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## Executive Summary

In the 1996 Amendments to the Federal Safe Drinking Water Act (SDWA), Congress mandated that states develop capacity development strategies to enhance the ability of public water systems to provide safe drinking water. These strategies are aimed at helping water systems acquire and/or maintain the technical, managerial, and financial abilities needed to properly operate, manage and finance their systems. With the assistance of a stakeholder group of State agencies, public water suppliers, technical assistance providers, local government representatives, and environmental groups, the Vermont Water Supply Division issued their Capacity Development Strategy Report on August 28, 2000.

Each State's strategy had to include provisions for new systems, for systems applying for funding within the Drinking Water State Revolving Fund (DWSRF) program, and for existing systems. Under this program, new and existing water systems are to be evaluated for their technical, managerial, and financial capabilities.

The 1996 SDWA Amendments also require that each State submit a report to the Governor assessing the efficacy of its Capacity Development Strategy and document the progress made towards improving the technical, managerial, and financial capabilities of its public water systems. This report satisfies the statutory requirements of the SDWA and assures that Vermont will not be penalized twenty percent of the DWSRF capitalization grant for failure to comply.

The report is divided into six sections.

- ❖ Section 1 provides a general review of the SDWA and the Capacity Development Program.
- ❖ Section 2 describes the three capacity development provisions through which a Public Water System's (PWS) technical, managerial, and financial capabilities will be evaluated. The new system provision requires all new Community Water Systems (CWSs) and all new Non-Transient Non-Community water systems (NTNCs) that begin operation after October 1, 1999 to demonstrate adequate capacity. The Drinking Water State Revolving Fund provision prohibits states from providing Drinking Water State Revolving Fund assistance to public water systems that lack adequate capacity. The existing system provision is intended to provide direct assistance to existing PWSs to help them acquire and maintain the necessary capacity.
- ❖ Section 3 provides an assessment of Vermont's Capacity Development Strategy. There were five objectives identified in the Capacity Development Strategy: (1) identify methods or criteria that the State will use to identify and prioritize the PWSs most in need of improving capacity; (2) identify institutional, regulatory, financial, tax, or legal factors at the federal, State, or local level that encourage or impair capacity development; (3) describe how the state will use the authorities and resources of the SDWA to: assist PWSs in complying with applicable laws and regulations; encourage the development of partnerships among PWSs; assist with the training and certification of water system operators; and establish methods for establishing a baseline and measuring improvements in capacity; (4) identify interested stakeholders; and (5) utilize other available resources in State of Vermont to assist PWSs with their technical, managerial, and/or financial capacity. In addition to the objectives, the activities that were undertaken to address them are discussed.
- ❖ Section 4 details the progress made in assisting public water systems improve their technical, managerial, and financial capabilities. The successes are measured through

existing programs and new initiatives that assist public water systems acquire, maintain, and build upon their technical, managerial, and financial capabilities.

- ❖ Section 5 describes the challenges that exist for public water systems in their efforts to develop their technical, managerial, and financial capacities.
- ❖ Section 6 provides conclusions regarding the efficacy of the Capacity Development Program.

## Glossary of Terms

**Agency of Natural Resources (ANR)** is the agency that oversees three departments Department of Environmental Conservation (DEC), Department of Fish and Wildlife (FWD) and Department of Forests, Parks and Recreation (FPR).

**Department Of Environmental Conservation (DEC)** department administers most of the Agency's regulatory programs plus several voluntary pollution and waste reduction programs. Program areas include: air quality, environmental assistance, public facilities engineering, geology, environmental permits, solid waste, hazardous waste, surface water quality, watershed planning, stormwater management, drinking water supply.

**Water Supply Division (WSD)** is the division within DEC responsible for administering the drinking water program in the State of Vermont.

**Safe Drinking Water Act (SDWA)** is the federal law passed by the U.S. Congress in 1974 and amended in 1986 and 1996, which authorizes the United States Environmental Protection Agency and the States to oversee public water systems and set standards for drinking water to protect public health.

**United States Environmental Protection Agency (EPA)** is the federal agency responsible for overseeing the state drinking water programs.

**Significant Non-Complier (SNC)** is a public water system that persistently violates drinking water standards specifically defined in EPA policy.

**Public Water System (PWS)** means any system(s) or combination of systems owned or controlled by a person, that provides drinking water through pipes or other constructed conveyances to the public and that has at least fifteen (15) service connections or serves an average of at least twenty five (25) individuals daily for at least sixty (60) days out of the year.

