EXECUTIVE SUMMARY

In 1996, Congress reauthorized the Safe Drinking Water Act. As a part of the Safe Drinking Water Act reauthorization, a Drinking Water State Revolving Fund was established for states to finance infrastructure improvements for public water systems.

In order for each state to receive their full allotment of the Drinking Water State Revolving Fund, they are required to establish a capacity development program. Failure to do so results in a withholding from the Drinking Water State Revolving Fund by the United States Environmental Protection Agency.

The state primacy agency is responsible for developing the program. The Arkansas Department of Health, Engineering Section is the state primacy agency in Arkansas. The Engineering Section is responsible for the oversight of Safe Drinking Water Act activities and for the development and implementation of the capacity development program in Arkansas. Arkansas’s capacity development strategy was approved by the United States Environmental Protection Agency in September of 2000 and is currently in compliance with all Safe Drinking Water Act capacity development requirements.

Within two years of approval, and every three years after that, each state must submit a report to the Governor on the efficacy of the state’s capacity development strategy and their progress toward improving the technical, managerial, and financial capacity of public water systems in the state. This report is to be prepared by the state primacy agency. Failure to submit the report results in an additional withholding of Drinking Water State Revolving Funds. This document is submitted to comply with those requirements.

In this document, the Engineering Section explains the background and purpose of capacity development, the mandated requirements for capacity development, the major objectives of our capacity development strategy, and any accomplishments associated with those major objectives.
Key Abbreviations:

Engineering Section  The Arkansas Department of Health, Engineering Section is the state primacy agency in Arkansas. The Engineering Section is responsible for the oversight of Safe Drinking Water Act activities and for the development and implementation of the capacity development program in Arkansas.

USEPA  The United States Environmental Protection Agency (USEPA), together with states, tribes, and its many partners, protects public health by ensuring safe drinking water and protecting ground water. The Office of Ground Water and Drinking Water, along with USEPA's ten regional drinking water programs, oversees implementation of the Safe Drinking Water Act, which is the national law safeguarding tap water in America.

ANRC  The Arkansas Natural Resources Commission (ANRC) is the lead agency for the administration of the Arkansas Drinking Water State Revolving Fund (DWSRF) Program. ANRC is responsible for the administrative set-aside funds and the actual loan funds.

SDWA  The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under the SDWA, USEPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards

DWSRF  Congress established the Drinking Water State Revolving Fund (DWSRF) as part of the 1996 SDWA amendments. The goal of the program is to provide States with a financing mechanism for ensuring safe drinking water to the public. States can use federal capitalization grant money awarded to them to set up an infrastructure funding account from which assistance is made available to public water systems. Loans made under the program have below market interest rates and repayment terms of up to 30 years.

Significant Terms

Capacity Development  In the context of the 1996 Amendments to the SDWA, water system capacity can be thought of as encompassing the technical, managerial, and financial capacity of the water system to plan for, achieve, and maintain compliance with applicable drinking water standards given available water resources and the characteristics of the service population

Public Water System  A system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year.
What challenges do small systems face in the Drinking Water industry?

The water industry in the United States is considered to be a rising cost industry, meaning that as more regulations to enhance public health protection go into effect, the cost of providing safe drinking water in compliance with those added regulations will increase. In conjunction with more and tighter regulations, public water systems must also bear routine costs of facility operation and maintenance, as well as any needed infrastructure improvements.

Another challenge faced by small systems is a lack of a large customer base and what is referred to as economies of scale. Depending on how a small system designs its rates, fewer customers can mean less revenue for infrastructure improvements, repayment of debt, and operators and other staff with technical expertise. Compared to larger systems, small systems are the least able to gain access to outside capital to finance needed infrastructure improvements, according to the USEPA’s 1997 Drinking Water Infrastructure Needs Survey.

Many small systems face a challenge of striking a balance between ensuring that water service is not underpriced, but also those services are affordable. It has been a widely held view in the drinking water industry that water in many areas has historically been underpriced. In theory, water prices are primarily a function of the cost of providing that service. However, when systems do not establish rates in accordance with collecting sufficient revenue to cover those costs, the system may inevitably lack resources to make needed infrastructure improvements and protect public health.

