

# **Capacity Development Program Report to the Governor**



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

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## Background

The 2005 Capacity Development Program Report to the Governor details the State of Delaware's strategy to meet the public health protection objectives of the Federal Safe Drinking Water Act (SDWA). The strategy assists public water systems in acquiring and maintaining technical, managerial and financial capacity. If a strategy is not in place, 20 percent of the Drinking Water State Revolving Fund (DWSRF) grant will be withheld from the state's allotment.

This Delaware Health and Social Services' (DHSS) Division of Public Health (DPH) report is the second report prepared for Governor Ruth Ann Minner by the Office of Drinking Water (ODW). The SDWA requires 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. DPH wrote an initial report in 2002. The reports are available to the public.

## The Program

The Capacity Development Program utilizes a strategy that is non-regulatory and is primarily preventative in nature. In developing the strategy, methods first were considered to identify and prioritize systems in need of improving technical, managerial, or financial capacity. ODW established a baseline in 2000 to measure improvements in capacity. To establish a baseline, ODW reviewed the compliance history and other criteria of all of Delaware's 521 public water systems (PWS). Each water system was ranked according to their compliance level:

### **Level 1: Significant Non-Compliers (SNC)**

Water systems in significant non-compliance are chronic non-compliers. They are lacking in many technical, managerial and financial capacity areas. Delaware has a small number of significant non-compliers.

### **Level 2: Systems with Health Related Compliance Problems**

Level 2 consists of systems currently in compliance with health-related regulations but with a history of a compliance problem in the last three years. ODW reviews for these types of violations: Systems exceeding lead/copper action level, Total Coliform Rule, and Phase II-V (chemical contaminants). If problems are not addressed, the systems' ranking could be reduced to Level 1.

### **Level 3: Systems with Compliance Problems Non-Health Related**

These systems are typically lack a certified operator or the system has failed to submit a Consumer Confidence Report. Other referral reasons are sanitary defects,

a large number of complaints, aging infrastructure, poor maintenance, financial problems, or a recently identified system.

**Level 4: Systems Exhibiting Full Capacity**

These water systems have no known compliance issues or other problems.

In 2001 and 2002, ODW sent self-assessment surveys to water systems. After reviewing the responses, ODW staff visited the systems and offered assistance. ODW contracts the Delaware Technical and Community College Environmental Training Center (DTCC) and the Delaware Rural Water Association (DRWA) to provide assistance. ODW refers some 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. ODW's flexibility allows it to tailor assistance to the individual needs of the water system.

Table 1 contains ODW's array of assistance available to water systems.

**TABLE 1**

<b><u>AREAS OF POTENTIAL ASSISTANCE</u></b>
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>Asset Management</u>
11. <u>Utility Rates Setting and Cost Recovery</u>
12. <u>How to Develop a Long Term Capital Improvement Plan</u>
13. <u>Assistance in Completing a Drinking Water State Revolving Fund Loan Application</u>
14. <u>Developing a Source Water Assessment or Wellhead Protection Plan</u>
15. <u>Assist Operator in Obtaining or Maintaining Drinking Water Operators License</u>
16. <u>Promote and Encourage Consensus Building between Operators, Elected Officials and Customers of Municipal Water Systems</u>

Once all water systems had the opportunity to participate in the Capacity Development Program, ODW ranked the systems once again in 2002 and 2003 to determine their improvement in compliance and thus in public health protection.

Many systems showed improvement and sanitary survey defects were reduced considerably. Many more water systems had written emergency and maintenance plans. Meanwhile, DTCC and DRWA began offering regular trainings for water operators, greatly enhancing their knowledge. DPH updated its requirements for licensed drinking water operators to require 12 or 20 hours of continuing education every two years depending upon the level of certification.

Changes in lead/copper (Pb/Cu) regulations in 2003 caused some water systems to decline in their compliance level. Systems that previously had a waiver from lead/copper testing were required to recertify their plumbing material or begin sampling for lead/copper. Although these systems appeared to be well run and had no history of noncompliance, they were not equipped to comply with regulatory changes.

To address the problem with Pb/Cu compliance, ODW reviewed all systems in 2004 and sent over 200 reminder letters. ODW worked closely with 53 systems with Pb/Cu waivers and assigned accelerated reduced monitoring schedules to eligible systems.