**Public Community Water System (PCWS)** means a public water system which serves at least fifteen (15) service connections used by year-round residents or, regularly serves at least 25 year-round residents.

**Non-Transient Non-Community water system (NTNC)** is a public water system that that regularly serves at least 25 of the same persons daily for more than six months per year. Examples: schools, factories, office buildings.

**Transient Non-Community water system (TNC)** is a public water system means a public that is not a Non-transient Non-community (NTNCs) water system. Examples: restaurants, motels, campgrounds.

## ***1. Introduction***

The objective of the 1996 Safe Drinking Water Act Amendments (Amendments) is to ensure that public water systems provide safe drinking water to the public. The Amendments seek to prevent compliance problems and associated health risks by ensuring that public water systems have the capability to produce safe drinking water now and in the future. To achieve these goals, the Amendments include provisions for several prevention programs – one of which is the capacity development program.

Water system capacity is the ability to plan for, achieve, and maintain compliance with all applicable drinking water standards. There are three components to capacity: technical, managerial, and financial. Technical capacity refers to a water system's ability to operate and maintain its infrastructure. Managerial capacity refers to the expertise of the water system's personnel to administer the system's overall operations. Financial capacity refers to the financial resources and fiscal management that support the cost of operating the water system. Adequate capability in all three areas is necessary for the successful operation of a public water system.

Capacity development is the process by which water systems acquire, maintain, and build upon their technical, managerial, and financial capabilities to enable them to consistently provide safe drinking water to their customers in a reliable and cost-effective manner. The capacity development program provides a framework for state agencies, local governments, stakeholder groups or organizations, water systems and the public to ensure that drinking water systems acquire and maintain the technical, managerial and financial capacity needed to achieve compliance with applicable State and Federal drinking water regulations.

The purpose of this report is to provide an assessment of the capacity development program in Vermont and the statewide strategy for assisting public water systems in need. The report highlights the progress made toward improving the technical, managerial, and financial capabilities of public water systems in Vermont as a result of the Vermont Water Supply Division Capacity Development Program.

## ***2. Capacity Development Provisions in the Safe Drinking Water Act***

The Amendments included three capacity development provisions.

- 1) All new community water systems and all new non-transient non-community water systems that begin operation after October 1, 1999 must first demonstrate that they possess adequate capacity.
- 2) States are prohibited from providing Drinking Water State Revolving Fund (DWSRF) assistance to public water systems that lack adequate capacity, unless that assistance is directly related to improving the system's technical, managerial or financial capacity.
- 3) States must develop and implement a strategy to assist existing public water systems acquire and maintain the necessary capacity.

## ***2.1. New Systems Provisions***

Section 1420(a) of the Amendments, the new systems provision, applies to all new CWSs and all new NTNC that begin operations after October 1, 1999. Vermont had to demonstrate to the United States Environmental Protection Agency (EPA) that it had the legal authority to ensure that all new CWSs and all new NTNCs had the technical, managerial, and financial capacity to comply with all applicable State and Federal drinking water regulations. On February 26, 1999 the EPA determined that Vermont met the guidance and statutory requirements under Section 1420(a). On October 1, 1999, Vermont began implementing the new systems provision of the Amendments.

To date, the Department Of Environmental Conservation (DEC), Water Supply Division (WSD) has submitted to the EPA five annual new systems progress reports. In those reports, the Division documented that the evaluation of new systems is ongoing and addresses the required capacity determinations for new water systems. In recent years, the new systems progress report has been included in the overall program implementation report submittal entitled, "Vermont New Water System Capacity Review Annual Report." The New Water System Capacity Review Annual Report must be submitted to the EPA annually.

## ***2.2. DWSRF Applicants Provision***

Section 1452(a)(3) of the Amendments applies to those public water systems that seek assistance from the DWSRF. Under this provision, states are prohibited from providing DWSRF assistance to a public water system that lacks the technical, managerial, and financial capability to ensure compliance with the Amendments or that is in significant noncompliance with applicable State and Federal drinking water regulations. However, states are allowed to provide DWSRF assistance to such a public water system if the use of the assistance will assure compliance, or if the owner or operator of the system agrees to undertake feasible and appropriate changes to acquire and maintain the system's technical, managerial, and financial capabilities over the long term.

