

North Carolina's Capacity Development Report for Public Water Systems

September 30, 2006

Public Water Supply Section
Division of Environmental Health
Department of Environment and Natural Resources



STATE OF NORTH CAROLINA

Michael F. Easley, Governor

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

William G. Ross Jr., Secretary

DIVISION OF ENVIRONMENTAL HEALTH

Terry L. Pierce, Director

PUBLIC WATER SUPPLY SECTION

Jessica G. Miles, Section Chief

Location:

2728 Capitol Boulevard
Raleigh, NC
(919) 733-2321

Mailing Address:

Public Water Supply Section
Division of Environmental Health
1634 Mail Service Center
Raleigh, NC 27699-1634

If there are any questions or comments on this report, please contact Sandy O'Daniel, Capacity Development Engineer, at (919) 715-3269. This report is available to the public on the Public Water Supply Section Internet website location:

<http://www.deh.enr.state.nc.us/pws/index.htm>

Contents

- I. EXECUTIVE SUMMARY
- II. PROGRAM SETTING: *CAPACITY REQUIREMENTS*
 - A. Background
 - B. Program Development
- III. PROGRAM STRATEGY: *CAPACITY OBJECTIVES*
 - A. Overview of Strategic Objectives
 - B. Efficacy of Strategies
- IV. PROGRAM SUCCESS: *CAPACITY IMPROVEMENTS*
 - A. Indicators for Measuring Capacity Improvement
 - B. Current Status: Facts and Figures
 - C. Discussion of Progress
- V. PROGRAM DIRECTION: *CAPACITY INITIATIVES*
 - A. New Challenges and Opportunities
 - B. Future Reports
- VI. PUBLIC AVAILABILITY OF THE 2006 CAPACITY DEVELOPMENT REPORT

LIST OF ACRONYMS

Capacity	Technical, Managerial and Financial Capacity
PWS Section	North Carolina Public Water Supply Section
SDWA	Safe Drinking Water Act
EPA	United States Environmental Protection Agency

I. EXECUTIVE SUMMARY

The Public Water Supply Section (PWS Section) of the North Carolina Department of Environment and Natural Resources is the primary agency responsible for assuring that the people of North Carolina are provided safe drinking water from public systems. Public water systems range from large municipalities to country stores that serve a minimum of 25 individuals for 60 days per year. The complexity of the federal Safe Drinking Water Act (SDWA) can make compliance difficult to achieve for many small systems. Of the approximately 6,800 regulated public water systems, about 6,000 serve a population of less than 500.

The PWS Section has a long history of responding to needs of public water suppliers through:

- surveillance of all public water supplies;
- enforcement of public water supply rules;
- consultation and assistance in planning and designing water supply systems;
- assistance with source water protection;
- review of technical plans and specifications for water supply construction;
- providing training programs for water works operators;
- investigation of hazards that may affect public water supplies; and
- administration of loans, grants, and bonds available for system improvements.

The 1996 Safe Drinking Water Act Amendments require withholding 20 percent of a state's Drinking Water State Revolving Fund Capitalization Grant unless the state obtains the means to ensure that all new community water systems and new nontransient noncommunity water systems beginning operation after October 1, 1999 demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date operations start. The PWS Section responded to this requirement by creating the Capacity Development Program. The goal of this program is to require technical, managerial, and financial planning of new community and nontransient noncommunity water systems to improve the service and sustainability of the systems. The Capacity Development Program also involves the State's ability to enforce requirements of the North Carolina Drinking Water Act. The Capacity of the PWS Section is enhanced by the coordination of these efforts.

In October 1999, the PWS Section adopted revised rules requiring community and nontransient noncommunity public water systems that are expanding or altering their system to conduct a self-assessment with documentation describing their technical, managerial, and financial viability and submit it to the state. It includes requirements for describing routine operation as well as emergency response. The new documentation is used to assess whether or not the public water suppliers have the capacity to operate the new expanded or altered water systems. This has placed the PWS Section and the public water suppliers in an excellent position to better determine areas of strengths, weaknesses, challenges and opportunities. This information helps systems and the PWS Section to be more effective in meeting the challenge of providing safe and reliable public drinking water.

In 2006, the PWS Section continues to maintain success in the Capacity Development Program. In the last seven years we have:

- reduced the number of public water suppliers operating in non-compliance;
- reduced the risk of system expansion without adequate capacity;
- reduced errors in system monitoring and reporting violations;
- increased coordination within the PWS Section; and
- increased the number of systems with complete Operations & Maintenance and Emergency Management Plans.

The PWS Section hopes to continue growing and changing to help public water suppliers meet the need of providing safe drinking water in the State of North Carolina.

II. PROGRAM SETTING: *CAPACITY REQUIREMENTS*

II.A Background

The 1996 federal Safe Drinking Water Act (SDWA) Amendments require withholding 20 percent of a state's Drinking Water State Revolving Fund unless the state created a Capacity Development Program. States needed to obtain the means to ensure that all new community water systems and new nontransient noncommunity water systems beginning operation after October 1, 1999 demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date operations start. Each state could develop a unique program to meet its specific needs. The goal of the Capacity Development Program is to require technical, managerial, and financial planning of new community and nontransient noncommunity water systems to improve the service and sustainability of the systems. Therefore, "Capacity" as used in this report refers to the technical, managerial, and financial capabilities of a water system to comply with the provisions of the Safe Drinking Water Act.

Even before the 1996 SDWA Amendments, North Carolina recognized the importance of public water system Capacity. Historically, the PWS Section found that larger municipal systems were generally well managed, but smaller systems were often lacking essential skills or resources to operate properly. Of the approximately 6,800 regulated public water systems, about 6,000 (88 percent) serve a population of less than 500. The PWS Section saw these systems as having huge needs that were not being addressed adequately.

Table 1 provides figures that show the ability of public water systems in North Carolina to comply with federal and state drinking water regulations. These systems are categorized by type and size of population served. The table shows the total number of systems in each category and the number receiving at least one violation with regard to the maximum permissible level of a contaminant in water delivered by a public water system. FY 2000 is shown for comparison since the Capacity Development Program began in this year. Table 1 also shows the number of systems receiving at least one violation for failure to monitor for required water quality tests for each year over a four-year period. It gives the percentage that these systems represent from the total number of systems in each category. These figures indicate that at least 32 percent of public water systems have had at least one monitoring failure in FY 2006. (This failure could include missing one monthly sample that year. Since a typical system monitors at least monthly and has many required tests, missing a single test over the course of a year is shown as a violation.) These numbers confirm that the vast majority of systems with deficiencies are ones that serve less than 500 people.

It is important to note that having a monitoring violation does not necessarily equate to unsafe water. Another way of looking at compliance is by determining the number of people served by compliant public water systems. As shown in Table 2, compliance rates based on population served have increased over the last four years, excluding monitoring in FY 2005. The overall increase in compliance levels from FY 2003 through FY 2006 can be attributed to: (1) successful Capacity Development efforts and subsequent system compliance; and (2) the change of data management programs by PWS Section.

Ongoing Capacity Development efforts have enabled compliance levels to increase since FY 2003. Activities such as effective compliance and enforcement, onsite visits, technical assistance and consolidation of "problem" systems with more reliable ones have gradually improved compliance for the last several years. Exceptions to this change were monitoring compliance rates in FY 2005, when systems were strongly impacted by the cyclic occurrence of asbestos monitoring compliance and new drinking water rules such as Stage 1 Disinfectants and Disinfection By-Products Rule, Radionuclide Rule, Interim Enhanced and Long-Term 1 Surface Water Treatment Rules.

