



**Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division of Water
14 Reilly Road
Frankfort, Kentucky 40601**

First Report to the Governor

Capacity Development

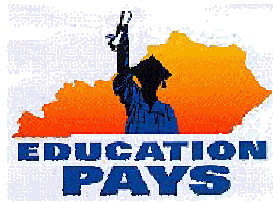
A strategy for Kentucky's Public Water Systems

September 30, 2002

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Executive Summary

Summary

Section 1420 of the Safe Drinking Water Act requires states to develop a strategy for assisting public water systems to develop the technical, financial, and managerial ability of the system to comply with the regulatory requirements of the Act. Subsection (c)(3) requires that two years after the adoption of the strategy, a report be sent to the Governor and made available to the public describing the efficacy of the strategy and progress made.

Highlights of the Strategies Effectiveness

Highlights of the effectiveness of the strategy are the continued mergers/consolidations or other reductions in total numbers of public water systems and the reductions in the numbers of persistent violators. In August 2000, there were 698 public water systems and 41 persistent violators. These numbers have been reduced to 595 public water systems and 20 persistent violators.

Requirements

Section 1420(c) of the SDWA outlined five elements that were addressed in Kentucky's development of a capacity development strategy:

- the methods or criteria that the Cabinet will use to identify and prioritize the public water systems most in need of improving technical, managerial, and financial capacity;
- a description of the institutional, regulatory, financial, tax or legal factors at the federal, state, or local level that encourage or impair capacity development;
- a description of how the Cabinet will use the authority and resources of the SDWA to assist public water systems in complying with drinking water regulations; encourage the development of partnerships between public water systems to enhance the technical, managerial, and financial capacity of the systems; and assist public water systems in the training and certification of operators;
- a description of how the Cabinet will establish a baseline and measure improvements in capacity to comply with drinking water law and regulations; and
- an identification of the persons who have an interest in and are involved in the development and implementation of the capacity development strategy (including all appropriate agencies of federal, state, and local governments, private and non-profit public water systems, and public water system customers).

This report follows these five elements and how Kentucky's strategy has changed or addressed them.

First Report to the Governor

Capacity Development A Strategy for Kentucky's Public Water Systems

Background

In 1996 Congress reauthorized the Safe Drinking Water Act (SDWA). One provision of the Act established a Drinking Water State Revolving Fund (DWSRF) to finance infrastructure improvements for public water systems. To get the full benefit of the Fund, Section 1420 of the SDWA requires states to establish capacity development programs to help assure that public water systems have the technical, managerial, and financial ability to meet state and federal requirements. Each state's capacity program must contain two elements: 1) the legal authority to demonstrate that all new public water systems have the technical, managerial, and financial ability to meet state and federal requirements, and 2) a strategy to assist existing water systems to improve their capacity.

In response to the capacity development requirements of the SDWA, the Kentucky General Assembly passed House Bill 598, now codified as KRS 151.630 - 151.636, directing the Natural Resources and Environmental Protection Cabinet to: deny plans for new systems, unless they can demonstrate the technical, financial, and managerial ability to meet requirements, and to establish a strategy to assist existing systems to improve capacity. The Division of Water (DOW), through its plans review and approval process will enforce these requirements. To date, no new systems have submitted plans for approval. However, a number of systems have substantially changed their infrastructure and have been treated as if they were new systems. For example, several systems have formed regional water commissions to jointly build new water treatment plants. In September 2000, the DOW adopted a strategy to assist existing water systems to improve their capacity. The strategy addressed the five elements outlined in Section 1420 of the SDWA. Those five elements will be reviewed here. This document is to fulfill the requirement of Section 1420(c)(3) to submit to the Governor two years after the adoption of a strategy, and make available to the public, a report on the efficacy of the strategy and the progress made toward improving the technical, managerial, and financial capacity of public water systems in Kentucky. Section 1420 also requires that a similar report be submitted every three years in the future.

Highlights of the efficacy of the strategy are the continued mergers/consolidations or other reductions in total numbers of public water systems and the reductions in the numbers of persistent violators. In August of 2000, there were 698 public water systems and 41 persistent violators. These numbers have been reduced to 595 public water systems and 20 persistent violators.

