



# **Arkansas Capacity Development Strategy**

**For**

**Existing Public Water Systems**

**Engineering Section**

**Arkansas Department of Health**

Revision 8

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## **Basis of Authority**

In 1996, Congress reauthorized the Safe Drinking Water Act (SDWA). As a part of this SDWA reauthorization, a Drinking Water State Revolving Fund (DWSRF) was established for states to finance infrastructure improvements for public water systems. In order to avoid withholding of a portion of a state's share of the DWSRF by the Environmental Protection Agency (EPA), states were required to establish capacity development programs. Section 1420(c) of the revised SDWA requires states to establish capacity development programs that are designed to ensure that the state's public water systems have the technical, managerial, and financial capability to meet EPA and state requirements.

America's Water Infrastructure Act of 2018 (AWIA) amended Section 1420(c) to add Asset Management into states' capacity development strategies by adding the following requirements: (i) encourage development by public water systems of asset management plans that include best practices for asset management; (ii) assist, including through the provision of technical assistance, public water systems in training operators or other relevant and appropriate persons in implementing such asset management plans, and (iii) include a summary of these efforts in the Triennial Capacity Development Report to the Governor.

This document deals primarily with the activities of the Arkansas Department of Health (ADH) Engineering Section. The ADH is the State Primacy Agency in Arkansas. The Engineering Section of the ADH is responsible for the oversight of SDWA activities and for the development and implementation of the capacity development program in Arkansas.

## **Definitions**

**Technical capacity** – refers to the adequacy of the physical infrastructure and the ability of system personnel to adequately operate and maintain the system. This would include source quality and adequacy, source water protection, operator certification, and submission of engineering plans for review.

**Managerial capacity**– refers to the system's ownership accountability, the system's staffing and organization, communication with customers, and emergency response planning.

**Financial capacity** – refers to the system's revenue sufficiency and credit worthiness, the implementation of fiscal controls, asset management plans, and budgets for operations, capital improvements, and emergencies.

## **DWSRF Requirements for Capacity Development**

The Arkansas Department of Agriculture's Natural Resources Division (NRD) administers the DWSRF loan program in Arkansas. The loan recipient priority list and overall oversight of the DWSRF program are the responsibility of the ADH Engineering Section. To be eligible for a loan the system must have adequate technical, managerial, and financial capacity, or the project must provide this to the system. The ADH review of the final plans and specifications will determine if the system has adequate technical capacity. The NRD makes the determination whether the system has adequate financial capacity. Both ADH and NRD look at aspects of managerial capacity.

### **Purpose**

The purpose of implementing a capacity development strategy is to assist water systems in acquiring and maintaining the technical, managerial, and financial capacity (TMF) to provide sustainable and reliable drinking water to its customers and to ensure new water systems demonstrate technical, managerial, and financial capacity.

### **Goals**

The goals of the Arkansas Department of Health's Capacity Development Strategy are to assist public water systems (PWSs) in complying with the National Primary Drinking Water Regulations (NPDWRs), to enhance technical, managerial, and financial capacity by encouraging the development of partnerships between PWSs, and to assist PWSs in the training and certification of their operators.

## **Existing Systems Capacity Development Strategy (The Five Elements)**

### **1. Methods or criteria used to prioritize systems**

The Arkansas Department of Health's Engineering Section has developed a capacity rating system for Community and NTNC public water systems. Systems are ranked in two areas, 1) technical and operational and 2) financial and managerial. Each year the ratings of systems are reviewed by the Capacity Development Coordinator in conjunction with the licensing staff, enforcement staff, and district staff as necessary.

The final list is made available to ADH staff on the Engineering LAN system. Additionally, the NRD personnel are contacted for updating financial criteria for the financial and managerial rating. These priority lists are used to determine which systems will receive technical assistance from the ADH's two Small Systems Technical Assistance Contracts. The ADH's two technical assistance contracts are for Technical and Operational Capacity Development and for Financial and Managerial Capacity Development.

### **Technical and operational ranking**

The priority ranking of community and NTNC public water systems for the technical and operational criteria includes the following factors: 1) Maximum Contaminant Level (MCL) or treatment technique violations during the previous 2 years, 2) presence of a properly certified operator, and 3) the type of system.

Points are awarded to systems as follows:

- 10 points for each MCL or treatment technique violation of the SDWA for the previous two years. No distinction is made between systems on the Enforcement Targeting Tool (ETT) list and those that are not on the ETT list.
- 20 points are added to a system that does not have a certified operator of the required level.
- 0 points for systems that purchase water or that are ground water systems, 5 points for ground water systems under direct influence of surface water (GWUDI), and 8 points for surface water systems.

The points for each category are totaled and systems scoring the highest number of points receive assistance first.

### **Financial and managerial ranking**

The priority ranking of small community and NTNC public water systems for the financial and managerial criteria includes the following factors: 1) monitoring violations during the previous 2 years, 2) presence of a properly certified operator, 3) type of system, and 4) loan repayment history. The point system is as follows:

- 10 points for each monitoring violation of the SDWA for the previous two years. No distinction is made between systems on the ETT list and those that are not on the ETT list.

- 20 points are added to a system that does not have a certified operator of the required level.
- 0 points for systems that purchase water or that are ground water systems, 8 points for ground water systems under direct influence of surface water (GWUDI), and 5 points for surface water systems.
- 20 points are assigned to systems that are determined to be financially weak, and 40 points are assigned to systems that are determined to be financially very weak.

The points for each category are totaled and systems scoring the highest number of points receive assistance first.

