



**State of Delaware  
Capacity Development Program  
Report to the Governor**

**September 2020**



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**TABLE OF CONTENTS**

EXECUTIVE SUMMARY..... 4

THE PROGRAM ..... 5

TYPICAL CAPACITY BUILDING ACTIVITIES ..... 6

    Technical Assistance – ODW ..... 7

    Technical Assistance – External Agencies ..... 7

    Security Projects..... 7

    Drinking Water State Revolving Fund applicants..... 7

GROUP TRAINING SESSIONS..... 8

    Limited License Water Operator Training ..... 8

SUCCESS STORIES ..... 8

OFFICE OF DRINKING WATER CAPACITY BUILDING TOOLS..... 9

    Operator Training..... 9

    ODW Email Blast..... 9

    New System Authority ..... 9

DRINKING WATER STATE REVOLVING FUND ..... 9

    Existing Programs..... 9

FACTORS THAT IMPAIR THE CAPACITY OF PUBLIC WATER SYSTEMS..... 10

    Drinking Water as Ancillary Business ..... 10

    Asset Management..... 10

    Financial Assistance Programs ..... 11

    Reluctance to Interconnect public water systems..... 11

FUTURE PROJECTS..... 11

CONCLUSION ..... 12

## **EXECUTIVE SUMMARY**

The 2020 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 (PWSs) in acquiring and maintaining technical, managerial, and financial capacity. If a strategy is not in place, 20% of the federal Drinking Water State Revolving Fund (DWSRF) grant will be withheld from the state's allotment.

Since Delaware began implementing the 1996 Amendments to the SDWA, Delaware's Capacity Development Program has consistently improved and evolved into the program it is today. Due to population growth and an increase in the number of residential communities in Delaware, new systems are continually being reviewed and added to the list of PWSs that are provided with regulatory oversight. The Delaware Department of Health and Social Services (DHSS), Division of Public Health (DPH), Office of Drinking Water (ODW) regularly evaluates and monitors the technical, managerial and financial capacities of PWSs. Currently, ODW monitors 474 PWSs.

Since 2002, ODW prepared five reports for the Governor's Office prior to this report. The 2020 Capacity Development Program report is the second report presented to Governor John Carney. The SDWA requires that a report be made to the Governor on the efficacy of the strategy and the progress made toward improving the technical, managerial, and financial capacity of PWSs in the state no later than two years after the date on which a state adopts a Capacity Development Strategy and every three years thereafter. The reporting period for this report is July 1, 2017 to June 30, 2020. A copy of this report is submitted to the United States Environmental Protection Agency (EPA).

The reports are available to the public through the Office of Drinking Water website: <https://www.dhss.delaware.gov/dhss/dph/hsp/capdevrep.html>.

## **THE PROGRAM**

The Delaware Department of Health and Social Services, Division of Public Health's (DPH) Capacity Development Program primarily utilizes a non-regulatory proactive strategy. In developing the strategy, methods first were considered to identify and prioritize public water systems (PWSs) in need of improving technical, managerial, or financial capacity. The Office of Drinking Water (ODW) established a baseline in 2000 to measure improvements in capacity. To establish a baseline, ODW reviewed the technical, managerial, and financial capacity of Delaware's 487 PWSs in existence at the time. Each water system was ranked according to their compliance level:

- **Level 1: Enforcement Targeting Tool Violators**  
The Enforcement Targeting Tool (ETT) is a calculative method used to determine a public water system's enforcement priority points. It is used to identify and prioritize systems for enforcement response. Any system with a score of 11 or greater must be addressed within six months. The Capacity Development Program will work with these systems to determine if they can be returned to compliance without formal state action.
- **Level 2: Systems with Health-Related Compliance Problems**  
These systems are currently in compliance with health-related regulations but have a history of compliance problems in the last three years. ODW conducts reviews for the following violations: Systems exceeding lead or copper action levels, Revised Total Coliform Rule, and Phase II-V (chemical contaminants). If problems are not addressed, a system's ranking could be moved to Level 1.
- **Level 3: Systems with Non-Health-Related Compliance Problems**  
These systems are typically lacking a certified water operator, or the system failed to submit a consumer confidence report. Other issues include sanitary defects identified during inspections, many complaints, aging infrastructure, poor maintenance, financial problems, or a recently identified system that did not go through the Capacity Development Program prior to opening.
- **Level 4: Systems Exhibiting Full Capacity**  
These PWSs have no known compliance issues or other problems. They are well run and address problems before they become a potential violation.