### Typical Capacity Building Activities

The Capacity Development Program promotes safe drinking water in Delaware by serving as a liaison between the customer, the water system and ODW's enforcement section.

#### **Problem-Solving Assistance:**

A large surface water system contacted ODW about homeowners in one development complaining about copper stains and green specks in ice. Although customers previously had a private laboratory sample their water and subsequently purchased elaborate and expensive water treatment systems, the stains continued. The water system was in compliance with the lead/copper rule.

ODW staff and utility representatives visited the homes and took samples. Staff also sampled water from hydrants and elevated storage tanks near the development. Results showed some samples exceeded the action level for copper.

When the results were presented to the water system, the utility voluntarily adjusted the water treatment, which gradually alleviated the customer's problems. ODW recommended the utility perform a corrosion control study. The water system also agreed to reevaluate their lead/copper sample sites before the next round of sampling.

**Security Projects:**

Since the events of Sept. 11, 2001, public water system security is an issue at the forefront of the drinking water industry.

ODW staff performed 28 surveys on water systems owned by a large investor-owned utility. The surveys identified sanitary defects and security issues. Several of the utility's wellheads were in open lots or along driveways with no protection from tampering, vandalism or accidental damage. ODW's recommendations prompted the utility to install customized wellhead protection equipment on their exposed wells.

ODW held an Incident Response Workshop in 2005 for over 70 water system operators, utility managers and owners, and staff representing DRWA and DTCC, the co-sponsors. Speakers from the county, state and federal government discussed roles and responsibilities during a terrorist attack or natural disaster. The security forum was so popular that ODW is planning a tabletop exercise with DRWA. The exercise will be held at a small water system early in 2006.

**Drinking Water State Revolving Fund applicants:**

The Drinking Water State Revolving Fund (DWSRF) is a loan fund established by the 1996 Amendments to the Federal Safe Drinking Water Act. The fund is administered in Delaware by the Division of Public Health Office of Drinking Water. The purpose of the loan fund is to assist public water systems in replace aging infrastructure, add needed treatment or to complete other projects.

All DWSRF applicants must have a Capacity Development Assessment. Water systems that do not comply with the National Primary Drinking Water Regulations are ineligible for DWSRF monies unless:

- a.) The system's owner or operator agrees to undertake feasible and appropriate operational changes, or
- b.) Financial assistance from the DWSRF will ensure long-term system compliance.

The Capacity Development Assessment covers compliance history, wellhead protection, emergency plans, maintenance plans, rates, capital improvement plans and organizational structure. If the system lacks capacity, operators are assisted by capacity development staff, DRWA or DTCC.

All municipalities applying for the State Revolving Fund are required to attend financial and managerial training provided by DTCC on asset management, capital improvement planning or rate setting. Although only two of the municipality's decision makers are required to attend, two municipalities sent their entire town council, town manager and mayor to our training. Additional sessions are planned for the future.

## Group Training Sessions

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

### **Drinking Water Operator Training for Daycares and Schools:**

Delaware's community water systems and non-transient non-community water systems are required to have a licensed drinking water operator. This requirement includes daycare centers, senior centers and schools that provide drinking water from their private well for over 25 people daily. While these populations are the most vulnerable to contaminants, daycare providers are least likely to take daytime classes in water operations or have the funds to contract with a licensed water operator. Were it not for ODW's Capacity Development Program, many of these water systems would have either been out of compliance or would have been burdened by hiring a water operator.

The program arranged for the Delaware Technical and Community College's Environmental Training Center in Georgetown to provide training and testing to these facilities. Over the last three years, 30 operators of daycares, schools and senior centers received training through the Environmental Training Center.

### **Coalition Training:**

An all-day workshop targeting municipal employees and council persons is held annually by The Delaware Environmental Coalition (TEC). TEC includes DPH/ODW, the Southeast Rural Assistance Project, the Rural Utility Service branch of the U.S. Department of Agriculture, the Delaware Rural Water Association, the Delaware Department of Natural Resources and Environmental Control and Delaware Technical and Community College. Topics range from asset management to source water protection. Attendance nearly reached 100 in 2005, compared to 20 attendees in 2002.

## Office of Drinking Water Capacity Building Tools

### **Operator Training:**

Only since 1998 has Delaware required public water system operators to be trained and licensed. In 2000 DPH began issuing licenses. There is a significant need for training water operators about both the operation and maintenance of a public water system, as well as state and federal drinking water regulations.