SDWA Requirements for a Strategy

Section 1420(c) of the SDWA and KRS 151.632(2) outlined five elements that could be addressed in the development of a capacity development strategy:

- 1) the methods or criteria that the Cabinet will use to identify and prioritize the public water systems most in need of improving technical, managerial, and financial capacity;
- 2) a description of the institutional, regulatory, financial, tax or legal factors at the federal, state, or local level that encourage or impair capacity development;
- 3) a description of how the Cabinet will use the authority and resources of the SDWA to assist public water systems in complying with drinking water regulations; encourage the development of partnerships between public water systems to enhance the technical, managerial, and financial capacity of the systems; and assist public water systems in the training and certification of operators;
- 4) a description of how the Cabinet will establish a baseline and measure improvements in capacity to comply with drinking water law and regulations; and
- 5) an identification of the persons who have an interest in and are involved in the development and implementation of the capacity development strategy (including all appropriate agencies of federal, state, and local governments, private and non-profit public water systems, and public water system customers).

Kentucky's strategy addressed each of the five elements set out in the SDWA and KRS 151.632(2). The following updates each of the five elements and how Kentucky has addressed them.

1. The methods or criteria that the Cabinet will use to identify and prioritize the public water systems most in need of improving technical, managerial, and financial capacity.

The DOW conducted public meetings and drafted a formula to rank public water systems most in need of improving capacity and drafted a regulation to incorporate these rankings. However, prior to completion of the regulation promulgation process, during the 2000 session, the Kentucky General Assembly, at the request of the Governor, passed Senate Bill 409, setting out a formal planning process for public water systems to: achieve the efficiencies of regionalization, and to plan how best to serve public drinking water to all Kentuckians by 2020. Following this, the capacity development process became part of a larger process to coordinate and address the water supply and infrastructure needs of the Commonwealth.

Included in the 2000 legislation was an appropriation to help with planning as well as to create a fund for improving public water and sewer system infrastructure (the 2020 fund). Local Planning Councils (LPCs), established by the Water Supply Planning (WSP) program of the Division of Water under KRS Chapter 151, have been utilized, along with staff provided by local Area Development Districts (ADDs), to develop regional plans and priorities for the supply of water to the people of Kentucky.

The WSP program mandated in 1990 that each county and its municipalities and public water systems develop a twenty-year plan to meet water supply needs. SB 409, administered by the Kentucky Infrastructure Authority (KIA), added to the established requirements of these plans. Original elements of the WSP program included the following:

- Delineation of a planning area (in most cases several counties joined together) and formation of a Planning Council. These Councils must continue after plan approval, approve plan amendments, and oversee the five-year plan updates.
- Determination of present water usage and forecasts of water supply demand at 5, 10, 15, and 20 years from the base year.
- Delineation of present service areas and projected service areas (including maps).
- Determination of existing treatment and distribution capacity and planned treatment and distribution capacity to meet projected demand.
- Estimates of costs of leak repair and meter installation.
- Analysis of available yield of all water sources during normal and drought conditions.
- Protection area delineation plans for all suppliers, both surface water and groundwater sources.
- Determination of water supply adequacy (supply vs. demand) in base year and at 5, 10, 15, and 20 years, with and without planned expansions, including any infrastructure inadequacies.
- Identification of potential sources of contamination in delineated watershed or recharge protection areas and analysis of susceptibility of the water systems to these potential sources.
- Listings of water supply alternatives to resolve present or projected supply inadequacies, including infrastructure inadequacies.
- Water Shortage Response Plan and A Supply Contamination Response Plan if needed.

These water supply plans may be amended as necessary, and KRS 151.632(3) directs that systems judged to be in need of improving capacity have a strategy included in the plan. SB 409 added requirements that the Kentucky Infrastructure Authority, through the ADDs, develop and prioritize proposals for infrastructure upgrades to encourage the efficiencies of regionalization, and plan for future water service for Kentucky. The KIA is the agency in Kentucky that administers state funding programs for infrastructure upgrades, including, with the DOW, the Drinking Water State Revolving Fund (DWSRF) and the Clean Water State Revolving Fund (CWSRF).

