
Clean Water and Drinking Water Infrastructure Sustainability Policy .....	25
<b>Appendix B: Detailed Case Studies .....</b>	<b>26</b>

## Acknowledgements

This document reflects the comments and insights contributed by a variety of individuals and organizations. In particular, EPA would like to thank the state representatives and the Association of State Drinking Water Administrators (ASDWA) who were part of the Capacity Development Re-Energizing Workgroup, and whose efforts provided substantial contributions to this document. The states represented on the Capacity Development Re-Energizing Workgroup include: Indiana, Kansas, Nevada, New Hampshire, North Carolina, Texas, Virginia, and Washington.

Affiliation	Name
Indiana	Mary Hollingsworth
Kansas	Cathy Tucker-Vogel
New Hampshire	Sarah Pillsbury
Nevada	Jennifer Carr
North Carolina	Julia Cavalier
Texas	Doug Holcomb
Virginia	Barry Matthews
Washington	Kristin Bettridge
EPA Region 1	Jane Downing
EPA Region 3	Vicky Binetti
EPA Region 6	Blake Atkins
EPA Region 7	Mary Mindrup
EPA Headquarters	Mindy Eisenberg, Sonia Brubaker, Stephen Hogye, Maria Lopez-Carbo
ASDWA	Bridget O’Grady, Jim Taft

### Introduction

This document is a reflection of the discussions held over the course of 2010 by the Capacity Development Re-Energizing Workgroup, as well as a compilation of comments received during the 2010 National Capacity Development and Operator Certification Workshop. It also includes insights and ideas from existing strategies and policies, such as EPA's Approach for the Equitable Consideration of Small System Customers ("Small Systems Approach"). Further information on EPA's Small Systems Approach, the 2010 National Capacity Development and Operator Certification Workshop, and other EPA initiatives is included in Appendix A of this document.

This document was prepared for individuals involved in the Capacity Development and Operator Certification Programs, including EPA Headquarters staff, EPA Regional staff, state staff, and stakeholder groups. This document is also intended to be informative to the staff of other programs (e.g., Drinking Water State Revolving Fund) that help public water systems (PWSs) attain and maintain technical, managerial, and financial (TMF) capacity.

### Re-Energizing the Capacity Development Program

The 1996 Safe Drinking Water Act (SDWA) Amendments emphasize a holistic approach to the protection of public health and prevention of drinking water contamination. The Act's provisions for Capacity Development provide a framework for EPA, states, and PWSs to work together and ensure that PWSs attain and maintain the TMF capacity needed to achieve SDWA's objectives for short- and long-term capacity. The SDWA Amendments recognized that states have different needs and resources, and therefore, this framework is not prescriptive. This has led to varied strategies and diverse implementation of state Capacity Development Programs.

Over 10 years have elapsed since EPA developed detailed guidance for the Capacity Development Program.<sup>1</sup> Since that time, national and regional meetings have been held to facilitate information sharing, numerous tools and resources have been developed, and many states have identified unique approaches to addressing TMF capacity challenges. Most recently the EPA Administrator has increased attention to supporting underserved communities, improving community and infrastructure sustainability, and ensuring that all consumers have access to safe drinking water. Based on these developments, EPA partnered with eight states and

---

<sup>1</sup> EPA's *Guidance on Implementing the Capacity Development Provisions of the 1996 SDWA Amendments* (EPA 816-R-98-006) was published July 1998 and EPA's *Handbook for Capacity Development: Developing Water System Capacity under the Safe Drinking Water Act, as amended in 1996* (EPA 816-R-99-012) was published July 1999. These documents are available on EPA's website at:

[http://water.epa.gov/type/drink/pws/smallsystems/state\\_guidance.cfm](http://water.epa.gov/type/drink/pws/smallsystems/state_guidance.cfm).

the Association of State Drinking Water Administrators (ASDWA) to form the Capacity Development Re-energizing Workgroup to assess Capacity Development's progress thus far and bring renewed attention to the Capacity Development Program.

### *The Capacity Development Re-Energizing Workgroup*

The main goals of the Capacity Development Re-energizing Workgroup were to better understand the Program's existing implementation efforts, evaluate roadblocks to building water system capacity, and identify best practices to facilitate program implementation. Ultimately, this re-energizing effort should help more PWSs be sustainable as a result of Capacity Development Programs strengthened by increased knowledge sharing, particularly the sharing of implementation best practices.

The Workgroup held monthly meetings over the course of 9 months, beginning in January 2010. At the conclusion of these meetings, the Workgroup developed a summary of identified challenges, recommendations, and best practices and in September 2010, took these findings to the 2010 National Capacity Development and Operator Certification Workshop. State and EPA Regional Workshop attendees were asked for feedback, and the Workgroup met again in October 2010 to incorporate the comments and to further summarize the findings and recommendations.

### *Recognizing Differences Among Public Water Systems*

One of the Workgroup's first actions was to identify challenges faced by states in implementing the program as well as PWSs that struggle with TMF capacity. Some of the challenges initially identified by the Workgroup included:

- **Compliance** – meeting current and future regulatory requirements.
- **Education** – providing information to rural PWSs; increasing customer understanding of the value of water services; expanding knowledge of water and energy efficiency measures.
- **Finance** – ensuring long-term financial stability to maintain the necessary infrastructure for providing safe drinking water; ensuring affordable rates and customers' ability to pay for delivery of safe drinking water; addressing the effects of the recent economic downturn.
- **Management** – improving decision maker (e.g., board member) involvement and knowledge of their responsibilities; effectively managing assets; enhancing use of technology.

- **Workforce** – hiring/retaining certified operators; planning for an aging workforce and associated loss of institutional knowledge.

Workgroup members acknowledged that challenges differ between community water systems (CWSs) and noncommunity water systems (NCWSs). For example, nontransient noncommunity water systems are less likely to employ tools such as water supply plans and capital improvement plans. CWSs, on the other hand, are subject to more stringent requirements, and therefore, more technical knowledge and financial resources are generally needed for these PWSs to be successful. The Workgroup decided not to include transient noncommunity water systems in the current scope of work due to the unique characteristics of these water systems and the allocated timeframe for the Workgroup to develop their report.

### Document Overview

The Capacity Development Re-energizing Workgroup's findings and recommendations are organized into the three chapters of this document:

1. Continue to Enhance Water System Capacity.
2. Re-focus on Education and Outreach.
3. Strengthen Implementation through Collaboration.

Each chapter identifies common implementation challenges experienced by state Capacity Development Programs, followed by recommendations and best practices that can be used to address these challenges. Some of the best practices demonstrate work that state Capacity Development Programs, EPA, or other organizations are already implementing, while other best practices are ideas to work toward. By implementing these recommendations and best practices, both PWSs and state Capacity Development Programs may benefit.

All of the best practices are examples only. The Workgroup acknowledges that not all best practices will be applicable to a particular state or PWS, and that additional best practices exist that are not described in this document. A number of current state examples, corresponding to specific best practices, are highlighted in textboxes throughout the document. Some of these examples, as well as additional state examples, are described in greater detail in Appendix B.

## Chapter 1: Continue to Enhance Water System Capacity

One of the goals of the Capacity Development Program is to assist new and existing public water systems (PWSs) in achieving and maintaining technical, managerial, and financial (TMF) capacity. PWSs that are able to acquire and maintain TMF capacity are more likely to achieve long-term sustainability. There are numerous ways to enhance capacity: from correcting non-compliance to implementing asset management programs to establishing PWS partnerships (e.g., equipment sharing, system consolidation). Both PWSs and states, however, may encounter challenges associated with enhancing capacity, some of which are identified below.

- **States may not receive sufficient information or may find it difficult to interpret the documentation received during the PWS proposal/application process in order to fully assess whether a proposed PWS will have managerial and financial capacity.** In many cases, PWSs are not required to submit information on managerial or financial capacity along with their permit application, making it difficult for states to determine if proposed PWSs have the necessary managerial and financial capacity.
- **Managerial and financial capacity are not easily assessed and measured by PWSs or states.** Many states and technical assistance (TA) providers have found that managerial and financial capacity are more difficult to define and measure than technical capacity and, therefore, more challenging to address. Additionally, some states do not have standard indicators or a uniform method for evaluating managerial and financial capacity.
- **Some PWSs struggle to obtain and retain qualified operators.** A certified, dedicated operator is essential to the capacity of a PWS. PWSs without knowledgeable operators are at higher risk of non-compliance and other capacity issues.
- **States often do not have the staff or resources to conduct follow-up visits to ensure that PWSs are implementing TMF activities.** Staffing shortfalls and budgetary constraints make it difficult for states to follow up with PWSs that have received technical, managerial, or financial assistance. This creates opportunities for existing PWSs to lose TMF capacity without the state's immediate knowledge.

