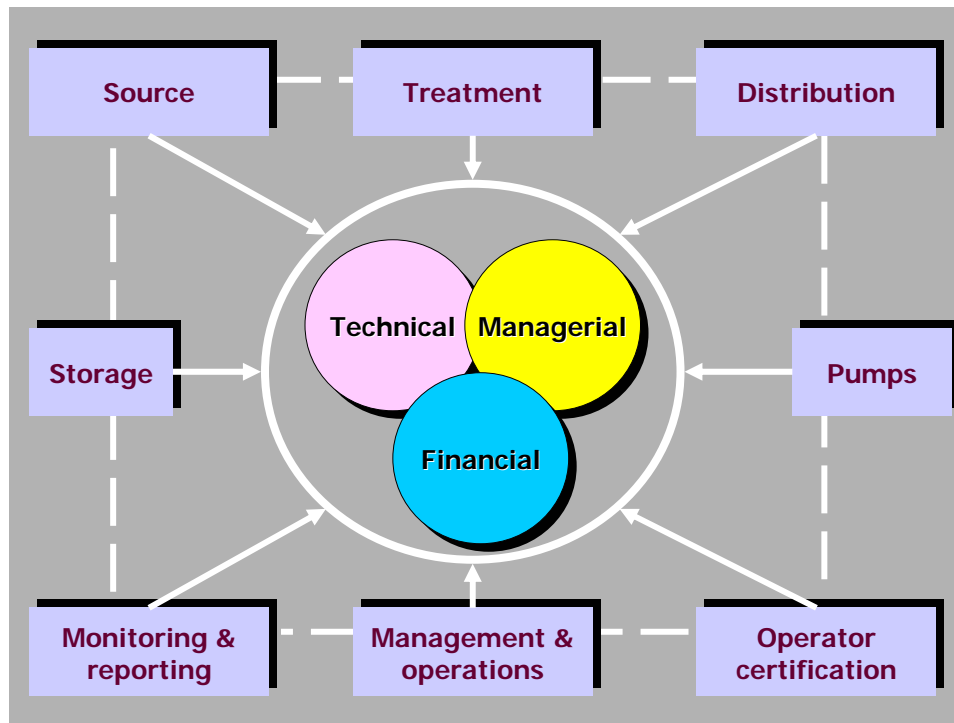


Capacity Development Program Implementation



Prepared By
Water Supply Division
Department of Environmental Conservation

September 29, 2006

Table of Contents

Executive Summary

Glossary of Terms

1. Introduction

2. Capacity Development Provisions in the Safe Drinking Water Act

2.1. New Systems Provision

2.1.1. New Water System Capacity Reviews

2.1.2. Most Recent Four Year Record

2.2. DWSRF Applicants Provision

2.3. Existing Systems Provision

2.3.1. Vermont Public Water Systems Demographics

2.3.2. Objectives

2.3.3. Implementation of the Existing Capacity Strategy

3. State's Approach in Offering or Providing Assistance

4. Review of Implementation of the Existing System Strategy

ATTACHMENT 1 - Vermont WSD Operator Certification Program Annual Report for Calendar Year 2005, dated July 1, 2006

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 an annual report 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 Safe Drinking Water Act (SDWA) as amended in 1996 brings significant improvements to the national drinking water program. Capacity development is an important component of the Act's focus on preventing problems in drinking water. The capacity development provisions offer a framework within which States and water systems can work together to ensure that systems acquire and maintain the technical, financial, and managerial capacity needed to achieve the public health protection objectives of the SDWA.

The report is divided into four 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. 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 the 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 3 details the state's approach in offering or providing assistance.
- ❖ 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.

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 NTNCs 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 six 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." WSD has been the primary governmental unit that exercises its authority to ensure the demonstration of new systems capacity. There have been no modifications to the WSD control points which are integrated with the WSD construction permit and operating permit programs.

2.1.1. *New Water System Capacity Reviews*

There were three new CWS and one new NTNC approved during state fiscal year 2006. We are currently evaluating proposals for one additional new CWS. This information is summarized below in Table 1.

