

# **Arkansas Capacity Development Strategy**

**For**

**Existing Systems**

**Division of Engineering  
Arkansas Department of Health**

**August 11, 2000**

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## **Compliance with SDWA Requirements for Capacity Development**

In 1996, Congress reauthorized the Safe Drinking Water Act (SDWA). As a part of the 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 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. Each state's capacity development program must contain the following elements. States were required to obtain authority to prevent new Community and Non-Transient Non-Community (NTNC) water systems from commencing operation if they lack adequate technical, managerial and financial capability. No system can receive DWSRF money unless they have adequate technical, managerial and financial capacity unless the DWSRF money will ensure the system attains technical, managerial and financial capacity. States were required to develop a strategy to address the enhancement of capacity of all existing water systems. This document deals primarily with the activities of the Arkansas Department of Health (ADH) Division of Engineering. The ADH is the State Primacy Agency in Arkansas. The Division of Engineering of the ADH is responsible for the oversight of SDWA activities and for the development and implementation of the capacity development program in Arkansas. This document deals only with this aspect of capacity development, the strategy to address the capacity of existing systems.

### **New Systems Capacity Development**

The revisions to the Arkansas Department of Health *Rules and Regulations Pertaining to Public Water Systems* effective July 5, 1999 include requirements for technical, financial, and managerial capacity for new Community and NTNC water systems in Arkansas. Section VII.H. of the *Rules and Regulations Pertaining to Public Water Systems* requires demonstration of a system's technical, financial, and managerial capacity in a written long-range plan. Requirements to demonstrate a new system's technical, financial, and managerial capacity are also required in a preliminary report for all new Community and NTNC water systems in Section XX.

### **DWSRF Requirements for Capacity Development**

The Arkansas Soil & Water Conservation Commission (ASWCC) 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 Division of Engineering. The initial determination for eligibility for a DWSRF loan from ASWCC must be made on the front end from the preliminary engineering report. To be eligible for a loan the system must have adequate technical, financial and managerial 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 ASWCC makes the

determination whether the system has adequate financial capacity. Both ADH and ASWCC look at aspects of managerial capacity.

### **SDWA Requirements for a Capacity Development Strategy for Existing Public Water Systems**

Section 1420(c) of the SDWA requires the State of Arkansas to develop a Capacity Development Strategy for existing systems. If the state does not receive approval of the Capacity Development Strategy from EPA by September 30, 2000, the state could face a withholding of a portion of the DWSRF Capitalization Grant. The State must consider, solicit public comment on, and include as appropriate the following five elements in the strategy:

- A) The methods or criteria that the Arkansas Department of Health will use to identify and prioritize the public water systems most in need of improving their technical, managerial, and financial capacity.
- B) The factors that encourage or impair capacity development in the State of Arkansas. These factors include the “institutional, regulatory, financial, tax, or legal factors” that exist at the Federal, State, or Local level that encourage or impair capacity development.
- C) The use of ADH or other state authorities and other means to:
  - a. Assist PWSs in complying with the National Primary Drinking Water Regulations (NPDWRs).
  - b. Enhance technical, managerial and financial capacity by encouraging the development of partnerships between Public Water Systems (PWSs).
  - c. Assist PWSs in the training and certification of their operators.
- D) How ADH will establish a baseline and measure improvements in the capacity of PWSs under their jurisdiction. This programmatic element includes the tools that ADH will use to produce and submit a report to Arkansas’ Governor on the efficacy of the capacity development strategy and progress made toward improving the technical, managerial, and financial capacity of PWSs.
- E) The procedures used by ADH to identify and involve stakeholders in the creation and implementation of the capacity development strategy.

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

### Element A

*Description of the methods or criteria that the Arkansas Department of Health will use to identify and prioritize the public water systems most in need of improving their technical, managerial, and financial capacity.*

The Arkansas Department of Health's Division of Engineering has developed a capacity rating system for small (<10,000 population) 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 ASWCC 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 with Arkansas Rural Water Association (ARWA) and Financial and Managerial Capacity Development with Community Resource Group (CRG).

### Technical and operational ranking

The priority ranking of small 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 Significant Non-Compliance (SNC) list and those that are not on the SNC 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. For the State FY2001 priority list the range in scores is from 10 to 138 points.

## **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 Significant Non-Compliance (SNC) list and those that are not on the SNC 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 by ASWCC to be financially weak, and 40 points are assigned to systems that are determined to be financially very weak. Points are determined based on the system's history of loan repayment problems.