On the other hand, small systems also seek to ensure that the services they provide are affordable to their customers. Providing affordable service is a function of the price of service and the ability of households to pay for that service. Ability-to-pay relates to elements of a household’s fixed income, such as housing, property taxes, utilities, food, and other necessities. For low-income households, a large proportion of their income devoted to paying for these fixed costs can make paying other bills difficult.

What is capacity development and how can it be used to help small systems enhance their level of public health protection?

Capacity development is a state effort to help drinking water systems improve their finances, management, infrastructure, and operations so they can provide safe drinking water consistently, reliably, and cost-effectively. More specifically, the capacity development provisions provide an exceptionally flexible framework within which states and public water systems can work together to ensure that systems acquire and maintain the technical, managerial, and financial skills to consistently achieve the health objectives of the 1996 SDWA.

Since the overwhelming majority of all public water systems are classified as small, it then follows that capacity development activities will likely have their greatest effect on small systems, and particularly on those small water systems that are currently out of compliance, or may likely be in the future.

States can use capacity development to efficiently target the technical, managerial, and financial needs of many small systems and then directly address those needs through specific activities that help systems enter and remain in compliance.
What do we mean by Technical, Managerial, and Financial (TMF) Capacity?

The National Drinking Water Advisory Council, which assisted USEPA in implementing the capacity development and other provisions of the SDWA, drafted a recommendation as to how capacity should be defined in the context of the 1996 SDWA. It recommended that capacity be viewed as encompassing a water system’s technical, managerial, and financial wherewithal to achieve, maintain, and plan for compliance with applicable standards, given the system’s available water resources and the characteristics of its service population. Two aspects of this recommended definition are particularly noteworthy:

- The group generally agreed that capacity needed to be viewed comprehensively, thus the statement “...encompassing a water system’s technical, managerial, and financial wherewithal...” All elements of a water system’s capability to effectively deliver safe water are involved.

- The group generally agreed that capacity must be forward looking and not merely a snapshot in time, thus the statement “...achieve, maintain, and plan for compliance...”

“Capacity development” is a process through which a system plans for and implements action to ensure that the system can meet both its immediate and its long term challenges.

Each State will establish its own operational definitions, but the group drafted these suggested definitions:

- Technical capacity refers to the physical infrastructure of the water system, including but not limited to the adequacy of the source water, infrastructure (source, treatment, storage, and distribution), and the ability of system personnel to implement the requisite technical knowledge.

- Managerial capacity refers to the management structure of the water system, including but not limited to ownership accountability, staffing and organization, and effective linkages to customers and regulatory agencies.

- Financial capacity refers to the financial resources of the water system, including but not limited to revenue sufficiency, credit worthiness, and fiscal controls. In the context of the 1996 Amendments to the SDWA, water system capacity can be thought of as encompassing the technical, managerial, and financial capacity of the water system to plan for, achieve, and maintain compliance with applicable drinking water standards given available water resources and the characteristics of the service population.
How did the concept of Capacity Development arise?

Since crafting the SDWA in the early 1970’s, the United States Congress has recognized the unique challenges that face small drinking water systems. The original Act in 1974, and the major amendments in 1986, focused on developing and implementing a strong regulatory program based on monitoring and treatment. The general sentiment was that, in the face of a strong regulatory program, systems would make the changes necessary to comply. The SDWA authorized training and technical assistance to help systems, and provided exemptions for systems that faced compelling economic circumstances. These exemptions could be extended for very small systems.

By the late 1980’s and early 1990’s, it was clear that small systems were having great difficulty keeping up with the rapidly expanding SDWA-mandated regulations. There was also a growing recognition of a significant need for basic infrastructure repair and replacement, quite separate from any regulatory mandates. A few States were implementing “viability” initiatives, which sought to promote small system compliance, and otherwise address small systems problems, by ensuring that systems had the necessary underlying technical, managerial, and financial wherewithal. These programs showed great promise, and the concept of "small system viability" emerged as a major consideration in the early discussions about SDWA reauthorization.
As the debate on SDWA reauthorization progressed, however, it became clear that the term "viability" had at least two significant shortcomings. First, it promoted an unproductive focus on classifying systems as "viable" or "nonviable." Second, it implied a static endpoint. The debate was really about finding a way to create a process through which systems could enhance their technical, managerial, and financial capacity to ensure consistent compliance with the SDWA. Thus, the concept became known as "Capacity Development." Capacity Development implies a process, not a static endpoint, and does not promote a focus on rigid classification of systems as "having it" or "not having it."