The following recommendations and associated best practices were identified as opportunities to address these challenges. As mentioned earlier, some of the best practices for each recommendation are already being used, while others are ideas for the future. Furthermore, not all best practices will be applicable to all states or PWSs.



## Recommendation 1.1: Improve assessment and measurement of managerial and financial capacity

To address challenges related to TMF capacity, the Workgroup identified several ways that states can work to improve the assessment and measurement of PWS capacity and thereby identify areas for improvement. Understanding a PWS's TMF capacity will assist the state in prioritizing assistance resources based on identified need. While all three components of TMF capacity are important, managerial and financial capacity are sometimes less clearly defined and oftentimes more challenging to measure. Therefore, it is important to identify specific tools that can assess the managerial and financial capacity of PWSs and to use these as metrics for measuring improvement. The following best practices may aid states in implementing this recommendation.

- **Promote effective management by providing specific support for new PWSs.**

Offering direct support over the first year or more of operation may help a PWS maintain managerial and financial capacity. It may also allow the PWS to better understand all of its regulatory requirements to ensure long-term compliance.

- ❖ During the first year of operation, states or TA providers might consider assisting PWSs in the development of asset management plans, programs, and/or standard operating procedures (SOPs). States and TA providers should encourage PWSs to create dynamic plans that will help guide management decisions and can be updated over the years as various changes occur.

The **Iowa** Department of Natural Resources promotes effective management by offering a Self-Assessment Manual as a tool for PWSs to assess their TMF capabilities. The Manual allows PWS managers to carefully consider all aspects of TMF capacity and plan for long-term capacity and sustainability. All PWSs are encouraged to utilize the Manual for self-evaluation.

<http://www.iowadnr.gov/water/viability/manual.html>

- ❖ States may want to consider developing a primer on managerial capacity that introduces new PWS owners to available TMF tools and resources and helps them understand how and why to use these tools.
- ❖ Some states have suggested requiring a detailed business plan or water system management plan for proposed PWSs to ensure that PWSs start off with adequate managerial and financial capacity. Either of these plans or a similar

**Indiana** currently requires potential PWSs to submit a water system management plan. The plan allows potential owners to learn about the full responsibilities of owning a PWS. Additionally, the state encourages proposed PWSs to identify existing PWSs within a 5-10 mile radius that may be suitable for connection. Refer to Appendix B for more information.

<http://www.in.gov/idem/4868.htm>

- management plan could cover, among other things, the details of an infrastructure strategy, information on the PWS owner and operator, and short- and long-term budget plans. Water system management plans should also be designed so they can be updated easily to facilitate adaptation to future changes and be useful to the PWS over the course of many years.
- ❖ Another option for promoting effective management is for states to develop tailored, dynamic monitoring plans for PWSs that detail all of the responsibilities and associated costs of day-to-day activities (e.g., sampling procedures). States that choose to develop such a plan could design a general plan for all PWSs, for any PWS that requests such a plan, or design a tailored plan for PWSs that the state has identified as struggling to achieve or maintain capacity.
  - **Use surveys to collect managerial and financial information, determine which PWSs have the greatest need, and prioritize state resources.** Although it may be resource intensive, states may find it worthwhile to use surveys or questionnaires to request information about managerial and financial capacity. States can use the submitted information to determine which PWSs need the most assistance and then prioritize state resources accordingly. Follow-up surveys could be sent (e.g., every 2 years) to track PWSs' progress. Over time, the information may help the state identify which PWSs are not building managerial and financial capacity and, therefore, require additional assistance. Another option is for states to review managerial and financial components during sanitary surveys. Some states (e.g., Nebraska) have had success using sanitary surveys for this purpose, while other states have struggled. A common challenge for using sanitary surveys to obtain managerial and financial information is that survey reviewers are trained specifically to conduct sanitary surveys, not to assess TMF capacity. States may want to consider training sanitary survey reviewers on standard procedures for collecting TMF capacity data. Most importantly, prior to choosing an information-collection method and starting data collection efforts, states will want to be sure that the type and amount of information to be collected reflects the state's intended purposes and will provide valuable insight on PWSs' managerial and financial capacity.

**Kansas** send outs a comprehensive survey to community water systems (CWSs) in the state every 3 years, which includes questions on TMF capacity. Kansas uses the survey to score each CWS, determine trends (e.g., number of CWSs not reviewing their water rates), assess loan distribution (CWSs lacking TMF capacity are ineligible for full loans), and develop appropriate tools (e.g., rate setting resources).

<http://www.kdheks.gov/pws/capdev.html>

## Recommendation 1.2: Implement efforts to address public water systems with continuing non-compliance

A PWS that is regularly or continually in non-compliance poses a serious risk to public health and requires state attention. There are numerous reasons that a PWS may be continually non-compliant. Technical capacity may be the most apparent problem; however, managerial or financial deficiencies may be the underlying causes of technical deficiencies. Understanding the drivers of non-compliance will help states in their efforts to assist struggling PWSs in achieving long-term compliance. These efforts will move these PWSs along a path towards achieving long-term TMF capacity and sustainability, which is supported by the following best practices.

- **Assign a dedicated person to each non-compliant PWS.** PWSs facing multiple years of non-compliance oftentimes have a unique combination of circumstances which results in recurring violations. The state may want to consider having a dedicated person oversee each struggling PWS. This individual would become intimately familiar with the PWS's characteristics and become knowledgeable about the root causes contributing to the non-compliance (e.g., new regulations, poor management, artificially low or non-existent water rates, lack of maintenance, unwillingness to change PWS procedures, need for infrastructure financing, etc.). PWSs could view this person as their "go to" person for questions and concerns since this individual would be responsible for helping to shepherd the system back into compliance. Furthermore, this individual may be able to develop a relationship with the board members, owner, and operator, which may facilitate information sharing and open communications between the PWS and the state. As an additional benefit to the state, this dedicated person may be able to develop an overall understanding of the types and underlying causes of non-compliance throughout the state.

**New Hampshire** uses referrals from enforcement and sanitary surveys to generate a "bucket list" of PWSs in need. A primary contact or Project Manager is then responsible for identifying each PWS's needs and reporting progress on a regular basis. The state keeps track of interactions with each PWS using a task log and regular meetings with management. Refer to Appendix B for more information.  
<http://des.nh.gov/organization/divisions/water/dwgb/capacity/index.htm>
- **Improve non-compliant PWSs' access to and use of technical assistance and other resources, while balancing state resource limitations.** Continually non-compliant PWSs are typically in need of additional assistance from states. These PWSs oftentimes have less knowledge of available resources that may help them return to compliance, or they may have less knowledge of how to use resources. These resources may include, but are not limited to, contact information for third-party TA providers, copies of guidance materials, and lists of funding sources. The type of assistance that states may need to provide will differ from one PWS to the next and may range from simply providing and

explaining informational materials (e.g., factsheets, software) to providing one-on-one assistance (e.g., in-person demonstration on how to do jar testing). States may be able to allocate assistance efforts more effectively by assessing which PWSs will benefit most in the long-run from targeted outreach and which PWSs will not make long-term changes towards self-sufficiency and, therefore, become a drain on state resources. To make this distinction, it is important to understand and recognize that the root causes of non-compliance are specific to a given PWS. Most PWSs that are provided with assistance will use those resources to build capacity. However, the state must determine how to prioritize resources to achieve the greatest benefit while providing assistance to all struggling PWSs.

- **Assess, explain, and promote PWS partnerships, where appropriate.** One way states can assist struggling PWSs is by conducting initial assessments to determine whether the PWS is a good candidate for partnerships, including restructuring or consolidation. Forming partnerships with other PWSs is a proven approach that may provide a wide range of options and benefits. PWS partnerships may be an effective means of changing a PWS's operation, management, or institutional structure so that the PWS can provide reliable drinking water services, streamline system management, and reduce costs.

Partnership options can range from informal measures, such as sharing equipment, to more formal options, such as transferring ownership of a PWS through consolidation.