The points for each category are totaled and systems scoring the highest number of points receive assistance first. For the State FY2001 priority list the range in scores is from 10 to 168 points.

## **Element B**

*The factors that encourage or impair capacity development in the State of Arkansas. These factors include the “institutional, regulatory, financial, tax, or legal factors” that exist at the Federal, State, or Local level 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 Division of Engineering has used this broad authority to implement the State’s “Rules and Regulations Pertaining to Public Water Systems”, which contains specific requirements for all public water systems. The ADH “Rules and Regulations Pertaining to Public Water Systems” were last revised July 5, 1999 to include requirements for technical, financial, and managerial capacity and other requirements of the SDWA and the State.

- 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 and Regulations Pertaining to Water Operator Licensing", were promulgated under the Law and duly adopted by the Board of Health in 1997. 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. The new system is in the process of being phased in over a three-year period beginning in the Fall of 1997 and completing in the Fall of 2000. The old exam and certification system required water operators to pass 4 exams and have a set amount of experience to receive a license grade of A, B, or C. Depending on the type of system, surface water or ground water, an operator would take exams geared toward the source type of system on the A and B level and upon completion be awarded either an A (Surface), A (Ground), B (Surface), or B (Ground) license. Licenses on the C level did not distinguish between surface and ground. Each open book exam consisted of 12 questions, generally essay and math questions from which operators chose 10 questions to complete. Grading of exams was subjective. 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 new 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 Division of Engineering and the Arkansas Board of Health on the rules and regulations 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 Division of Engineering 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, identified by stakeholders, is a good network or community of informed providers. Since Arkansas is a small state with a population of about 2.5 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).

- 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/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. This year about 2,600 persons attended the 69<sup>th</sup> annual conference, with the first meeting in 1931. The meeting provides training opportunities for operators, managers, and consultants. Some of the contributing organizations at the meeting include the ADH, Arkansas Department of Environmental Quality (ADEQ), 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) 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 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 very 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 ASWCC. 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. Also, ARWA has built the \$1 million ARWA Dale Bumpers Training Facility in Lonoke for providing classroom and hands-on training of water operators.

The facility has a large auditorium-style classroom and two smaller classrooms to provide more individual training. Future plans include the construction of a model distribution system on the grounds to provide hands-on training. The building was dedicated on May 30, 2000. John Ramono, Deputy Assistant Administrator of RUS was one of the speakers during the dedication and made the statement that the facility was the best training facility in the nation for state rural water associations. The dedication was well attended by about 200 people from groups with an interest in rural water systems. Other speakers included the Governor, Lieutenant Governor, a U.S. Senator, and retired U.S. Senator, Dale Bumpers. Activities at the new facility have included joint training on preparation of Consumer Confidence Reports (CCRs) by ARWA and ADH staff.

- The Community Resource Group (CRG) provides water management and water board members a variety of resources to meet the needs of water systems. Among the services provided by CRG include on-site technical assistance including locating, qualifying and applying for development financing. Also operation and management services on rate structures; billing and accounting systems; budgeting and record keeping; preventive maintenance; long-term planning; and overall system operation are provided. CRG provides education and training for governing boards and staff on duties and responsibilities of system operation and maintenance. The *Community Water Bulletin: A Resource for Small System Decision-Makers* is a newsletter distributed to board members to help them better manage their systems. CRG also has 15 publications on specific topics related to small system management and finance. These manuals are designed for use by public utility board members in carrying out their responsibilities for system management and governance. The CRG Community Load Fund is a \$3 million revolving loan fund operated by CRG to assist small systems needing \$100,000 or less for improvements. CRG also provides utility management and operational services in cases where a crisis has threatened continued service or where no other feasible alternative is available.
- The Arkansas Water & Wastewater Advisory Committee (WWAC) is a very 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, ASWCC, ADEQ, Arkansas Department of Economic Development (ADED), Rural Utilities Services (RUS), Community Resource Group (CRG), and ADH. The WWAC meets on a monthly basis to discuss water and sewer projects to be funded. Any projects to receive public funding from these groups must submit a preliminary report to and obtain approval from the WWAC. Projects are submitted to the WWAC in the form of a preliminary engineering report. 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 and Regulations 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 Division of Engineering policies. All comments from the 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 Academy (AEA), a part of Southern Arkansas University Tech in Camden, Arkansas, provides operator training and technical assistance in water, cross connection control, wastewater and solid waste. The training is provided on-campus and off-campus in local communities throughout the state. On-campus training is provided utilizing their recently expanded training center. It consists of 3 classrooms equipped with much of the latest education delivery technologies, including two-way television and a fully equipped water and wastewater training laboratory. In a separate facility on campus AEA has a cross-connection control and pump maintenance training facility with a classroom, 10 station wet lab for hands-on device training and a pump maintenance hands-on classroom. AEA provides most of its off-campus training utilizing the facilities of sister junior colleges or other training facilities. AEA presently has a Director, 2 full time instructors and a large adjunct instructor staff to provide the training throughout the state. AEA has at least 12 adjunct instructors actively teaching water classes.
- The ADH project plan review process is another control point to help ensure that all public water systems have technical capacity. The *ADH Rules and Regulations 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 and Regulations Pertaining to Public Water Systems, Recommended Standards for Waterworks*, engineering design criteria, and Division of Engineering 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 and Regulations 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 Counsel periodically to discuss issues relating to the plan review process in order to help the system function more effectively.
- The *ADH Rules and Regulations Pertaining to Public Water Systems* Section VII.H 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.