Compliance measures were also affected by PWS Sections's change from its traditional database management system (FOCUS) to EPA's Safe Drinking Water Information System (SDWIS). For reporting purposes, compliance levels are calculated based on the end of the compliance period for a given contaminant. The two database systems utilize different methods to determine the compliance period for systems on reduced monitoring. The FOCUS program calculates the end of the compliance period based on when the system was eligible for reduced monitoring, varying from system to system. The Safe Drinking Water Information System specifies a fixed three-year compliance period (ie, 2005 through 2007) as determined by EPA's Standard Monitoring Framework. Because of these facts, compliance levels in FY 2006 and into the future may be lower at the end of the fixed three-year period compared to those years in between.

Another challenge presented to the PWS Section is maintaining compliance of systems that began operation within the last three years (new systems). As shown in Table 3 and Figures 1 through 6, compliance levels of new systems vary widely. The data gathered suggests that these systems experienced difficulty performing the required monitoring necessary to remain compliant. One study performed by PWS Section of new system compliance activities indicated that: (1) many owners/operators are confused about monitoring requirements; and (2) the proper number of lead and copper samples are not collected due to rule misinterpretation or misunderstanding. In contrast, Table 4 indicates that new systems as a whole show similar compliance levels with all systems in North Carolina if compared collectively over the last three years. Further investigation is needed to determine why systems that began operation within the last three years have these compliance issues. PWS Section will continue to explore strategies that will assist new systems to achieve fully compliant operations.

A comparison of Tables 1, 2, and 3 highlights the dilemma the PWS Section faces in working with public water systems in North Carolina. Even though a great majority of the citizens of North Carolina are served by compliant community public water systems, the number of small systems needing improvements in Capacity is also large. This has created a resources challenge for the PWS Section in balancing priorities on efforts that would provide the greatest public benefit as well as assisting the greatest number of systems. As we continue to automate and streamline our compliance processes, our limited resources can be shifted somewhat to better assist small systems.

Table 1: The Number of Public Water Systems with Contaminant and Monitoring Violations

State Fiscal Year*	Population†	Community					Nontransient Noncommunity					Transient Noncommunity					TOTALS				
		Systems‡	MCL§	%	MR¶	%	Systems	MCL	%	MR	%	Systems	MCL	%	MR	%	Systems	MCL	%	MR	%
2000 (Baseline)	<500	1938	51	3%	765	39%	604	24	4%	263	44%	5293	284	5%	3206	61%	7835	359	5%	4234	54%
	500-9,999	536	19	4%	181	34%	131	2	2%	46	35%	85	3	4%	35	41%	752	24	3%	262	35%
	10,000-49,999	87	3	3%	23	26%	0					0					87	3	3%	23	26%
	>50,000	20	0	0%	2	10%	0					0					20	0	0%	2	10%
	Totals	2581	73	3%	971	38%	735	26	4%	309	42%	5378	287	5%	3241	60%	8694	386	4%	4521	52%
2003	<500	1756	75	4%	630	36%	469	33	7%	251	55%	4293	318	7%	2370	55%	6518	426	6%	3251	50%
	500-9,999	504	35	7%	151	30%	99	1	1%	33	58%	43	6	14%	25	58%	646	42	6%	209	32%
	10,000-49,999	86	12	14%	32	37%	0				0					86	12	14%	32	37%	
	>50,000	21	3	14%	8	38%	0				0					21	3	14%	8	38%	
	Totals	2367	125	5%	821	35%	568	34	6%	284	50%	4336	324	7%	2395	55%	7271	483	7%	3500	48%
2004	<500	1731	74	4%	607	35%	456	25	5%	193	42%	4087	267	7%	2035	50%	6274	366	6%	2835	45%
	500-9,999	515	41	8%	204	40%	102	5	5%	24	24%	57	1	2%	27	47%	674	47	7%	255	38%
	10,000-49,999	86	18	21%	16	19%	0				0					86	18	21%	16	19%	
	>50,000	23	1	4%	5	22%	0				0					23	1	4%	5	22%	
	Totals	2355	134	6%	832	35%	558	30	5%	217	39%	4144	268	6%	2062	50%	7057	432	6%	3111	44%
2005	<500	1751	91	5%	607	35%	443	25	6%	182	41%	3966	291	7%	1536	39%	6160	407	7%	2325	38%
	500-9,999	511	78	15%	180	35%	96	2	2%	36	38%	54	3	6%	20	37%	661	83	13%	236	36%
	10,000-49,999	89	11	12%	29	33%	0				0					89	11	12%	29	33%	
	>50,000	24	2	8%	9	38%	0				0					24	2	8%	9	38%	
	Totals	2375	182	8%	825	35%	539	27	5%	218	40%	4020	294	7%	1556	39%	6934	503	7%	2599	38%
2006	<500	1745	82	5%	451	26%	421	19	4%	134	32%	3824	206	5%	1394	36%	5990	307	5%	1979	33%
	500-9,999	513	74	14%	125	24%	95	4	4%	28	30%	54	1	2%	11	20%	662	79	12%	164	25%
	10,000-49,999	89	8	9%	18	20%	0				0					89	8	9%	18	20%	
	>50,000	26	1	4%	4	15%	0				0					26	1	4%	4	15%	
	Totals	2373	165	7%	598	25%	516	23	4%	162	31%	3878	207	5%	1405	36%	6767	395	6%	2165	32%

* Data source and query software used were as follows: Legacy database and Focus language for FY 2000 through FY 2004, Legacy database and SQL Server for FY 2005, SDWIS database and MS Access for FY 2006. Migration of Legacy data to SDWIS database may have inherent differences. Information is believed to be reliable and will be corrected when discrepancies are discovered.

† "Population" indicates the grouping of systems by the number of people served.

‡ "Systems" means the number of public water systems serving the population size indicated.

§ "MCL" means a violation with regards to the maximum permissible level of a contaminant in water delivered by a public water system.

¶ "MR" means a failure to monitor for required water quality tests as defined by federal and state regulations and for FY 2002 through FY 2005 includes systems that failed to report on time.

(Footnotes continued on page 3.)

(Footnotes continued from page 3.)

Table 1 is a summary of the number of systems receiving one or more contaminant exceedance or monitoring violations in the given time period. The compliance rates do not account for the ever-increasing number of contaminants required for testing. New complex testing requirements have resulted in more monitoring violations. This will cause a lower compliance rate unless compensating improvements are made in other contaminant testing areas.

The high percentages of systems with MR violations (Table 1) are largely due to the fact that systems have numerous opportunities to collect and report on water quality. A typical system monitors at least monthly and has a large number of required tests. A system missing a single test over the course of a year will be shown as a violator.

The MCL violations (Table 1) indicate the number of systems with at least one contaminant exceeding permissible levels during the given year. A typical system has many opportunities to test over the course of one year. Most systems receiving bacteriological MCL violations return to compliance by the next compliance period. However, a public water system receiving at least one violation will appear on this table.