Vermont's capacity development review criteria for DWSRF applicants are described in each year's Intended Use Plan. A loan fund may not provide any type of assistance to a system that lacks the technical, managerial or financial capability to maintain SDWA compliance, unless the owner or operator of the system agrees to undertake feasible and appropriate changes in operation or if the use of the financial assistance will ensure capacity over the long-term. The Water Supply Division will make a determination on system capacity based on information available in Water Supply Division records, the priority list application, completion of the capacity evaluation form at the pre-application meeting, and the loan application. Some considerations include current compliance status with requirements for an operation and maintenance manual, operator certification, water quality monitoring, source protection plan, payment of lawful fees, groundwater under the influence determination, sanitary survey recommendations, and long range planning. Financial capacity determination will also consider current and projected water rates, delinquent water accounts, and financial planning. The existence of an active organization with identified responsible officials and business practices with respect to customer complaints will be considerations in managerial capability determinations. Loan applications will rarely be rejected based on capability determinations (e.g., capacity determination), however, loan agreements will frequently include corrective action requirements to improve capability.

### ***2.3. Existing Systems Provision***

Section 1420(c)(2) of the Amendments requires that Vermont develop and implement a capacity development strategy to assist public water systems acquire and maintain technical, managerial, and financial capacity. With the assistance of a stakeholders group of federal, state, and local government, water districts, fire districts, and water systems, homeowners associations, mobile home parks, school districts, schools, and daycare centers, camps, and consulting/engineering in 2000, the Division developed a comprehensive capacity development implementation strategy to assist public water systems. The strategy considered identifying and prioritizing public water systems most in need of improving their technical, managerial, and financial capabilities; identifying the institutional, regulatory, financial, tax, or legal factors that encourage or impair capacity development at the Federal, State, or local level; describing how the State will use the authority and resources of the Amendments to assist public water systems in need; establishing a baseline measure of public water system capacity and a means to measure improvements in capacity of public water systems; and identifying those persons that have an interest in capacity development. The Vermont Water Supply Division submitted a Capacity Development Program Strategy Report: Improving the Technical, Managerial and Financial Capabilities of Public Water Systems in Vermont in August 2000. On September 2000 the EPA determined that the Vermont Capacity Development Strategy met the guidance and statutory requirements under Section 1420(c) of the Amendments.

On October 1, 2000 the Division began implementing the existing systems provisions of the Capacity Development Strategy. To date, the Division has submitted to the EPA five annual "State Of Vermont Capacity Development Program Strategy Implementation" reports. The implementation report documented that the State Water Supply Division is implementing a fully functioning existing water system plan according to its capacity development strategy.

## ***3. Assessment of Capacity Development Strategy***

### ***3.1. Vermont Public Water Systems Demographics***

There are 1372 public water systems in Vermont separated into three different types.

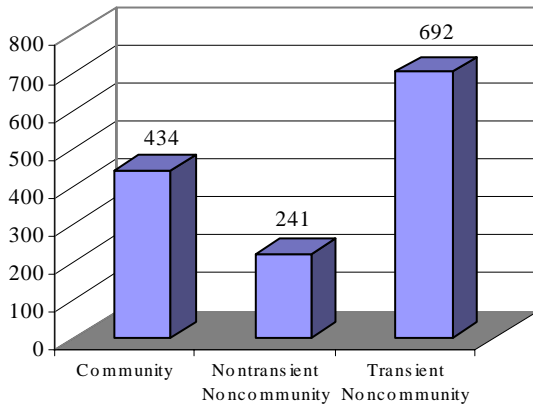
Community public water systems regularly serve at least 25 year round residents. There are 439 systems serving an estimated aggregate population of 446,755.

Non-Transient Non-Community water systems serve at least 25 of the same persons daily for more than six months per year. Schools, factories, and office buildings meet these criteria. There are 241 systems in this category serving an aggregate population of 43,966.

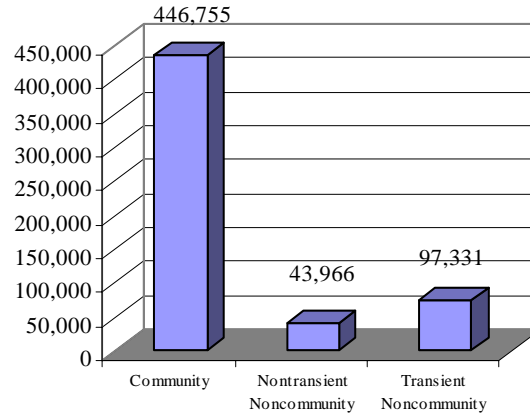
Transient Non-Community water systems serve more than 25 persons for at least 60 days during the year. Restaurants, motels, and campgrounds are examples. Approximately 692 systems are classified as transient non-community water systems.