## **2. Factors that encourage or impair capacity development**

The following factors that encourage or impair capacity development were identified by the ADH and by stakeholders through the stakeholder meeting process.

### **Factors that encourage capacity**

- Act 96 of 1913 gives the Arkansas Department of Health (ADH) the broad legal authority “to make all necessary and reasonable rules and regulations of a general nature for the protection of the public health.” The ADH Engineering Section has used this broad authority to implement the State’s “Rules Pertaining to Public Water Systems”, which contains specific requirements for all public water systems. The ADH “Rules Pertaining to Public Water Systems” were last revised January 27, 2020, which include requirements for technical, financial, and managerial capacity and other requirements of the SDWA and the State.
- Oversight of Retail Water Providers, Act 605 of 2021, tasks retail water providers with additional responsibilities in managing and operating their water systems, with some exceptions. Some of these responsibilities include preparation of a rate study every 5 years or before any major development project and requiring all members of a retail water provider governing board to complete 8 hours of board member training. NRD utilized an advisory board of water professionals to develop the curriculum for the training. Under Act 605 a water system is designated as under fiscal distress if its board members fail to:
  - 1) Obtain required training;
  - 2) Prepare a rate study every 5 years or before any major development project.

The rate study must include an inventory of essential assets. Information for each asset shall include the asset type, maintenance costs, useful life, anticipated date of replacement, cost estimate for the replacement of the asset, and criticality.

- 3) File the required audit report or agreed-upon procedures and compilation report with the Arkansas Legislative Audit;
  - 4) Maintain unencumbered cash or cash equivalents in an amount equal to one-twelfth of the total expenses from the most recent fiscal year;
  - 5) Adopt a budget before the beginning of a new fiscal year providing for sufficient revenues to meet or exceed anticipated expenses during that fiscal year;
  - 6) Make all required payments due to the United States Treasury – Internal Revenue Service, Arkansas Department of Finance and Administration, or Arkansas Department of Health;
  - 7) Make any bond, loan, or lease payment; or
  - 8) Comply with an administrative order of the US Environmental Protection Agency, Arkansas Department of Health, or Arkansas Division of Environmental Quality concerning operation and maintenance of the system.
- The requirement for water systems to have licensed operators is mandated by Act 333 of 1957, as amended, generally referred to as the "Water Operator Licensing Law". The present "Rules Pertaining to Water Operator Licensing", were promulgated under the Law and duly adopted by the Board of Health with its latest revision on August 1, 2022. The Law and its Regulations establish the Water Operator Licensing Program. The 1997 Regulations resulted in Arkansas switching to the Association of Boards of Certification (ABC) exam system and classification for water operators. In the ABC system operators are required to take either 1 or 2 exams for certification depending on their actual job duties in addition to the work experience requirement. If an operator works in treatment only, the operator is required to pass a treatment examination. If the operator works in distribution only, the operator is required to pass a distribution exam. If the operator works in treatment and distribution, the operator is required to pass both exams. The license grades include Very Small System (VSS) and grades I, II, III, and IV. Grades I through IV have separate licenses for distribution and treatment. The exams are all multiple-choice questions, closed book, and have from 100 to 125 questions. Exams are standardized and are computer graded. In both the old and new licensing system, operators are required to receive 24 hours of training every two years in order to renew their license. The ADH Training and Certification Officer must approve the training.
  - The Arkansas Drinking Water Advisory and Operator Licensing Committee advises the Engineering Section and the Arkansas Board of Health on the rules affecting licensing, setting fees, establishing education standards, and suspends licenses when necessary.

The committee consists of 7 individuals including 4 persons from public water systems, 1 consulting engineer, 1 faculty member of the University of Arkansas who is an engineer with drinking water expertise, and an Executive Secretary who is the Director of the Engineering Section of the ADH. Members serve 6-year terms, except the Executive Secretary, which is a permanent position. The committee meets on a quarterly basis to discuss and make decisions on items affecting the licensing program.

- Another factor encouraging capacity in Arkansas is a good network or community of informed providers. Since Arkansas is a small state with a population of about 3 million, people in the waterworks industry who have been around the business for a while tend to know each other. This network is further enhanced by several organizations filling their respective niches in the waterworks community such as the Arkansas Water Works and Water Environment Association (AWW&WEA) and its regional districts, Water Wastewater Advisory Committee (WWAC), Arkansas Drinking Water Advisory and Operator Licensing Committee, Arkansas Water and Wastewater Managers Association, and Arkansas Rural Water Association (ARWA), and Communities Unlimited (CU).
- The Arkansas Water Works and Water Environment Association is an organization that serves the water and wastewater operators in the State of Arkansas. It consists of 9 districts located in the various geographic areas of the state. Individual member dues fund the districts. Each district has a monthly meeting and provides training and networking opportunities for water and wastewater operators working in that general area. The meetings are informal and provide opportunities for water operators to network with other neighboring systems. The relationships between neighboring systems that are established at these meetings have resulted in sharing of equipment such as backhoes and more experienced operators providing technical assistance to their less experienced counterparts in the profession. Operators also receive training hours for attending meetings to be applied toward licensing renewal.
- The Arkansas Department of Health district staff attend most of these meetings to provide a forum for open communication between the ADH district staff and the water systems in an informal setting. The ADH technical support staff working in programs including the Lead and Copper Program, Consumer Confidence Reports and Cross-Connection Control Program have provided training at the district meetings recently. The AWW&WEA also sponsors an annual meeting held each Spring. The meeting provides training opportunities for operators, managers, and consultants. Some of the contributing organizations at the meeting include the ADH, Arkansas Energy and Environment's Environmental Quality Division, AWW&WEA, Southwest Section of AWWA, University of Arkansas, Arkansas Environmental Academy, and Arkansas State University. The conference provides opportunities for water operators, managers,



engineers, state agencies, and vendors to mingle in classroom, exhibition, social, and informal situations. Operators also receive training hours for licensing renewal.