Table 1 Vermont Annual Capacity Program Report Of The New CWSs & NTNCs For The Period July 1, 2005 - June 30, 2006				
# CWSs	Names of Proposed New CWSs	Approved	Denied	Reason Not Approved
1	Brookside PRD Water System	Yes		
2	Eastfield Condo. Water System	Yes		
3	Rocking Stone Farm, LLC	Yes		
4	South Alburgh Fire District #2	No		Pending Review
Totals CWSs		3	0	One Pending Review
# NTNCs	Names of Proposed New NTNCs	Approved	Denied	Reason Not Approved
1	Groton Revitalization Project Water System	Yes		
Totals NTNCs		1	0	

2.1.2. *Most Recent Four-Year Record*

In any given fiscal year, the WSD receives 20-30 inquiries from developers, landowners, and other entities about creation of new public water systems. In most cases, the WSD promotes alternatives to creating a new public water system, such as consolidation with, or annexation by, existing public water systems.

Summarized in Table 2 below is the operational status of the new Vermont PWSs permitted during the past four state fiscal years and reported on in the annual new systems capacity reports. There are probably another 5-10 entities who have submitted proposals to the Division for creation of a PWS but who have not yet proceeded to engineering design or construction.

Table 2 New Public Water System Activity 7/1/2002 – 6/30/2006			
PWS Number	PWS Name	PWS Type	SNC List Ever?
20874	Northern Power Systems	NTNC	No
20893	Sharon Academy	NTNC	No
20908	Addison County Home & Health Hospices, Inc.	NTNC	No
21015	Champlain Valley Cohousing	CWS	No, under construction
20917	Jackson Gore-Okemo	CWS	No
20904	Oak Hill Child Care	NTNC	No
20907	Lake Champlain Waldorf School	NTNC	No
20944	Townhome @ The Vale	CWS	No, under construction
20986	Vernon Senior Housing	CWS	No, under construction
21026	Dorset Community Housing	CWS	No, under construction
20934	Town of Putney	CWS	No
20463	Butterfield Common Housing	CWS	No, under construction
21064	Brookside PRD Water System	CWS	No, under construction
21020	Eastfield Condo. Water System	CWS	No, under construction
20995	Rocking Stone Farm, LLC	CWS	No, under construction
21003	Groton Revitalization Project Water System	NTNC	No, under construction

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 WSD will make a determination on system capacity based on information available in WSD 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 fees, groundwater under the influence determination, sanitary survey recommendations, and long range planning. The 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 are considerations in managerial capability determinations. If a loan applicant is determined to lack capacity in some areas, generally, a corrective action plan will be established and included as a loan condition.

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 formed in 2000 consisting of federal, state, and local government, water districts, fire districts, homeowners associations, mobile home parks, school districts, daycare centers, camps, and consulting engineers, 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. In September 2000, EPA determined that the Vermont Capacity Development Strategy met the 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 WSD is implementing a fully functioning existing water system plan according to its capacity development strategy.

2.3.1. 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 434 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 are 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.

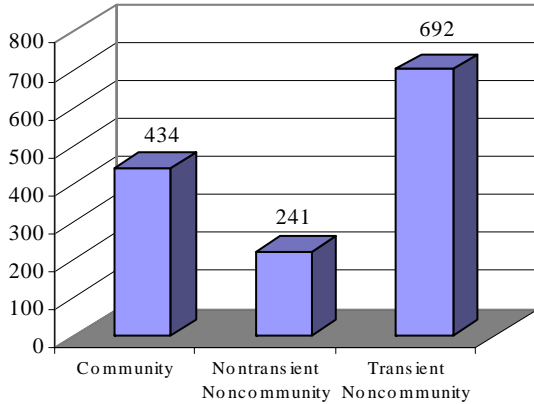
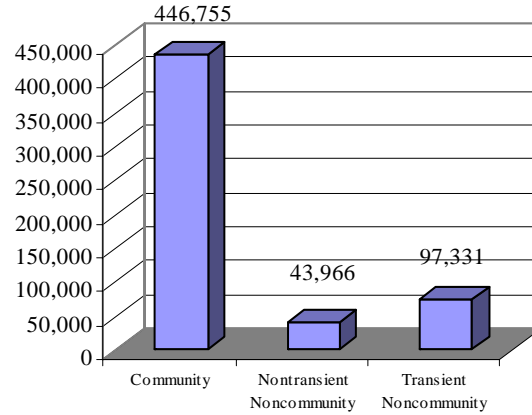


Figure 2. Population served by public system type.



Vermont Public Water Systems Profile			
<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
Total	434	241	692

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.

