

Delaware Health and Social Services
Division of Public Health
Office of Drinking Water

Capacity Development Program
Report to the Governor

September 2002

“Doing Many Small Things Well”

Background

The 1996 amendments to the Federal Safe Drinking Water Act (SDWA) require that not later than two years after the date on which a State adopts a Capacity Development Strategy and every three years thereafter, a report shall be made to the Governor on the efficacy of the strategy and the progress made toward improving the technical, managerial and financial capacity of public water systems in the State. The report should also be made available to the public.

Objectives

Delaware has developed and implemented a strategy to assist public water systems (PWS) in acquiring and maintaining technical, managerial, and financial capacity to meet the SDWA public health protection objectives. Capacity Development is a non-regulatory program that is primarily preventative in nature.

In order for the program to be successful with limited staff and resources, a choice had to be made between doing a few big things or doing many small things well. We chose to do many small things well. The result has been a program that has grown in recognition and influence.

The Program

In developing the Strategy, methods first were considered to identify and prioritize systems in need of improving technical, managerial, or financial capacity. A baseline was established from which the improvement in capacity could be measured. To establish a baseline, the compliance history and other criteria of all of Delaware's 521 PWSs were reviewed. Every water system was assigned to a ranking category according to their compliance level 1-4 (See the Appendix for an explanation of the criteria used to rank the systems).

Next self-assessment surveys are sent along with other information about the Capacity Development Program to systems assigned levels 1-3. Contact is made with the water system to arrange a meeting/site visit. Level 4 systems are the most capable and are therefore not contacted. Site visits are performed for all systems willing to participate since this is a voluntary program. Assistance is offered in any areas needed. The Office of Drinking Water maintains a contract with Delaware Technical and Community College Environmental Training Center and the Delaware Rural Water Association to provide assistance beyond what is available through Office of Drinking Water staff. The Office of Drinking Water also refers water systems to other sections within Delaware Health and Social Services, the Department of Natural Resources and Environmental Control (DNREC), and the Public Service Commission as needed.

Table #1 shows a summary of the compliance ranking level of all public water systems in Delaware. Systems in level #1 are the water systems most in need of assistance.

Table #1

Water Systems level #1	5
Water Systems level #2	64
Water Systems level #3	202
Water Systems level #4	250
Total # of Public Water Systems	521

Table #2 shows some of the areas in which the Office of Drinking Water can assist water systems. One of the advantages of the program is its flexibility; we can tailor the assistance to the individual needs of the water system.

Table #2

<p><u>AREAS OF POTENTIAL ASSISTANCE</u></p> <ol style="list-style-type: none"> 1. <u>Develop Emergency Plans Including Water System Security</u> 2. <u>Provide Information about Delaware Drinking Water Regulations</u> 3. <u>In Depth Water System Evaluation with Recommendations</u> 4. <u>Assist in Creating Operation and Maintenance Manuals</u> 5. <u>Water Treatment Technique Evaluations</u> 6. <u>How to Comply with Requirements of the Lead/Copper Rule</u> 7. <u>Evaluation of Operational Policies, Job Descriptions, and Organizational Charts</u> 8. <u>Calculating and Controlling Water Loss</u> 9. <u>Encouraging Customers to Practice Water Conservation</u> 10. <u>Management and Budget Training</u> 11. <u>How to Develop a Long Term Capital Improvement Plan</u> 12. <u>Assistance in Completing a Drinking Water State Revolving Fund Loan Application</u> 13. <u>Developing a Source Water Assessment or Wellhead Protection Plan</u> 14. <u>Assist Operator in Obtaining or Maintaining Drinking Water Operators License</u> 15. <u>Promote and Encourage Consensus Building between Operators, Elected Officials and Customers of Municipal Water Systems</u>
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Table #3 shows the number of public water systems that were offered assistance, (not all have been approached) the number that accepted, and those that declined as of June 30,2002.

Table #3

Number of Level 4 (needing no assistance):	250
Systems designated 1-3 (offered CD assistance as of 6/30/02):	142
Systems accepting assistance:	121
Systems declining assistance:	21
Percentage of systems accepting assistance (as of 6/30/02):	85%

As the table indicates, we have been very successful to date in gaining the cooperation of the water systems. A portion of our assistance is answering questions and disseminating information. Therefore, it is difficult to measure the long-term impact that the program will have. Once all of the systems rated 1-3 have had the opportunity to participate in the Capacity Development Program, the systems will be ranked once more to determine the level of improvement in compliance and thus in public health protection.

Another advantage of the program is the potential to change the program if necessary. If the format used was not effective, the approach can be changed to achieve better results. So far the program has been very successful at both gaining cooperation of water supplies and in assisting them. Consequently, there are no current plans to alter the program format.

Success Story #1

A school in mid-state Delaware had a problem with persistent nitrates in their well. In spite of public notices of violation being issued by the Office of Drinking Water, the problem was not corrected. The school was one of twelve water systems in Delaware on EPA's list of significant non-compliers.