- The Arkansas Soil & Water Conservation Commission (ASWCC) is the major State funding agency for drinking water projects. In 1997, the state legislature passed a \$300 million general obligation bond to help fund drinking water and sewer projects with a \$60 million per biennium limit. The voters in the November 1998 election approved the bond issue. ASWCC also administers the DWSRF loan program in Arkansas under the oversight of the ADH Division of Engineering. The bond money and the DWSRF are the main sources of state money available for lending to public water systems in Arkansas by ASWCC. ASWCC also administers the State Water Plan that determines service areas for water systems in Arkansas. Additionally, ASWCC 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. The law allows ASWCC to deny future well permits and restrict water pumping as a last resort in an emergency, but to date this procedure has not been used. The Sparta Aquifer, which underlies eleven counties, is designated a critical groundwater area. The aquifer serves about 320,000 Arkansans for drinking water or about one eighth of the state's population. The Alluvial aquifer in the Grand Prairie area is also a critical groundwater area. Additionally, riparian water rights disputes are arbitrated by ASWCC to avoid going to court.
- The Arkansas Water Well Construction Commission is a “subsidiary” of ASWCC reporting directly to the Executive Director of ASWCC. They license water well drillers in 5 different fields of expertise and investigate customer complaints.
- Recently, the Governor's Water Resource Task Force was established to look at water quality and quantity issues related to protecting Arkansas' Water Resources. The Lieutenant Governor is heading the task force with the assistance of the Director of ASWCC. The group will take a multi-agency look at water resource issues in Arkansas.
- Other factors discussed by stakeholders were that Arkansas is a water rich state, and the state capital is easily accessible. The fact that EPA has delegated SDWA authority to the state was considered an enhancement as well as the \$0.25 per meter per month fee, which helps the ADH maintain primacy by providing funding to the Division of Engineering and paying for sampling and laboratory analyses required by SDWA.
- The ADH has an informal Capacity Development team consisting of but not limited to Ted Schlueter, P.E., Engineer Supervisor and Capacity Development Coordinator; Martin Nutt, Training and Certification Officer; and Trevor Bowman, P.E., Engineer Supervisor. 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.

- In February, the ADH participated in the Region 4 and Region 6 Regional Capacity Development Workshops held in Dallas, Texas. This event proved very useful in gaining insight from other states and making contacts with other State Capacity Development Coordinators in helping to develop Arkansas' Capacity Development Program.

### **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.
- The lack of mandatory board member training is a major factor that impairs capacity. Key decision makers that control the money of water systems, including water boards, city councils, and mayors, are often not trained in water works management and are not aware of what is involved in operating a water system. Water board members lack management training, and there is not a lot of continuity or knowledge among current board members. Many operators have expressed frustration with boards and city councils who tie the operators' hands by not making funds available for needed improvements.
- The stakeholders identified the low passing rates on water operator exams as a negative factor affecting capacity. The need for more assessable training and exams more suited to the study materials was expressed as one of the highest priorities.
- Another major impairment identified by stakeholders 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.