Regulatory requirements vary for the different types of systems: CWSs must meet the strictest requirements, followed by NTNCs and then TNCs. The major focus of the Strategy is therefore on CWSs and NTNCs. Major factors in strategy development and implementation is system size and ownership type. Economies of scale are dramatic for water system operation and maintenance costs and have a major impact on the ability of small volunteer or part-time system operators to maintain their systems in compliance with the ever increasing and more complex EPA and State regulatory requirements.

**Figure 1. Number of public water systems by type.**



**Figure 2. Population served by public system type.**



<b>Vermont Public Water Systems Profile</b>			
<i>Population Range</i>	<i>Community</i>	<i>Non-Transient Non-Community</i>	<i>Transient Non-community</i>
25 - 100	142	119	423
101 - 200	92	64	160
201 - 300	32	26	48
301 - 400	23	8	24
401 - 500	24	7	10
501 - 1000	42	12	20
1001 - 3300	48	5	7
3301 >	31	0	0
<b>Total</b>	<b>434</b>	<b>241</b>	<b>692</b>

Approximately 200 of the community systems are privately owned. Most of these serve small rural homeowners associations or mobile home parks; approximately 20 are for-profit systems regulated by the Public Service Board.

Approximately 147 of 241 NTNC water systems serve small rural schools. Most of the remaining 94 systems are privately owned.

Nearly all of the 692 transient systems are privately owned businesses.

Our Capacity Improvement Program is focused primarily, although not exclusively, on those most in need of assistance, the small community system and small rural school system. A significant number of these systems would not economically be able to comply with regulatory requirements and protect public health without the technical and financial assistance provided through this program.

### **3.2. Objectives**

In the Capacity Development Program Existing Strategy Report, the Water Supply Division identified and indicated that it would undertake the following activities:

- Identify methods or criteria that the State will use to identify and prioritize the PWSs most in need of improving capacity;
- Identify institutional, regulatory, financial, tax, or legal factors at the federal, State, or local level that encourage or impair capacity development;
- Describe how the State will use the authorities and resources of the SDWA to:
  - Assist PWSs in complying with applicable laws and regulations;
  - Encourage the development of partnerships among PWSs;
  - Assist with the training and certification of water system operators;
  - Establish methods for establishing a baseline and measuring improvements in capacity;
- Identify interested stakeholders; and
- Utilize other available resources in State of Vermont to assist PWSs with their technical, managerial, and/or financial capacity.

The Vermont Water Supply Division has conducted a number of activities to fulfill the objectives specified in the Capacity Development Strategy Report. Below is a summary of these activities.

### ***3.3. Capacity Strategy Components***

Vermont has a long history of providing both financial and technical assistance to water systems. The 1996 Amendments to the Safe Drinking Water Act provided an opportunity to use federal and state dollars to improve and expand this program to more nearly meet the need. A series of meetings with owners, operators, representative of state and federal organizations, consulting engineering firms and others were held in the spring of 2000 to identify needs, and obtain suggestions for new and revised programs. Based on the public input the Vermont Existing Public Water System Capacity Strategy was developed and submitted to EPA in July of 2000. A copy of the strategy is attached. The strategy continued some programs, expanded or modified others, and added new ones. The three major components of our capacity program are technical assistance, financial assistance, and training. We believe the right emphasis on each of these components will be most successful in assuring Vermont water systems are able to and will comply with regulatory requirements and protect public health.

#### (1) Financial Assistance

- (a) Reduced Interest Loans for Water System Improvements
- (b) Zero Interest Loans for Planning & Final Design
- (c) Reduced Interest Loans for Land Purchase and Conservation Easements for Source Water Protection

- (d) Negative Interest Construction Loans to Low Income Communities with High Water Rates
- (e) Planning and Final Design Loan Forgiveness for Small Municipalities
- (f) Up to \$25,000 Construction Loan Forgiveness for Municipal School System Improvement Projects.