For example, partnerships can allow PWSs to contract management, billing, or customer service tasks to a neighboring PWS or an outside business. Another partnership option, which

**Texas** contracts with the Texas Rural Water Association to provide consolidation assessments. The contractor discusses consolidation with the small PWS and other surrounding entities and helps facilitate consolidation activities (e.g., completing paperwork or providing support at public meetings). Texas also contracts with the University of Texas to help PWSs with MCL violations understand their problems and consolidation options (e.g., interconnections, treatment, or relocating a source), including the financial impacts. Refer to Appendix B for more information.

<http://www.trwa.org/FMTAssistanceBrochure.pdf>

[http://www.beg.utexas.edu/enviroqlty/TCEQ\\_ss2004-2007.htm](http://www.beg.utexas.edu/enviroqlty/TCEQ_ss2004-2007.htm)

may reduce administrative and operating costs, is to create a Joint Powers Agency or to consolidate under common regional ownership or management while maintaining separate infrastructure and treatment. Neighboring PWSs can sometimes benefit from physically connecting their infrastructure and sharing components, such as treatment facilities and distribution lines. States have noted that it is more cost effective and successful in the long-run to spend money on helping PWSs with partnerships than on maintaining failing, unsustainable PWSs. To further promote these efforts, states may offer additional support, such as low-cost financing for various partnership activities. Potential resistance to partnerships, especially consolidation, should be recognized and

earnestly addressed. This may involve employing a third-party mediator to explain the benefits to all the parties involved.

### Recommendation 1.3: Continue to enhance operator trainings and support

It is important for states to regularly evaluate and enhance operator trainings as needed, especially taking into account technological changes that may improve PWS operations and innovations in management of PWSs. Other support mechanisms for operators, in addition to traditional classroom trainings, can include periodic meetings with the state and TA providers, site visits, and website resources such as operator “chat rooms.” Below are some specific best practices to enhance operator trainings and support.

- **Promote outreach, mentoring, internship, and apprenticeship programs to address workforce challenges.** Some PWSs struggle with workforce issues, whether related to staff retirement or turnover. Hiring and retaining a certified operator is vitally important to the success of any PWS. To address these workforce issues, states may consider developing, requiring, and/or supporting mentoring, internship, or apprenticeship programs that educate the next generation of PWS operators. States can also promote programs that increase the prestige associated with the certified water profession and help encourage more individuals to learn about and pursue the career. States may encourage PWS managers and operators or industry associations to reach out to those who will eventually be entering the workforce. These outreach activities may include operators visiting elementary, middle, and high schools or participating in career days. It may also include reaching out to those currently in the workforce through adult education or career re-training programs. The state should be sure that any outreach activities are appropriately tailored to target the intended audience.
- **Encourage programs to sustain institutional knowledge.** Many PWS owners, managers, and operators have a thorough understanding of operation and maintenance of

**Massachusetts** uses its Green Job Training and Placement Partnership to identify, attract, and train future PWS operators by providing them with both classroom and field training. Trainings are offered through vocational and technical high schools, evening adult education classes, and state and community colleges. An associated internship program is open to all students who complete a training program. The state identifies PWS operators who can mentor the training program graduates. These mentors agree to play an active role in the development of the individual as a water supply professional and offer meaningful work that exposes the student to many facets of PWS operation. Refer to Appendix B for more information. <http://www.mass.gov/dep/water/drinking/greenjob.htm>

their PWS because they have worked at the PWS for many years. States may want to assist PWSs in ensuring that this institutional knowledge is gathered, preserved, and passed on by encouraging programs that facilitate information sharing between new and existing PWS operators. For example, states may want to require a “transitional” operator that will observe the previous operator before his or her retirement from the PWS. Similarly, mentoring programs, like those mentioned in the previous best practice, allow current operators to pass on their knowledge of a particular PWS and its operation, as well as PWS operation in general. These types of programs can help ensure that institutional knowledge, including best practices and PWS-specific SOPs, is maintained and shared with future owners and operators through first-hand experience.

- **Provide assistance to PWSs using contract operators.** Some PWSs benefit substantially from using contract operators. Some states, such as Colorado, encourage the majority of their small PWSs to utilize contract operators so that a certified operator is consistently working at the PWS. To assist PWSs with the process of contracting water services, states can maintain an active list of contract operators in the state and provide guidance to PWSs on contractual language and contractor responsibilities. In addition, states may want to consider compiling a list of contractor operators that are able to assist in the event of an emergency. It may also be a good idea for states to monitor the number and complexity of PWSs being run by a single operator so that one operator does not assume more responsibilities than he or she can reasonably manage. Some states have developed contractor operator materials and documents, including interview questions, contract templates, guidelines, and more. One way states can obtain this information is through ASDWA’s CapCert Connections website (<http://www.asdwa.org/index.cfm?fuseaction=Page.viewPage&pageId=503>). This website does require individuals to register and obtain a valid username and password in order to access the information.

The **Washington** Office of Drinking Water maintains a list of approved contract operators which is made available on its website. These contract operators are certified operators that are responsible for the daily operational activities of three or more PWSs. Contract operators must be available 24 hours per day and are subject to specific certification and documentation requirements. These requirements also apply to operators of Washington’s Satellite Management Agencies.  
<http://www.doh.wa.gov/ehp/dw/opcert>

## Chapter 2: Re-focus on Education and Outreach

The Workgroup identified a need for further education and outreach efforts to assist PWSs and boards, as well as to improve knowledge sharing among states related to implementation of the



Capacity Development Program. Several commonly experienced challenges can be tackled through education and outreach. These challenges include:

- **Ensuring that PWS owners and board members understand their roles and responsibilities.** In particular, new PWS owners and board members are often unaware of the complexity, legal responsibility, and expense of running a PWS.
- **Recognizing that it is often difficult to convey the value and cost of water services to customers.** The public is largely accustomed to the false notion that treated water is a freely available public good. Some PWS customers are unaware of the complexity and costs associated with delivering reliable, safe drinking water.
- **Improving awareness of available tools and resources.** Many states, PWS owners and operators, and TA providers have tools and resources that can address specific needs and problems. Many of these resources, however, remain unknown to or underutilized by others who can benefit from them. In addition, the tools and resources are rarely collected in one central location, creating an obstacle to accessibility.

A number of recommendations and best practices were identified to address these challenges. As with the previous chapter, some of the associated best practices for each recommendation are already being used, while others are ideas for the future.

### Recommendation 2.1: Educate potential and existing public water system owners and board members on their roles and responsibilities

Many state Capacity Development Programs have created opportunities or established requirements for new owners to learn about their responsibilities prior to state approval of a new PWS. Such opportunities or requirements are intended to reduce the likelihood that owners will find themselves unable or unprepared to handle the responsibilities of running a PWS. The Workgroup identified several existing and potential best practices that state Capacity Development Programs may use to support this recommendation.

- **Develop a “PWS Ownership 101” package.** Some states have developed an introductory package describing roles and responsibilities that can serve as an effective tool for states to communicate with new or potential PWS owners. In addition to providing these 101 packages to potential new owners, states can also provide them to any “found” PWSs (i.e., PWSs that are identified after they are constructed). Introductory packages can outline important roles and responsibilities, emphasizing those of owners. In some cases, potential PWS owners who receive this type of information will recognize that the responsibilities and complexities of owning a PWS are greater than they had realized and that establishing a new PWS may not be the best option. Therefore, states

may want a 101 package to include alternatives to forming a new PWS (e.g., connecting to an existing PWS). A number of states, such as North Carolina, send letters or other materials addressing specific topics related to PWS ownership. Any “101” materials, whether newly developed or adapted from an existing state’s materials, should be provided to potential PWS owners as early in the permitting process as possible.

- **Use incentives to increase PWS owner and board member attendance and participation at trainings.** Effective trainings should identify and distinguish between the roles and responsibilities of owners, operators, and board members. Board members play an integral role in ensuring that their PWS has capacity. Many states and organizations offer well-developed and effective trainings, but are looking for innovative ways to increase attendance and engagement. One idea for encouraging owners or board members to attend trainings is to offer incentives, such as Drinking Water State Revolving Fund (DWSRF) priority points. Once owners or board members attend a training session, they may develop a deeper understanding of the complexity of operating and maintaining a PWS. Seeing the need for and value of such trainings may even lead these individuals to seek out additional trainings and resources and may also make them more apt to address the PWS’s needs and plan for long-term sustainability.