- An impairment identified by stakeholders was that in some cases funding is too easy for small systems to obtain to fix problems, so the systems might not feel the need to properly operate and maintain their facilities.
- Politics, at the local, state, and national levels also contribute to impairing capacity. Some stakeholders felt that smaller water companies are more susceptible to politics than larger ones. Many small systems value autonomy and do not consider regionalization as an option.
- Another impairment discussed was the relationship between ADH and communities. Some stakeholders felt that communities calling ADH with a problem often do not get the help they need. This may be partially due to the difficulty for ADH to maintain adequate properly trained staff to make timely visits to systems and meet their technical needs. Travel time to outlying areas of the state can also be a contributing factor.
- 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.
- An additional factor impairing capacity is the use of water system funds in cities to fund other city projects, such as street improvements, parks, etc., thereby reducing revenues available to water systems for necessary maintenance and improvements.
- The lack of funding for source water protection was another impairment discussed by stakeholders.
- The inability to follow-up with hands-on technical assistance due to the unavailability of funds from ADH after the technical assistance contractors (CRG and ARWA) do a capacity assessment was also discussed as an impairment to capacity. See Element C below for information on the ADH technical assistance contracts with CRG and ARWA.

## Element C

*The use of ADH or other state authorities and other means to:*

- a. Assist PWSs in complying with the National Primary Drinking Water Regulations.*
  - b. Enhance technical, managerial and financial capacity by encouraging the development of partnerships between Public Water Systems (PWSs).*
  - c. Assist PWSs in the training and certification of their operators.*
- a. Assist PWSs in complying with the National Primary Drinking Water Regulations.**

The ADH is using the 2% set-aside from the DWSRF for small systems technical assistance. This assistance is provided in the form of two technical assistance contracts. The ADH has a *Small Systems (<10,000 population) Technical Assistance Contract for Technical and Operational Capacity Development* with ARWA. The ARWA has many years of experience providing small systems technical assistance to operators through their circuit riders and other programs. Also, the ADH has a *Small Systems Technical Assistance Contract for Financial and Managerial Capacity Development* with CRG. The ADH hopes to capitalize on CRG's experience and expertise in financial and managerial issues related to public water systems. A priority list is developed for each contract as described in Element A. Some systems have appeared on both priority lists and received assistance from both of the technical assistance providers. Each contractor conducts on-site assessments of water systems using assessment forms provided by ADH according to the priority list established by ADH. Flexibility is allowed in the order of assessments; the contractors may select from the top 20 systems on the priority list to conduct assessments in order to minimize travel time and maximize assistance. After assessments are conducted, the contractors prepare a strategy to address areas in which systems need improvement in their technical, financial and managerial capacity. The contractors 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. An Access database was developed by each of the contractors to input data collected during assessments, strategies, and verifications. Minor revisions have been made to the contracts to allow contractors to participate in Comprehensive Performance Evaluations (CPEs) conducted by ADH staff. The goal of including ARWA and CRG in the CPE process is multi-faceted. By having other organizations involved in the CPE process someone other than the regulators is identifying to the systems the areas where improvement is needed. Also, it is hoped that a benefit will be received by both ADH staff and the contractors so that each party will gain a better understanding of what each is looking for and learn from a broader spectrum of experiences.

The ADH also plans to use a portion of the 5% set-aside from the DWSRF Local Assistance and other State Programs for Capacity Development assistance. The State made provisions under the 1998-99 capitalization grant set-asides for funding contracts to identify water operator training needs, develop training courses, and conduct training sessions. The operator needs were to be identified, in part, using the results from the small system technical assistance set-aside contracts. There is currently a lack of available time and manpower to address these activities, as the State's resources have

been consumed in addressing other new SDWA regulatory requirements, leaving no time to address these activities. As soon as adequate resources can be made available, these activities will be initiated.

Capacity Development is further addressed under the State Public Water System Supervision Program. The 10% set-aside for State Program Management will be used in implementing activities under the ADH's routine SPWSSP. These activities include such items as sanitary surveys, project plan reviews, technical assistance, and operator training.