Finally in 1998, a new deeper well was drilled and given approval for use based on results of nitrate and microbiological tests. However, the drinking water problems at the school were not over. During 1999, water samples began testing positive first for total coliform bacteria and then for E-Coli bacteria.

Boil water notices were issued with administrative orders for continuous chlorination. With each public notice, the well was disinfected and retested but within months the bacteria would reappear.

Staff determined that a review of issues with the management of this water system was needed. The system did not have a licensed operator and staff responsible had no idea how to operate and maintain a water system. The initial attempts of the Capacity Development Office to assist the school were met with suspicion. However, they eventually agreed to meet and discuss possible solutions to their problems.

Result:

During the meeting it was discovered that there was a main from a municipal water system in close proximity to the school. The city was contacted and agreed to serve the school. The school is now connected to city water and no longer operates its own public water system.

This is just one example of how the Capacity Development Program was able to assist this water system because they gave individual attention in a non-regulatory circumstance.

Success story #2

During a Capacity Development meeting with officials of one city, questions were raised about engineering plan review of water system alterations and expansions. The City was confused about when plans should or should not be reviewed by the Office of Drinking Water engineer.

A second meeting was arranged between the City, staff from the Office of Plan Review and Capacity Development staff to clarify policies regarding submission of plans.

Result:

The city is now in direct contact with the Office of Plan Review via fax and email, thus reducing turn-around time for mail. Plan review engineers can also alert the City of regulations concerning new construction and how they relate to Sanitary Surveys performed by the Office of Drinking Water.

The Capacity Development self-assessment and meeting discovered and corrected previously undetected issues that could have resulted in larger problems for the water system in the future.

Group Training Sessions

In addition to assisting individual water systems, the Capacity Development Program has initiated several group-training sessions for drinking water system operators, supervisors and elected and appointed officials.

1. Security Workshop

Since the events of September 11th 2002, public water system security has been an issue at the forefront of the drinking water industry. In December of 2001 a Security Workshop for drinking water and wastewater personnel was held at Delaware Technical Community College (Del Tech) in Dover. The workshop, which was coordinated by the Capacity Development Program, was attended by over 100 people. Speakers were provided by Delaware Rural Water Association, Del Tech, DNREC, DEMA and the Office of Drinking Water.

2. Drinking Water Operator Training

All public drinking water systems in Delaware are required to have a licensed drinking water operator. This includes daycare centers and schools that provide drinking water from their own well for over 25 people per day. While this population is one of the most vulnerable to contaminants that may be in drinking water, the daycare providers are some of the least likely to have the time to take classes in water operations or the funds to contract with a licensed water operator.

Eventually, what would have occurred is that many of these water systems would have either been out of compliance with the licensing requirement or would have had the financial burden of hiring a water operator.

The Capacity Development Program elicited the assistance of the Del Tech Environmental Training Center in Georgetown to provide training and testing to 30 operators of daycares, schools, and senior centers. As a result, these operators have the basic knowledge of how to operate a water system and provide safe drinking water to their customers.

3. DWSRF Applicants Workshop

All applicants for a Drinking Water State Revolving Fund (DWSRF) loan must have a review of their financial, managerial, and technical ability to provide safe drinking water throughout the term of the loan.

In order to boost managerial and financial capability, the Capacity Development Program provides a training workshop for decision makers of municipal water systems. Two representatives from each applying municipality must attend the training. Typical attendees would be town managers, mayors, council members, and public works superintendents.

To date, four workshops have been held training over 30 attendees. Subjects covered include, rate setting, budgeting, and capital improvement planning.

The most recent all day workshop was a joint effort between the Office of Drinking Water, the Southeast Rural Assistance Project, the Rural Utility Service branch of USDA, the Delaware Rural Water Association, and Del Tech.

4. Rate Setting Satellite Workshop

The Office of Drinking Water procured a downlink site and handled registration for the local audience for a satellite teleconference broadcast presented by Penn State Harrisburg Environmental Training Center and the Small Public Water Systems Technology Assistance Center supported by US EPA. The workshop was designed to provide participants with general rate setting skills and methodology and to provide answers to pressing problems dealing with rate setting. The audience consisted of town managers, public works superintendents, and engineers.

Factors that Impair or Encourage the Capability of Public Water Systems

◆ Operator training

It is only in the last few years that Delaware has required public water system operators to be trained and licensed. So there has been a significant need for training of water operators both in operation and maintenance of a public water system and in the requirements of state and federal drinking water regulations.

◆ Drinking water as ancillary business

Frequently water suppliers, particularly when the production of drinking water is not the principal business, have little understanding of regulations or the expertise needed to run a water system. This is especially true of noncommunity water systems. The management of such industries or businesses may have even less knowledge of water systems and therefore not provide adequate financial support for the production of safe drinking water.

◆ Political rivalry

Political rivalry between municipalities and between municipalities and private utilities may prevent interconnection or consolidation of any part of the operation. Interconnections could provide redundancy of equipment, economy of scale and shared use of personnel. The result would cut costs as well as assure greater continuity of water service during emergencies or the mechanical failure of a component. Resistance to change also prevents new ideas from being implemented.