As an incentive to increase board member/council attendance at trainings, **Kansas** awards additional DWSRF points to a PWS if 80 percent or more of the board/council for that PWS attends a training session. Additionally, PWS operators earn 5 hours of credit if the majority of the board attends a training session. Refer to Appendix B for more information. <http://www.kdheks.gov/pws/capdev.html>
- **Promote effective management by providing periodic training for existing PWS owners and board members.** Providing trainings on a periodic basis can support managerial and financial capacity for PWSs and provide useful TMF capacity indicators for states and EPA. Periodic training ensures that existing PWS owners and board members continue to understand the managerial and financial needs of the PWS even as changes occur over time, such as new regulatory requirements or changes in workforce (e.g., turnover or retirement). States may want to provide training on developing and updating a PWS business plan, calculating cash flow summaries, and understanding profitability and basic accounting practices. Other ideas include training PWS owners and board members in performing rate analyses and conducting water loss audits and energy efficiency evaluations. By training these individuals on how to accurately produce this type of information, states could benefit from being provided with useful indicators of capacity, which can then be used to prioritize PWS assistance.



## Recommendation 2.2: Raise public awareness on the value and cost of water services

Community support is essential for PWSs to be sustainable. Public awareness of the value and cost of water treatment and delivery services allows PWSs to accurately price these services. States can help ensure a PWS's long-term capacity, particularly financial capacity, by promoting a common understanding of the value of water services among PWSs' customers. To raise public awareness of the value and cost of water services, a variety of best practices are available.

- **Support a public campaign to raise customer awareness.** A public campaign to raise awareness about the value of delivered water can change consumer expectations by increasing awareness and understanding of the true costs of providing water. These campaigns could aim to increase customers' appreciation for the amount of effort that is required to reliably provide safe water and ensure that PWSs have the capacity to meet water demands. Campaigns can be developed and implemented at the national, state, community, or PWS level. Under the Capacity Development Program, states are able to use DWSRF set-aside funds for public education outreach campaigns. For example, Arkansas uses set-aside dollars to support general outreach on the importance of wellhead and ground water protection programs. In addition to performing public outreach in their own states, states can also support existing national or regional initiatives, such as the American Water Works Association (AWWA) *Only Tap Water Delivers* grassroots and media campaign. This AWWA campaign helps PWSs and local officials communicate to consumers, the media, and other stakeholders about the value of tap water services.
- **Evaluate, assess, and communicate the value provided by PWSs by comparing water rates with other utility rates or commodities.** It is beneficial for PWSs to evaluate their water rates on a regular basis to determine whether the current rates meet their near- and long-term financial needs. If an evaluation of water rates indicates that current or proposed rates will make revenue insufficient and stress the PWS's financial capacity, the PWS must then assess what a more appropriate water rate would be. When a PWS determines that its water rates are unsustainable, one way to communicate the importance of higher rates to its customers is to demonstrate that water rates are lower than other utility rates (e.g., heating) and commodities (e.g., bottled water). This difference in rates is often found even when water rates are increased

The Environmental Finance Center and the North Carolina League of Municipalities collect rate schedules annually from hundreds of local government and not-for-profit utilities in **North Carolina**. The rate schedules are used to determine what customers are billed for water and other services at various consumption levels. Information on rates and rate structures are then shared among utility managers, including PWS owners.

<http://www.efc.unc.edu/projects/NCWaterRates.htm>

to sustainable levels, and PWS owners need to articulate the benefits customers are getting for the price. Illustrating this value for cost can be especially useful for helping customers realize how much they benefit from a sustainable PWS that provides safe, reliable drinking water while operating with sufficient infrastructure, management, technology, and resources.

- **Link water bills to water use.** PWS owners, operators, and customers should be aware of exactly how much water is being consumed. If PWSs bill according to metered consumption, consumers may be more apt to control their water use through water efficiency and water conservation efforts in order to save money. Additionally, providing explanations on how water rates reflect actual costs (e.g., instead of just stating “variable fee” or “fixed fee” on the bill) can also help customers to correctly value water services.

### Recommendation 2.3: Increase awareness and access to resources and useful tools

The Workgroup emphasized that PWSs, states, third-party TA providers, and EPA all need to find ways to increase their awareness of existing practices and resources. The primary issue is not a shortage of tools or best practices. Rather, resources are scattered and can be time-consuming to collect, which can hinder the dissemination of this information. While venues for information sharing, such as national and regional meetings, webinars, and websites, do exist, demand for faster and easier access to resources is still high. For example, the 2010 National Capacity Development and Operator Certification Workshop provided a meaningful opportunity for groups and individuals working in the Capacity Development, Operator Certification, and technical assistance fields to come together and participate in discussions (for more information on the 2010 Workshop, refer to Appendix A of this document). The comments received during the Workshop reinforced the notion that people are very interested in learning from one another and sharing ideas. Based on the Capacity Development Re-Energizing Workgroup’s findings and recommendations, a number of potential best practices are available to enhance outreach and sharing of tools and resources.

- **Organize regular meetings at all organizational levels to share new and important information.** State workshops can be organized to both contribute to and build

The **Mississippi** Department of Health partners with a state Advisory Committee to review, evaluate, and discuss the state’s Capacity Development Program during a regular, annual meeting. The Advisory Committee consists of representatives from stakeholder organizations (e.g., Mississippi Rural Water Association, Mississippi Municipal League, Mississippi Water & Pollution Control Operators' Association, Rural Community Assistance Partnership), as well as selected PWS managers and operators from around the state.  
[http://msdh.ms.gov/msdhsite/\\_static/resources/2998.pdf](http://msdh.ms.gov/msdhsite/_static/resources/2998.pdf)

off of national or regional workshops, such as the 2010 National Capacity Development and Operator Certification Workshop. Participants and stakeholders should be able to contact workshop planners with relevant information and ideas, both before and after the workshop, so that the information can be shared more broadly. It is important for meetings to facilitate two-way information sharing – meaning participants should be encouraged to both contribute to, and learn from the events.

- **Increase and encourage sharing of information, tools, and resources.** States and other organizations can collaborate to address a range of timely topics and provide examples of recommendations and best practices by hosting webinars or other types of events. States or EPA can also highlight interesting and innovative examples from states and PWSs, including those that address challenges related to implementation, system capacity, and sustainability. Furthermore, EPA’s website, or an alternate website, may be used as a discussion board for states to share the challenges and best practices of their programs. Capturing materials on a CD or USB may be particularly helpful in allowing state programs to share information with PWSs in rural locations where high-speed internet access may not be available or affordable. Overall, the goal of any of these efforts should be to increase knowledge sharing amongst all individuals.

The **Kansas** Department of Health and Environment developed a CD for PWSs that includes information on requesting TA, permitting, contact information, emergency planning, water conservation planning, and reporting.

<http://www.kdheks.gov/pws/capdev.html>

### Recommendation 2.4: Emphasize trainings for public water system managers, owners, and technical staff on environmental sustainability

Many PWSs face water availability and financial challenges. Incorporating environmental sustainability objectives such as water and energy efficiency and long-term source water management into operator and board member trainings can play an important role in strengthening TMF capacity and can generate real cost savings for PWSs. To implement this recommendation, the best practice below was identified. The Workgroup noted that some small and very small PWSs may find the implementation of water and energy efficiency and long-term resource management objectives to be particularly challenging and that in some cases this best practice could conflict with the need to address existing non-compliance issues (e.g., arsenic violations). For these reasons, some states may choose not to prioritize use of the following best practice for some PWSs.

- **Educate PWS managers, owners, and technical staff on the DWSRF Green Project Reserve (GPR) and other funding sources for efficiency and environmental sustainability.** The DWSRF provides several funding opportunities to enhance TMF capacity by implementing water efficiency (e.g., metering, leak detection), energy efficiency (e.g., energy audits, pump system optimization), green infrastructure, and environmentally innovative projects, particularly through the GPR. In Fiscal Year 2010, 20 percent of state DWSRF funds had to be used to help PWSs implement GPR projects. PWSs considering their infrastructure needs should evaluate the costs and benefits of GPR-eligible projects. States can assist them in understanding the GPR requirements, as well as requirements for other funding sources for environmental sustainability (e.g., Department of Energy grants for energy efficiency). For example, states can consider holding training sessions to explain requirements or provide examples of green business cases (e.g., engineering reports, information on water or energy audits). State programs can also use a variety of resources to help identify PWSs with potential projects that qualify for funding based on green or sustainable criteria. Pennsylvania, for example, contracted services for assistance in identifying GPR-eligible projects.

The **Georgia** Environmental Finance Authority uses a pre-application process for green projects requesting DWSRF funding. The pre-application is designed to help potential loan applicants describe proposed green projects and environmental improvements. The pre-application is used to rank each GPR project and develop a priority list of green projects.