The following is a summary of the organizational structure of the Division of Engineering. The Division of Engineering 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 9 ADH Engineering Districts. Among the functions provided by the district staff are plan review, sanitary surveys, 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. In the Spring of 2000, the ADH management announced plans to restructure the agency. This is the first major restructuring of the ADH since 1979. The intent of the restructuring is to decentralize the ADH in order to make services more accessible to the communities and eliminate levels of bureaucracy. Plans are to have the State divided into 5 Regions that operate more or less autonomously under agreements with and the leadership of the Central Office. Functions that require a federal interface and rulemaking are to be placed in Statewide Services. Functions requiring an economy of scale that are to support the Regions are to be placed in Shared Services. Statewide Services and Shared Services are to be centralized. Presently, the Division of Engineering is entirely based in Little Rock. The implementation of the restructuring of ADH is in the planning process at this time. The ADH interim structure became effective May 1, 2000. A flow chart shows the ADH interim structure is shown in Appendix B. The restructuring of the Division of Engineering is to be completed by June 30, 2001. It is unknown at this time what impact this will have on the Division of Engineering and the State Drinking Water Program.

The Comprehensive Performance Evaluation (CPE) is a tool used by ADH staff to provide assistance to surface water systems. Approximately two full-time equivalents (FTEs) are dedicated to this program. There is one full-time position, the CPE engineer, and the other FTE is made up from multiple staff working on an as-needed basis in the program. Currently 5 staff members have been trained in the CPE process and 16 other staff members have participated on at least one CPE. The ADH has a goal to conduct one CPE about every 2 to 3 months. The CPE program provides an in-depth look at the design, operation, and administration of surface water systems. During the CPE, performance-limiting factors are identified and prioritized. The CPEs are conducted with a team of 6 to 9 persons. The CPE process includes a pre CPE site visit by one or two

staff and a week of fieldwork by the full CPE team. Following the CPE a final report listing the findings is prepared and submitted to the water system. ARWA and CRG staff participated in the most recent CPE conducted at Glenwood as a part of the technical assistance contracts to get another perspective besides the regulatory agency. Recent CPEs have been targeted at systems with the greatest need for assistance determined by number of points on the priority list. The ADH is participating with EPA and other states in a pilot program that is called the Area Wide Optimization Program (AWOP). The goal of the AWOP program is optimized performance at all surface water treatment plants. As a part of the AWOP, the ADH is planning on participation in a pilot project called Performance Based Training (PBT). The PBT consists of a long-term training project with a group of water systems with the goal of teaching problem solving skills to water plant operators and assisting the water plant operators in addressing performance limiting factors at their water treatment plant through the application of the skills learned in meetings of the PBT group.

After performing multiple CPEs, the ADH has determined some factors commonly occur. For example, lack of or incorrect calibration of turbidimeters was identified as a common problem. The ADH conducted a series of topic specific training sessions on the calibration of turbidimeters. In the summers of 1999 and 2000, a summer intern was trained in checking the calibration of turbidimeters and sent out to various treatment plants to check the calibration of turbidimeters. District staff has been tasked with follow up at systems where the turbidimeters are significantly out of calibration. The ADH may conduct other topic specific training sessions. The operation, calibration, and maintenance of chlorination and pH test equipment have been identified as potential topics.

Sanitary surveys are conducted for Community and NTNC 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. Surveys for Transient Non-Community (TNC) public water systems are conducted by the TNC program staff every 2 years for surface systems (including springs and GWUDI systems), every 3 years for privately owned groundwater systems, and every 5 years for government owned groundwater 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. Sanitary surveys will need to be revised following the final publishing of the Ground Water Rule. At that time, it is the intent that technical, financial, and managerial capacity questions will be proposed and considered for inclusion in the revised 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 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. The Division of Engineering also maintains a website providing information about the Division, waterworks topics, and links to other related websites. 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 Division of Engineering 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), and assistance with plan submittals for small systems declared groundwater under the direct influence of surface water (GWUDI).

The ADH Division of Engineering has a formal enforcement plan, the *Compliance and Enforcement Plan for the Public Water System Supervision Program*. The ADH Rules and Regulations 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. Escalating enforcement actions include a Warning Notice of Violation, Notice of Violation Potential 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.

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. Presently, there is no technical assistance available from ADH or technical assistance providers to help systems with preparing long-range plans. Future stakeholder meetings should discuss the possibility to have a technical assistance provider help with training ADH staff or provide direct assistance to systems with preparing long-range plans. At this time, the only time ADH checks to see that a system has a long-range plan is during the sanitary survey. Field staff presently does not always request that the plan be made available during the survey for inspection. This is an item to be considered when the sanitary surveys are revised following the publication of the final Ground Water Rule.