Table 2: Population Served by Compliant Community Public Water Systems

Compliance Measures	State FY 2000 (Baseline)		State FY 2003		State FY 2004		State FY 2005		State FY 2006	
	Population	Percent	Population	Percent	Population	Percent	Population	Percent	Population	Percent
Citizens served by Community Public Water Systems having no MCL* violations	5,728,588	97.7%	5,635,738	89.9%	5,883,120	91.6%	5,980,936	91.7%	6,359,423	93.6%
Citizens served by Community Public Water Systems having no MR† violations	4,870,728	83.0%	4,414,672	70.4%	4,944,495	77.0%	3,939,642	60.4%	5,529,963	81.4%
Total Service Population	5,865,812		6,271,854		6,423,032		6,520,106		6,792,588	

* "MCL" means a violation with regards to the maximum permissible contaminant level in water delivered by a public water system.

† "MR" means a failure to monitor for required water quality tests as defined by federal and state regulations and for FY 2002 through FY 2005 includes systems that failed to report on time.

Table 3: The Number of Public Water Systems Beginning FY 2001 to FY 2006 with Contaminant and Monitoring Violations

System Begins (State Fiscal Year)	Compliance Period (State Fiscal Year)	Community						Nontransient Noncommunity						Transient Noncommunity						TOTALS					
		Systems	SS*	MCL	%	MR†	%	Systems	SS	MCL	%	MR	%	Systems	SS	MCL	%	MR	%	Systems	SS	MCL	%	MR	%
2001	2001	37	86%	2	5%	17	46%	13	92%	0	0%	8	62%	223	96%	3	1%	72	32%	273	94%	5	2%	97	36%
	2002	35	86%	4	11%	18	51%	10	90%	0	0%	5	50%	209	96%	26	12%	131	63%	254	94%	30	12%	154	61%
	2003	34	88%	4	12%	10	29%	9	89%	1	11%	5	56%	196	96%	10	5%	103	52%	239	94%	15	6%	118	49%
	2004	34	88%	3	9%	9	26%	9	89%	0	0%	2	22%	184	96%	12	6%	79	43%	227	94%	15	7%	90	40%
	2005	33	88%	3	9%	9	27%	8	88%	0	0%	3	38%	172	95%	10	6%	61	35%	213	94%	13	6%	73	34%
	2006	33	88%	4	7%	7	21%	8	88%	0	0%	1	12%	157	96%	11	7%	44	28%	198	94%	15	8%	52	26%
2002	2002	48	81%	0	0%	14	29%	22	100%	1	4%	13	59%	214	99%	12	6%	142	66%	284	96%	13	4%	169	60%
	2003	46	80%	1	2%	27	57%	19	100%	2	10%	14	74%	201	100%	18	9%	126	63%	266	96%	21	8%	167	63%
	2004	44	80%	0	0%	13	30%	18	100%	1	6%	5	28%	189	100%	12	6%	105	56%	251	96%	13	5%	123	49%
	2005	42	81%	1	2%	8	19%	17	100%	0	0%	9	53%	180	99%	10	6%	73	40%	239	96%	11	5%	90	38%
	2006	42	81%	2	5%	5	12%	13	100%	1	8%	6	46%	169	99%	10	6%	64	38%	224	96%	13	6%	75	33%
2003	2003	33	88%	1	3%	15	45%	17	100%	3	18%	12	70%	83	100%	5	6%	47	57%	133	97%	9	7%	74	56%
	2004	31	87%	2	6%	15	48%	14	100%	2	14%	7	50%	81	100%	7	9%	46	57%	126	97%	11	9%	68	54%
	2005	31	87%	4	13%	7	22%	14	100%	1	7%	5	36%	79	100%	7	9%	44	56%	124	97%	12	10%	56	45%
	2006	30	90%	3	10%	4	13%	14	100%	0	0%	5	36%	77	100%	4	5%	36	47%	121	98%	7	6%	45	37%
2004	2004	24	88%	1	4%	11	46%	8	100%	1	12%	2	25%	88	99%	4	4%	52	59%	120	97%	6	5%	65	54%
	2005	24	88%	6	25%	10	42%	8	100%	1	12%	4	50%	86	99%	12	14%	53	62%	118	97%	19	16%	67	57%
	2006	24	88%	5	21%	6	25%	8	100%	1	12%	3	38%	81	99%	2	2%	32	40%	113	96%	8	7%	41	36%
2005	2005	59	95%	3	5%	30	51%	9	100%	1	11%	8	89%	72	97%	1	1%	28	39%	140	96%	5	4%	66	47%
	2006	56	95%	4	7%	16	28%	9	100%	0	0%	5	56%	67	97%	3	4%	32	48%	132	96%	7	5%	53	40%
2006	2006	34	97%	0	0%	12	35%	16	56%	0	0%	8	50%	66	100%	5	8%	28	42%	116	93%	5	4%	48	41%

* *Small Systems (SS)* indicates percent of systems that serve less than 500 persons and operated during the indicated state fiscal year.

† For FY 2002 through FY 2005 includes systems that failed to report on time.

Table 4: Comparison of Public Water Systems Beginning Operation Beginning FY 2004 to FY 2006 and All Public Water Systems Over the Last Three Years with Contaminant and Monitoring Violations

System Begins (State Fiscal Year)	Compliance Period (State Fiscal Year)	Community						Nontransient Noncommunity						Transient Noncommunity						TOTALS					
		Systems	SS*	MCL	%	MR†	%	Systems	SS	MCL	%	MR	%	Systems	SS	MCL	%	MR	%	Systems	SS	MCL	%	MR	%
<i>New Systems</i> 2004-2006	2004-2006	117	94%	13	11%	64	55%	33	79%	3	9%	22	67%	226	99%	28	12%	139	62%	376	95%	44	12%	225	60%
<i>All Systems</i> 2004-2006	2004-2006	2478	76%	311	12%	1183	48%	565	82%	62	11%	385	68%	4294	99%	667	16%	2716	63%	7337	89%	1040	15%	4284	58%

* *Small Systems (SS)* indicates percent of systems that serve less than 500 persons and operated during the indicated state fiscal year.

† For FY 2003 through FY 2005 includes systems that failed to report on time.