**How does Capacity Development fit together with other elements of the SDWA?**

The SDWA Amendments of 1996 became law on August 6, 1996. While retaining the best of the previous SDWA, the Amendments create a new and strong focus on preventing contamination and noncompliance. They also greatly increase State flexibility, provide badly needed financial support, and create a new ethic of public awareness and participation. The new provisions may be thought of as a tapestry. Individual provisions are best understood not in isolation, but in the context of the whole.

From a small systems perspective, the major components of the tapestry are the Drinking Water State Revolving Fund (DWSRF), capacity development, source water protection, operator certification, consumer confidence, and variances and exemptions. These provisions are closely interrelated.

Capacity development, source water protection, and operator certification are directly linked to the DWSRF. A State may set aside funds from its DWSRF to develop and implement a program that addresses these three provisions. Capacity development and operator certification are also tied to the DWSRF through withholding requirements.

Capacity development alone can also be thought of as a tapestry which weaves together all existing state drinking water program activities into a focused effort to help troubled small systems, such as through sanitary surveys, technical assistance, permitting and licensing, operator certification, etc.

States can take advantage of DWSRF set-asides to prepare a capacity development strategy that is focused on a specific group of systems, such as significant non-compliers, or directed broadly towards systems that are out of compliance or will soon be out of compliance.

**What is the Drinking Water State Revolving Fund?**

The creation of the DWSRF, to assist communities installing and upgrading safe drinking water treatment facilities, is among the new statute's most dramatic departures from the past. It is also one of the most important changes in the nation’s drinking water program since passage of the original SDWA in 1974. President Clinton proposed this DWSRF in 1993 to advance the same kind of national commitment to safe drinking water as America has made to wastewater treatment and clean water.

The DWSRF was authorized at $599 million for Fiscal Year 1994, and approximately $1 billion annually thereafter through Fiscal Year 2020. The full span of this authorization is meaningful because the law permits appropriation in future years of any funds authorized but not
appropriated in prior years. Funds were allotted to all primacy States through Fiscal Year 1997 based on the current formula for Public Water System Supervision grants, and thereafter based on the results of the most recent federal Drinking Water Infrastructure Needs Survey. A minimum allotment of one percent is available for all States, and the required State match is twenty percent of the capitalization grant. States may elect to use as much as 31% of the federal capital grant for state set aside fund activities. For loan assistance, community water systems and non-profit non-community water systems are eligible, but federal systems are not. Projects, including associated land "integral to a project," are eligible if they "will facilitate compliance with" applicable national drinking water regulations or will "significantly further the health protection objectives" of SDWA. States will annually prepare intended use plans identifying eligible projects and their priority, based on seriousness of health risk, compliance needs, and economic need calculated on a per-household basis. Based on the Needs Surveys, Arkansas has received more than the minimum 1% State allotment each year.

Who is responsible for implementing the DWSRF loan program in Arkansas?

The Arkansas Department of Health, Engineering Section, is the SDWA primacy agency for the State of Arkansas. It is responsible for the development and administration of the DWSRF comprehensive project priority list, SDWA oversight, and state set aside fund programs, with the exception of the administrative set-aside funds.

The Engineering Section entered into a Memorandum of Agreement with the Arkansas Natural Resources Commission (ANRC), making ANRC the lead agency for the administration of the Arkansas DWSRF Program. Under this memorandum, ANRC is responsible for the administrative set-aside funds and the actual loan funds. The Engineering Section is responsible for the remaining set-aside funds.

The Arkansas Development Finance Authority has fiscal responsibilities for the program through the collection of loan repayments and the investment of unspent funds of the DWSRF. All programs are administered in accordance with the guidance of the USEPA and the SDWA.

What are the major components of capacity development under the 1996 SDWA?