**b. Enhance technical, managerial and financial capacity by encouraging the development of partnerships between Public Water Systems (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 regular two to three day short schools providing training for water operators. A new position was filled in the last year in the licensing program to help with training efforts. The new position is the Licensing Training Coordinator. This individual is responsible for organizing and coordinating Division of Engineering operator training programs around the state. All staff in the Division of Engineering is expected to be involved in the operator training program. Recently, an in-house survey was circulated among Division of Engineering staff requesting input in regards to how to improve the training program and selecting what classes staff members would be interested in teaching. From the Stakeholder Meeting on April 19, 2000 stakeholders indicated the desire for more and improved water operator training. A survey was distributed in-house to solicit input from staff to determine methods of improving operator training offered at short schools by ADH staff. ADH solicited input at a second stakeholder meeting to determine specific needs for operator training from stakeholders such as types and frequency of training to be offered. At the second Stakeholder Meeting on June 22, 2000 stakeholders discussed operator training issues. At this meeting, stakeholders felt that a lot of training was available but that the training may be less accessible in certain areas of the state. Also, the issue of adequate notification of training events was discussed. One suggestion was for the ADH to partner with the vendor that provides the training calendar in order to provide a more complete training schedule. Another suggestion was to hold training in more locations around the state. The Division of Engineering has changed to a multiple choice based exam system from an essay based exam system to meet the SDWA SRF Operator Certification Program Guidelines. The new system has created an even greater need for operator certification training. The ADH's previous training efforts were aimed at assisting operators in certifying in the essay-based system. The new system will require revamping the old training program to meet the needs of the new system. Also, ADH will need to offer training aimed at treatment operation separately from training aimed at

distribution system operation. Both training programs will need to be longer in length to cover the wide array of information tested by the new exam system. By offering a greater number of training programs, utilizing the modified training programs, a greater number of operators should be better prepared to properly operate their water system and to successfully sit for the license exam. This in turn will provide for an increase in the number of needed competent operators and better operated systems, which is the primary operator need/goal. The Division of Engineering has its first treatment focused short school scheduled for September 2000 in Nashville, Arkansas. The distribution short school is under development and should be offered for the first time before the end of the calendar year. The Division of Engineering plans to offer each school three times next year and has a goal of offering each school quarterly in 2002. Managerial and financial issues are addressed in the schools. This is an area that could possibly be expanded in future schools, if a cooperative instructor staffing agreement could be reached with ASWCC. However, focused workshops on this topic could possibly better serve the water systems. Staff that would not normally attend a training program aimed at basic system operation and licensure, the financial secretary or licensed operator for example, could also be encouraged to attend the focused workshop. The Division of Engineering has committed one full-time employee and a portion of the overall technical staff available work time to the performance of the short schools. Staff members have been surveyed as to their particular subject matters they are comfortable teaching. They are then being teamed with other staff members who prefer the other short school topics to create a willing team to instruct the full cross section of topics taught in the school. The number of staff man-hours dedicated to this activity is difficult to determine. The Division has one staff member whose primary job duties is coordinating the schools, assisting other staff develop their instruction aids, and planning needed improvements in our training efforts. The remaining staff time dedicated to this activity is estimated to be 0.5 FTEs.

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.

Also, ARWA has built the \$1 million ARWA Dale Bumpers Training Facility in Lonoke for providing classroom and hands-on training of water operators. The facility has a large auditorium-style classroom and two smaller classrooms to provide more individual training. Future plans include the construction of a model distribution system on the grounds to provide hands-on training. Some of the training provided to date at the new facility includes training on preparation of Consumer Confidence Reports (CCRs) provided by ARWA and ADH staff.

Additionally, ARWA has received funding from Rural Utilities Service (RUS) to provide board member training in Arkansas. Arkansas is one of eleven states to receive this funding. One staff member has been dedicated to this activity. ARWA has plans to include RD specialists, their own CPA, and other successful board members to provide

the training. The primary systems to be targeted for the training are Rural Development borrowers that may need help with budgeting and other financial and managerial needs. The training is available to board members of other water systems on a request basis. ARWA has plans to conduct 3 to 4 schools per year. RUS has a three-year commitment to the funding of this program.

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 sponsor an annual meeting held in the Spring at the Hot Springs Convention Center. This year about 2,600 persons attended the annual conference. 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.

The Arkansas Environmental Academy 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.