Figure 1: Community Systems Beginning FY 2001 Through FY 2006 with Contamination

1 MCL Violation or More - New Community Systems

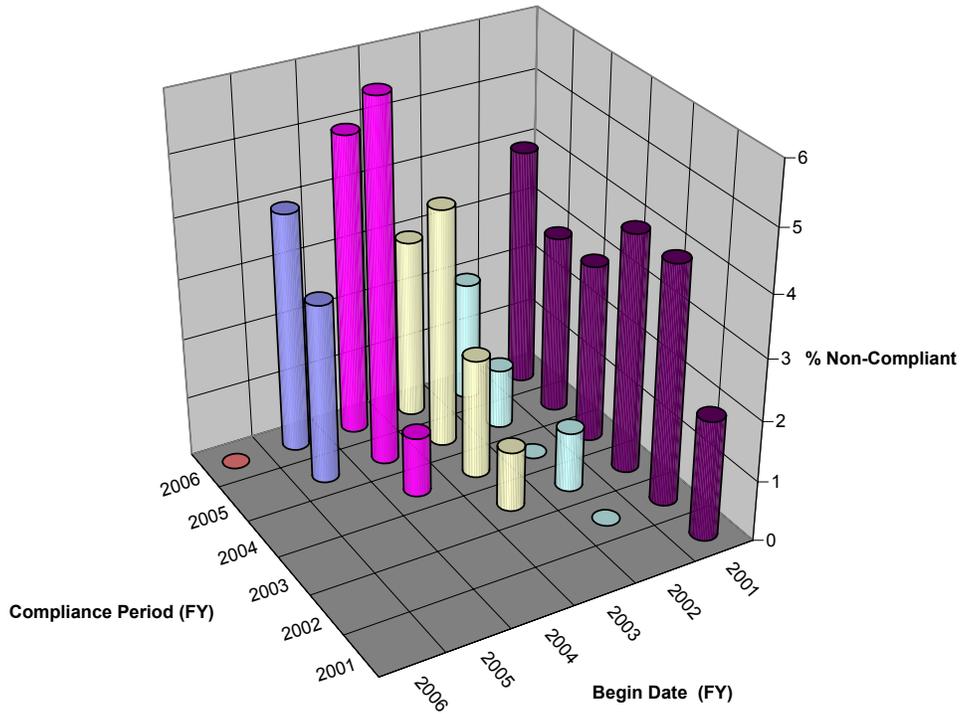


Figure 2: Community Systems Beginning FY 2001 Through FY 2006 with Monitoring Violations

1 M/R Violation or More - New Community Systems

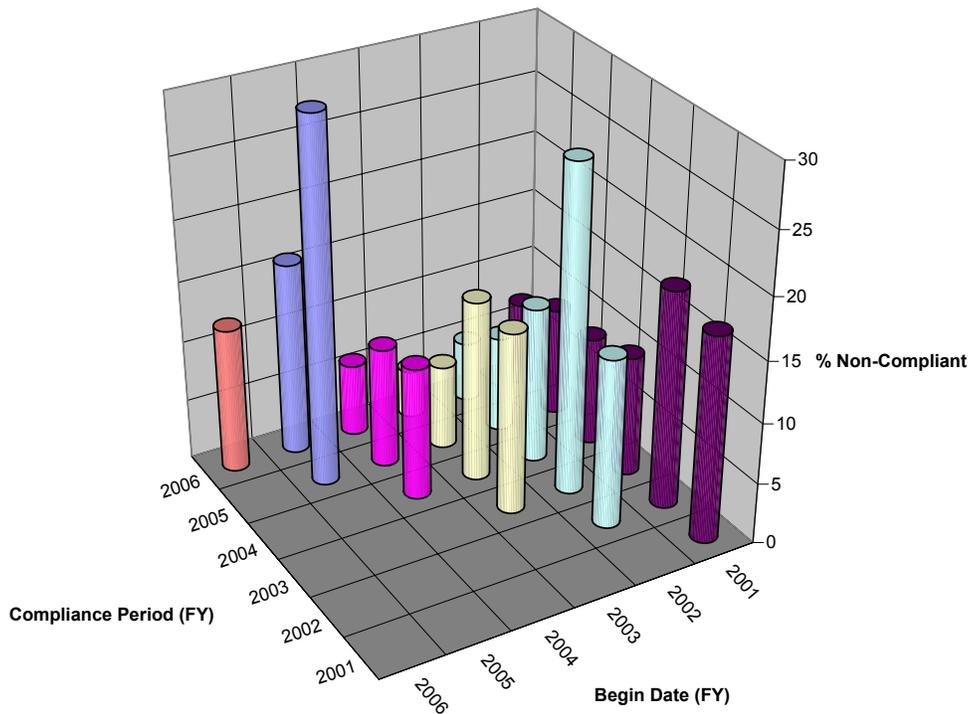


Figure 3: Nontransient Noncommunity Systems Beginning FY 2001 Through FY 2006 with Contamination

1 MCL Violation or More - New Nontransient Noncommunity Systems

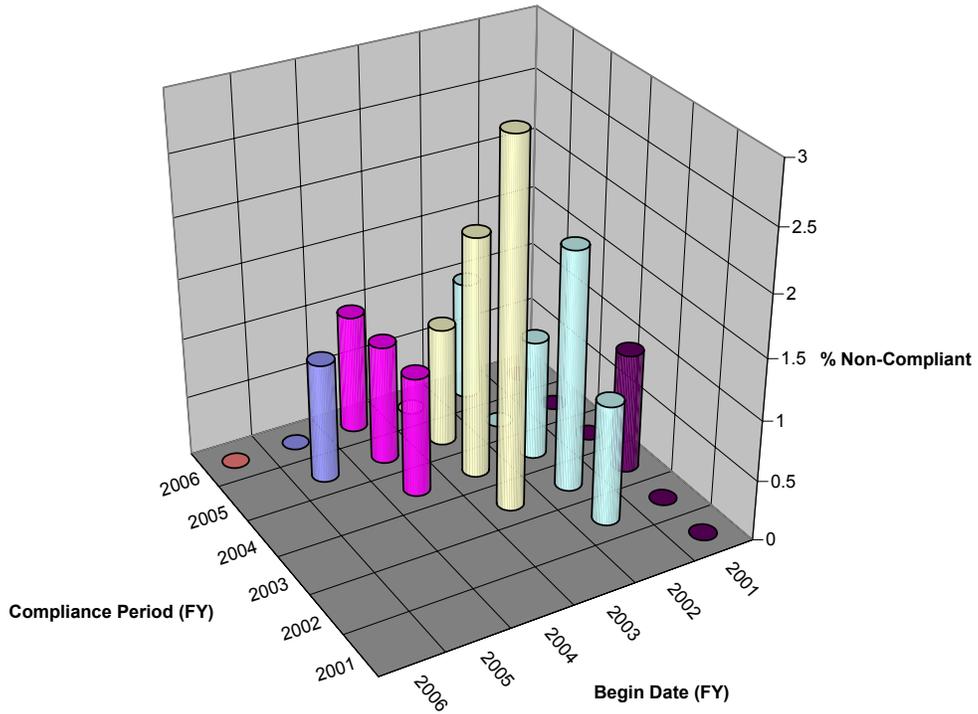


Figure 4: Nontransient Noncommunity Systems Beginning FY 2001 Through FY 2006 with Monitoring Violations