**Newsletter:**

The Office of Drinking Water's quarterly newsletter "Tap Talk" contains information about new and existing regulations and other developments in the water industry. The newsletter, sent to all public water systems in the state, is another way ODW can communicate with small systems that previously had limited means to obtain current information.

**New System Authority:**

DHSS has the authority to prevent the construction of new public water systems that do not have the ability to ensure safe drinking water now and into the future. This provision assures that every new water system has technical, managerial and financial capacity.

**DWSRF:**

The Drinking Water State Revolving Fund loans public water systems funds to replace aging infrastructure, add needed treatment or to complete other projects.

**Existing Programs:**

Several other programs within the Office of Drinking Water build the capacity of water systems. The Capacity Development Program works closely with and complements these activities.

SANITARY SURVEYS: Sanitary surveys are performed on all public water supplies. The survey evaluates the water system's source, treatment, and storage facilities. Sanitary surveys discover defects that could compromise the water quality and safety of its consumers, as well as ODW compliance.

TECHNICAL ASSISTANCE: ODW staff investigates various water system components to determine the cause of problems and suggest solutions. ODW staff provides advice about operating and maintaining equipment.

PLAN REVIEW: An environmental engineer reviews plans for new water systems or proposed changes to existing systems. Plan review assures owners and users of public drinking water systems that systems are technically sound and can deliver efficiently and safely deliver water to consumers.

MONITORING: Sampling and testing protect the water quality of public water systems. Delaware does most of the monitoring for small and medium-sized systems. This approach provides fast laboratory results and assures the integrity of the results.

## Factors that Impair the Capability of Public Water Systems

### **Drinking Water as Ancillary Business:**

Since producing drinking water is not the principal business of water suppliers, they may have little understanding of regulations or expertise needed to operate a water system. This is especially true of non-community water systems. The management of such industries or businesses may have even less knowledge and therefore not provide adequate financial support for producing safe drinking water.

### **DWSRF:**

While the State Revolving Fund is a wonderful program for large projects, a small water system may be overwhelmed by the bureaucratic process, state wage rates, federal cross-cutter requirements and closing costs.

### **Political Rivalry:**

Political rivalry between municipalities and between municipalities and private utilities may thwart interconnection or consolidation of any part of the operation. Resisting change also prevents the study or implementation of new ideas. Interconnections could minimize equipment duplication, create an economy of scale and share personnel. Interconnected parties would both profit by reducing costs. Moreover, the parties would assure their customers of greater continuity of water service during emergencies or mechanical failures.

## Future Projects

How will the Capacity Development Program identify water systems needing assistance now that ODW has ranked and re-ranked all water systems and those systems have had the opportunity to receive assistance?

1. Capacity Development now follows lead and copper compliance and provides individual assistance to systems that either fail to monitor for lead/copper, or which exceed the action level.
2. The program will work vigorously with significant non-compliers, those with multiple violations within a three-year period.
3. To date in 2005, staff has reviewed the compliance history of over 170 water systems submitting engineering plans to alter or expand their existing systems. Systems not in compliance are counseled about necessary steps they need to take to achieve compliance before expanding to serve more customers.

4. The Capacity Development Program offers technical assistance to water systems that have trouble returning to compliance after a bacteriological or other violation.
5. As water operators receive additional training, their level of expertise will reach a new level. However, even the most knowledgeable water operator can only achieve limited success unless the municipal or company management understands the importance of properly funding the operation and maintenance of a water system. In the coming years, ODW will emphasize managerial and financial issues related to operating 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 in the future.

The program works in partnership with ODW's Public Water System Supervision Program, ODW's Office of Plan Review, and several outside agencies to form a network of support. The Capacity Development Program examines underlying issues that cause water systems to become non-compliant, thus compromising the quality of the public drinking water they provide.

The program achieves compliance by educating water system operators about implementing required or suggested procedures, and advising them about equipment, trainings and processes needed to avoid non-compliance.

DPH attributes most of this non-regulatory program's success to the cooperative nature of its staff, the willingness of most water operators to improve operations, and to partnerships with Delaware Technical and Community College, the Southeast Rural Assistance Project, the Rural Utility Service branch of the U.S. Department of Agriculture, the Delaware Rural Water Association, and the Department of Natural Resources and Environmental Control.