(2) Technical Assistance & Outreach

- (a) Professional Engineer Consultant Assistance
- (b) Legal Assistance with Loan Closings for Private Borrowers
- (c) Vermont Rural Water Association (VRWA) Technical Assistance Program
- (d) Small System Engineering Evaluations and Reports
- (e) Comprehensive Performance Evaluation (CPE) Reports of surface water treatment systems
- (f) Treatment Specialist Assistance
- (g) Source Protection Plan Development Assistance
- (h) Water System Security Guidance
- (i) Regulatory Interpretation Assistance
- (j) Operation and Maintenance Manual Preparation Assistance
- (k) Long Range Plan Preparation Assistance
- (l) Budgeting Assistance
- (m) Evaluation of System Technical, Financial, and Managerial Capabilities and Completion of Capacity Improvement Plan
- (n) Sanitary Surveys
- (o) Construction Plan Review and Permit Program
- (p) Water Quality Sampling Compliance Program
- (q) Operator Certification Compliance Program
- (r) Operating Permit Program

(3) Training and Information Sharing

- (a) Training Courses For Operators
- (b) Newsletter
- (c) On- Site Training for Owners and Operators
- (d) Regulatory Requirements Guidance Documents
- (e) System Specific Water Quality Monitoring Plans

**3.4. Accomplishments**

Many of our program's impacts are difficult to measure in quantitative terms. Also, many programs are still in the developmental or implementation phase. Some of the new or modified program accomplishments for the past five years are:

- 1) Number of Water Systems Receiving Facility Improvement Loans – 83
- 2) Amount of Water System Improvement Loans - \$40,000,000
- 3) Number of Planning and Final Design Loans - 35
- 4) Amount of Planning and Final Design Loans - \$1,424,830
- 5) Number Of Source Water Protection Loans - 3
- 6) Source Water Protection Plans Prepared - 440
- 7) Formal Training Credit Hours Offered - 825
- 8) Formal Training Course Attendees - 2400
- 9) Water Systems Receiving VRWA Assistance - 587

10) Water System Evaluations by Engineer Consultants	- 174
11) Water Systems Receiving Professional Engineer Assistance	- 26
12) Newsletters Distributed	- 18
13) Operation and Maintenance Manuals Completed	- 36
14) Long Range Plans Completed	- 23
15) Water System Capacity Assessments Completed	- 252

Another approach to evaluating programs in the early stages of development is to determine if the various program elements have been put in place, are functioning as intended, and will likely result in attainment of program objectives. A major emphasis of the program is to improve capabilities of small community water systems and water systems serving small rural schools. Approximately 62 % of the public community water systems in the state serve populations of less than 300 and 72 % serve populations of less than 500. These small systems (school and community) are eligible for the greatest number of assistance programs including the following.

### **3.4.1. No Cost Technical Assistance**

Water systems can receive a system evaluation and report by a Professional Engineer under contract to the State that includes recommendations and cost estimates for system improvements.

There is preparation of a source protection plan with owner participation that lists possible sources of contamination and actions that may be taken to protect the water source.

Water Systems can receive professional engineering consultant services with operation and maintenance problems, hiring a Professional Engineer to complete plans and specifications for system improvements, and completing the loan application documents for financing. Funding is limited to \$1000 per system.

Vermont Rural Water Association provides technical, managerial, and operating assistance to water system owners, operators, and governing boards. This includes assistance with loan applications for system improvements, on-site training, assistance with water conservation and leak detection, and unusual operation and maintenance problems. These activities are funded in part by this program.

On-site assistance with completion of operation and maintenance manuals for water systems using fill in the blank type forms developed for typical Vermont systems to simplify the process. The manuals include security procedures and an emergency response plan.

On-site assistance with completion of a long range plan for repair and replacement of system components using fill in the blank type forms developed for Vermont water systems. The plan includes estimates of the useful life of system components such as pumps, pipes, etc., the cost to replace the facilities at the end of their useful life, and an estimate of the annual savings required to have adequate funds available at the time of replacement.

Water systems can receive on-site evaluation of a water system's technical, financial, and managerial capabilities using a Vermont specific evaluation form. A corrective action plan with target dates to correct identified deficiencies is completed as part of the

evaluation. Systems are rated as lacking capability, having minimal capability, good capability, or excellent capability.

### ***3.4.2. Training and Information Sharing***

Small water systems have a number of readily available sources of information on technical or regulatory issues including Water Supply Division staff, Vermont Rural Water Association staff and in-house Treatment Specialist. In addition there are a number of outreach programs to continually update operators on new developments and remind them of regulatory requirements.