The DOW is developing a process and a scoring mechanism to create a list of those systems most in need of capacity assistance. The DOW will use sanitary surveys, persistent violators lists, boil water advisories, routine field inspections, compliance monitoring data and the experience of qualified Drinking Water staff to make an initial list of those systems most in need of technical assistance. DOW will work with PSC and KIA to develop an inventory of systems in need of financial and managerial assistance.

2. A description of the institutional, regulatory, financial, tax, or legal factors at the federal, state, or local level that encourage or impair capacity development.

The first institutional factor impairing capacity identified in the Capacity Development Strategy related to the Corps of Engineers (COE), specifically the time-consuming process that is involved in getting a permit to use COE-developed reservoirs as a drinking water source. This involves a study that must be funded through a direct Congressional appropriation, and even after funding is secured, the study is time consuming and does not guarantee success for the public water system. Even if successful, the water system must pay a substantial fee to use the water.

Local institutional problems were identified, including a managing board that fails to seek needed rate hikes or political fights that prevent water service where such service should be available. These kinds of impediments continue to arise, including situations where routine operation and maintenance is ignored or impeded and adequate staffing is not provided.

Regulatory factors were identified. Monitoring costs that can strain small water system budgets, and a complexity of requirements that frequently catch even large systems off guard, make it difficult to assure that all requirements are met. Inconsistent interpretations of federal requirements from the U.S. Environmental Protection Agency (U.S. EPA) exacerbate this problem. Enforcement policies may vary from state to state within a region as well as among regions. These differences are noted by water systems near state borders. The creation of the Office of Enforcement and Compliance Assistance contributed greatly to these inconsistent approaches to administration of the regulatory requirements, creating an additional institutional impediment.

Another issue identified is the division of regulatory authority between state agencies. The Kentucky Public Service Commission (PSC) regulates water districts and associations for rates, service, and the financial and managerial health of the system. However, the PSC's regulation only applies to only about one-third of the public water systems in the state. The DOW regulates all public water systems, but traditionally only for the quality of the water. Now, capacity development and new federal regulations for surface water systems are causing DOW to review water systems for financing and management, creating what appears to water systems to be a duplication of effort. This appearance of duplication has become more pronounced as the U.S. EPA enters into direct regulation of some water systems through the Information Collection Rule and the new Unregulated Contaminant Monitoring Rule.

Staffing issues are a new, additional impediment. U.S. EPA recently identified a lack of staff within the DOW as an impediment to the efficient implementation of the DWSRF.

3. A description of how the Cabinet will use the authority and resources of the SDWA or other means to assist public water systems in complying with drinking water regulations; encourage the development of partnerships between public water systems to enhance the technical, managerial, and financial capacity of the systems; and assist public water systems in the training and certification of operators.

Kentucky has applied for and received grants to set up a DWSRF to assist the state's water systems with infrastructure needs. The DOW sets priorities for funding of proposed projects using a priority formula, and the KIA actually provides the administration of the loans. In addition, a number of the set-asides from the DWSRF have been used for source water assessment and delineation, capacity development, and wellhead protection. The priority formula is heavily weighted to encourage systems to achieve economies of scale through mergers and creating regional facilities, obtaining adequate quantities of water and upgrading treatment facilities. It is anticipated that the planning process being developed by the KIA will be incorporated into the DWSRF formula to further encourage regional efficiencies to meet the requirements of the SDWA. Projects with binding commitments as of August 31, 2002, total \$48,575,188 from the DWSRF for infrastructure upgrades. Another \$357,500 from the DWSRF has been committed for land acquisition to protect the source water of one public water system.