Capacity development under the 1996 Amendments to the SDWA has three major components outlined in the table below:

**Section 1420(a) New Systems**

Under penalty of Drinking Water State Revolving Fund (DWSRF) withholding, States must have a program established to "ensure that all new community water systems and Non-transient, non-community water systems commencing operations after October 1, 1999, demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date of commencement of operations."

**Section 1420(c) State Capacity development Strategies**

Under penalty of DWSRF withholding, the State must develop and implement a "strategy to assist public water systems in acquiring and maintaining technical, managerial, and financial capacity."
Section 1452(a)(3) Assessment of Capacity

States cannot provide financial assistance under the DWSRF loan program, if the system lacks the TMF capability to ensure compliance; or if the system is in significant noncompliance with any drinking water standard or variance; however, States may provide financial assistance in the form of loans if the use of such assistance will ensure compliance; and the system has agreed to make the necessary changes in operation to ensure that it has the technical, managerial, and financial capacity to comply over the long term.

What are the major objectives of Arkansas’s Capacity Development Strategy to meet the Section 1420(a) requirements for New Systems?

The Engineering Section requires that new systems submit a preliminary engineering report for review and approval prior to submitting detailed construction plans, thus ensuring that the new system will have the required capacity at startup. Once a new system commences operation, one measure to determine if the system is maintaining technical, managerial and financial capacity is to routinely review the system’s ability to comply with the SDWA. If there is a negative trend in compliance data, the system will be inspected to determine what factors are contributing to this poor performance. The water system will then be required to take appropriate corrective actions to address any deficiencies found in the areas of TMF capacity.

What progress has been achieved in meeting the major objectives for New Systems?

Plan review of “New” systems has been a major objective of the Public Water System Supervision program for many years. In order to more fully comply with the TMF provisions of the 1996 amendments, the Engineering Section developed a guideline document in 2005 to assist the plan review engineers adequately document that newly proposed water systems meet technical and managerial capacity requirements. The plan review engineers have been ensuring that all “New” systems meet the capacity provisions of the 1996 amendments.

As of 2011, none of the “New” systems that have been approved through the plan review process have been on any historic significant non-complier lists. Also, as part of “New” system startup, the Engineering Section conducts TMF assessments for each system, thus ensuring that each of these “New” systems have an excellent chance of maintaining compliance with the SDWA.

What are the major objectives of Arkansas’s Capacity Development Strategy to meet the Section 1420(c) requirements for Existing Systems?

Since the overwhelming majority of all public water systems are classified as small, it then follows that capacity development activities will likely have their greatest effect on small systems, and particularly on those small water systems that are currently out of compliance, or may likely be in the future. The major objectives of our strategy are then to assist these small public water systems with the following:
• Routinely conduct TMF assessments of high priority public water systems and provide ongoing technical assistance to these systems to help enhance their capacity.

• Utilize new or existing Engineering Section program elements to help existing public water systems plan for compliance with the SDWA.

What accomplishments and progress have been made in implementing the major objectives for existing systems?

Since 1999, the Engineering Section has contracted with Arkansas Rural Water Association [ARWA] and/or Communities Unlimited [CU] to provide a helping hand to small public water systems that need technical, managerial and financial assistance. ARWA has been the technical assistance contractor for the Technical and Operational contract since 2010. ARWA works with systems needing help evaluating their source water, physical condition of the infrastructure and the technical knowledge of the operational staff to properly operate the system. CU has been the technical assistance contractor for the Financial and Managerial contract since 2018. CU works with systems needing help with organization staffing, revenue sufficiency, credit worthiness and fiscal management and controls.

Each year, or more often, the Engineering Section develops a priority ranking system to determine which systems, potentially, have the highest technical, managerial or financial capacity need. The priority system is based on compliance, source, operator status and other factors. Systems with the most points, potentially, have the highest need. The contractor then contacts these high priority systems to offer assistance. If the water system accepts assistance from the contractor, they meet with the operational and administrative staff and assist in solving deficiencies.

For the period July 1, 2017, through June 30, 2020, ARWA and CU have assisted a total of 108 systems with achieving and maintaining TMF capacity. A complete list of the systems that have been helped for the reporting period is shown in Appendix A.