A newsletter is sent to approximately 3000 owners, operators and other interested individuals three times a year.

Operator training courses are conducted at several locations in the state, generally at no cost to operators. An EPA operator tuition reimbursement grant has helped to subsidize training. Course subjects are determined in part by an advisory committee that includes water system operators.

On site training is available to operators on the operation and maintenance of their water system.

Owners and operators are sent a water quality and monitoring schedule each year that lists the water samples required during the next two years and the sampling dates. Monitoring requirements differ for every system. A typical small public community system with a well for a water source may be required to sample for 72 different contaminants.

Owners and operators are notified of new regulatory requirements or advisories applicable to their water systems. Most notices are by mail but in unusual situations all systems are contacted by phone, fax, or email.

### ***3.4.3. Financial Assistance***

Many small municipal community water systems and school water systems need improvements to the piping system, the water source, storage, pumping, or treatment facilities. Such systems are eligible for the following assistance.

A no-cost small system engineering evaluation is performed by a professional engineer to identify needed improvements, recommendations and cost estimates. In 2000 the WSD had contracted with three professional engineers who completed 79 water systems facility improvement plans. From 2001-2003, the WSD contracted with two professional engineers who completed 81 additional water systems facility improvement plans. The contracts were 100% federally funded from the DWSRF Local Assistance Set-aside. The FFY 1999 through 2003 Intended Use Plans (IUP) budgeted \$685,000 for this project. We have a remaining balance of \$424,549 to continuing funding this program. This has been an extremely successful program in assisting Vermont water systems in determining their future water systems needs. The program has been successful in identifying many projects that have ultimately been financed through the DWSRF construction loan program. The improvement plans have served as a good stepping-stone for the loan program. It is our intent to continue this program. The Water Supply Division (WSD) has issued WSD contracts over two years with three professional

engineers to provide professional engineering services for water systems facility improvement plans. In the 2004 IUP \$100,000 of additional funds was added to support this program.

There is a zero percent, five-year loan program to finance preliminary and final design engineering. Up to \$25,000 of the planning and final design loan may be forgiven if the construction project is completed and other operational requirements are met. The forgiveness will cover most, and possible all, of these costs to water systems for small systems meaning no cost for planning and final design.

There is a three percent, 20-year loan program to cover the cost of the improvements. The interest rate and term will be modified if the users will be required to pay more than 1.0% of their median household income annually to repay the loan and pay for operation and maintenance. The interest rate may be reduced to negative three percent and the term extended to 30 years. This is equivalent to approximately a 40% grant and the rest of the loan at 0% interest for 30 years under some circumstances.

School systems may receive \$25,000 construction loan forgiveness if they complete the project and comply with certain operating requirements. The \$25,000 forgiveness will be the total construction cost for many of these projects. This means that many schools can complete needed improvements to their water systems and more adequately protect the public health of their students at no cost to school.

These systems are also eligible for a three percent, 20-year loan to purchase land or conservation easements to improve the protection of their water source from contamination.

The programs outlined above are applicable to small municipal systems serving populations of fewer than 300; many are applicable to systems of all sizes and types. Some of the assistance available is reduced based on system size and type. As an example, the planning loan forgiveness described above is not available to privately owned water systems and there are special provisions that might limit assistance financially to municipal water systems with a population under 500.

### ***3.5. Enforcement***

When capacity development assistance is not sufficient to bring a system into compliance, enforcement is sometimes necessary. The Water Supply Division has well established programs of inspections, plan reviews, water quality monitoring, certified operator requirements, and operating permit requirements to continually monitor and evaluate a water system's compliance with regulations. Notifications and offers of technical assistance are the first response to a water system that has problems with meeting regulatory requirements. Formal legal enforcement actions are taken against systems that do not take advantage of the available technical and financial assistance and return to compliance. Tracking is done with our milestone tracking system.

## ***4. Improving the Capabilities of Public Water Systems in Vermont***

The Water Supply Division's Capacity Development Program is improving the operations of public water systems throughout the State, thus protecting the public health of all Vermonters. Below is a summary of a number of specific achievements made towards successful implementation of the capacity development program.

The Division discourages the formation of new public water systems that lack technical, managerial, and/or financial capacity through its construction permit and operating permit programs. During State Fiscal Year 2000 through 2005, the Division reviewed 16 new systems, with all 16 systems receiving approval to proceed with system construction.