2.3.2. 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 the State of Vermont to assist PWSs with their technical, managerial, and/or financial capacity.

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

2.3.3. Implementation of the Existing Capacity Strategy

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, representatives 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.

Financial Assistance

- 1) Reduced Interest Loans for Water System Improvements

- 2) Zero Interest Loans for Planning & Final Design
- 3) Reduced Interest Loans for Land Purchase and Conservation Easements for Source Water Protection
- 4) Negative Interest Construction Loans to Low Income Communities with High Water Rates
- 5) Planning and Final Design Loan Forgiveness for Small Municipalities
- 6) Up to \$25,000 Construction Loan Forgiveness for Municipal School System Improvement Projects.

Technical, Managerial Assistance & Outreach

The Capacity Development Strategy included 13 initiatives plus continuation of other ongoing capacity related programs. This section of the report will focus on the implementation status of the 13 initiatives and five additional new initiatives. The 13 initiatives are detailed on pages 11 through 17 of the Vermont Existing Public Water System Capacity Strategy, dated July 28, 2000.

Initial set of capacity initiatives:

1. Monitoring Cost Study (one-time activity and completed): The original intent of this initiative was to complete a report evaluating the options, advantages and disadvantages, and impediments to providing water systems with financial assistance for compliance monitoring activities. The report was to include cost estimates, funding sources, and implementation recommendations for NTNCs, TNCs, and small CWSs. The work that was accomplished consisted of a study completed in 2002 that identified the cost of quarterly compliance sampling for TNC water systems. Based on the study's findings, the state developed a budget for conducting the water quality (WQ) samples, which included providing technical support to the TNCs. The work was accomplished in 2004 – 2005 through contracts with private engineering firms and use of the DEC laboratory, at no charge to the water systems. Costs were paid for with state surplus funds. The initiative was to have included a similar cost and financing analysis for NTNCs and CWS as well, but that analysis has yet to be undertaken. The management team decided to keep this on hold for now.
2. DWSRF Program Changes (ongoing activity which has been well integrated the other WSD programs): Numerous program changes have been identified and implemented since the inception of the Vermont DWSRF, which are highlighted in each year's DWSRF IUP. It is expected that the program will undergo continual change to meet emerging internal and external needs. Some of the more recent changes include: modifying the definition of disadvantaged community system, adjustment of the priority point system to give credit for water system security improvements, and modifying project ranking by commingling new projects with the most significant system facility deficiencies with continuing projects.
3. Training and Assistance (ongoing activity): WSD personnel teamed with VRWA (a technical assistance provider) to conduct group and individual training and technical assistance for water system operators and owners. Training and assistance topics include development of an O&M manual and long-range plan, water system financial management, and how to perform a capacity self-assessment. This initiative was combined with other WSD

operator certification activities to create an integrated capacity development, operator certification training, and regulatory compliance program. The WSD tracks training contact hours credited to system operators for both the group and individual trainings that are delivered. The WSD Management Team evaluated this initiative and determined that the scope should be expanded to include more WSR compliance related training and assistance and increased direct financial and managerial training to water systems.

4. Legal Assistance (ongoing activity): This initiative started out through a contract with a law firm for \$10,000 to provide legal service for DWSRF loan applicants. The services under the initial contract were provided and fully billed and have since been reauthorized as subcontracted services through the DWSRF loan assistance contract with VRWA. These legal services are provided to privately-owned CWSs and consist of: preparation and submission of documentation to the Vermont Economic Development Authority for loan closings, which work is supported by title search, and uniform commercial code examination; modifications to home-owner organization by-laws, and other similar work.
5. Engineering Technical Assistance (ongoing activity): This assistance is provided through contracts with private engineering firms and includes: troubleshooting O&M problems; helping systems to complete DWSRF loan applications; preparation and review of RFPs for more in-depth engineering services such as preliminary engineering and final design work; and review and comment on technical work products. So far, we have awarded four contracts to perform these services. Work under those contracts has been completed and we are considering advertising for the next another round of contracts later this year to offer the same engineering services.
6. Small System Templates and Self-Assessment (one-time activity that is now completed): Templates for a small system O&M manual and long range plan, and a capacity assessment form were completed in April 2001, and in 2006, a more comprehensive O & M manual template was developed. Water system officials and WSD staff have been using the forms since that time. These documents form the basis for some of the individual on-site and group-training sessions provided under Initiative #3. Capacity assessments are completed for all loan applicants and are a prerequisite for both planning and construction loan eligibility. The assessments are used as a tool for developing capacity improvement plans. Documents will be updated from time to time as needed.
7. User Rate Reviews and Budgeting/Assisting in the Development of Financial Capacity (ongoing activity): This initiative is focused on helping water systems improve their financial capacity, which is achieved in part through technical assistance provided by WSD and VRWA staff. Assistance is provided to help water systems develop or modify their operating budget and user rate structure to reflect the true cost and generate sufficient revenue to run a water system effectively. Most of this assistance is provided through the review of long-range plans. Non-profit PWSs that receive funding through the loan program receive budget and rate review assistance through a small systems technical assistance contract with Vermont Rural Water Association (VRWA).