Other activities of the Commonwealth and federal government are available to public water systems to assist them in developing their ability to meet requirements. A brief description of these follows:

- The Kentucky Wellhead Protection (WHP) Program addresses groundwater protection issues at the community level by assisting local planning teams with the development of wellhead protection plans for their public water systems.
- The Source Water Assessment Program (SWAP) was mandated by the 1996 amendments to the SDWA under which all public water systems must delineate sources, inventory potential sources of contamination, analyze susceptibility of systems to these potential sources of contamination, and make the results available to the public. The first phase of planning for this program was completed on July 15, 1999, with phase 2 to be completed by May 2003.
- The Water Withdrawal Permitting Program governs all water withdrawals greater than 10,000 gallons per day from any surface or groundwater source, with the exception of water required for domestic or agricultural purposes and for steam-powered electric generating plants. Each permit limits withdrawals to an amount that the permittee currently requires and that the water source is generally capable of providing. In addition, each permit may be conditioned to provide protection for other users and for the aquatic habitat. This program is ongoing.
- Through its Comprehensive Technical Assistance Program (CTAP), the DOW continues to provide extensive on-site technical assistance to public water systems. This assistance is offered without the threat of enforcement action. The CTAP program is currently engaged in a program with several states called the Area Wide Optimization Program (AWOP). This program allows CTAP to work with surface water systems to optimize treatment to operate those systems as efficiently as possible and in most cases to exceed regulatory requirements. The current thrust of this technical assistance is to prepare surface water systems to meet the requirements of the Interim Enhanced Surface Water Treatment Rule,

Long Term 1 Enhanced Surface Water Treatment Rule, and the Disinfectant/Disinfection By-products Rule. The CTAP program will extend the optimization concept to all water systems in the state. Other technical assistance continues to be extended to any water system with a particular short-term need.

- The DOW regulates, through its drinking water plan approval process, the engineering standards and materials used in the construction of or modification of drinking water treatment plants and distribution systems. The plan approval process is in effect a permitting program. No modification of a water system's infrastructure or treatment process can be legally begun without plans and specifications approved by the Division. Any modification of a water system must be in accordance with approved plans and specifications. It is this activity that provides the DOW its primary control point to enforce the requirement of the 1996 amendments to the SDWA and KRS 151.634 that all new systems have the technical, managerial, and financial ability to meet requirements.
- The Operator Certification Program provides continuous ongoing training of public water system operators, as well as setting standards and enforcing certification requirements for operators dealing with different type water plants and distribution systems. This program provides two full-time trainers to provide training and coordinate training efforts with third parties. This program has been in place for several years and was approved under the new federal operator certification program on February 15, 2001.
- The Division requires public water systems to continuously monitor for an extensive list of bacteriological, chemical, and radiological contaminants to assure the safety of the water and to satisfy state and federal regulatory requirements and maintains a database containing all public water systems currently operating in Kentucky. This database contains information on the system's source of water, treatment technique, treatment capacity, customer base, monitoring results, and information on any other public water systems that may buy or sell water from or to the system. The Division is currently converting this database to the "Safe Drinking Water Information System" (SDWIS), developed by U.S. EPA for state primacy programs. In addition, the Division is participating in a state effort to upgrade computer programming to assist state programs in administration of programs. This effort, called TEMPO, has led to a short-term loss of staff to the development of software, but should assist in the efficient operation of the Division in the long run.
- New sanitary survey requirements of the Interim Enhanced Surface Water Treatment Rule requires review of financial, managerial, and technical aspects of a water system to be reviewed. The Division is looking at the business practices of water systems for the first time and will hopefully have a firmer handle on these aspects of all surface water systems as surveys are completed.