- The Arkansas Rural Water Association (ARWA) provides multiple training opportunities for water operators. ARWA holds several two- or three-day training schools for water operators at various locations around the state every year. ARWA also has circuit riders and other specially trained technical staff members to provide hands-on assistance to water systems. In the summer, ARWA holds an annual conference in Hot Springs. This conference is well attended with hundreds of participants each year. The conference is geared closely to the training needs of water operators and offers classes that are specific for the various types of licenses operators are seeking. Other organizations have also been involved in this conference, including the ADH and NRD. This conference also provides opportunities for ARWA, vendors, water system staff, and state staff to share information. Operators receive training hours toward licensing at the conference and short schools. The ARWA Dale Bumpers Training Facility in Lonoke provides classroom and hands-on training of water operators.
- Communities Unlimited (CU) provides technical assistance to water board members through a variety of resources to meet the needs of water systems in rural and underserved communities. Among the services provided by CU include on-site technical assistance including identifying, qualifying, and applying for development financing. CU provides capacity building through technical assistance in the following areas rate analysis; billing and accounting systems; budgeting and record keeping; preventive maintenance plan; long-term planning, asset management, and general system policy development are also provided. CU provides education and training for governing boards and staff on duties and responsibilities of system operation and maintenance. CU also has several publications on specific topics related to small system financial and managerial operations. These manuals are designed for use by public utility board members in carrying out their responsibilities for system management and governance. CU provides GIS mapping services to communities under 3,300 in population to water and wastewater systems. Household well services are available in the form of well assessment of at no cost to the homeowner and loan products. Communities Unlimited is a (CDFI) Certified Development Financial Institution that makes environmental loans up to \$750,000 (max 15 years) for water and wastewater system improvements. Funds can be used for pre-development engineering services, interim financing, construction and system improvements, and to purchase equipment for operating and maintenance. Additional environmental loan products include household well rehabilitation and individual septic systems for a maximum \$15,000 for 20 years.
- The Arkansas Water & Wastewater Advisory Committee (WWAC) is an important organization in the State for coordinating efforts in publicly funded water and sewer

projects. The members of the WWAC represent the primary public funding agencies in the State and the ADH. Members include, NRD, Arkansas Energy and Environment's Environmental Quality Division, Arkansas Department of Economic Development (ADED), Rural Utilities Services (RUS), Communities Unlimited (CU), and ADH. The WWAC meets on a monthly basis to discuss water and sewer projects to be funded. The ADH district engineers, engineer supervisors, and chief engineer prior to the monthly WWAC meeting review these projects from a technical standpoint. The technical review is based on the ADH Rules Pertaining to Public Water Systems, the Recommended Standards for Waterworks by the Great Lakes – Upper Mississippi River Board of State Sanitary Engineers (Ten States Standards), engineering design criteria, and Engineering Section policies. All comments from ADH must be addressed prior to the project receiving funding. The WWAC review acts as one control point to help ensure that projects receiving public funds meet technical, financial, and managerial capacity objectives before receiving funding. The WWAC acts as a “clearinghouse” for public funding and avoids duplication in effort particularly in the areas of project submission and project review. It also facilitates communication between the various funding agencies to make better use of public resources.

- The Arkansas Environmental Training Academy (AETA) is a division of Southern Arkansas University Tech in Camden, Arkansas. The AETA serves as the mandated environmental training center for the State of Arkansas. The AETA provides operator training for state and federal certification and licensing programs in the fields of Water Treatment and Distribution, Backflow Prevention (Cross-Connection Control), Wastewater Treatment, Solid Waste Management, and Environmental Health & Safety. Training is provided on-campus and off-campus in local communities throughout the state and by alternative delivery methodologies. On-campus training is provided in five multi-media equipped classrooms and a fully equipped backflow, water, EHS, and wastewater training laboratory. The AETA staff consists of a Director, Assistant Director, 5 full-time Program Coordinator/Instructors, 25 Adjunct (Part-Time) Instructors, and 2 Administrative Support Staff. Training provided by the AETA can be found on their website <https://www.sautech.edu/aeta/>.
- The ADH project plan review process is another control point to help ensure that all public water systems have technical capacity. The ADH Rules Pertaining to Public Water Systems Section XX requires systems that are making any major improvements to their existing facilities prepare and submit a preliminary report. The ADH Rules Pertaining to Public Water Systems, Recommended Standards for Waterworks, engineering design criteria, and Engineering Section policies govern project design. An inspection by ADH staff of all proposed surface water and all ground water source locations is conducted as part of the review process.