8. Public Service Board (PSB) Technical Assistance (one-time activity that is now completed): WSD awarded a contract to a technical assistance provider in January 2001 to help small water systems through PSB rate change procedures. The initiative consisted of two forms of assistance; a one-year pilot program to provide direct technical assistance to systems, with continuation based on the program's results, and development of a guidance manual. The 2001 contract was awarded to a law firm and the manual was subsequently completed in 2002 and distributed to systems regulated by the PSB. Direct assistance was limited to two water systems that had applied. Following termination of the contract and pilot program, WSD opted to not continue with additional contracted services and instead offer help through ongoing coordination with Public Service Department staff and use of the guidance manual. We will update the manual from time to time as needed and place it on WSD's website.
9. Board Member-Owner Manual (one-time activity that is still in development): A PWS board member manual is in development. The manual will outline the responsibilities and liabilities for PWS board members and include information on relevant laws, regulations, and policies, and a list of resources. Vermont is using New Hampshire's manual as a model and is targeting completion January 2007. Once the manual is done, it will be placed on the WSD's website and hard copies will be printed and made available for distribution to PWSs.
10. Small System Design Guidance Manual (ongoing until the manual or series of manuals is/are completed): This initiative consists of the development of a design criteria guidance manual for small water systems to address system modification and replacement requirements and new regulatory requirements. The manual will target consultants and system owners and operators. Although a comprehensive design manual has not yet been developed, work was completed on UV design, installation, and operational guidelines for TNCs & NTNCs as a first step in implementing this initiative and an informational brochure on broader disinfection practices for school water systems is in draft form. Although we still see value in completing a comprehensive guidance document; we may instead continue with development of separate design manuals, informational brochures, etc. for more narrowly focused topics.
11. Consolidation Study (one-time initiative replaced with other ongoing activities and one new initiative): This initiative was established with the intention of awarding a contract to a consultant to study the issue and identify opportunities for physical or operational consolidation of water systems in the State. Small CWSs and school water systems were intended to be the focus of potential consolidation. Impediments, costs, and benefits of consolidation to water systems and their customers were to be identified. Development of a screening process to identify specific systems that may benefit from consolidation was to be part of the contracted work. This initiative has not been undertaken as originally intended and instead is being addressed through various means, such as through the small systems engineering evaluation initiative and WSD's general outreach efforts. Additionally, WSD will award a contract for professional mediation assistance to help water systems develop interlocal agreements that will facilitate system

consolidation. The FFY2006 DWSRFIUP identifies use of up to \$25,000 from the Local Assistance Set-Aside for this contract.

12. Water Supply Divisional Newsletter (ongoing): This initiative began with the publication of WSD's first newsletter in October 2000 and has continued uninterrupted since that time, with a total of fourteen issues through the Summer 2006. The purpose is to improve communications between the WSD and public water systems by providing timely information to those systems, the consultanting community, and other interested stakeholders. In addition to several thousand hard copies that are mailed distributed to stakeholders, the newsletter is posted on the Divisional Web page. WSD has received many positive comments about the newsletter and expects to continue the initiative.
13. Communication Workgroup (one-time initiative that is now completed): A workgroup was formed by WSD to evaluate and develop recommendations on mass mailing procedures, newsletters, use of the Electronic Bulletin Board, electronic communication with water systems, and general publicity issues. A workgroup was formed in December 2002, it last met in late spring 2003 and established and presented recommendations to the WSD. A number of those recommendations have been implemented and this initiative is considered complete.