1 M/R Violation or More - New Nontransient Noncommunity Systems

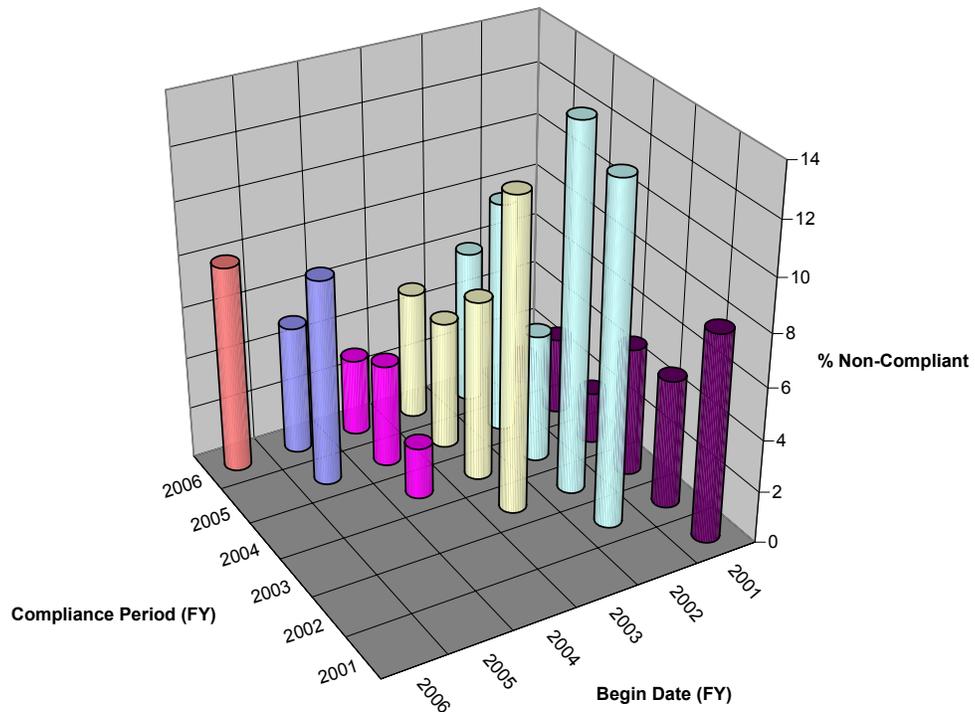


Figure 5: Transient Noncommunity Systems Beginning FY 2001 Through FY 2006 with Contamination

1 MCL Violation or More - New Transient Noncommunity Systems

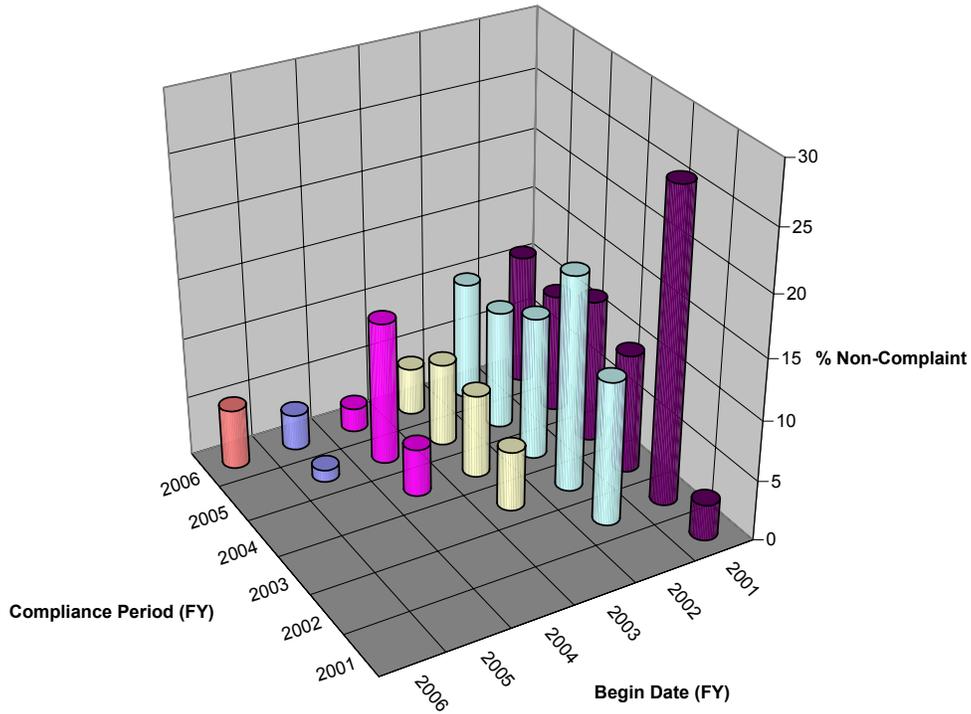
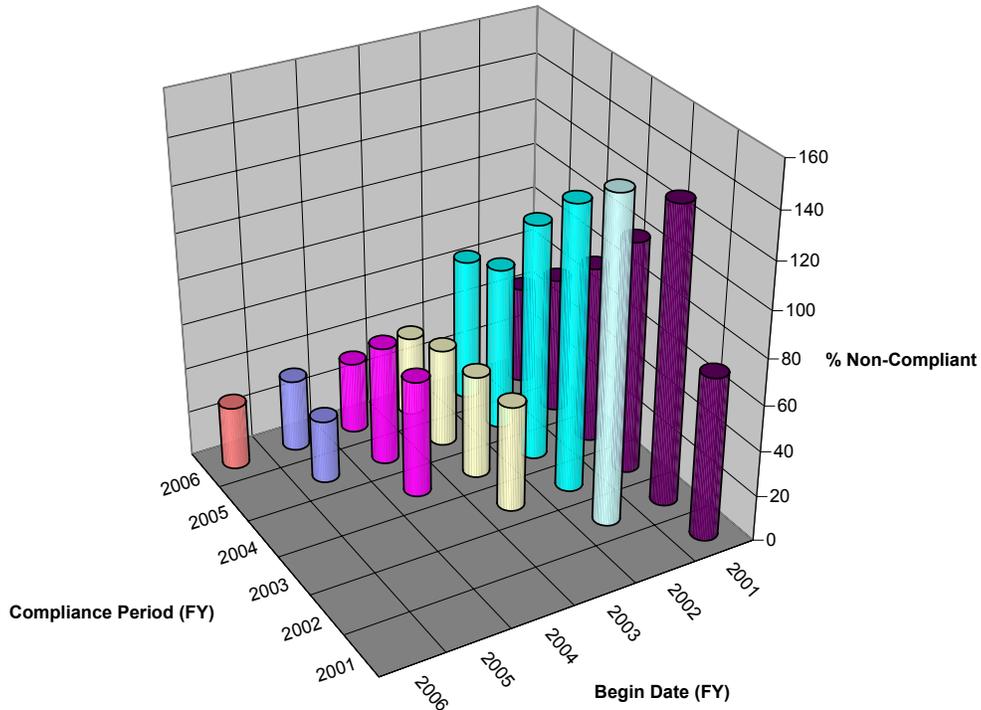


Figure 6: Transient Noncommunity Systems Beginning FY 2001 Through FY 2006 with Monitoring Violations

1 M/R Violation or More - New Transient Noncommunity Systems



II.B Program Development

Considering the number of small systems needing improvements in Capacity and the limited resources available, the PWS Section took steps regarding system viability that provided the foundation for a Capacity Development Program. A Viability Stakeholders group was formed in May 1995 to assess the operational needs of public water systems. In 1998, a Capacity Development stakeholder group was convened. From this group the Capacity Development rules evolved with temporary rules in place October 1, 1999. The final rules for the program were adopted August 1, 2000 (NCAC Title 15A, Subchapter 18C, .0300).

A comprehensive strategy was developed and implemented through an effort involving stakeholders, interested parties, sister agencies and PWS Section staff. Due to budgetary constraints, the coordination of this effort was provided by only one added position within the PWS Section as a Capacity Development Engineer. However, the entire section would be involved in implementing the goals of the program.

Training for the Capacity Development Program in April of 2000 included four day-long seminars that were co-sponsored by the PWS Section, the North Carolina Rural Water Association and the North Carolina Section of the American Water Works Association. More than 400 water system managers and operators attended these one-day seminars held in Asheville, Greensboro, Raleigh and Wilmington. The PWS Section also informed community and nontransient noncommunity water systems of the program through mailings and on its Internet site.