- The Water Resources Development Commission (WRDC), created by Governor Patton, established a database to quantify areas of the state that were and were not being served by public water systems. The "Water Resource Information System" (WRIS), developed by the WRDC, maps the state's public water and sewer lines as they currently exist, as well as proposed future water and sewer service identified by the planning efforts of KIA and the ADDs. The WRDC's efforts resulted in the passage by the 2000 General Assembly of Senate Bill 409, transferring the responsibilities of the WRDC to KIA and creating the planning mechanism to encourage the regionalization efficiencies previously discussed.
- The PSC continues to regulate water districts and water associations for issues relating to rates, service areas, and quality of service (adequate pressure, availability of fire service). The PSC requires regulated systems to use a uniform system of accounts and to file a financial statement annually with the Commission. The PSC has the authority to designate service areas for regulated water systems, to order service to areas within the service area, to set rates, and to order mergers where the Commission finds that a merger would be appropriate. These regulatory powers are very broad; however, the PSC does not regulate municipal systems. The PSC also does not regulate very small water systems that are not organized under any statutory authority, but do meet the definition of a public water system used by the DOW (i.e., trailer parks, campgrounds, motels, restaurants).
- The Dental Health Program in the Cabinet for Health Services continues to provide supplemental fluoridation equipment to certain water systems to promote dental health. Supplemental fluoride monitoring analytical results are transmitted from the Health Department to the DOW for final disposition and use in compliance monitoring for fluoride.
- The Department for Local Government (DLG) administers the Community Development Block Grant (CDBG) Program, which provides grants for various community development projects, including water.
- The KIA provides banking functions for a number of infrastructure loan programs, including the Clean Water State Revolving Fund, which lends money for wastewater projects, and the DWSRF, which lends money for drinking water projects. These funds, together with 2020 funds and other funds available to KIA through bond issues, are instrumental for water systems to be able to meet state and federal requirements now and in the future. KIA uses a mixture of state and federal money to make loans. KIA loans are frequently used in conjunction with grants from other sources to increase the pool of money and lower the effective interest rate on a project.
- The United States Department of Agriculture's Rural Development (RD) program funds water projects through both grants and loans. RD money is frequently

matched with KIA loans and/or CDBG funds to provide a larger pool of money or lower effective interest rates.

- Some other, more limited, sources of money for public water systems include:
 - The Appalachian Regional Commission, which administers federal grants for various projects, including water, in the Appalachian area of the state.
 - The Economic Development Administration, which grants money for various economic development projects which can include water projects.
 - The abandoned mine lands program can, under certain limited conditions, provide water to areas impacted by past mining practices.
- Kentucky's 15 ADDs are regional planning agencies for local governments. They work with counties and municipalities to develop funding packages, facilitate LPCs, and are responsible for much of the planning required by Senate Bill 409. There is also a "Small Issuer Loan Program" administered by the ADDs.
- The Kentucky Rural Water Association (KRWA) provides on-site technical assistance to its member public water systems and wastewater systems. This assistance can take the form of circuit riders who assist a water system operator in solving operational problems, a leak detection program to help a water system find and correct water losses, assistance in establishing a WHP program, or other technical assistance. In addition, KRWA cooperates with the Kentucky Association of Counties (KACo) in operating a Peer Review Program for water systems, in which volunteer operators from other water systems visit and critique a system's operations and offer assistance. The Peer Review Program is an excellent example of a program to encourage partnerships between water systems to improve technical, managerial, and financial ability to meet requirements. The DOW has frequently offered training sessions in conjunction with the Peer Review Program but is not involved in a system's peer review evaluation. KRWA offers a number of continuous education opportunities to public water systems in cooperation with the DOW operator certification program and offers forums where DOW personnel offer overviews to KRWA members of existing and upcoming regulatory requirements. In some cases, under contract with the DOW or other agencies, KRWA offers technical assistance to non-member water systems. The KRWA is also involved in the "Small System Technical Assistance Center" at Western Kentucky University.
- The KACo represents county governments generically. KACo sponsors the Peer Review Program in cooperation with KRWA. In addition, water districts are organized under the jurisdiction of county governments. KACo has some limited ability to lend money for water projects.

- The Kentucky League of Cities represents city governments generically. Like KACo, the League has a limited amount of money it can make available for loans. Most community water systems in the state are city-owned and not regulated by the PSC.
- The Rural Community Assistance Program (RCAP) provides technical assistance to very small communities (usually serving a population under 500), including assistance for small water systems.
- Western Kentucky University has established a “Small System Technical Assistance Center” with a grant from the SDWA through the U.S. EPA. Among other things, the center is working with the KRWA to develop training for water system managers.
- The University of Louisville (U of L) has been designated by U.S. EPA as an “Environmental Finance Center.” U of L has already offered training sessions to a number of public water systems in the use of a computer model to help plan appropriate rates and reserve funds for the long-term financial health of the system.