Modifications to capacity strategy:

Intended use plans and set-aside work plans provided detailed descriptions of strategy additions and changes. The following initiatives have been added since the original set was developed in 2000, representing modifications to the Capacity Development Strategy for Existing Systems. Funding for these additional initiatives is provided from DWSRF set-asides.

14. Development of a Cross-Connection Guidance Manual (one-time initiative not started that is being reevaluated): This initiative, which was added in 2001 with \$10,000 reserved for it, has not yet been undertaken. WSD will explore this further before deciding if creating a Vermont-specific manual is warranted. The intent is to provide guidance to small water systems with development of cross connection control programs. If we find that a manual already exists that provides the desired information, this initiative will be modified or dropped altogether.
15. Reservoir Water Quality Study (one-time initiative that is nearing completion): This study was funded by an amendment to the August 2001 Program Management set-aside work plan. The intent is to provide detailed data on changes in source water characterization during the year for two small surface water bodies used by public community water systems in Vermont. The results and recommendations will be provided to other systems operating under similar conditions. The original target date for completion was December 2003. All of the field data has been collected and analyzed and a draft report has been prepared. Field data collection was conducted from April 2002 through May 2003 for the Town of Brattleboro and City of St. Albans Water Systems. Data was analyzed and preliminary results evaluated and communicated to the participating water systems. WSD intends to complete a summary of its findings soon.

16. Comprehensive Performance Evaluation Program (one-time initiative that is now completed): This initiative involves facility-specific technical assessment of surface water treatment plant design and operation by WSD staff. The purpose is to identify areas of improvement through low cost solutions to optimize finished water quality. The FFY 2002 IUP provided \$20,000 to support this program, which was initiated in the spring of 2002. The funds were used to purchase two Hach 1720D turbidimeters and two Hach PCX 2200 particle counters and related equipment. Comprehensive Performance Evaluations (CPEs) were conducted for Proctor and Bennington Water Departments in March and July of 2002, respectively. Final reports were prepared for the systems, identifying performance-limiting factors to optimization. A 3rd CPE was conducted in December 2003 for the Fair Haven Water System, which also served as the 3rd in a series of CPE training sessions run by Cadmus Group. Staff training to perform this work has been completed, the equipment necessary to conduct future CPEs has been procured, and the CPE program is now considered integrated into WSD's overall technical assistance activities.
17. Operation & Maintenance Manual Template for Small Surface Water Systems (one-time initiative not started that is being reevaluated): The FFY 2002 IUP identified use of up to \$50,000 to finance development of an O&M manual template for small surface water treatment plants. The plan was to develop a template and field test it on at least one system. The original target date for completion was October 2003; however, this initiative has not yet been undertaken and may be modified, or dropped if the need no longer exists.
18. Small System Engineering Evaluations (on-going initiative): This initiative, also referred to at its inception as the Facility Improvement Plan Program in the FFY1999 IUP, was established to help small water systems develop technical capacity. Work consists of system-specific engineering evaluations performed by private consulting engineering firms under contract with the WSD. Following the system evaluation a report is prepared and submitted to the WSD and the water system. The reports include, at a minimum, a replacement schedule with cost estimates for major system components, an assessment of consolidation potential with other PWSs, and an evaluation of potential compliance issues. To date, \$835,000 has been allocated for this work with FFY1999 – FFY2004 set-aside money, and 8 contracts have been awarded. The following is a summary of the three sets of contracts.

Year of Contract Award	Funds Allocated	Contract Status	No. of Contracts Awarded	No. of Reports Completed
2000	\$150,000	Closed	3	79
2001	\$250,000	Closed	2	81
2004	\$375,000	Open	3	86
Total	\$775,000	-	8	244

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. Once the

current round of contracts expires in August 2007, we may consider providing similar services for systems serving a population between 1,000 and 3,300.

3. State's Approach In Offering Or Providing Assistance

As indicated in the original strategy, prioritization of systems for technical assistance and training is not required because assistance is available to meet all requests. Established Drinking Water State Revolving Fund (DWSRF) procedures are used to prioritize systems requesting loans, including planning and source water protection loans. We have given priority for water system evaluations to community systems serving populations of less than 1000 and schools. Sanitary surveys play an important role in prioritization of directing capacity assistance to water systems. An enforcement committee establishes enforcement priorities and an operator certification committee identifies and prioritizes training needs. Systems selected for enforcement are frequently contacted to determine if assistance through the capacity program would be helpful. The priority system for DWSRF loans was changed in 2001 to provide higher priority than previously for small systems. This change has had the intended effect of increasing the number of small systems receiving loans.