<http://www.gefa.org/Index.aspx?page=504>

## Chapter 3: Strengthen Implementation through Collaboration

Members of the Workgroup and participants of the 2010 National Capacity Development and Operator Certification Workshop recognized that collaboration efforts are essential to addressing many of the challenges identified by state Capacity Development Programs. Several commonly experienced challenges related to collaboration include:

- **Limited communication reduces opportunities for collaboration across various groups working on drinking water issues.** Staff and managers working on drinking water issues (in the Capacity Development, Operator Certification, DWSRF Programs, and more) may sometimes be located in different office buildings or government divisions, or may rarely interact on a regular basis. This communication challenge often prevents staff from having a sound understanding of the needs, practices, and priorities of the other individuals working on drinking water issues, resulting in limited collaboration and missed opportunities for joint efforts.

- **A lack of coordination among different funding sources.** The variations in the rules and deadlines for funding sources can make it challenging for PWSs to acquire the funds needed for a particular project. Navigating the numerous, different funding options can sometimes be an overwhelming task. As a result, some PWSs do not take advantage of the most appropriate funding sources and therefore, do not make needed long-term planning or infrastructure investments.

The following recommendations and associated best practices were identified to address these challenges. These best practices call attention to the fact that partnerships can occur on many levels, including within state programs, across state programs, and between states and EPA. In addition to the recommendations listed below, states can also explore other approaches for effective collaboration. The most effective strategy will vary based on the specific circumstances of the state and on the type and size of a PWS.

### Recommendation 3.1: Increase collaboration for all state and federal staff working on drinking water issues

Increasing collaboration between staff working on drinking water issues requires communication and cooperation among members of the Operator Certification, Capacity Development, DWSRF, Enforcement, Source Water Protection, and Regulatory Programs, among others. Collaboration can improve the utilization of funds as well as the prioritization of PWSs or operators in need of assistance. The most effective actions and approaches for collaboration will vary from one organization to another. Critical to the success of such partnerships is support from both the bottom-up (a desire for staff members to collaborate) and the top-down (encouragement and support for collaboration from state program managers, EPA Regional staff, and EPA Headquarters staff). The following best practices, identified by the Workgroup, are intended to help implement this recommendation.

- **Participate in collective discussions about struggling PWSs and how to assist them.** Discussions among the different individuals responsible for assisting struggling or non-compliant PWSs can help everyone develop a more comprehensive view of PWSs' unique situations. Staff and managers from the Capacity Development Program can meet with those in the enforcement, funding,

**Washington's** Capacity Development Program promotes the Small Communities Initiative (SCI), a collaborative, interagency effort between the state's Health, Ecology, and Commerce Departments which supports small communities that are overwhelmed by cumulative, regulatory mandates. SCI's goal is to establish strong working relationships between communities and regulators, promote compliance with environmental and public health requirements, and support the economic vitality of Washington's small communities.  
<http://www.commerce.wa.gov/site/306/default.aspx>

and regulatory divisions to analyze why PWSs are not attaining or maintaining TMF capacity. Staff can work together to find ways to assist struggling PWSs and ensure that the PWSs can maintain capacity after assistance has ended. In-person meetings, electronic correspondence, conference calls, and discussion boards are just a few examples of forums to facilitate this information sharing.

- **Increase interactions between the Capacity Development and DWSRF Programs to promote sustainable PWSs.** Discussions between these programs can increase identification of current resources within the state and ways that these resources can be used most effectively to further promote sustainable PWSs. In particular, Capacity Development staff can comment on Intended Use Plans to provide insight into PWS projects, such as projects for consolidation with a more viable PWS or optimization of pump systems for increased energy efficiency. Additionally, Capacity Development staff can help assess the TMF capacity of DWSRF loan applicants. This may ensure that more loans are given to sustainable PWSs, that set-asides are used to build TMF capacity, and that PWSs lacking TMF capacity are provided with the opportunity to become sustainable by having access to conditional loans (e.g., requiring submittal of quarterly operations and maintenance data). Capacity Development staff can then evaluate PWSs' capacity after receiving DWSRF funding to determine if funding has led to long-term improvements in TMF capacity.

The **Maine** Drinking Water Program uses PWS Consolidation Grants to provide financial assistance to PWSs struggling with TMF capacity. The grants of up to \$100,000 are intended to encourage these PWSs to consider consolidation with a neighboring, viable PWS. The Consolidation Grants are funded using the 15 percent DWSRF Capacity Development set-aside. Grant recipients are required to complete an environmental review process. Refer to Appendix B for more information. [http://www.maine.gov/dhhs/eng/water/dwp\\_services/capdev/capdev.htm](http://www.maine.gov/dhhs/eng/water/dwp_services/capdev/capdev.htm)

### Recommendation 3.2: Increase coordination and communication among funding groups

States, EPA, the United States Department of Agriculture (USDA), the Department of Housing and Urban Development (HUD), and others involved in funding drinking water infrastructure can benefit from proactively coordinating and communicating to achieve shared goals and enhance PWS capacity. Several existing and potential best practices to increase collaboration can be explored at the state and federal levels.

- **Identify non-traditional sources of funding for PWSs.** The Workgroup suggested that by considering innovative or non-traditional funding ideas (e.g., not the DWSRF), EPA or state Capacity Development Programs can develop a list, database, or catalog of



funding sources that extends beyond the traditional sources that are familiar to most PWSs. States that use or discover non-traditional funding sources can also make this information available to other states, third-party TA providers, and PWSs. This may help PWSs determine which funding sources are most applicable to their projects and take advantage of more

The **California** Partnership for the San Joaquin Valley is a public-private partnership focused on improving the region's economic vitality and quality of life. The Partnership is composed of 24 members from state government to local governments and the private sector. One effort undertaken by the Partnership included using a Seed (e.g., startup) Money grant to develop a draft integrated federal and state regional water plan.

[http://www.sjvpartnership.org/wg\\_seed\\_grant.php?wg\\_id=10&sg\\_id=13](http://www.sjvpartnership.org/wg_seed_grant.php?wg_id=10&sg_id=13)

diversified funding options. Some potential non-traditional funding sources for states and PWSs to explore include, but are not limited to: Public-Private Partnerships, Department of Education grants (for drinking water projects at schools), the Bureau of Reclamation Working Capital Fund, the Small Business Administration's Small Business Loans, the Army Corps of Engineers, and the Department of Energy (grants for energy efficiency).

**Increase collaboration at a national level to increase funding opportunities for all PWSs.** HUD's Community Development Block Grant Program, USDA's Rural Utilities Service, and the DWSRF Program all have important and unique funding programs. By taking advantage of opportunities for collaboration, these funding agencies may be able to collectively promote worthwhile and sustainable projects, while clarifying and increasing consistency between their different funding requirements. Some PWSs may be more familiar with one particular funding source than others. Increased clarification of funding objectives may aid PWSs in recognizing ways that their projects fit within the objectives of different funding sources. Furthermore, increased consistency in funding requirements may reduce the burden of completing funding applications for multiple funding agencies, particularly for small PWSs.

- **Coordinate funding efforts among all state funding agencies.** Well-designed funding coordination activities can help stretch limited public dollars further and streamline the efforts of both local communities and funding agencies. Coordination may take place on a variety of levels, depending on a state's needs or resources. One way to coordinate funding sources is by establishing a pre-application process.

The **Nevada** Water and Wastewater Review Committee (NWWRC) brings together state and federal funders to assist communities in navigating multiple agencies' application processes. NWWRC created a pre-application to help small communities begin the application process and to provide consistent information to all of the funding agencies. The committee recommends the most appropriate funding for the applicant. Refer to Appendix B for more information.

<http://ndep.nv.gov/bffwp/nwwwpa.htm>

Another coordination method is to hold regular (e.g., quarterly) meetings among funding agencies or create a funding committee with representatives from each agency.

## Conclusion

The Workgroup hopes that sharing the recommendations and best practices described in this document will help spread awareness about available tools and opportunities, inspire new initiatives and ideas, and re-energize state Capacity Development Programs. Measuring the progress of Capacity Development Programs can be difficult, but is a worthwhile endeavor, particularly in light of declining state resources and the need for PWSs to be sustainable.