- Section XXI requires that engineering plans and specifications be submitted to ADH for approval prior to constructing or entering into a contract to construct a water supply system, source of supply, water purification plant and/or distribution system, or any alterations thereto. These final plans are reviewed in much greater detail than preliminary reports. Again, the ADH Rules Pertaining to Public Water Systems, Recommended Standards for Waterworks, engineering design criteria, and ADH policies (written and unwritten) govern project design. The Chief Engineer meets with the Consulting Engineers Council periodically to discuss issues relating to the plan review process in order to help the system function more effectively.
- The ADH Rules Pertaining to Public Water Systems Section VII.I requires each Community and NTNC PWS to have a written long-range plan. The long-range plan is to address, at minimum, projected needs for source, treatment, storage and distribution for a planning period of at least ten years, and to demonstrate the system's technical, financial, and managerial capacity to comply with the requirements of the SDWA. A copy of the ADH Guidelines for Long-Range Plans is included in Appendix A.
- Arkansas Department of Agriculture's Natural Resources Division (NRD) is the major State funding agency for drinking water projects. NRD also administers the DWSRF loan program in Arkansas. Bond money and the DWSRF are the main sources of state money available for lending to public water systems in Arkansas by NRD. NRD also administers the State Water Plan that determines service areas for water systems in Arkansas. Additionally, NRD administers other technical programs related to water resources in Arkansas, including nonpoint source pollution prevention, and designates critical groundwater areas if an aquifer is depleting more than 1 foot per year under the Groundwater Protection and Management Act of 1991. Additionally, riparian water rights disputes are arbitrated by NRD to avoid going to court.
- The Arkansas Water Well Construction Commission is a "subsidiary" of NRD reporting directly to the Executive Director of NRD. They license water well drillers in 5 different fields of expertise and investigate customer complaints.
- The ADH has an informal Capacity Development team consisting of but not limited to an Engineer Supervisor serving as Capacity Development Manager; a Health Program Specialist serving as Training and Certification Officer; an Environmental Health Specialist serving as Capacity Development Coordinator. This team discusses issues relating to Capacity Development on an unscheduled basis. The feedback from these team members, stakeholders and other ADH staff will be used to consider topics for future stakeholder meetings, priority list criteria, operator and board member training and other issues.

## **Factors that impair capacity**

- A lack of public education and awareness of water costs, the need to adequately pay operators, and the regulations faced by water systems are major factors impairing capacity development according to stakeholders. Water is generally the least expensive household commodity. Many people have the attitude that water should be free and do not have an understanding of what is involved in operating and managing a public water system. This same public perception is a factor in low salaries for many water system operators in small communities. In some communities, operation of the water plant is placed on the same level with garbage collection, animal control and street repairs, and employees are compensated accordingly. The combination of low salaries and public perception makes it difficult for many small utilities to attract qualified operators. In some small systems, the operator is running the system because no one else could be found who would assume the responsibility. Act 605 of 2021 requires board member training. Board member training should alleviate many of these problems.
- A major impairment is not treating water systems as a business. A number of systems are reluctant to raise rates, and smaller systems also carry a higher debt load. The reluctance of water systems to raise rates to cover the increasing costs associated with operating a water system has been seen in communities where a mayor and city council do not want to raise rates because it is not popular to the electorate, as low water rates may be used politically to show that an administration is doing a good job. Again, the recently enacted Act 605 requires water systems to complete a rate study a minimum of every 5 years. The Act also has the authority to designate a water service provider under fiscal distress to submit to NRD an improvement plan detailing the provider's plan to resolve the issue or issues that caused it to be considered in fiscal distress.
- Another factor impairing capacity is the tendency in certain areas for systems purchasing water to want to break off from the parent system and secure their own independent source of water. This "urge to diverge" is often a result of disputes over water rates and the parent system setting quantity limits or limiting the number of new taps for a purchase system thereby limiting growth. Additionally, recent years have seen power struggles between neighboring water systems to serve new areas and disputes over State Water Plan Compliance.

### **3. How the State will use the authority and resources of the SDWA**

### **a) Assist PWSs in complying with the National Primary Drinking Water Regulations**

The ADH utilizes set-asides from the DWSRF for small systems technical assistance. This assistance is provided in the form of two technical assistance contracts. The ADH currently has a Technical Assistance Contract for Technical and Operational Capacity Development with ARWA. Also, the ADH has a Technical Assistance Contract for Financial and Managerial Capacity Development with CU. ARWA and CU have many years of experience providing small systems technical assistance to operators through their circuit riders and other programs. A priority list is developed for each contract as described in Element 1. Some systems have appeared on both priority lists and received assistance from both technical assistance providers. The Engineering Section provides the contractor with a list of systems and their associated assistance needs. The contractors provide direct assistance to the water systems and follow-up on the progress systems are making toward reaching milestones set in the strategies. Follow-up is provided by the contractors making site visits and through telephone calls. The current contracts focus on having the contractors providing technical assistance to the water systems in directly addressing the areas identified as needing improvement. Some of these areas are rate studies, asset management plans, emergency response plans, leak detection, and assisting operators in the proper functioning of water treatment plants.

ADH will use set-asides from the Bipartisan Infrastructure Law funds to assist water systems with preparing lead service line inventories which is a requirement of the Lead and Copper Rule Revisions.

The Engineering Section offers technical assistance. The Section has two major groups: field surveillance staff and technical support. The field surveillance staff, or districts, are generalists that function as the primary contacts with the Community and NTNC PWSs in the 8 ADH Engineering Districts. Among the functions provided by the district staff are plan review, sanitary surveys, general technical assistance, proctoring and grading of water operator exams, and complaint investigations. The technical support staff tends to work in special programs that require a very focused expertise created by the various EPA rules such as Surface Water Treatment Rule, Lead & Copper, Capacity Development, and DWSRF. This organizational structure provides a somewhat personalized contact with the water systems while providing an economy of scale to implement the various rules within the SDWA.