ODW currently monitors 474 PWSs and offers assistance to those that have difficulty maintaining compliance. ODW also contracts with the Delaware Technical Community College's (DTCC) Environmental Training Center and with the Delaware Rural Water Association (DRWA) to provide compliance/technical assistance and training. The Southeast Rural Community Assistance Project (SERCAP) also provides technical assistance to PWSs in Delaware. In addition, ODW refers some PWSs to other sections within DHSS, the Department of Natural Resources and Environmental Control (DNREC), and the Public Service Commission. This is to ensure that the system receives assistance tailored to its individual needs. Through feedback from systems and national trends, ODW determined areas in which systems commonly need assistance.

ODW and its contractors can provide the following types of assistance to PWSs:

- Develop emergency response plans including water system security.
- Provide information about Delaware Drinking Water Regulations.
- Provide in-depth water system evaluations with recommendations.
- Assist in creating operation and maintenance manuals.
- Provide Water Treatment Technique evaluations.
- Explain how to comply with the requirements of the Lead and Copper Rule.
- Evaluate operational policies, job descriptions, and organizational charts.
- Calculate and control water loss.
- Encourage customers to practice water conservation.
- Develop asset management plans.
- Assist utility with rates setting, record keeping, and cost recovery.
- Provide instructions on developing a long-term Capital Improvement Plan.
- Assist in completing a Drinking Water State Revolving Fund (DWSRF) loan application.
- Develop a Source Water Assessment or Wellhead Protection Plan.
- Assist operators in obtaining or maintaining a Drinking Water Operators License.
- Assist with compliance of operator certification requirements.
- Promote and encourage consensus between Operators, Elected Officials, and Customers of municipal water systems.

One third of all the PWSs are ranked annually to gauge the state of PWSs in Delaware. The ranking provides the Capacity Development Program with a good general indicator of each individual system's assistance needs. This ranking is also used as an evaluation tool to assess the effectiveness of the Capacity Development Program and to identify areas of focus in terms of compliance trends and assistance.

Since 1998, all PWSs have had the opportunity to participate in the Capacity Development Program. Most accept ODW's offers for assistance and show improvement in compliance and, consequently, in protecting public health. The number of sanitary survey defects were considerably reduced, and many more systems developed written emergency and maintenance plans. Much of this is due to regularly offered water operator trainings by contractors DTCC and DRWA, which greatly enhances their knowledge. Another factor encouraging participation in training is that DPH requires all Delaware-licensed drinking water operators to obtain 20 hours of continuing education every two years.

## **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, the Public Water System Supervision Program.

### **Technical Assistance – ODW**

Short-term revisions in the Lead and Copper Rule (LCR) regulations were published in 2007, where the rule was revised to enhance implementation in the areas of monitoring, treatment, customer awareness, and lead service line replacement. Due to a lack of naturally occurring lead in Delaware's groundwater and the treatment processes that drinking water providers follow, Delaware currently has a low rate (1% of regulated PWSs) of health-based non-compliance for the LCR. ODW will continue to ensure that there is not a decline in compliance regarding this rule.

During this reporting period, ODW provided technical assistance to over 300 PWSs regarding this rule, assigned accelerated reduced monitoring schedules, and sent more than 450 letters to remind PWSs of their monitoring requirements. These efforts have resulted in an overall high compliance with the LCR.

### **Technical Assistance – External Agencies**

In conjunction with DRWA, the Capacity Development Program provides technical assistance to municipal and other community water systems that have ongoing compliance related issues. Through funding provided by the DWSRF, DRWA assists systems by offering the services of an interim water operator (i.e., a "circuit rider") for systems that need a temporary water operator due to unexpected circumstances. DRWA conducts approximately 200 technical assistance site visits per year. This service continues to be provided via funding from the DWSRF program.

The Capacity Development Program currently encourages PWSs to develop, implement and maintain asset management plans for their water systems. DRWA provides technical assistance to develop and implement these plans.

### **Security Projects**

Public water system security continues to be an issue at the forefront of the drinking water industry. ODW addresses water system security through several initiatives.

DPH encourages PWSs to have a governance structure to protect them from cyber-attacks. To provide cybersecurity technical assistance to PWSs, DPH contracted a private consultant via the DWSRF program as part of their sustainability contract. The objectives are to raise awareness of cybersecurity issues related to PWSs, and to provide PWSs with an understanding of risk management and controls that need to be in place to effectively manage risk.