At the conclusion of the 2010 National Capacity Development and Operator Certification Workshop, participants identified the three most important topics to address over the next few years. Many participants agreed to help tackle these issues by forming workgroups that would promote discussion of challenges and sharing of best practices. The three workgroups address the following topics identified at the Workshop: 1) managerial capacity; 2) collaboration; and, 3) workforce. At the time of this document's publication, these workgroups have already started to meet. These workgroups will continue to meet and hope to share the information learned with all individuals involved in the Capacity Development Program. In addition, the Capacity Development Re-energizing Workgroup agreed to continue meeting on an ad hoc basis to discuss any timely issues or new best practices. Any individuals interested in staying up-to-date with EPA's and the states' current activities on these topics can obtain information through the new CapCert blog on ASDWA's CapCert Connections website (<http://www.asdwa.org/index.cfm?fuseaction=Page.viewPage&pageId=503>). This website does require individuals to register and obtain a valid username and password in order to access the information.

Overall, information sharing within the Capacity Development Program is moving forward and improved communication methods are being evaluated and tested. The Workgroup encourages EPA to continue working closely with states in addressing new and existing challenges, and identifying new and innovative best practices for the Capacity Development Program. The culmination of actions by states, EPA, and other stakeholders will continue to help PWSs improve capacity and continue along a path towards achieving long-term sustainability.



## Appendix A: EPA's Initiatives for Re-Energizing Capacity Development and Promoting Sustainable Systems

### EPA's Approach for the Equitable Consideration of Small System Customers (Small Systems Approach)

The United States Environmental Protection Agency (EPA) prepared the Approach for the Equitable Consideration of Small System Customers ("Small Systems Approach") in 2009 to improve public water system (PWS) sustainability and public health protection for persons served by small PWSs, and to fulfill the commitment in the Fiscal Year (FY) 2010 President's Budget<sup>2</sup> which states:

*In conjunction with the dramatic increase in Federal funding for local water infrastructure needs, the Administration will pursue program reforms that will put resources for these ongoing needs on a firmer foundation... The 2010 Budget also proposes to work with State and local governments to address Federal drinking water policy in order to provide equitable consideration of small system customers.*

In working with these stakeholders and reviewing available data, EPA confirmed that: 1) some small PWSs (also referred to as small systems) face challenges to providing water in compliance with drinking water standards; and, 2) there is no single solution to small system challenges, and therefore, a variety of strategies needs to be employed. The principles and key components of EPA's Small Systems Approach, incorporating the input EPA received through outreach efforts, are provided below.

#### *Principles of the Approach*

1. Access to safe drinking water should not be based on ability to pay. Every person served by a PWS should receive safe drinking water.
2. Small systems should be provided a hand-up not a hand-out.
3. A variety of strategies should be employed to address the full spectrum of needs.
4. The long-term sustainability of small systems should be ensured.
5. Better targeted assistance should be provided to those small systems that are most in need.

---

<sup>2</sup> U.S. EPA. Office of the Chief Financial Officer. Budget Homepage. <http://www.epa.gov/budget/>.

### *Key Components of the Approach*

1. EPA will work with the state Drinking Water State Revolving Fund (DWSRF) Loan Fund and the United States Department of Agriculture (USDA) Rural Utilities Service to strengthen and target financial support to small systems.
2. EPA will support strengthening Capacity Development Programs and tools.
3. EPA will promote partnerships/restructuring of non-sustainable systems.

EPA believes that the Safe Drinking Water Act (SDWA) currently allows for the development and implementation of many of the tools and programs necessary to assist these systems in reaching EPA's public health objectives, and to move PWSs down the path toward long-term sustainability. The robust use of these tools will promote protection of public health while providing for the equitable consideration of small system customers.

### 2010 National Capacity Development and Operator Certification Workshop

In recognition of a need for greater input and involvement nationwide, EPA partnered with the states to plan the first ever joint National Capacity Development and Operator Certification Workshop. This workshop was held in September 2010 in Dallas, Texas. The goals of the workshop were to promote greater cohesion and communication between state programs and among stakeholders (e.g., states, EPA, and technical assistance [TA] providers), and to discuss challenges and identify best practices that states can apply to their individual programs. The workshop was attended by 35 states, EPA Headquarters and Regions, the Rural Community Assistance Program, the Environmental Finance Centers, the National Rural Water Association, the American Water Works Association, Small System Technical Assistance Centers, the Association of State Drinking Water Administrators, and the USDA Rural Development.

Participants at the workshop expressed great interest in moving forward with implementation of approaches and practices that address the key PWS challenges identified. For this reason, the participants suggested forming three ongoing workgroups to address the following topics: 1) challenges with managerial capacity; 2) workforce; and, 3) improving coordination among drinking water programs. These workgroups, in addition to the Re-Energizing Capacity Development Workgroup, will assist EPA in implementing the Small Systems Approach and moving the Capacity Development Program forward.

## Clean Water and Drinking Water Infrastructure Sustainability Policy

EPA issued its Clean Water and Drinking Water Infrastructure Sustainability Policy in October 2010 as part of its efforts to promote sustainable infrastructure within the water sector.

Sustainable management of our water infrastructure is one of the most substantial challenges facing the water sector and is essential to protecting human health and the environment and realizing the goals of clean and safe water. Communities across the country face challenges with their water infrastructure—often related to aging systems in need of significant upgrade and repair. The investments made now in water sector infrastructure can have profound impacts on long-term community sustainability. Through the Clean Water and Drinking Water Infrastructure Sustainability Policy, EPA is helping to ensure that federal investments, policies, and actions support water infrastructure in efficient and sustainable locations to best aid existing communities, enhance economic competitiveness, and promote affordable neighborhoods.

The Policy was released in response to a request in the FY 2010 President's Budget. In developing the Policy, EPA reached out to federal, state, and local officials to obtain input. These stakeholders provided a number of key insights on water and wastewater infrastructure sustainability that EPA took into consideration.

The Clean Water and Drinking Water Infrastructure Sustainability Policy emphasizes the need to build on existing efforts to promote sustainable water infrastructure, working with states and PWSs to employ robust, comprehensive planning processes to deliver projects that are cost effective over their life cycle, resource efficient, and consistent with community sustainability goals. The Policy encourages communities to develop sustainable systems that employ effective management practices to build and maintain the level of technical, managerial, and financial (TMF) capacity necessary to ensure long-term sustainability.

This Policy represents a collaborative effort between EPA and its federal, state, and local partners. Working with these partners, EPA will develop guidance, provide TA, and target federal-state revolving fund capitalization funds and other relevant federal financial assistance to increase the sustainability of our water infrastructure.

## Appendix B: Detailed Case Studies

### **COLORADO WATER QUALITY CONTROL DIVISION: FACILITY OPERATORS PROGRAM**

The Colorado Water Quality Control Division's Water and Wastewater Facility Operators Certification Board has a Facility Operators Program for the certification of operators for water treatment plants, water distribution systems, and other water related systems.

While basic operator responsibilities include physical operation of the PWS and chemical dosing, the Facility Operator Program encourages operators to go above and beyond their basic duties and to hold themselves to a higher level of professionalism. Colorado recently enhanced the Facility Operator Program by implementing the Certified Water Professional (CWP) credential. The goal of this new credential is to establish a higher level of operator qualification and recognize those individuals who perform above and beyond their basic responsibilities. The CWP credential is intended to enhance an operator's professional status by encouraging operators to achieve the highest applicable certification level and to participate in education beyond the minimum required training units. The designation as a CWP would appear after an operator's name, similar to a professional engineer (P.E.) designation. The state also wants to use the CWP credential to highlight individuals who display additional professionalism, ethics, competence, and pride in their system and community. For example, the state is interested in highlighting individuals who mentor new operators, visit local schools to promote the water system operator profession, or respond to emergency situations.

The Facility Operators Program is strengthened through several partnerships. For example, the Water Quality Control Division (WQCD) works closely with the state's Capacity Development Program. This collaboration allows the WQCD to better inform water systems and communities of information related to upcoming trainings. The Capacity Development Program also supports the WQCD's Facility Operator Program by allocating Local Assistance set-aside funds to support a coaching program. The coaching program enables certified operators with a high level of knowledge and experience to assist small systems lacking TMF capacity using a non-enforcement and non-regulatory approach. ERG funds are also used to reimburse small system operators for renewal certifications. In addition, the WQCD funds hands-on distribution system training at low or no cost. These programs and trainings are offered as a direct result of collaboration between the Capacity Development Program and the Facility Operator Program.