As noted previously, the ADH requires plan review and approval for all major modifications to public water systems prior to construction of any PWS infrastructure. This includes system source, treatment, distribution, and storage. The ADH uses its project plan review process as one means of assisting and guiding water systems toward system improvements that ensure compliance with the SDWA and NPDWR and improved technical capacity. Through the plan review process, the ADH ensures that any proposed modifications are compatible with existing and upcoming regulations, that good engineering practices are employed, and that the best

interest of the water system is served. It is through the review and analysis of proposed projects that the Department has its first opportunity to impact each of the three components of capacity development, both for newly found, systems not going through plan review process and existing systems. Newly found systems are defined as and will be reviewed according to New System Criteria. Capacity development can be addressed in the following ways:

### **Technical Capacity**

All projects involving source development, treatment, or major distribution modifications are required by ADH regulations to submit a preliminary engineering report for the proposed work, as are proposals for new systems. Major modifications to source development, treatment, or distribution of existing systems also require the engineering report. These reports are to be submitted and reviewed before any construction work commences.

The preliminary engineering reports must contain data and information sufficient for the complete understanding of the proposed work. The preliminary reports typically address design, cost, financing, operation, and management of facilities. It is during this process that the ADH first begins a review of system long range planning efforts. District staff review those reports to assess, among other things, the feasibility of each project, alternatives to the proposed project, whether the proposal will address existing or anticipated violations, and viability of the project. At this point in the review process, District staff may make recommendations to and work with state and federal funding agencies to promote consolidation, interconnections, or combined operations to improve the feasibility or viability of a project, particularly for small systems. The plan review process also allows ADH Engineers the opportunity to encourage, where appropriate, efforts toward consolidation, interconnection, or combined operations with nearby PWSs in the form of correspondence, phone discussions, and on-site assistance.

For both new and existing systems, the ADH regulations require that the design drawings and specifications for any water system improvements be submitted to and approved by the ADH prior to any construction activity. Upon receipt of the construction drawings and specifications, whether or not a preliminary engineering report was submitted, the ADH reviews the proposed project's compatibility with existing and upcoming regulations, for compliance with established design guidelines (e.g., Ten States Standards, AWWA), good engineering practices, and to see that the best interests of the water system and its customers are served. In addition to regulatory compliance, the review process also ensures that the project will accomplish the PWS's project goal without detriment to the remainder of the treatment, distribution, or storage systems and that appropriate materials and methods of construction are employed. If substantial comments are generated in the plan review process, then ADH engineers can communicate directly with the PWS, or its consultant if so, authorized and provide on-site assistance as needed.

Further, the ADH engineers, in effect, function as a ‘surrogate engineer’ for the smaller PWSs that cannot afford to hire a staff engineer.

### **Managerial Capacity**

The plan review process will consider any limitations of a project and bring these to the attention of PWS managers and operators for further planning efforts. Most small systems do not have the in-house resources to evaluate the projects in light of proposed federal and state regulations and the agency plan review process can be used as a part of the system’s management planning process. The licensing status of the operator or manager for a project under review can also be a part of the plan review process. Should a project be operated by an unlicensed or inappropriately licensed individual, a review comment on the matter can be raised with the water utility, or with the funding agency if state or federal funds are being used in financing. System officials can then be referred to the ADH’s Operator Certification Program for further assistance on licensing. The plan review process will also ensure that water systems have established a board of directors and bylaws.

In the project approval letter from ADH to the PWS, the PWS will be encouraged to update, as needed, its long-range planning efforts to reflect changes needed as a result of system growth, or SDWA regulatory needs, or other activity. Onsite assistance can be provided to the PWS in these instances as requested.

### **Financial Capacity**

By ensuring that projects are designed properly, that suitable equipment is used, and that proper construction techniques are employed, the plan review process can actually save a PWS dollars in the long run. As part of the review of preliminary engineering reports, engineers will review the cost of all alternatives and their estimated operational costs, and comment, if necessary, on the accuracy and feasibility of those costs. A PWS’s governing body (e.g., Board of Directors, City Council, etc.) is always encouraged to evaluate current and future allocation of resources needed to comply with the SDWA regulations and other system needs.

Sanitary surveys are conducted for all PWSs by district staff on a biannual basis for surface water systems (including springs and GWUDI), and a triennial basis for groundwater and purchase systems. Items that are addressed in sanitary surveys include factors related to source, treatment, pumping, storage, distribution, compliance, and management. Deficiencies found in sanitary surveys are provided to the water systems in writing for correction and may be tied to enforcement actions for SDWA violations. Technical, financial, and managerial capacity questions are included in the sanitary surveys.

ADH provides educational materials to water systems, the public, and interested parties in the form of EPA rule summaries, state regulations, applications, and waterworks training topics. The Engineering Section also maintains a website providing information about the Section, waterworks topics, and links to other related websites.

The ADH also publishes and distributes a quarterly newsletter to advise PWSs of upcoming regulations, provides a summary of regulations and other topics of interest on both a state and national basis. Through the newsletter and hopefully in the future through the website, the ADH will be able to keep other interested parties informed of developments in the Capacity Development Program besides only the people attending the stakeholder meetings and persons on the stakeholder list. The ADH currently provides one copy of the newsletter to each community public water system, each water operator, each mayor of all Arkansas cities and towns, and other interested parties.

On occasion, training programs to educate teachers in the area of environmental education in general, or water resource issues, are available from public interest organizations or private vendors. When such programs are available, it is the Department's intent to present, sponsor, or fund attendance at such programs utilizing funds from the Capacity Development portion of the Local Assistance set-aside from the Drinking Water State Revolving Loan Fund.