### **Drinking Water State Revolving Fund applicants**

The DWSRF is a loan fund established by the 1996 Amendments to the Federal Safe Drinking Water Act. The fund is administered in Delaware by DPH's Health Systems Protection Section. Its purpose is to assist PWSs replace aging infrastructure, add needed treatment, or complete improvement projects.

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

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

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

All municipalities applying for DWSRF loans are required to attend financial and managerial training provided by DTCC on asset management, capital improvement planning, or rate setting. During this reporting period (July 1, 2017 to June 30, 2020), 20 loans were closed under the DWSRF program, with a total loan amount of \$34.894,155.

## **GROUP TRAINING SESSIONS**

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

### **Limited License Water Operator Training**

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, businesses, and schools that provide drinking water for 25 or more people daily. While all of these populations are generally considered 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.

To address this concern, ODW's Capacity Development Program, in conjunction with the DTCC's Environmental Training Center in Georgetown, provides customized operator training to these facilities. This training is available to all operators of daycares, schools, and senior centers. During this reporting period 35 operators were trained. Without this specialized training, many of these non-transient non-community water systems would have either been out of compliance or would have been financially burdened if they had to hire a licensed water operator.

## **SUCCESS STORIES**

The Capacity Development Program has successfully implemented its strategy over the past three years. Program success/achievements are identified in the State of Delaware, Capacity Development Program Implementation Report and Annual Review, a report submitted to the Environmental Protection Agency (EPA) that focuses on the previous federal fiscal year. The

2017 to 2019 reports showcase success stories and can be found at:  
<https://www.dhss.delaware.gov/dhss/dph/hsp/capdevrep.html>.

## **OFFICE OF DRINKING WATER CAPACITY BUILDING TOOLS**

### **Operator Training**

Since 1998, Delaware has required public water system operators to be trained and licensed to operate and maintain a public water system in compliance with state and federal drinking water regulations. DPH began issuing PWS operator licenses in 2000. Delaware currently has 449 licensed water operators, including 42 limited license operators.

DTCC conducts the Base Level Water Operator (exam preparation) training for water operators. During this reporting period, 107 candidates enrolled in this training program and 100 candidates successfully completed the course.

### **ODW Email Blast**

To improve ODW's communication with PWSs, the Capacity Development Program started an email newsletter (the Blast) in 2018. This replaces the previous tri-annual newsletter that was produced and distributed by ODW. The Blast informs PWSs about training opportunities, free webinars/education sessions, and important regulatory and compliance issues. Currently, our Trainer/Educator produces and distributes the monthly Blasts to certified water operators and administrative contacts. ODW has received positive feedback from water operators on this email publication. The Capacity Development team is expanding the target audience to include additional drinking water stakeholders.

### **New System Authority**

DHSS has the authority to prevent the construction of new PWSs 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. This authority falls under [16 Delaware Code § 122\(3\)\(c\)](#).

## **DRINKING WATER STATE REVOLVING FUND**

[DWSRF](#) provides low interest loans to PWSs to replace aging infrastructure, add needed treatment, or to complete other improvement or expansion projects.

### **Existing Programs**

Several other programs within the ODW build the capacity of PWSs. The Capacity Development Program works closely with and complements these activities:

1. **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 and helps ensure compliance with all regulations.
2. **Technical Assistance:** ODW staff investigate various water system components to determine the cause of problems and suggest solutions. ODW staff provide advice about operating and maintaining equipment.

3. **Plan Review:** An environmental engineer reviews plans for new PWSs or proposed changes to existing systems. Plan review assures owners and users of PWSs that systems are technically sound and can efficiently and safely deliver water to consumers.
4. **Monitoring:** Sampling and testing helps protect the water quality of PWSs by identifying potential contaminants. DPH performs most of the monitoring for small and medium-sized PWSs. Compliance data is available at the Delaware Drinking Water Watch website (<https://drinkingwater.dhss.delaware.gov/>) and is summarized annually in the Annual Compliance Report (ACR) produced by the Public Water System Supervision Program at ODW. The ACR is available at <https://www.dhss.delaware.gov/dhss/dph/hsp/annrepdw.html>.
5. **Approved Sampler/Tester (AST):** This class was created to assist PWSs that need to conduct regular monitoring. It teaches an individual how to take daily chemical readings like chlorine or nitrate. By having certified individuals take daily readings, it is not required to have an operator on site every day. The class also certifies individuals to take bacteriological and chemical samples that are used for compliance and lets the owner of the water system have a better understanding of what is happening with their water system. This class is divided into two types: AST Basic and AST Refresher. During this reporting period, ODW delivered the AST Basic class to 214 participants and the AST Refresher class to 60 participants. Near the end of the reporting period, in-class training was curtailed due to the COVID-19 pandemic. However, ODW was able to accommodate two AST training sessions utilizing the prescribed precautionary measures under the COVID-19 pandemic guidelines. Delaware currently has 227 Approved Sampler/Testers.
6. **Outreach and Education:** ODW has participated in annual local events, including the Delaware State Fair in Harrington, the Rural Water Expo in Milford, the National Guard Health Expo in New Castle, the Delaware Rural Water Association's Annual Technical Conference & Exhibition in Harrington, and the Communicable Disease Summit in Christiana. In addition, ODW staff provided six on-site training sessions at various Delaware sites during the reporting period. Additionally, the ODW Trainer/Educator taught approximately 2,331 elementary school students about safe drinking water during the reporting period.