- ◆ DWSRF

The availability of Drinking Water State Revolving Fund loans allows public water systems to replace aging infrastructure, add needed treatment or other projects to enhance long-term capability. The revolving fund is a wonderful program for large projects. But a small water system that needs a new well or treatment to comply with drinking water would find the bureaucratic process, state wage rates and closing costs overwhelming.

- ◆ New system authority

DHSS has the authority to prevent the construction of new public water systems that do not have the ability to provide safe drinking water over the long term. The benefits of this provision will accumulate in the coming years by assuring that every new community and non-transient noncommunity water system has technical, managerial and financial capacity.

- ◆ Staff retention

The Capacity Development Program has had some problems with the ability to retain staff. The program has been implemented by a Program Manager, who also manages a program for new water systems, and one Environmental Health Specialist II. The Environmental Health Specialist position has had three different people in the position in the past two years. The level of expertise required by the position is beyond that of most other Environmental Health Specialist IIs in the State. This position should be reclassified to a more appropriate level.

- ◆ Newsletter

The Office of Drinking Water newsletter “TapTalk” has been created and contains information about new and existing regulations and other developments in the water industry. The quarterly newsletter is sent to every public water system in the State. It provides another means of reaching small systems that previously had limited means of obtaining current information.

- ◆ Existing programs

There are several existing programs within the Office of Drinking Water that are designed to assist water providers in complying with regulations. The Capacity Development Program works closely with and complements these programs.

- SANITARY SURVEYS: Sanitary surveys are performed on all public water supplies. The survey provides an evaluation of the water system’s

source, treatment, and storage facilities. The purpose of the sanitary survey is to discover defects, which may lead to a compromise in the water quality or safety and eventually noncompliance. This program is undergoing a review to add new requirements of the SDWA.

- TECHNICAL ASSISTANCE: Technical support is given by investigating various components of water systems to determine the cause of problems and suggest solutions. ODW staff also provides advice about operation and maintenance of equipment.
- PLAN REVIEW: Plans for new water systems or changes to existing systems are reviewed by an environmental engineer. This process assures owners and users of public drinking water systems that the system is technically sound and can deliver water to the consumer in the most efficient and safest way possible.
- MONITORING: Sampling and testing protect the water quality of public water systems throughout the State. Delaware does most of the monitoring for small and medium size systems. This approach provides fast laboratory results and assures the integrity of the results.

Future projects:

When all the eligible water systems have been offered the assistance for the Capacity Development Program, all systems will be ranked again to measure the progress that they are making.

As water operators receive additional training, their level of expertise will reach a new high. However, there is a need for elected officials, managers, and customers of some water systems to be more aware of the importance of safe drinking water. Even the most knowledgeable water operator can only achieve limited success if the town or company management doesn't understand the importance of properly funding the operation and maintenance of the water system. There is a tendency for customers to think that water is free because it comes from the ground yet they are willing to pay many times over for other utilities and services. The emphasis in the next year will be on managerial issues related to running a water system.

Conclusion:

Capacity Development addresses the technical, managerial, and financial capability of public water systems to comply with National Primary Drinking Water Regulations currently and into the future.

The program works in partnership with the Public Water System Supervision Program, the Office of Plan Review, and several agencies outside of the Office of Drinking Water to form a network of support. The Capacity Development Program examines the underlying issues that cause a water system to fall into non-compliance and therefore compromise the quality of drinking water provided to their customers.

APPENDIX

Criteria Used for Ranking Water Systems into Four Compliance Levels

Level 1: Significant Non-Compliers (SNC)

Water systems in significant non-compliance are chronic non-compliers. They are undoubtedly lacking in many technical, managerial, and financial capacity areas. Delaware only has a small number of significant non-compliers. These systems are given the first priority in receiving assistance. Level 1 was determined by researching data contained in the existing Public Water Systems database. Each of these systems is addressed individually so time needed and the method of assistance varies considerably. Some need training or technical assistance while others may need further enforcement.

Level 2: Systems with Health Related Compliance Problems

Level 2 consists of systems that have had some compliance problem with health related regulations in the last 3 years but are currently in compliance. Types of violations that will be reviewed are: Systems exceeding lead/copper action level, Total Coliform Rule, Phase II-V (chemical contaminants). These systems have problems that if not addressed may cause them to become SNCs. Level 2 was determined by researching data contained in the existing Public Water Systems database.

Level 3: Systems with Compliance Problems Non-Health Related

Systems without health related compliance problems but referred to Capacity Development for other reasons. Typical non-health related compliance issues for referral are: lack of a certified operator or failure to submit a Consumer Confidence Report. Other referral reasons could be sanitary defects, a large number of complaints, aging infrastructure, poor maintenance, financial problems, or a recently identified system etc. Levels 2 and 3 are offered primarily preventative programs.

Level 4: Systems Exhibiting Full Capacity

These are the systems with no known compliance or other problems; therefore, they have no immediate need for technical, managerial or financial assistance.