The entire PWS Section staff, both central and field office personnel, has continued to provide the energy and resources to make the Capacity Development Program a success. Several factors have been involved in ensuring the success of the program, including but not limited to the following:

- using an interactive stakeholder process in the adoption of new and revised rules, effective October 1999;
- training PWS Section staff and water system engineers, managers, and operators;
- increasing coordination within the branches of the PWS Section;
- instructing professional engineering organizations involved in plan preparation; and
- enhancing the PWS Section's on-line plan review tracking system.

The PWS Section believes this background continues to provide a strong foundation to ensure that public water systems are receiving the assistance needed to provide safe public drinking water for the citizens of North Carolina.

III. PROGRAM STRATEGY: *CAPACITY OBJECTIVES*

III.A Overview of Strategic Objectives

As reported in August 2000, the PWS Section met the challenge to improve Capacity of public water supply systems in North Carolina by taking a multi-track approach. This was due to the desire by the agency to focus on systems that were in greatest need of assistance. It was also based on budgetary limitations that would necessitate the PWS Section to center its efforts on improvements to systems that would provide the greatest public benefit.

One tool the PWS Section developed to make determinations regarding the Capacity of public water systems is the Water System Management Plan. This plan is a self-evaluation by a system of its Capacity. The plan is required for all new, altered or expanding community and nontransient noncommunity systems. The Water System Management Plan provides opportunity to evaluate and report on:

- ownership of the public water system;
- contractual arrangements regarding operation or interconnections;
- management structure, qualifications, and training;
- policies regarding the operation of the system; and
- financial information ensuring the continued viability of the system.

These considerations led the PWS Section to adopt the following strategic objectives:

A.1 New, Altered or Expanding Systems: The PWS Section recognized the difficulty of improving Capacity of a public water system **after** construction of a system had already taken place. In addition, systems that are changing their condition may be at greater risk of failure if proper planning and preparation is not done. Therefore, the PWS Section chose a strategy based on the requirement that all new and expanding community and nontransient noncommunity systems demonstrate Capacity **before** construction. The comprehensive requirements specified by the revised *Rules Governing Public Water Systems* now include the historical approval of engineering plans and specifications as well as certification that the following have been prepared:

- Water System Management Plan;
- Operation and Maintenance Plan (not submitted); and
- Emergency Management Plan (not submitted).

A.2 Existing Systems: On July 1, 2006, the state regulated 2,373 community systems, 516 nontransient, noncommunity systems, and 3,878 transient systems for a total of 6,767 regulated public water systems, 88 percent of which serve populations of less than 500 people. With regard to existing public water systems, the PWS Section realized that it had a well-established program that could identify and prioritize systems in need of improved Capacity. The PWS Section expects that focusing on candidates identified from these sources would provide the most benefit to existing systems in greatest need of improving Capacity. Determination for the type of assistance would be done on a case-by-case basis. The PWS Section expects that the Water System Management Plan will be another extremely useful tool in clarifying the causes of non-compliance. Systems could be identified from:

- US Environmental Protection Agency's (EPA) significant non-compliance list;
- sanitary surveys and technical assistance; and
- administrative penalties.

A.3 Improving Coordination: The PWS Section recognized opportunities among its own branches and programs to improve coordination in an effort to make the Capacity Development Program more successful. There has been a concerted effort to better coordinate internal activities in order to improve the efficiency of many of the regulatory functions. The Capacity Development Program is being used as the fulcrum in providing the leverage to implement some of these changes, as is highlighted in Section III.B.3 of this report.

III.B Efficacy of Strategies

The following is a discussion on the effectiveness of the strategies the PWS Section has implemented to improve the Capacity of public water systems.

B.1 Strategy Efficacy - New, Altered or Expanding Systems

The plan review process was revised to accommodate the new Capacity Development Program. The following procedure is now in place to ensure that the Capacity of public water suppliers exists before construction:

- The applicant submits an Engineer's Report, engineering plans and specifications, and a Water System Management Plan;
- If the Engineer's Report is complete and the engineering plans and specifications meet all requirements, the PWS Section approves engineering plans and specifications;
- When, in addition to having approved plans and specifications, the PWS Section determines that the Water System Management Plan is complete, the PWS Section issues an Authorization to Construct letter and the system begins construction;
- The applicant prepares or updates an Operation & Maintenance Plan and an Emergency Management Plan for the system;
- The applicant submits an Engineer's Certification and an Owner's Certification;
- The PWS Section issues a final approval letter; and
- The new construction, alteration or expansion project is placed into service.

The approach that the PWS Section has taken in promoting Capacity development has proven to be quite effective. Requiring the submission of a complete Water System Management Plan for review as part of the plan approval process ensures that any new or expanding public water system is demonstrating the Capacity necessary to operate viably. Starting from the adoption of the rules in October 1999 through June 2006, the PWS Section has accepted Water System Management Plans for 1,428 public water systems. To reduce the administrative burden on the owners of public water systems, the capacity development rules allow a single Water System Management Plan for multiple systems owned by the same person or legal entity.

During the approval process, a new or expanding public water system is also required to submit an Owner's Certification. This document certifies that the owner has developed an Operation and Maintenance Plan, an Emergency Management Plan, and has an appropriately licensed operator acting as the Operator in Responsible Charge. This certification step in the approval process has accomplished a great deal in developing Capacity. It has allowed systems to exhibit the requirements of operating and maintaining the system before it is available for public use. It also allows systems to provide the forethought of managing emergency or disaster events concerning the public water system. With this requirement, the PWS Section is building a strong foundation regarding recent security concerns and has provided a good starting point for systems to meet federal requirements for disaster preparedness for public water systems.

B.2 Strategy Efficacy - Existing Systems

The PWS Section has started to identify systems using information generated from program activities throughout the Section. The systems in greatest need of improving their Capacity based on performance with respect to their compliance with state and federal monitoring requirements for water quality testing are identified using information available within the PWS Section.

Annual Monitoring Status and Sampling Schedule Report: Since 1999, the PWS Section has been making available the Monitoring Status and Sampling Schedule Report. This report was posted on the PWS Section's Internet web site through the end of 2005. It provided the latest information on compliance and sampling dates. It also provided information on the frequency of testing and codes used in reporting. This information helped systems collect samples properly and receive credit for those samples, thereby reducing a frequent source of past errors for the systems. System officials could verify this information and report back any discrepancies. This has greatly assisted the section in avoiding unnecessary monitoring and reporting violations. Through the first half of FY 2006, drinking water data was migrated to the Safe Drinking Water Information System (SDWIS). At the beginning of FY 2007, Drinking Water Watch was made available to replace the Monitoring Status and Sampling Report.

Compliance Inspection Report: The PWS Section developed a Compliance Inspection Report to be used during site visits by agency staff. These reports may be used to document that the system is in compliance with the *Rules Governing Public Water Systems* or may serve as a field-generated Notice of Violation. This report has been in use since July 2000 and has improved the efficiency of communicating systems deficiencies to owners and operators, as well as reducing the requirement of formal letter generation, thus saving resources.

Technical Assistance from the North Carolina Rural Water Association: The PWS Section has a contractual agreement with the Rural Water Association to provide technical assistance to small water systems (less than 10,000 people) through a circuit rider. This circuit rider receives system referrals from PWS Section as well as requests for assistance from other sources. During FY 2006, the circuit rider assisted 113 systems with issues such as compliance and treatment, operation and maintenance, water loss and leak detection, management techniques, and emergency response. Thirty-one of these systems were referred by the PWS Section. Many systems required follow-up visits to insure proper application of procedures, to complete initiated programs, or to review operational records for compliance. The North Carolina Rural Water Association has also jointly sponsored 31 workshops during FY 2006 to assist smaller systems in areas such as rules and regulations, system operations, safety practices and equipment repair and maintenance.