## **Element D**

***How ADH will establish a baseline and measure improvements in the capacity of PWSs under their jurisdiction. This programmatic element includes the tools that ADH will use to produce and submit a report to Arkansas' Governor on the efficacy of the capacity development strategy and progress made toward improving the technical, managerial, and financial capacity of PWSs.***

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 strategies that are proposed under the Small Systems Technical Assistance Contracts require the setting of milestones. Telephone verifications and on-site verifications are part of the contracts to measure improvement by checking compliance with milestones. Assessments, strategies, and verifications are entered into an Access database to provide baseline information in order to be able to measure improvement. The State will also review a list of those 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 methods of measuring improvement identified by stakeholders to be considered include an increase in the attendance at AWW&WEA district meetings, number of systems helped through technical assistance contractors, increase in number of systems having a long-range plan, number of systems receiving funding for improvements. Additional items identified by stakeholders include number of sanitary surveys done on a routine basis, number of Source Water Protection Plans, and number of SRF projects and total amount of funding for water system improvements.

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

## **Element E**

### ***The procedures used by ADH to identify and involve stakeholders in the creation and implementation of the capacity development strategy.***

The initial contacts list was formed by compiling addresses of members of various water industry related organizations and planning groups. A mailing list was developed from members of the Water Wastewater Advisory Committee (WWAC), Arkansas Water Works & Water Environment Association (AWW&WEA) District Directors and officers, Arkansas Water Licensing Committee members, and Arkansas Water & Wastewater Managers Association members. Other key groups that were added to the list include Arkansas Soil & Water Conservation Commission (ASWCC), Arkansas Rural Water Association (ARWA), Community Resource Group (CRG), Arkansas Department of Economic Development (ADED), Rural Utilities Services (RUS), Arkansas Society of Professional Engineers (ASPE), Arkansas Consulting Engineers Council, Arkansas Environmental Academy, Arkansas Municipal League, League of Women Voters of Arkansas, League of Women Voters of Pulaski County, and County Judges Association of Arkansas. Hope Waterworks was invited due to personal contact and interest of the manager.

Randolph Polk with ASWCC was instrumental in providing addresses and contact persons with the various planning and development districts around the state. Among these organizations included in the contact list include Central Arkansas Planning & Development District, Northwest Arkansas Economic Development District, Southeast Arkansas Economic Development District, Northwest Arkansas Regional Planning Commission, Southwest Arkansas Economic Development District, West Central Arkansas Economic Development District, East Arkansas Planning & Development

District, White River Planning & Development District, ARKHOMA Regional Planning Commission, Western Arkansas Planning & Development District, Arkansas-Texas Council of Governments, Mississippi-Arkansas-Tennessee Council of Government, Arkansas Development Finance Authority (ADFA), ECS Planning & Management, MetroPlan, and Benton County Rural Development Authority.

Letters of invitation were mailed to the contacts listed in Appendix C. Also, announcements were made at the AWW&WEA district meetings for the first stakeholder meeting. A newsletter article and mailing to the same list of organizations was done for the second stakeholder meeting.

A stakeholder meeting was conducted in Little Rock on April 19, 2000. The University of New Mexico Environmental Finance Center facilitated the meeting. Over 30 participants were present at the meeting representing public water systems, funding agencies, technical assistance providers, economic development districts, consulting engineers, political groups, and state regulators. Minutes of the meeting, an invitation letter, and a list of participants are given in Appendix D. The meeting consisted of an overview of the capacity development program and input sessions facilitated by EFC consisting of small group discussion. The small group discussions consisted of 4 small groups of about 7 to 10 people each. Individuals rotated within the groups in order to gain a cross-section of ideas.

Input session 1 looked at factors that encourage or impair capacity development of water systems. Among the factors discussed that were considered to encourage capacity development include the amount and diversity of technical assistance available to water systems in Arkansas, particularly by CRG and ARWA. Also, Arkansas has a high rate of partnering with professional organizations. All groups discussed the WWAC as an important enhancement. Factors considered to impair capacity included the lack of mandatory training for governing bodies of water systems and need for public education. Others identified politics on the local, state, and national level as impairments. Finally, the reluctance of some systems to raise water rates was considered a negative factor.

Input session 2 looked at current activities assisting public water systems. Next participants were asked to brainstorm and identify the top one or two most important programs for the state to implement. Public education and more and better training for operators as well as mandatory board member training were identified as top priorities.