The Engineering Section also provides one-on-one technical assistance to water systems. The district staff provides general technical assistance to the systems in the regions in which they work. This technical assistance could be in many forms, including explaining rules and regulations, assisting water operators with exam questions, or performing jar tests and chemical feeder calibrations for small surface water treatment plants. Other staff also provide technical assistance including proper methods of backflow prevention, assistance with lead/copper corrosion control plans, assistance with preparing Consumer Confidence Reports (CCRs), operations to comply with DBP and SWTR regulations and assistance with plan submittals for small systems declared groundwater under the direct influence of surface water (GWUDI).

The ADH Engineering Section has a formal enforcement plan, the Compliance and Enforcement Plan for the Public Water System Supervision Program. The ADH Rules Pertaining to Public Water Systems Section XXIV gives the ADH regulatory authority for administrative penalties for systems that are out of compliance with ADH regulations. The enforcement plan has a set procedure for escalating enforcement actions and penalties. The enforcement procedure is based on the Enforcement Targeting Tool (ETT). Each violation acquires a score based on type and severity. A score of 5 starts the enforcement process. Escalating enforcement actions include a Warning of Administrative Order, Administrative Order, and Administrative Penalty. After an Administrative Penalty is assessed, the water system's representative must appear before a three-member panel of the Board of Health or enter into a Consent



Decree. The panel makes recommendations to the full Board of Health for enforcement actions including monetary fines for noncompliant water systems.

ADH recently updated its long-range plan to include an asset management plan requirement. The requirement of systems to have a written long-range plan is to make systems consider present and future needs over the next 10 years in order to be proactive instead of reactive so as to make the best use of available resources. The long-range plan should consider both present and future regulations. Although not a formal business plan the long-range plan is a requirement to help systems focus on future needs. The requirements of systems to have emergency plans is to make sure systems consider and plan for operations during emergency conditions and plan for alternatives if operations are interrupted. Both the Section staff and the technical assistance contractors provide assistance and guidance to water systems in developing these plans. The ADH is using the priority criteria of the DWSRF to encourage water systems to maintain up-to-date asset management plans by offering 10 bonus points.

The Department has historically assisted public water systems in Arkansas in their compliance efforts by providing analytical services to the water systems for all required analyses. By providing for the collection and analyses of chemical samples, and the analyses of coliform samples, the Department has improved the capacity of water systems to comply with the Safe Drinking Water Act regulations by eliminating from the water operators' duties, a series of extremely complex and sensitive activities. Simultaneously, the Department improves quality assurance of the monitoring program by utilizing state employed, properly trained samplers. The Department has provided these services through a combination of state general revenue funds, water system service fees, and federal grant funds. It is the intent of the Department to continue to provide analytical services for all required routine and non-routine analysis by utilizing funding from, but not limited to, the Capacity Development portion of the Local Assistance set-aside of the Drinking Water State Revolving Loan Fund.

**b) Enhance TMF capacity by encouraging the development of partnerships between PWSs**

The ADH is also using the priority criteria of the DWSRF to encourage regionalization. Priority points are assigned to systems for consolidation or interconnection with an existing system. Anywhere from 10 to 50 points are assigned based on the number of service connections of a system that proposes to consolidate with an existing system which is fully compliant with SDWA water quality regulations. The smaller the system, the greater the number of points assigned depending on the number of service connections. In cases where multiple systems will consolidate, point assignments will be based upon the number of service connections of the smallest system. Extra points for additional consolidating systems under the same project will be assigned at a rate of ten percent (10%) of the original rate. Points will be awarded only for

systems which propose an interconnection and water purchase agreement with another water system as a means of resolving a water quantity or quality problem for which points are awarded. Anywhere from 5 to 25 points are assigned depending on the number of service connections. The smaller the system, the greater the number of points assigned for interconnection. In cases where multiple systems will interconnect, point assignments will be based upon the number of service connections of the smallest system. Extra points for additional systems under the same project will be assigned at a rate of ten percent (10%) of the original rate.

**c) Assist PWSs in the training and certification of their operators.**

The ADH in years past has conducted or coordinated regular two-to-three-day short schools providing training for water operators. The Section's Licensing Training Coordinator is responsible for organizing and coordinating Engineering Section operator training programs around the state. All staff in the Engineering Section are expected to be involved in the operator training program.

The Arkansas Rural Water Association (ARWA) is very active in providing training opportunities for water operators. ARWA holds several two-to-three-day training schools for water operators at various locations around the state every year. ARWA also has 3 circuit riders and 5 other specialty technical staff members to provide hands on assistance to water systems. ARWA also holds an annual meeting in Hot Springs, where operators receive training hours toward licensing at the conference and short schools. The Engineering Section currently contracts with ARWA to provide required water operator license training courses.

The Arkansas Environmental Academy (AEA) in Camden is a part of Southern Arkansas University and provides on-campus training classes for water operators. The Environmental Academy also provides operator training classes in other locations around the state through adjunct faculty. The Engineering Section currently contracts with AEA to provide required water operator license training courses.