The Engineering Section believes that the training and certification of Operators are necessary components of any program that will provide for the long term improvement of water system capacity. The Operator must have not only the requisite knowledge of his system and the regulations, but also must know how to implement that knowledge. Training in the implementation of the regulations and best practice technologies has long been a mainstay of the Engineering Section.

The Engineering Section conducts monthly, or more frequently, eight hour classroom training courses on the responsibilities of public water systems to comply with the “Rules and Regulations Pertaining to Public Water Systems” and the “National Primary Drinking Water Regulations”. The training does not include all details necessary to ensure compliance, but advises the Operator of the primary areas of responsibility and refers the Operator to the appropriate location for the regulatory citation.

The Engineering Section understands that many of the new regulations are complicated and may be difficult for some of the smaller public water systems to implement without some direct assistance. The Engineering Section has made special provisions to address some of these key issues:
As part of the 1996 Amendments to the SDWA, each community public water utility must provide a consumer confidence report to each customer. The report provides an overview of the water quality results for the utility for the past year along with its violation status. The report is directly delivered to each customer by publishing it in a local newspaper, by direct mail, or posting it on the internet. The language and reporting requirements are quite detailed and specific. In order to assist water operators meet this requirement, the Engineering Section prepares an “official” printable report that each utility can either directly print or give to their local newspaper for publication. We also publish each report on the Engineering Section’s website. Without such an assistance program many of these small water systems would not be able to comply with the SDWA.

Like most States, the enhanced surface water treatment rules and the disinfection and disinfection by-products rules are having impacts on the small surface water systems and to a lesser extent some groundwater systems. Arkansas took an early lead in developing its own Comprehensive Performance Evaluation team to assist surface water systems to comply with challenging water quality goals for these type systems. Over the last 10 years, the team has averaged about 3 to 5 evaluations a year in addition to conducting targeted investigations tailored to help problematic systems.

In addition, Arkansas also networks with other States as part of USEPA’s Area Wide Optimization Program. As part of the network, Arkansas sets voluntary optimization goals for the targeted systems and then conducts evaluations and investigations as part of the Comprehensive Performance Evaluation. Each year the Engineering Section documents the achievements that have been made in assisting these systems to reach their optimization goals.

The Engineering Section believes that public education on the value of drinking water resources, and the complexities of the competing interests that must be addressed to provide safe drinking water, are a necessary component of any program that will provide for the long term improvement of water system capacity. The drinking water knowledge of the public being served by a water system is a critical factor in the decisions made by the governing body of that system. Those decisions will have a direct impact on the ability of the water system to comply with the SDWA regulations. With this public education goal in mind, the Engineering Section implements a number of projects to educate the public, elected officials, and water system employees on these issues. They are as follows:

- The Engineering Section maintains a website http://www.healthy.arkansas.gov/eng/ providing information about the Engineering Section, waterworks topics, and links to other related web sites. Special topic areas include: “Hot News”, Drinking Water, Source Protection, Operator Certification, Cross Connection and Capacity Development.

- The Engineering Section publishes and distributes a quarterly newsletter to advise public water systems of upcoming regulations, provides a summary of regulations and other topics of interest on both a state and a national basis. The Engineering Section currently provides one copy of the newsletter to each community public water system, each mayor of all Arkansas cities and towns, and other interested parties.

- The Engineering Section has developed an Arkansas Compliance manual for the water operators. The document is intended to be a summary of the responsibilities of public water systems to comply with the SDWA. It does not include all details necessary to
ensure compliance, but advises the operator of the primary areas of responsibility and refers the operator to the appropriate location for the regulatory citation, as well as the location of any additional information. The Engineering Section also conducts a one day eight hour course each month in various locations around the state to train operators about their SDWA responsibilities.

**What progress is the Engineering Section making in improving the TMF capacity of public water systems?**

Although the Engineering Section is making efforts to improve the capacity of existing small public water systems, we believe that no single quantitative metric can adequately measure the Engineering Section’s efforts. Rather, the Engineering Section’s efforts should be viewed in context of the services it is providing to meet the objectives of the Engineering Section’s Capacity Development strategy. With that in mind, the Engineering Section believes the following has made a qualitative improvement in the TMF capacity of small water systems.