Input session 3 concerned goals of the capacity development strategy. The highest-ranking goals of the stakeholder group included increasing public education and awareness, more and better training for water operators, mandatory board member training, and more money available to assist water systems. Another goal of the strategy would be an increase in water system compliance rates.

The minutes of the first stakeholder meeting and draft strategy were made available to participants by E-mail. Hard copies were mailed to participants that did not have E-mail. Additionally, hard copies were made available at the second meeting. Also, copies were sent to other interested parties by request that were unable to attend the first meeting.

A second stakeholder meeting was held in Little Rock on June 22, 2000. The second stakeholder meeting was held to comment on the draft capacity development strategy. 14 participants were present at the meeting. Minutes of the meeting, an invitation letter and a list of participants are given in Appendix E. The stakeholder input session followed a short presentation by EFC discussing requirements of a capacity development program. The items discussed in the meeting included a review of the ADH prioritization list of systems for technical assistance, assistance with compliance, partnering, and training and certification, measurements of success, and future stakeholder involvement.

Some of the comments received in regards to the ADH priority list for technical assistance included the following. The priority list is based on 2 years of data. By the time some systems received assistance their problems were already corrected. It was determined that the priority list needed to be more flexible. It also needs to be more proactive than reactive. Other states have the opportunity to get direct referrals to the list from the agency, technical assistance providers, and others.

The better use of the long-range plan as a tool to help systems attain technical, managerial, and financial capacity was discussed. Some ideas included for CRG to be able to assist systems with preparing a long-range plan. Another idea was for ASWCC to request changes and updates to the plan during their audit process.

A third issue discussed was assistance with partnering. The AWW&WEA district meetings provide opportunities for water system staff to build relationships and participate at the local level. An idea was to increase training programs by ADH staff that attends the meetings. It was suggested that possibly the capacity development program could provide a part-time staff for providing training at the district meetings.

In the first stakeholder meeting it was suggested that more and better operator training was needed. In the second meeting, stakeholders indicated that there are some areas in the state where training is not easily available but generally there are plenty of training opportunities. It was suggested that a potential problem was notification of training. One suggestion was for the ADH to partner with the vendor in the state that produces the training calendar in order to create a more complete calendar. Another concern was that some operators were unable to attend training due to a lack of a back up. It was suggested that a temporary operator or circuit rider be used to allow these operators to attend training.

Compliance data was identified as a means to measure improvement of the Capacity Development Program. Also compliance data for new systems could be tracked to determine if capacity development requirements helped. Other ideas presented for measuring the success of the program include the increase in the number of systems having a long-range plan, number of Source Water Protection Plans, number of SRF projects and total funding for improvements, and number of systems helped through technical assistance contractors.

Finally, further stakeholder involvement was discussed. Stakeholders indicated a desire to meet on a semi-annual basis to provide input and be involved with the evolution of the capacity development strategy.

E-mail will distribute minutes for the second stakeholder meeting to participants. Also, hard copies will be mailed to participants that do not have E-mail. Future plans are to post minutes of stakeholder meetings and the approved strategy on the Division of Engineering website.

Plans are to have a third stakeholder meeting in November in Little Rock. Topics of discussion have not been determined at this time. Potential topics include technical, financial and managerial questions for sanitary surveys. Another topic could be board member training. Public education is another possible discussion topic. Following the meeting in November, plans are to hold a fourth stakeholder meeting in late April or early May in Hot Springs during the AWW&WEA Annual Conference. Ongoing stakeholder meetings will be held and frequencies determined based on the interests of stakeholders and availability of ADH resources.

The ADH will be focusing on the following areas identified by stakeholders: 1) operator training, 2) modification of the capacity development contract priority list criteria to allow greater flexibility in the program, 3) better use of the long-range plan, 4) methods of measuring success of the program, 5) modification of sanitary surveys to include capacity development questions, 6) board member training and 7) public education. Other items will be incorporated over time as the ADH gains experience implementing the capacity development strategy.

## **Appendix A**

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

## **Appendix B**

### **ADH Interim Structure**

## **Appendix C**

### **Stakeholders List**

**Appendix D**

**Capacity Development Strategy  
Stakeholder Meeting**

**April 19, 2000  
Little Rock, Arkansas**

**Appendix E**

**Capacity Development Strategy  
Stakeholder Meeting**

**June 22, 2000  
Little Rock, Arkansas**