*For more information: <http://www.cdphe.state.co.us/op/ocb/index.html>*

### **INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT: WATER SYSTEM PLAN FOR PROPOSED SYSTEMS**

The Indiana Department of Environmental Management (IDEM) has established several new system requirements, including a water system plan. The goals of these requirements are to help the IDEM assess TMF capacity of potential PWSs and to ensure that potential owners have an understanding of the effort it takes to run a PWS and of the quality and quantity of their proposed water source. Since 1999, Indiana has had 7 or 8 PWSs halt their request for a permit because the prospective applicant realized that establishing and running a system would be too expensive. The water system plan and other new system requirements also help expedite the permitting process and limit the need for enforcement activities by the state since non-viable systems will not receive a permit.

PWSs must submit a water system plan prior to the submission of a construction permit. The plan is required to have not only descriptions of the technical aspects of the systems but also include financial information, including details on an infrastructure replacement plan and both a 5 year and 10 year budget. Managerial information required in the water system plan includes information on the owner and operator, a description of risks and how the PWS would respond to an emergency, and an assessment of authority and responsibility. The IDEM provides an *Information Handbook for Preparing a Water System Management Plan* on their website to ensure that potential owners know how to create the water system plan and why each component is important to a PWS's capacity.

For more information: <http://www.in.gov/idem/4868.htm>

### **KANSAS CAPACITY DEVELOPMENT PROGRAM: RURAL WATER DISTRICT BOARD AND CITY COUNCIL EDUCATION PROGRAM**

The Kansas Capacity, or KanCap, Education Program was developed by the Kansas Capacity Development Program to train water district board and city council members in rural areas. The KanCap Education Program utilizes a handbook and an interactive CD. Board or council members can use these as a learning tool and also as a reference guide once the training course is completed. As an incentive to increase attendance, Kansas awards additional "points" towards a PWS's ranking for DWSRF loans if 80 percent or more of the board or council for that PWS attends a training session. Additionally, PWS operators earn 5 hours of educational credit if the majority of the board attends. This educational outreach effort has been highly successful, with 112 PWSs (229 people) participating in the training in state fiscal year 2010.

The Kansas Rural Water Association was contracted to develop training materials and conduct the trainings. The purpose of the 8-hour training sessions is to provide board and council members with information they need to make decisions that protect public health, with an emphasis on their managerial and financial responsibilities. The training program is voluntary and flexible, with a minimum of 12 training sessions conducted during each state fiscal year. Learning options range from on-site discussions with TA providers to a self study option. There is no cost for materials if participants attend either classroom training or engage in on-site discussions; materials for self study are available for a fee. Available training materials include video clips, interactive quizzes, and other activities that provide information on maintaining compliance with drinking water regulations.

For more information: <http://www.kdheks.gov/pws/capdev.html>

### MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION: GREEN JOBS TRAINING AND PLACEMENT PARTNERSHIP

To address the challenge of an aging and retiring workforce, the Massachusetts Department of Environmental Protection (MassDEP) created the Green Jobs Training and Placement Partnership (GJPP). GJPP is a targeted initiative that aims to identify, attract, and train future water system professionals by providing them with both classroom and field training. This program focuses on, but is not limited to, EPA-designated environmental justice (EJ) areas.

MassDEP partners with various groups, including EPA Region 1, drinking water trade associations and service providers, water systems, vocational technical high schools, adult education programs, and state and community colleges in order to provide a complete and well-rounded experience to potential water system operators. These partners assist in providing operator trainings and internships, examination preparation and review, and career counseling.

GJPP is comprised of four components:

1. ***Training for students at vocational and technical high schools.*** MassDEP works with vocational and technical high schools to expose students to drinking water operations and educate them on a career as a water system professional. MassDEP and its partners work together to offer classroom instruction including use of reading/reference materials, guest lecturers, and field trips.
2. ***Training for adult students through evening adult education classes.*** MassDEP partners with an existing adult education program to provide a 15-hour course on operator training for very small systems. The evening classes attract ready-to-work individuals and introduce them to the water supply field and the responsibilities of certified operators. Adult education students receive reference materials, lectures from water supply professionals, networking opportunities, field trips to drinking water systems, and reimbursements for the Operator Certification exam.
3. ***Training for students at state and community colleges.*** MassDEP partners with four community colleges (all located in EJ areas) to offer an 18-hour classroom training course. The course provides students with an understanding of professional opportunities in the drinking water field and helps attract students to existing environmental programs in the colleges' networks. Students participating in this training are eligible to receive college credit for the course.
4. ***On-site field trainings (i.e., internships) for all trainees.*** MassDEP provides interactive field training experience for students who complete any of the above trainings. MassDEP identifies operators that will act as mentors for the training program graduates. These mentors agree to play an active role in the individual's development as a water supply professional and offer meaningful work that exposes the student to many facets of water system operation. One of MassDEP's partners identifies PWSs to host interns, processes applications from interested students, and sets up interviews with prospective PWSs. Interns are reimbursed \$10 per hour for up to 300 hours of work and must submit a project at the conclusion of the internship. MassDEP funds these internships through EPA Operator Expense Reimbursement Grants.

A total of 240 students (115 in the community college program, 66 in the adult education program, and 59 in the vocational high school program) participated in the first year of GJPP. At the conclusion of the first year, more than 12 operator licenses were issued and four students were hired by PWSs.

For more information: <http://www.mass.gov/dep/water/drinking/greenjob.htm>

### **MAINE DRINKING WATER PROGRAM: FUNDING MECHANISMS TO ASSIST WATER SYSTEMS IN ACHIEVING TMF CAPACITY**

The Maine Drinking Water Program (DWP) assists water systems in achieving TMF capacity by increasing PWS access to funding mechanisms, including the Public Water System Consolidation Grants and the Very Small Water System Compliance Loan Fund.

#### ***Public Water System Consolidation Grants***

The Public Water System Consolidation Grant Program was started in 2008 and provides financial assistance to PWSs struggling with TMF capacity. The grants are intended to encourage PWSs with capacity issues to consider consolidation with a neighboring, viable PWS. PWSs are eligible for a grant of up to \$100,000. The grant funds up to 50 percent of consolidation costs for for-profit PWSs and up to 75 percent of costs for non-profit PWSs. Qualifying costs include, but are not limited to: planning and design, environmental review, income survey, and construction and abandonment of sources. Currently, the state allocates \$500,000 annually to the Grant Program through the use of the 15 percent DWSRF Capacity Development set-aside.

To qualify for a Consolidation Grant, the following criteria must be met:

- The applying PWS must have a TMF capacity issue that will be addressed by consolidation with the more viable PWS and applying PWS must report a median household income of less than \$35,178.
- The receiving PWS must have sufficient TMF capacity, and the consolidation must not reduce the receiving PWS's capacity.
- Plans and specifications for the consolidation must be reviewed and approved by DWP.
- The PWS must complete the environmental review process that is currently part of the DWSRF construction loan program.

Since 2008, 13 water systems have received Consolidation Grants, totaling \$720,000. Overall, approximately 1,600 customers have been impacted. Due to the popularity of the Program, the state is planning to implement a ranking process and will use certain criteria to evaluate applications, including risk to public health, timeframe for completion, and timing of the application submission.

#### ***Very Small Water System Compliance Loan Fund***

The Very Small Water System Compliance Loan Fund was created in 2010 to help very small water systems achieve compliance with new and current standards of the SDWA, excluding the Total Coliform Rule. The Fund puts aside \$500,000 of construction funds for use by very small PWSs, enabling community water systems (CWSs) serving 100 or fewer customers or any non-profit, nontransient noncommunity water systems (NTNCWSs) to receive a loan of up to \$50,000 to address compliance issues. The loans are provided at 100 percent principal forgiveness, have no application period, and overhead costs are rolled into the loan. The state has identified eight potential projects; seven with arsenic compliance issues and one with a uranium compliance issue. To date, three water systems have applied for a Very Small System Compliance Loan.

For more information: [http://www.maine.gov/dhhs/enq/water/dwp\\_services/capdev/capdev.htm](http://www.maine.gov/dhhs/enq/water/dwp_services/capdev/capdev.htm)



### **NEVADA DIVISION OF ENVIRONMENTAL PROTECTION: NEVADA WATER AND WASTEWATER REVIEW COMMITTEE**

The Nevada Water and Wastewater Review Committee (NWWRC) brings together state and federal funders to assist communities in navigating the application processes of multiple agencies. The committee includes representatives from the United States Department of Agriculture, the Community Development Building Group, and the Nevada Division of Environmental Protection (DEP). These groups collaborate to assist potential PWS loan and grant applicants in determining the best approach to funding their projects.