In addition, the Division provided DWSRF assistance to 55 complying systems to help them achieve compliance with applicable State and Federal drinking water regulations. During 2000 through 2005, the Division determined that, 83 applicants possessed adequate technical, managerial, and financial capacity to receive DWSRF assistance. The Division provided technical, managerial, and financial assistance directly to public water systems in need to help them achieve and maintain compliance with applicable State and Federal drinking water regulations.

The Division will continue the small system engineering evaluation program to identify needed improvements, recommendations and develop cost estimates. The WSD has contracted with three professional engineers who will potentially complete 160 water systems facility improvement plans by August 2006.

The Division had awarded a one-year contract with a one year extension to the Vermont Rural Water Association (VRWA) to provide technical assistance to small community and non-community water systems throughout Vermont. One full time Technical Assistance (TA) provider has served as a technical resource for the Water Supply Division in a non-regulatory role. The TA provider has been assigned tasks that include improving the capacity of public water systems in coordination with the capacity development coordinator while assisting with the needs of the DWSRF loan program. The assistance they will continue to provide includes, but is not limited to:

- Assisting small PWSs with compliance;
- Identifying, evaluating and troubleshooting PWS problems/violations;
- Educating water operators, municipal officers, elected officials and system owners;
- Providing necessary training (on-site or in a class room forum);
- Assisting with the development of Emergency Response Plans;
- Assisting small PWSs with security and vulnerability assessments;
- Assisting small PWSs in developing a rate structure;
- Collecting water samples for analysis;
- Evaluating PWSs' current operating procedures;
- Complete Capacity Assessment and Improvement plans with PWSs
- Locating funding and assisting with funding applications; and
- Coordinating activities with other TA providers.

Since submitting the previous Report to the Governor in 2002, the Division has increased the level of security preparedness at public water systems. These efforts have included training of water system personnel, developing guidance on conducting vulnerability assessments and preparing emergency response plans, notifying systems of potential and real threats, developing response protocols, and providing financial assistance to systems. Recently, the Department began conducting on-site security inspections of public water systems. During FFY 2005, 31 security inspections were conducted.

In 2001, the Division amended the Operator Certification regulations to ensure that all water system operators are properly certified and have sufficient technical and managerial training and experience to operate their public water systems. The Division continues to sponsor and/or

provide training to water system operators at no cost to the operators. During FFY 2004, the Department conducted 17 training sessions on the following topics: Water Certification Update; Operation and maintenance manual; Long Range Planning; Stage 1 Disinfectants and Disinfection Byproducts Rule; Disinfection Byproducts Rule and Long-Term 1 Enhanced Surface Water Treatment Rule; AWWA conference: Emerging Issues in Water Operations; AWWA conference: Changes to the Water Treatment Operator Training Program.

The Division's Comprehensive Performance Evaluation Program reviews and evaluates the capabilities of existing drinking water treatment facilities to determine if the treatment facility and its public water system meet current standards and performance goals. During FFY 2002 through FFY 2004, the Division completed 3 comprehensive performance evaluations that included a detailed evaluation report, recommendations, and follow-up meetings with the community.

The Division's Sanitary Survey Program provides for complete and detailed assessments of public water system physical plants, maintenance and operations, and administrative abilities. One of the goals of this ongoing program is to review and evaluate the capabilities of existing facilities to determine if they can assure compliance with current and future drinking water standards and regulations.

The Division takes enforcement actions against public water systems that persistently fail to comply with State and Federal drinking water regulations and demonstrate a lack of capacity. Prior to taking enforcement action against a public water system that persistently fails to comply with State and Federal drinking water regulations, the Division engages in activities designed to assist the troubled system to come into compliance. These activities include engineering support, training, and establishing compliance schedules.

## ***5. Challenges Remain for Vermont's Public Water Systems***

There are many factors that impair the capacity development of public water systems. Since implementation of the statewide capacity development strategy, some of these barriers have been overcome. In subsequent years, the Water Supply Division will continue to meet the challenges faced by Vermont's public water systems and assure the safety of the State's public drinking water. The Water Supply Division and its partners, including public water systems, will need to be ever vigilant in maintaining the necessary technical, managerial and financial capabilities of public water systems, especially at smaller systems. Sufficient technical assistance, owner and operator training, and financial assistance, particularly for economically distressed communities, must continue to be made available.