The Arkansas Water Works and Water Environment Association consists of 9 districts located in the various geographic areas of the state. Each district has a monthly meeting and provides training and networking opportunities for water and wastewater operators working in that general area. The meetings are informal and provide opportunities for water operators to network with other neighboring systems. Operators also receive training hours for attending meetings to be applied toward licensing renewal. The Arkansas Department of Health district

staff attends most of these meetings to provide a forum for open communication between the ADH district staff and the water systems in an informal setting. The AWW&WEA also sponsors an annual meeting held in the Spring at the Hot Springs Convention Center. The meeting provides training opportunities for operators, managers, and consultants. The conference provides opportunities for water operators, managers, engineers, state agencies and vendors to mingle in a classroom, social, and informal setting. Operators also receive training hours for licensing renewal.

**d) Assist PWSs in source protection activities.**

The ADH recognizes that protection of drinking water sources is a critical activity that must be carried out on the local level with state support if it is to be successful. The ADH plans to continue to assist individual PWSs in their efforts. The ADH's intent is to provide technical assistance to PWSs to enable them to better understand and characterize their source water watersheds, protect their water sources, and establish local source water protection programs to insure the continued protection of sources.

Under EPA guidance, a source water protection program consists of five steps as a minimum. The ADH generally concurs with the need for the implementation of these steps. The steps with example activities are establish a local team, delineate the area to be assessed, develop a contaminant source inventory, develop management controls, and assist in developing contingency plans in cases of emergency.

In conjunction with local water utility officials, ADH provides Geographical Information System (GIS) maps and evaluation results to PWS's as a basis for the development of local Source Water Protection Plans.

ADH conducts technical reviews of state permitting actions including, but not limited to NPDES permits, Land Application permits, Landfill permits, proposed highway construction projects, oil and gas well sites, and stream alterations. These projects are analyzed for potential adverse effects on PWSs. The PWSs are advised if potential adverse effects are anticipated, and stakeholder meetings are held where warranted.

ADH works with the Arkansas Highway Department to design "Source Water Protection Area" signs for Assessment Areas. These signs are available at no charge to PWSs that request them.

ADH will sponsor community education programs for local groups on the importance of source water protection activities, as requested by local water utility officials, citizens, or civic groups, and to promote active interaction with local source water protection efforts.

The Source Water Protection Program has the responsibility to notify the appropriate members of the local source water protection team in the event of an identified threat to the quality of the system's source of drinking water. The State is notified also to address any source water protection issues beyond the authority of the local team members.

#### **4. How the State will establish the baseline and measure improvements**

The State will establish a baseline by looking at the present levels of compliance by water systems. Improvement in system capacity can be measured by comparing future compliance levels with current levels for a particular regulation or set of regulations. Overall compliance levels are not necessarily a good measurement of improvement, as new regulations are continually promulgated and may result in additional noncompliance.

The State reviews a list of systems that have been given technical assistance as a result of being placed on the priority list due to violations and other factors in order to determine their subsequent compliance history.

New systems that have undergone the full capacity review will be tracked and their compliance history compared with previously approved systems that did not have a complete capacity review as part of their approval process. Those systems that were required to have capacity reviews are expected to show a better compliance history than those systems that were built prior to the capacity requirements.

Other elements may be identified in the future to measure improvements as the capacity program progresses.

## 5. Stakeholder input

Various stakeholders were given an opportunity before the draft copy was prepared to update the 2011 versions of the documents concerning their work relating to Capacity Development. These updates were incorporated into the draft version of this document.

An Arkansas Water and Wastewater Advisory Committee meeting was held on November 2, 2022, in the Illinois River Commission Room at the Arkansas Department of Agriculture. The Capacity Development Strategies were discussed. Members of the committee were requested to review the updated Capacity Development Strategies and to offer any comments or concerns that would improve the document.

After the meeting on November 2, 2022, emails containing the Capacity Development Strategy for Existing Systems and the Capacity Development Strategy for New Systems were emailed to the following individuals for comments:

Ryan Benefield, P.E., Deputy Director, Natural Resources Division, Arkansas Department of Agriculture

Debra Dickson, Water Development Section Manager, Natural Resources Division, Arkansas Department of Agriculture

Leah Johannes, Program Fiscal Manager, Natural Resources Division, Arkansas Department of Agriculture

Jerry Kopke, Senior Environmental Management Consultant, Communities Unlimited

Brad Jarrett, Arkansas Coordinator, Environmental Services, Communities Unlimited

Dennis Sternberg, CEO, Arkansas Rural Water Association

Jim Philipp, EPA Training Specialist, Arkansas Rural Water Association

Randy Harper, Director, Arkansas Environmental Training Academy

Jeremy Rowe, Assistant Water Program Coordinator, Arkansas Environmental Training Academy

Scotty Boggs, Manager, Searcy Water Utilities, and Chair Elect, Arkansas Drinking Water Advisory and Operator Licensing Committee

Lance McAvoy, Utility Director, Fort Smith Utility, and Member, Arkansas Drinking Water Advisory and Operator Licensing Committee

Jeff Ford, General Manager, James Kimzey Regional Water District, and Member, Arkansas Drinking Water Advisory and Operator Licensing Committee

Larry Lloyd, P.E., Instructor, Civil Engineering, University of Arkansas, and Member, Arkansas Drinking Water Advisory and Operator Licensing Committee

Sharon Sweeney, Manager, Water Quality, Central Arkansas Water, and Member, Arkansas Drinking Water Advisory and Operator Licensing Committee

Brad Hammond, P.E., Olsson, Member, Arkansas Drinking Water Advisory and Operator Licensing Committee

Jonathan Reynolds, Capacity Development Program Manager, US EPA, Region 6, Drinking Water Section

Jatin Mistry, Arkansas Program Manager, US EPA, Region 6, Drinking Water Section

Lance Jones, P.E., Director, Engineering Section, Arkansas Department of Health

Craig Corder, P.E., Chief Engineer, Engineering Section, Arkansas Department of Health