List of Significant Non-Compliance Systems: The United States Environmental Protection Agency's list of significant non-compliant public water systems is being used to determine systems that may benefit from the Capacity Development Program. The PWS Section has established the Capacity Development Committee to improve the Section's capacity to provide timely and appropriate enforcement actions that incorporates the review of significant non-compliant public water systems and develops strategies to return systems to compliance.

Administrative Penalties: The PWS Section has an established enforcement program for issuing Administrative Orders and Administrative Penalties to public water systems that violate the *Rules Governing Public Water Systems*. The consequence for continued non-compliance has been assessment of a penalty. Through FY 2006, the Compliance Services Branch of the PWS Section has been issuing consolidated penalties that address monitoring deficiencies for all contaminant groups for systems that are considered "Significant Non-Compliers." Consolidation of penalties has allowed the PWS Section to assess a total fine to systems for multiple drinking water enforcement issues. This approach has better utilized the Section's enforcement capabilities and provided comprehensive enforcement for systems with persistent drinking water problems.

Beginning in FY 2007, the Compliance Services Branch will be accelerating its enforcement procedures. For monitoring violations, penalties will quickly follow notices of violation issued for each contaminant group and each compliance period. For maximum contaminant level violations, a combination notice of violation/administrative order will be issued each compliance period with a compliance deadline specified. Failure of a system to comply with the conditions in the administrative order within reasonable timeframes will result in the issuance of an administrative penalty.

During FY 2006, 154 Administrative Orders and 348 Administrative Penalties were issued to systems. Approximately \$68,400 was collected from previous penalties and about \$174,400 was assessed for penalties issued during FY 2006. The PWS Section has also included the Water System Management Plan as a mediation option when negotiating the settlement of an administrative penalty between the PWS Section and the non-compliant public water system. With this option, the owner of the system would describe specific managerial and/or financial plans to be implemented to ensure future compliance with the *Rules Governing Public Water Systems*.

B.3 Strategy Efficacy – Improving Coordination

The following highlights how the associated programs and initiatives within the PWS Section are being used in coordination with the Capacity Development Program.

Technical Assistance to Small Water Systems: The Safe Drinking Water Act has added tremendously to the responsibilities and workload of public water system personnel. All areas of water system operation have increased in complexity. Water system officials have called on the state for assistance more than ever before. The result is limited technical assistance available to the water systems. During FY 2006, approximately 52 field personnel provided technical assistance to systems during 7,189 on-site contacts, 3,000 of which were sanitary surveys.

Transient Noncommunity Water Systems: From the inception of the Safe Drinking Water Act in 1974, the very small transient noncommunity water systems have been a concern of Congress. Examples of the transient water systems include churches, gas stations, restaurants, highway rest stops, and state parks. For states with large numbers of transient systems such as North Carolina, funding was not provided to adequately address the transient water system problem. For years, North Carolina implemented the drinking water program in accordance with the “Priorities Guidance” from EPA, which focused the limited program resources available on the most significant issues leaving little time for oversight of the transient water systems. The State Revolving Fund set aside for State Program Management now provides North Carolina with the opportunity to initiate oversight and enforcement activities of the transient systems to include:

- identifying transient noncommunity water systems not on inventory;
- verifying and maintaining the transient noncommunity water system inventory;
- performing initial sanitary surveys and follow-up surveys every 10 years;
- conducting compliance and enforcement work including automated violation letters;
- issuing boil water notices and performing follow-up actions; and
- providing technical assistance.

The transient system compliance unit maintains an updated inventory and oversees regulation of these systems. The central office activities include inventory coordination and updating, training and regulatory consultation to system owners and operators, compliance and enforcement activities, and development and oversight of related computer programming. Additional duties in the regional offices included:

- providing on-site technical assistance;
- providing transient noncommunity inventory updates, site visits and consultation as follow-ups to contamination;
- conducting sanitary surveys;
- issuing boil water notices;
- assisting with public notice of contamination; and
- providing training.

During FY 2006, 2,475 site visits were performed. In addition to transient system work, some technical assistance activity was performed for all other types of public water systems. While much progress has been made and compliance improvements have been the result, there are still insufficient resources at the PWS Section to respond to the needs of systems with on-site assistance, such as water quality test results showing bacterial contamination (which may indicate a serious health risk). Recent statutory increases to the operating permit fee structure will phase in through FY 2008. The additional staff resources provided will allow significant progress to be made on these issues in the future.

Compliance Services Branch Initiatives: The Compliance Services Branch of the PWS Section has developed several initiatives that complement the goals of the Capacity Development Program. They have been aimed at improving the efficiency of compliance reporting requirements of public water systems. The initiatives are also improving the issuance and tracking of enforcement activities, as well as the overall administration of the PWS Section's compliance program. These initiatives include:

- placement of public notices and monitoring charts on the PWS Section website;
- preparation and distribution of annual "Regulatory Update" to each water system by type;
- standardization of laboratory reporting forms (including training and workshops for laboratories);
- use of faxes to expedite the return of unsatisfactory analyses to laboratories;
- continued clarification and revision of enforcement letters (Notices of Violation, Administrative Orders and Administrative Penalties) and use of standardized templates for their ease of preparation;
- development of Significant Non-Compliance list spreadsheets to aid in preparation and tracking of enforcement letters;
- creation of a lead position to perform database queries that more closely track systems with MCL violations and that are significant non-compliant and followup more quickly with enforcement actions;
- inclusion of required forms for public notification attached to violation letters;
- improvements to the tracking and follow-up of contaminant violations, submittal of remedial plans, and public notifications;
- combination of public notice and certification forms to single sheet, easing system's public notice reporting requirement burden;
- automation of daily identification of public water systems exceeding bacteriological and nitrate/nitrite contaminant violations and weekly identification of those systems required to increase monitoring due to detection(s) of volatile organic compounds, synthetic organic compounds, inorganics, and nitrates/nitrites;
- automation of nitrate and nitrite administrative order letters; and
- automation of "returning systems to compliance" when justified;
- development of contact protocols for interaction with sister agencies such as Children's Environmental Health and Dairy and Food Protection Branches.