## **FACTORS THAT IMPAIR THE CAPACITY OF PUBLIC WATER SYSTEMS**

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

Producing drinking water is not the principal business of many public drinking water providers. The owners and managers of such facilities, especially non-community water systems, may have little understanding of drinking water, regulations, and water system operations. Therefore, inadequate financial support to produce safe drinking water can be problematic for such businesses.

### **Asset Management**

Asset management specifies and prioritizes periodic infrastructure additions, improvements, cost estimates, and periodic equipment update timelines, which when actively managed will result in the protection of public health via the provision of safe drinking water.

Unlike most large municipalities, small municipalities and other community water systems rarely have asset management plans. Since increasing water rates is unpopular, planning and budgeting for PWS improvements is low priority. This results in many small municipal water systems not having the financial capacity to effectively maintain their PWS over the long term, and they end up following a “fix when broken” strategy.

### **Financial Assistance Programs**

Access to financial assistance programs is daunting for small communities (including small municipalities) and the administrative process/requirements can be intimidating to these systems.

### **Reluctance to Interconnect public water systems**

Interconnected water systems could minimize equipment duplication, create an economy of scale, and share personnel. Interconnected municipalities could reduce revenue expenditures by reducing the costs of providing safe drinking water. Moreover, municipalities would assure their customers of greater continuity of water service during emergencies or mechanical failures. Political rivalry between municipalities and between municipalities and private utilities may thwart interconnection or consolidation. Resistance to changing existing drinking water infrastructure also prevents the study or implementation of new ideas.

## **FUTURE PROJECTS**

The Capacity Development Program will identify PWSs needing assistance through the following control points:

1. Rank systems based on their compliance at least every three years. ODW will continue to rank systems to identify those that require assistance, and to identify compliance trends throughout the state.
2. Track LCR compliance and continue to provide individual assistance to systems that either fail to monitor for lead and copper or exceed the action level.
3. Work actively with significant non-compliant PWSs, those with multiple violations within a three-year period, and with those systems that have an ETT score of 11 or greater.
4. Review the compliance history of PWSs that submit engineering plans to alter or expand their existing systems. PWSs not in compliance are counseled about necessary steps needed to achieve compliance before an approval to construct is issued.
5. Assist PWSs with managerial and financial issues related to operating a water system.

6. Work actively with PWSs owners/administrators, operators, and municipal leaders to educate them on the importance of creating, implementing, and maintaining an effective asset management plan. The program will solicit the aid of technical assistance providers to help PWSs with creating and implementing asset management plans. The trainer educator at ODW will provide asset management training to all public water system owners, operators, and board members to educate them on the importance of asset management. Additionally, as part of the capacity development review of DWSRF loan applications, asset management will be encouraged for all loan applicants.

## **CONCLUSION**

Capacity development addresses PWSs technical, managerial, and financial capabilities to comply with the National Primary Drinking Water Regulations currently and in the future.

The program works in partnership with ODW's Public Water System Supervision Program, DPH's Office of Engineering, DNREC, and other entities to form a network of support. The Capacity Development Program examines underlying issues that cause PWSs to become non-compliant, thus compromising the quality of the public drinking water they provide and, therefore, public health.

The Program assists PWSs in achieving compliance by educating water system purveyors about the importance of providing safe drinking water and advising them about equipment, trainings, and processes needed to avoid non-compliance.

DPH attributes most of the Capacity Development Program's success to the cooperative nature of its staff, the willingness of water operators to improve operations, and to partnerships with DTCC, SERCAP, DRWA, and DNREC.

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