- The Engineering Section has employed a full time Capacity Development Coordinator since early 2007. The Coordinator has been busy working with the regional District staff, Operator Certification program staff and the Enforcement program staff to coordinate key issues affecting system capacity such as:
  - Significant non-compliers with the SDWA
  - Lack of a qualified operator of record
  - Sanitary survey deficiencies
  - Source, treatment, storage, pumping and distribution deficiencies
  - Regionalization efforts
  - Long Range Planning
  - Asset Management

  The Coordinator works closely with our technical assistance contractors to target activities so that these key issues can be addressed.

- Through the efforts of the contractor, the Engineering Section provides assistance to water utilities to complete a Long Range Planning document. The contractor, in cooperation with the Engineering Section, prepared a long range plan template for water systems to use.

- It is generally accepted that if a water system cannot locate its underground infrastructure that is a good indicator that there may be capacity issues with that system. ARWA participated in the hurricane relief efforts of 2005 in Texas, Louisiana and Mississippi. During that effort, ARWA noted the impossibility of locating valves and other assets during such a disaster. ARWA brought this idea back to Arkansas and began addressing the mapping needs of small systems. They purchased GPS equipment and began locating key valves and meters. They then took this information and installed it on the utilities' computer with a free GIS platform. These small systems were encouraged with the results. As a result of ARWA's efforts, the Engineering Section, has contracted with a technical assistance provider, Magnolia River, since 2008 to work with small systems establish a GIS program for their water systems. Thirty-two small systems were mapped and provided GIS programs from July 1, 2017 through June 30, 2020.
While the Engineering Section is committed to these and other activities, and it is anticipated that there will be improvement in the capacity of small systems, improvement is not guaranteed as there are many factors that affect the process. Some of them are as follows:

- Limited public understanding of the implications of complying with the Safe Drinking Water Act or the problems faced by the managers and operators of small public water systems.

- Inability to fund or prioritize small water systems so that they can achieve, maintain and plan for compliance with the Safe Drinking Water Act.

- Governing bodies in some cases do not fully understand their responsibilities as the administrator of managers and operators trying to comply with the Safe Drinking Water Act.

- The Engineering Section does not have adequate financial resources to provide services beyond those which have been identified above.
SELECTED REFERENCES


Public Water Systems
Assisted by ARWA through Technical Assistance Contracts
SFY 2018 - 2020

Bald Knob North
Barton Lexa
Bassett
Bauxite
Baxter Marion Regional
Bearden
Bee Branch
Berryville
Big Flat
Blue Mountain
Bodcaw
Bois D’Arc
Bull Shoals
Caldwell
Cash Cherokee Village
Clinton
Compton
Deer
Dermott
DeWitt
East Johnson County
East Logan County
Eudora
Faircrest
Fifty-Six
Fordyce
Freedom
Frenchport
Garfield
Gould
Gum Springs
Harmony Grove
Hartford
Helena
Horatio
Humphrey
Jasper
Jefferson Samples
Johnson Township
Judsonia
Keo
Kingsland
Knoxville
Lake Lucerne
Lakeside
Lamar
Lead Hill
Leola
Leslie
Lewisville
Lonoke
Lurton
Pelsor
Marshall
Marvell
McCrory
Melbourne
Mitchellville
Morning Star
Mountain Top
Nail Swain
Norman
North Howard County Rural
North White County
Northern Ohio WA
Ola
Old Union
Outside Kingsland
Ozark Mountain Regional
Pangburn
Parthenon
Patterson
Pleasant View
Plumerville
Poyen
Prattsville
Pyatt
Rambo
Ravenden Springs
Readland Grand Lake
Richwoods
Riviera Utilities
SDM Water Association
SE White County
Shady Acres MHP
South Mountain
Sparkman
SPG Water Association
St. Francis
St. Francis River Regional WD
St. Francis Rural Water Strong
Sulphur Springs
Summit
Sylamore Valley
Tollette
Turrell
Valley Springs
Village
Wabbaseka
Watson Chapel
West Woodruff
Western Grove
Willisville
Winthrop
Wire Road
Wright-Pastoria