Martin Nutt, Training and Certification Officer, Engineering Section, Arkansas Department of Health

Aaron Hilborn, P.E., Engineer Supervisor, Capacity Development Program Manager, Engineering Section, Arkansas Department of Health

After collecting all comments, the document was amended to reflect stakeholders' suggestions. Most of the comments were positive. One suggestion referred to the fact that this document had specific information, such as a particular number of circuit riders, which pertained to the present and would cause the document to need revisions more frequently. The information noted was amended to be of a more general nature. Another comment from NRD was to remove the requirement for a Preliminary Engineering Report for the funding application. NRD recently eliminated this requirement, however, ADH Engineering Section continues to require a PER before detailed plans and specifications are prepared for major improvements to existing public water systems.

Many of the factors impairing water system capacity identified in the original strategy still hold true today, however, Act 605 gives us hope that those responsible for managing public water systems will become more knowledgeable, and with this knowledge be able to meet the technical, managerial, and financial capacity necessary to provide safe and sustainable drinking water to the public.

Appendix A  
**Guidelines for Long-Range Plans**



## **Guidelines for Long-Range Plans**

### **Existing Public Water Systems**

Under Section VII. I. of the Arkansas Rules Pertaining to Public Water Systems, each public water system shall have a written Long-Range Plan covering a planning period of at least ten years. This plan should be updated at least every 5 years. A Long-Range Plan shall address the following information at a minimum.

#### **Items Pertaining to Technical Capacity:**

1. A discussion of the water system's ability to consistently provide an ample quantity of safe drinking water to its customers, including such items as water use data, projected water use, current and future regulatory compliance, etc.
2. A description of the current state of the water system's assets
3. A description of the water system's required sustainable level of service
4. A description of which assets are critical to sustained performance
5. A description of all major projects and expansions anticipated within the planning period
6. A discussion and brief analysis of possible alternatives to the planned projects and expansions; including such items as interconnection with a neighboring system, purchased water arrangements, alternate ownership, and management arrangements
7. Hydraulic analyses of the distribution system at all pertinent flows and storage tank levels anticipated within the planning period
8. A discussion of source water adequacy, for both quality and quantity concerns, for the planning period
9. A discussion of the adequacy of source water protection areas and measures to control potential contaminants, including any applicable legal authority to implement such measures
10. A discussion of the current adequacy of water treatment processes and their projected performance and adequacy for the planning period
11. A discussion of how the water system plans to address any waste disposal issues occurring due to water treatment, (e.g., sludge, backwash water, etc.)
12. Documentation that the water system currently has a sufficient number of properly licensed operators, and plans that the water system has for maintaining a sufficient number of properly licensed operators for the planning period

13. A listing of any laboratory/water quality monitoring needs anticipated within the planning period
14. A discussion of the water system's planning efforts to ensure compliance with applicable state and federal regulations anticipated to be finalized within the planning period
15. A statement of compliance with section XIV.F of the Rules Pertaining to Public Water Systems regarding plumbing inspection and sewage disposal requirements, and a description of the system's legal authority to implement the requirements
16. A statement of compliance with section VII.E of the Rules Pertaining to Public Water Systems regarding the establishment of a cross-connection control program, and a description of the system's legal authority to implement the requirements
17. A discussion of deficiencies listed in the water system's sanitary survey that would result in major capital expenditures, and how those deficiencies will be addressed
18. Other items as appropriate for documenting and/or maintaining the water system's Technical Capacity.

**Items Pertaining to Managerial Capacity:**

1. A clear identification of the owner or other responsible legal body for the water system
2. A commitment from the owner or controlling body to adhere to and periodically review and update the Long-Range Plan
3. An organizational chart for the water system, showing all staff and their role in the organization. Also indicate any license or certification requirements of the positions
4. A discussion of any anticipated or on-going operator training and certification efforts.
5. A general operation and management plan for the water system, addressing such items as: routine inspections, planned equipment replacements, equipment calibration, emergency procedures, record keeping, reporting and similar activities
6. A discussion of the billing and collection procedure to address such items as: Is water use metered or estimated? If estimated, what is the basis for the estimate? If metered, who reads the meters? Are the meters tested periodically? What is the bill collection success rate? Please include any procedures in place to manage delinquent accounts. Are revenues collected sufficient for current and future operation of system?
7. An evaluation of unaccounted for water, and a discussion of plans to address any excessive losses

8. A listing of any standing O&M contract(s) and the relative responsibilities of the water system and contractor(s) relating to each contract
9. A statement of compliance with section VII.H of the Rules Pertaining to Public Water Systems regarding emergency planning, and a description of the system's legal authority to implement the requirements
10. A discussion of the adequacy of the spare parts inventory on hand for repairs
11. A discussion of the adequacy of the chemical supply inventory on hand
12. A discussion of the water system's existing safety program for chemical handling and other work area activities
13. Other items as appropriate for documenting and/or maintaining the water system's Managerial Capacity

**Items Pertaining to Financial Capacity:**

1. A forecast of all future capital needs and operating expenses to meet SDWA requirements, unregulated and/or emerging contaminants, infrastructure rehabilitation, and system expansion
2. A cash flow analysis to demonstrate revenue sufficiency
3. An operating budget to include such items as: depreciation, reserves, debt service, O&M, salaries, etc.
4. Other items as appropriate for documenting and/or maintaining the water system's Financial Capacity.