The NWWRC also has a particular focus on small, rural communities since these communities often face difficulties with meeting both the administrative and financial requirements of individual (or in some cases, multiple) funding agencies. The NWWRC created a pre-application to help communities begin the funding application process and to provide consistent information to all of the funding agencies. The NWWRC's committee meets within 3-4 weeks of receiving a pre-application and provides detailed correspondence to recommend the most appropriate funding for the applicant. Applicants can then complete the funding applications for individual agencies.

The Nevada DEP has found the creation of the NWWRC to be very beneficial. The NWWRC helps small communities by identifying funding opportunities and helping to navigate the application process. The NWWRC has also been beneficial in allowing Nevada's funding agencies to craft funding packages that combine various loans and grants. Additionally, project applicants know that the various funding agencies are communicating, which reduces "answer shopping" by applicants. This also allows the funding agencies to receive consistent explanations of funding proposals because all agencies have read the basic project information on the pre-application.

*For more information:* <http://ndep.nv.gov/bffwp/nwwpa.htm>

### **NEW HAMPSHIRE CAPACITY DEVELOPMENT PROGRAM: TECHNICAL ASSISTANCE AND ENFORCEMENT**

The New Hampshire Capacity Development Program identifies PWSs in need (i.e., "the bucket list") based on referrals primarily from enforcement and sanitary survey inspections. This Capacity Development list is cross-checked quarterly with EPA's Enforcement Targeting Tool (previously the Significant Non-Complier [SNC] and Historical SNC lists) to ensure outreach has been exhausted for all higher level enforcement cases as well.

In January 2008, one new outreach position was created and other technical staff members were assigned outreach duties to shepherd each PWS on the bucket list back to compliance. An active work log for each PWS is maintained and is accessible internally to all staff of the Drinking Water and Groundwater Bureau (DWGB) for recording and review of information on outreach activities.

The current status of non-compliant PWSs is discussed at weekly meetings of the Capacity Development staff, and quarterly meetings with the Bureau Administrator and all technical and survey staff. When necessary, the Administrator personally attends membership meetings and conference calls with PWS commissioners or board members to review deficiencies and come to an agreement on a suitable work plan and timeline for resolution. The work plan log is closed when the PWS returns to compliance, and a copy of the chronological log is maintained in the PWS file.

*For more information:* <http://des.nh.gov/organization/divisions/water/dwgb/capacity/index.htm>



### **NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES: WATER SYSTEM MANAGEMENT PLAN REQUIREMENT**

The North Carolina Department of Environment and Natural Resources (DENR) requires a water system management plan (WSMP) to document that new PWS owners have the ability to finance, operate, and manage their PWS. A WSMP is a useful tool for any owner, and especially new owners, and is required by state regulation for all CWSs and NTNCWSs intending to construct, alter, or expand their PWS. To assess the capacity of new PWSs, the state reviews WSMPs to verify that PWSs have both managerial and financial capacity. DENR has the authority to review WSMPs at any time and to require existing PWSs to address any management and ownership issues.

The WSMPs must include details on the managerial and financial capacity of the PWS. The WSMP specifically discusses: system organization; ownership; management qualifications; management training; internal PWS policies; monitoring, reporting, and record keeping procedures; and financial plans. Once construction, alteration, or expansion activities are finalized, the PWS must submit an engineer's certification that the project has been constructed in accordance with the approved WSMP and specifications. When DENR encounters difficulty with a PWS, it may review the WSMP and require that the PWS submit an engineer's report on how it is addressing the problem.

*For more information:* <http://www.deh.enr.state.nc.us/pws/CapDev/CapDevForms.htm>

### **TEXAS COMMISSION ON ENVIRONMENTAL QUALITY: SYSTEM RESTRUCTURING**

The Texas Commission on Environmental Quality (TCEQ) offers consolidation assessments for PWS owners who are considering getting out of the water business by consolidating their PWS. In these circumstances, TCEQ contracts with the Texas Rural Water Association (TRWA) to provide consolidation assessments. If consolidation is determined to be feasible and recommended, the TRWA discusses consolidation with the PWS owner and other affected parties and helps to facilitate the process (e.g., complete paperwork and applications, provide support at public meetings) until completion. PWSs currently in enforcement proceedings or in the process of being referred to enforcement for violations are not eligible for assistance without the approval and involvement of the TCEQ Enforcement Division and Regional Field Operations Office. Projects that will result in PWS consolidation can receive additional priority points in the state's DWSRF Intended Use Plan.

TCEQ also contracts with the University of Texas to help PWSs with Maximum Contaminant Level violations understand the issues and related consolidation options (e.g., interconnections, treatment, relocating a source). Financial impacts are also discussed, so that the PWS understands the costs per customer for different options. TCEQ funds this high-level technical assistance to small PWSs using the DWSRF Small Systems Technical Assistance (2%) set-aside.

*For more information:* <http://www.trwa.org/FMTAssistanceBrochure.pdf> and  
[http://www.beq.utexas.edu/enviroqlty/TCEQ\\_ss2004-2007.htm](http://www.beq.utexas.edu/enviroqlty/TCEQ_ss2004-2007.htm)

**VIRGINIA OFFICE OF DRINKING WATER:  
SOURCE WATER ASSESSMENTS AND SOURCE WATER PROTECTION**

Virginia's Office of Drinking Water (ODW) staff work collaboratively with PWSs to help them comply with regulations by using a programmatic and financial assistance approach. As part of the state's Capacity Development Strategy, ODW promotes sustainability and encourages PWSs to develop TMF capacity by utilizing ODW's source water assessments and engaging PWSs in the development of source water protection (SWP) plans.

In 2003, ODW completed a focused effort to perform Source Water Assessment Reviews on all active public water supplies. These assessments were designed to reveal PWSs' potential vulnerabilities to manmade contamination and serve as a tool for water supply resource planning. ODW continues to perform assessments on new PWSs and to update historical assessments using field observations made during sanitary surveys.

ODW also has a Source Water Protection Program for small ground water CWSs. This Program utilizes a contractor to provide technical support to small PWSs. The resulting SWP plans enable participating PWSs to take steps to safeguard their drinking water sources by managing and controlling activities in the vicinity of the source that could compromise water quality and quantity.

As of August 2010: 89 CWSs (46% of population, 9% of CWSs) have achieved substantial implementation of their SWP plans; 255 CWSs (26% of CWSs) have a SWP strategy in place; and, 166 CWSs have completed a SWP plan which addresses one or more aspect of their protection strategy.

Additionally, ODW, in conjunction with the Department of Environmental Quality, solicits proposals for Wellhead Protection Plan Development from PWSs. This funding source helps PWSs implement activities in their SWP plans (e.g., installing fencing around wellheads, adding signs, removing underground storage tanks).

*For more information: <http://www.vdh.state.va.us/drinkingwater/Owners/strategy.htm>*

**WASHINGTON STATE DEPARTMENT OF HEALTH, OFFICE OF DRINKING WATER:  
THIRD-PARTY TECHNICAL ASSISTANCE AND PLANNING PROGRAM**

The State of Washington Department of Health (DOH) collaboratively engages with their TA providers to provide PWSs with Capacity Development assistance. The state's regional staff members make referrals to TA providers based on a PWS's needs. This assistance can include board training, asset management, budgeting, rate setting, loan preparation, and other activities that improve the PWS's viability. The TA providers complete summary reports of services provided and consult with the state's contract manager and regional staff to discuss progress, concerns, remaining technical assistance needs, and how best to address unresolved issues.

DOH also proactively engages with PWSs through their planning program. By regulation, all CWSs and NCWSs must demonstrate their TMF capacity through a comprehensive planning document. CWSs that serve 1,000 or more connections or that are expanding in size must receive DOH approval of their water system plan. These PWSs evaluate and document their operational and management structure, future capital improvements, budget, current and estimated future demand, and ability to meet the demand. The remaining PWSs must develop and implement a smaller comprehensive plan that evaluates system capacity, but does not anticipate future growth. PWSs work with local planning agencies, emergency responders, officials, and neighboring PWSs throughout their plan development process. DOH regional planners and engineers use the plan approval process to oversee PWSs' capacity to serve their current and future customers. Regional staff members also help small PWSs develop appropriate plans for their future by providing direct technical assistance and outreach or referrals to TA providers.

*For more information:* <http://www.doh.wa.gov/ehp/dw/Programs/capacity.htm>