In the future, if the need for technical assistance exceeds WSD staff or contract assistance resources, WSD will prioritize systems using the following factors:

1. DWSRF priority list status
2. System ownership (municipal, private non-profit, private profit)
3. System type (CWS, NTNC, TNC)
4. System size (design population)
5. Permanent residents

4. Review of Implementation of the Existing System Strategy

Although the WSD does not conduct regularly scheduled reviews of the implementation of its Capacity Development Program, this past year it did conduct a comprehensive review of the 18 initiatives described above. In April 2006, the WSD Management team met to discuss the 18 initiatives. The team examined the status of each one and identified those it would like to continue, postpone, or terminate. There is a great deal of flexibility in program administration and implementation. The program evolves in response to water system owner and operator feedback. Some minor changes that have help improved program implementation include the development of staff checklists for use in the review of applicant business plans for existing as well as for new water systems. The checklists are keyed to the required items enumerated in our WSD Water Supply Rule.

Availability of the Report to the Public

The WSD posts its annual Capacity Development Program Report to EPA on its web site at: <http://www.vermontdrinkingwater.org>.

Prepared by: _____

Date: _____

Roger Bergeron
Vermont Capacity Development Coordinator

ATTACHMENT 1

Vermont Water Supply Division
Operator Certification Program
Annual Report for Calendar Year 2005
July 1, 2006

This Annual Report documents Vermont's program compliance with the EPA Operator Certification Guidelines for the calendar year ending December 31, 2005. The US Environmental Protection Agency published guidelines for the "Certification and Recertification of the Operators of Community and Non-transient Non-community Public Water Systems" in February 5, 1999. Vermont adopted the revised rules in the Vermont Water Supply Rule on December 29, 2000 to comply with the EPA guidelines. EPA approved the State of Vermont Operator Certification Program on February 14, 2001 and awarded the Operator Certification Expense Reimbursement Grant (ERG) January 2002.

Program overview and Enforcement efforts

A new Division Certification Officer was recently hired, when Bryan Redmond moved to the Drinking Water State Revolving Fund program. Matthew Guerino was hired in April 2006.

The total number of certified operators for Community, Non-Transient Non-Community, and Transient Non-Community systems is 1255.

Vermont has not grand parented operators since 1992 when we adopted the initial operator certification rules. The goal was to assist those operators already operating public water systems to become certified. All grand parented operators are required to maintain their renewal credits for their class each renewal cycle. We currently have one hundred and sixty grand parented operators in our computer inventory.

Vermont offers Operator-in-Training and Provisional Certification to help new water systems and operators become fully certified. Our computer inventory currently lists 12 operators with Provisional Certification and 44 with Operator-in-Training Certification.

The number of systems without certified operators as of 12/31/05 is listed in the table below.

System type	Number of systems	Number of systems with no certified operator
Community	435	10
Non-Transient Non-Community	240	5
Transient Non-Community*	689	152

* TNC certification requires registration only unless operating a surface water supply. TNC certification is not mandated by EPA.

The Division Certification Officer continues to work closely with new and delinquent community and non-transient non-community water systems to help them obtain a certified operator. The Certification Officer runs a report monthly to identify community and non-transient non-community systems without a certified operator. The Certification Officer will call these systems and follow up with an initial warning letter, if necessary. The water system has thirty days to notify the Water Supply Division in writing of their certified operator. If the system does not obtain a certified operator, we will issue a Notice of Alleged Violation (NOAV) shortly after the thirty-day period. At this stage, most water systems comply with the NOAV. For the few remaining, the Division attorney calls them and warns them of potential enforcement actions. If the system still does not obtain a certified operator, we will refer the system to the Agency of Natural Resources Enforcement Division for further action.

Most community and non-transient non-community water systems without certified operators have this status due to operators failing to renew in a timely way. All of these systems have received warning letters, and several systems have returned to compliance. NOAVs will be issued shortly for the remaining 7 systems.