### ***5.1. Long-term Challenges***

Many public water systems, particularly small systems, have difficulty in understanding and complying with ever more comprehensive drinking water regulations. The Vermont Water Supply Division has taken the lead in developing and implementing training programs to assist small public water system owners and operators to understand current and future drinking water rules and regulations. In addition, the Division continues to use the DWSRF to ease the economic impact on public water systems that must comply with new drinking water rules and regulations.

For most public water systems in Vermont, there is no mandated review of the rate that a system charges its customers and no means to enforce an appropriate rate structure. A public water system that is unable to raise the necessary revenues to support its operating

expenses, places a risk on its ability to produce safe drinking water. Legislation, regulations, and/or incentives that will encourage public water systems to review their water rates periodically and adjust them as necessary need to be considered.

Program delays and responses on some program components have not been implemented as scheduled. A part of this can be attributed to overly optimistic expectations, however program delays have also resulted from employment and procurement restrictions imposed to address Agency/Department and State budget issues. Funding for the new programs is 100% federal and there is no impact on the State budget; in spite of this, the restrictions, controls and reviews were applied to all programs.

Some impact examples are:

1. The funding to assist water systems with identifying potential sources of contamination of their water sources and developing source protection plans to minimize the risk of contamination occurring has been delayed by approximately 18 months due to hiring restrictions.
2. The consolidation study to identify opportunities for physical or operational consolidation of water systems has been delayed by lack of staffing to manage this effort. Consolidation is one of the most promising and obvious answers to small system inability to economically and efficiently comply with the ever increasing and complex regulatory requirements. This initiative has the potential of providing significant improvement in the capabilities of many small systems.

The low number of systems actively participating in some of the new programs has been frustrating at times. We believe that small water systems in Vermont have available today a combination of technical and financial assistance that will enable most if not all to measurably improve their capabilities without undue hardship. We expect and are hopeful that as the programs mature and become better known and understood the participation rate will improve.

Measures of Improvement for the success of the program may be measured in part by comparing the base year (2000) or prior year compliance with specific regulatory requirements to the current compliance rates or numbers. This approach must be used with discretion because of the many factors that impact compliance rates and numbers. Major factors are continuing changes in regulatory requirements, and increased or modified emphasis on certain regulatory requirements. An additional factor is the level of monitoring and inspections carried out by the Water Supply Division in any given year.

This modified and expanded program is in the implementation phase and meaningful data to measure changes in water system compliance with regulatory compliance is taking several years to develop. We have established baseline data for the year 2000 for several compliance elements. Information on changes in compliance rates will be included in the 2008 report when we have adequate data to make assessments and draw conclusions.

## ***6. Conclusions***

The program for improving the technical, financial and managerial capabilities of public water systems is still in the early implementation phase. We have experienced some delays in certain program elements due to State and Department budget issues however we are generally pleased with the progress to date. We anticipate the program will be continually changing as

we evaluate our successes and failures and as small water systems face new challenges to comply with new and revised regulations and the always unexpected. The recent increased emphasis on water system security is an example.

Protecting public health will require continuation of this program for our small, rural water systems for the foreseeable future. We are fortunate that Federal resources are available for the majority of this effort and suggest that state restrictions on the use of the federal funding be minimized in order to effectively and efficiently implement the program and maximize the public health benefit to Vermonters.

By the end of calendar year 2005, the program will have five years of full operation and we look forward to providing a 2008 report that will demonstrate significant improvements in the capabilities of Vermont public water systems to protect public health.

This report provides an assessment of the capacity development program in Vermont and the statewide strategy for assisting public water systems in need. In addition, this report summarizes the progress made toward improving the technical, managerial, and financial capabilities of public water systems in Vermont as a result of the Division's Capacity Development Program. Overall, the Capacity Development Program, along with other state resources, has helped public water systems in Vermont acquire and/or maintain the technical, managerial, and financial abilities needed to properly operate, manage and finance their systems. The Division will continue to strive to achieve the fundamental goals of the capacity development program, and looks forward to increasing the awareness of stakeholders of public water systems as well as the general public about new challenges and issues related to water system capacity as they arise.

This report and related environmental information are available electronically via the internet. For information visit us through the Vermont Homepage at <http://www.vermont.gov> or visit VT WSD directly at <http://www.vermontdrinkingwater.org>

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