Kentucky believes that the activities outlined above continue to meet the requirements of this third of the five elements of the SDWA to assist public water systems to meet federal requirements.

4. A description of how the Cabinet will establish a baseline and measure improvements in capacity to comply with drinking water law and regulations.

Kentucky began 1999 with 698 public water systems serving nearly 3.3 million Kentuckians. Included in these systems were 26 community, 14 transient noncommunity, and 1 nontransient noncommunity persistent violators. On August 1, 2002, these numbers were 595 water systems, serving 3,621,131 Kentuckians. Persistent violators were reduced to 20 public water systems. Perhaps the most significant statistic for determining the efficacy of the strategy is the reduction in overall numbers of public water systems. As the planning efforts of KIA, and the other assistance efforts of DOW and others come into play, more and more systems are opting to merge or be served by other public water systems. This number is expected to continue to decrease. Perhaps the best success story of these efforts is the soon-to-be-operational Logan-Todd Regional Water Commission's 10-million-gallon-per-day water plant, which will treat water for 12 small water systems. Other recent regionalization efforts include the Greater Fleming Water Commission, Carr Creek Regional Water Commission and Madison County Utility District.

The successful lending of \$48,575,188 of available DWSRF money to date is a clear benchmark of success in addressing the needs of Kentucky's public water systems. In addition,

KIA has granted a total of \$50,000,000 to improve public water systems' infrastructure. Other KIA loan programs have also assisted with water needs.

5. An identification of the persons that have an interest in and are involved in the development and implementation of the capacity development strategy (including all appropriate agencies of federal, state, and local governments, private and non-profit public water systems, and public water system customers).

All of Kentucky's public water systems and public water system consumers and potential consumers continue to have an interest in capacity development. In addition, public water systems and public water system consumers and potential consumers in states bordering Kentucky have an interest in the capacity development strategy since public water systems in other states may buy from or sell to water systems in Kentucky, now or in the future. In addition, the following state and federal agencies continue to have an interest in the capacity development strategy:

- Kentucky Natural Resources and Environmental Protection Cabinet
- Kentucky Cabinet for Health Services
- Kentucky Infrastructure Authority
- Kentucky Department of Parks
- Kentucky Department for Corrections
- Kentucky Department for Local Government
- Kentucky Economic Development Cabinet
- Kentucky Geological Survey
- Kentucky Office of Geographic Information Systems
- Kentucky Public Service Commission
- Kentucky Transportation Cabinet
- Kentucky Department of Agriculture
- Rural Community Assistance Program
- Appalachian Regional Commission
- U. S. Environmental Protection Agency
- U. S. Department of Agriculture, Rural Development
- Other state or federal agencies

The following local governments have a continued interest in the capacity development strategy:

- Area Development Districts
- City governments
- County governments

The following groups or associations have a continued interest in the capacity development strategy:

- Consulting engineers

Certified laboratories
Kentucky Rural Water Association
Kentucky League of Cities
Kentucky Association of Counties
Kentucky Ground Water Association
Kentucky Resources Council
Kentucky Conservation Committee
Kentuckians for the Commonwealth
Kentucky Mobile Home Manufacturers Association
Other groups or associations

The Kentucky DOW considers the mailing list that was used to solicit public comment on the elements of the strategy a comprehensive listing of those who were involved in developing the strategy. That list consisted of several thousand names of organizations and individuals and is too large to be included here.

Conclusion

The Kentucky DOW believes that the descriptions in response to the five elements identified in the SDWA and KRS 151.632(2) have been an effective strategy to improve the capacity of Kentucky's public water systems. The WSP program and the KIA planning program, the DWSRF program, other state and federal funding programs, the technical assistance offered by the CTAP and that which is offered by the KRWA and others have been effective in assisting public water systems to acquire technical, financial, and managerial capacity. Additional progress in the next three years is anticipated.