The Agency of Natural Resources has the authority to revoke or suspend an operator's certificate. Failure to comply with the regulations may require revocation or suspension. In calendar year 2005 we requested no operators to surrender his or her certificate, nor were revocation or suspension actions taken.

Training and exams

The operator training program is coordinated with the Northeast Rural Water Association (VRWA). Communication between the VRWA Coordinator and Water Supply Division and Compliance & Certification staff occurred frequently throughout the year. Additional courses have been coordinated with the Green Mountain Water Environment Association (GMWEA) and the New England Water Works Association (NEWWA). The GMWEA utilized funds allocated from the EPA Expense Reimbursement Grant to subsidize these courses to reduce the course fees.

We continue to hold courses in various locations throughout the state to reach small water systems. Our courses were publicized on our web site, listed in our newsletter, and mailed to operators before a renewal period. In calendar year 2005, we provided approximately 300 hours of training credit hours. There have been 962 operators who were trained using ERG funds (see the attached list of courses which were offered through the ERG grant). The attendance for each class ranges from 10-20 participants (depending on location). Several water system operators took advantage of the Water System Rule Update/Sampling course and qualified for \$500 reimbursement toward water quality testing for their systems. We offered 8 of these classes in 2004. To date, 335 water systems have taken advantage of this training.

Exams were again administered in the spring and fall, on the same day (typically the first Friday in May and November), at two different locations in the state (Rutland, Waterbury). There were 47 individuals who took the exams.

Stakeholder Involvement

The Vermont Operator Certification Advisory Committee met 3 times in 2005. The following major topics were reviewed and discussed: core curriculum, owner responsibilities, operator duties and responsibilities, availability of increased training, and committee organization. Exam review was also initiated, and will continue through 2006.

ERG expenditures

Operator reimbursement and use of the Operator Certification Expense Reimbursement Grant continues. The Division has received favorable response regarding reimbursement for expenses and \$500 voucher towards compliance testing per water system. As of December 31, 2005, the Division has allocated approximately \$731,800 of the ERG funds.

Training provided/coordinated January 1, 2005 – December 31, 2005

Month 2005	Courses	Training Credit Hours	# of attendees	Training Contact Hrs
Vermont Rural Water Association (VRWA) Courses				
January	VT Long Course, Certification Basics, Jan. 4 session 1	3	11	33
	VT Long Course, Certification Basics Jan. 11 session 2	3	11	33
	VT Long Course, Certification Basics, Jan. 18 session 3	3	11	33
	VT Long Course, Certification Basics, Jan. 25 session 4	3	12	36
	VT Long Course, Water Works Math, Jan. 6 session 1	3	6	18
	VT Long Course, Water Works Math, Jan. 13 session 2	3	8	24
	VT Long Course, Water Works Math, Jan. 20 session 3	3	8	24
	VT Long Course, Water Works Math, Jan. 27 session 4	3	8	24
	Capacity Development on-site training by Elizabeth Walker	2	1	2
February	VT Long Course, Certification Basics, Feb. 1 session 5	3	12	36
	VT Long Course, Class 4 Surface Water, Feb. 3 sess. 1	3	15	45
	VT Long Course, Class 4 Surface Water, Feb. 15 sess. 2	3	13	39
	VT Long Course, Class 4 Surface Water, Feb. 17 sess. 3	3	14	42
	VT Long Course, Class 4 Surface Water, Feb. 24 sess. 4	3	14	42
	VT Long Course, Groundwater Treatment, Feb. 8 sess. 1	3	8	24
	VT Long Course, Groundwater Treatment, Feb. 15 sess. 2	3	8	24
	VT Long Course, Groundwater Treatment, Feb. 22 sess. 3	3	8	24
	Capacity Development on-site training by Elizabeth Walker	2	2	4
March	VT Long Course, Class D Distribution, March 3 sess. 1	3	7	21
	VT Long Course, Class D Distribution, March 10 sess. 2	3	6	18
	VT Long Course, Class D Distribution, March 17 sess. 3	3	7	21
	VT Long Course, Class D Distribution, March 24 sess. 4	3	7	21
April	Seasonal Water System Operations and Maintenance Seminar, April 7 Rutland	3	12	36
	Seasonal Water System Operations and Maintenance Seminar, April 11, Waterbury	3	6	18
	VT Small Systems Certification Course April 12, 14, 19 Hyde Park	10	15	150
	VT Small Systems Certification Course April 12, Session 1 Hyde Park	3.5	1	3.5
	VT Small Systems Certification Course April 14, Session 2 Hyde Park	3.5	1	3.5
	VT Small Systems Certification Course April 19, Session 3 Hyde Park	3.5	1	3.5
	VT Small Systems Certification Course April 12, 14, 19, Rutland, AM Session	10	15	150
	VT Small Systems Certification Course April 12, AM Session 1	3.5	1	3.5
	VT Small Systems Certification Course April 12, 14, 19	10	15	150

	Rutland, PM Session			
	VT Small Systems Certification Course April 12, Rutland, PM Session 1	3.5	2	7
	VT Small Systems Certification Course April 14, Rutland, PM Session 2	3.5	1	3.5
	VT Small Systems Certification Course April 19 Rutland, PM Session 3	3.5	1	3.5
	Waterworks Math Review, April 21 Hyde Park, VT	3	23	69
	Waterworks Math Review, April 21 Rutland, VT AM Session	3	13	39
	Waterworks Math Review, April 21 Rutland, VT PM Session	3	13	39
	VT Water System Rule Update and Sampling Seminar 4/27 White River Junction	5	24	120
May	Coagulation & Jar Testing	1	17	17
	Hydrant Maintenance	1	23	23
	One Plan Emergency & Contingency Planning	1	25	25
	Regulatory Roundtable for Water Systems	1	57	57
	Vermont Water System Rule Update Sampling Seminar	5	27	135
	Capacity on-site trainings	0	2	2
June	VT Water System Rule Update and Sampling Seminar Wbry	5	21	105
	VT Water System Rule Update and Sampling Seminar Nwpt	5	11	55
	Water System Operations & Maintenance for Schools	3	15	45
	Ultraviolet-Common Sense Disinfection Technology	3	21	63
	Capacity on-site trainings (Walker)	various	1	5
	On-site training (Desranleau)	5	1	5
July	Cross Connection Control	3	11	33
	Water System Operations & Maintenance for Schools	3	10	30
August	Confined Space Entry, 8/9, St. Albans	5	15	75
	Basic Electrical, 8/17, White River Junction	6	6	36
	Confined Space Entry, on-site, 8/30, St. Albans	4	11	44
	Capacity on-site trainings July	various	5	5
Sept	Line Location and Leak Detection (Springfield)	4	14	56
	INFLO (Island Pond)	2.5	14	35
	Cost Savings through Electrical Energy Efficiency (WRJ)	3	10	30
	Cost Savings through Electrical Energy Efficiency (Waterbury)	3	13	39
	Capacity Development: Financial Planning and Long Range Plans (Brattleboro)	3	5	15
	VT Water System Rule Update and Sampling Seminar	5	9	45
October	Vermont Small Systems session 1, 2, &3 (Waterbury)	10	12	120
	" " " " " "	7	1	7
	" " " " " "	3	2	6
	Waterworks Math Review	3	10	30
	Capacity on-site trainings by Elizabeth Walker	various	4	5
Nov	VT Water System Rule Update and Sampling Seminar	5	9	45
	How to Prepare for a Sanitary Survey	3	5	15
	Safety Basics for Water Operators	3	5	15
	Capacity Development – O and M manuals	3	7	21
	Confined Space Onsite training am session	4	8	32
	Confined Space Onsite training pm session	4	9	36
	Capacity On-site Training	Various	3	2
December	VT Water System Rule Update and Sampling Seminar	5	5	25
	Informational Network for Local Operators (INFLO)	3	5	15

	Capacity Development Seminar – O and M Manuals	3	10	30
	UV Disinfection/Disinfection Alternatives	3	11	33
	Capacity On-site Training	3	2	3
	Green Mountain Water Environment Association Courses			
January	Sound Procedures of Drinking Water Sampling	3.5	46	161
February	How to Operate and Maintain your Distribution System	6	11	66
April	"Hands-On" Hydrant and Main Maintenance	6	42	252
October	Pumps and Pumping	6	40	240
December	Developing a Flushing Program to Meet SDWA Requirements	6	34	204
Totals		299.5	962	3730

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>

Water Supply Division
103 South Main Street
Waterbury, VT 05671-0403
Toll free 1-800-823-6500
Out of State 1-802-241-3400
Fax 1-802-241-3284