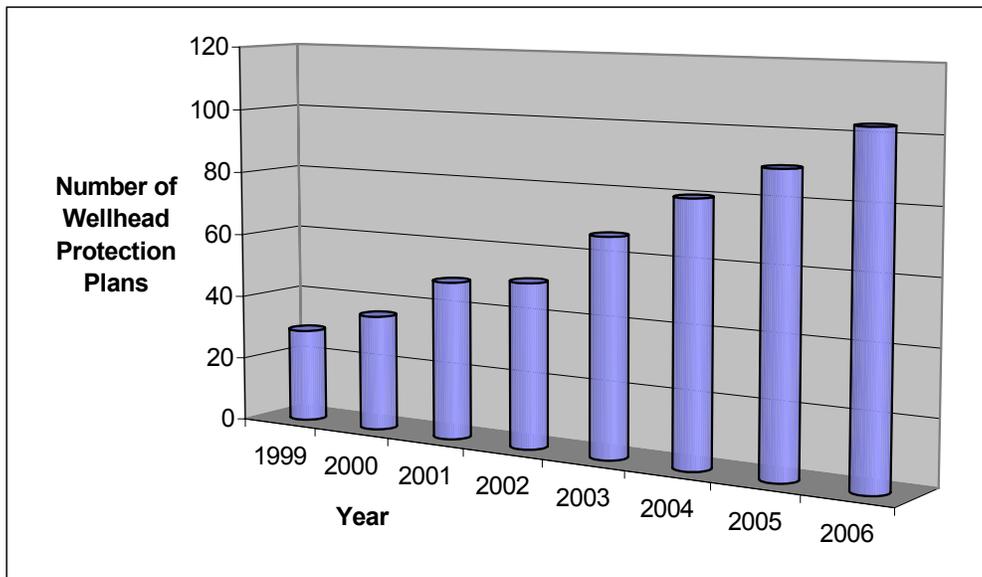
North Carolina's Source Water Program: The PWS Section continued to improve and implement items in accordance with North Carolina's approved Source Water Assessment Program. SWAP reports continue to be refined and are available to the public using the PWS Section's geographic information application, SWAPinfo (<http://www.deh.enr.state.nc.us/pws/swap>). The reports on this website provide information that can be used by public water system owners, operators, local governments, volunteer organizations, and citizens to develop and implement source water protection strategies. The results of the Source Water Assessment Program, along with voluntary source water protection activities, will enhance the capacity of public water systems to meet safe drinking water standards.

The Source Water Protection Program is designed to promote efforts at the local level that result in the creation of source water protection plans for surface water sources. Technical assistance is available to any public water provider wishing to develop a source water protection plan. Additional information, including a newly published guidance document, is available on the PWS Section website.

Currently, two public water providers using surface water sources have initiated efforts to develop a source water protection plan. These systems will serve as pilot programs, and the PWS Section anticipates completion and approval of their plans in early 2007. These two water providers alone serve a population of approximately 175,000 people. As more public water providers join the Source Water Protection Program, there is potential to improve greatly.

North Carolina's Wellhead Protection Program: The Wellhead Protection Program is a pollution prevention and management program used to protect underground sources of drinking water. In North Carolina, development of a local Wellhead Protection Plan is not mandatory, but is viewed as a valuable supplement to state groundwater protection programs. North Carolina's Wellhead Protection Program is intended for city and county governments and water supply owners that wish to provide added protection to their local groundwater supplies. The Wellhead Protection Plan, once implemented, reduces (but does not eliminate) the susceptibility of wells to contaminants. Figure 7 highlights the success of this program.

Figure 7: Cumulative Wellhead Protection Plan Approvals



Since the beginning of the program, the PWS Section has received 152 local wellhead protection plans submitted for review and approval. Of these 152 plans, 103 have received approval. The majority of the remaining plans are under active review. Active review includes generating review letters requesting additional information and/or clarification regarding the information submitted with the local well head protection plans, as well as attending numerous meetings with the parties involved in the plan development. The 103 systems with approved well head protection plans comprise 468 public water supply wells serving approximately 485,048 people. It is expected that these plans will assist greatly in improving the Capacity of public water systems in North Carolina. Through the Drinking Water State Revolving Fund, the state provides funding to the North Carolina Rural Water Association for two positions to assist local governments in the development of these plans.

Operator Certification and Training: The State of North Carolina has approximately 4,705 certified water system operators who possess approximately 6,336 active operator certifications. North Carolina is responding to the need to provide certification and training to these operators by providing an active certification program. A network of volunteer and member organizations conducts the program. The PWS Section together with the North Carolina Waterworks Operators Association (NCWOA), the North Carolina Rural Water Association, and the North Carolina American Water Works Association coordinate schools, seminars, workshops, and conferences. This program has successfully increased the capacity of public water systems by directly influencing the training and certification provided public water system operators. Through the Expenditure Reimbursement Grant from EPA, the state provides funding to the NCWOA for a training coordinator position.

IV. PROGRAM SUCCESS: *CAPACITY IMPROVEMENTS*

IV.A Indicators for Measuring Capacity Improvement

The August 2000 report, “North Carolina’s Capacity Development Strategy for Existing Public Water Systems,” discussed the indicators the PWS Section is using to determine the progress of its Capacity Development Program as follows:

“The primary component of North Carolina’s capacity development program is evaluation of technical, managerial and financial capacity during the planning stages of new construction, expansion or system alteration. Therefore a key indicator of water system capacity is compliance with the requirements specified in Section .0300 of the *Rules Governing Public Water Systems*. Specifically the PWS Section plans to use existing databases to track the following information for public water systems:

- Number of public water systems with approved plans and specifications;
- Number of public water systems with a complete Water System Management Plan;
- Number of public water system projects with a submitted Engineer’s Certification to document that the system is constructed in accordance with approved plans and specifications;
- Number of public water system projects with an Owner’s Certification to document that the system has an Operation and Maintenance Plan and an Emergency Management Plan; and
- Number of Public Water Supply systems that have an appropriate certified operator in responsible charge.

The above information, in addition to compliance information will be used to measure improvements in capacity.

Also, the PWS Section will track the number of water supply intakes with complete Wellhead Protection Plans and/or Source Water Assessments as a measure of improved capacity.”

The PWS Section has therefore adopted the following approach in determining the effectiveness of the Capacity Development Program:

- *Progress*: Progress in the Capacity Development Program is defined as improving the technical, managerial, and financial viability of an increasing number of public water systems;
- *Measuring Progress*: Measuring progress will be accomplished by tracking the number of public water systems that have completed the requirements of the Capacity Development Program as specified in the rules;
- *Benchmark Figures*: The benchmark figures against which this progress is to be measured are the completion rates of the program requirements of the first period of the program (October 1, 1999 to June 30, 2000). The goal of each year is to surpass the completion rate of the previous year. It is expected that an ever-increasing number of public water systems will have completed the requirements of the program.

Supporting activities for Capacity development include Compliance and Enforcement, Wellhead Protection Plans and Source Water Assessments. The PWS Section is looking at ways in which information from these activities can be used to enhance the Capacities of regulated water systems.

IV.B Current Status: Facts and Figures

Table 5 is a summary of the numbers of systems that have completed these specific Capacity Development Program activities and provides the percent completed compared to the total community and nontransient noncommunity systems.

Table 5: Capacity Development Measures

10/1/99 through:	Total Number of Community and Nontransient Noncommunity Systems	Systems with Plans Submitted		Systems with Plans Approved		Systems Covered by Complete Water System Management Plans		Systems with Engineer's Certification		Systems with O&M and EM Plans		Systems with Final Approval	
		#	%	#	%	#	%	#	%	#	%	#	%
June 30, 2000	3,316	438	13.2	283	8.5	699	21.1	46	1.4	6	0.2	6	0.2
June 30, 2001	3,208	697	21.7	504	15.7	1,062	33.1	201	6.3	58	1.8	69	2.2
June 30, 2002	3,107	818	26.3	634	20.4	1,153	37.1	386	12.4	148	4.8	146	4.7
June 30, 2003	2,935	976	33.2	757	25.8	1,233	42.0	537	18.3	269	9.2	262	8.9
June 30, 2004	2,913	1,118	38.4	870	29.9	1,301	44.7	621	21.3	369	12.7	356	12.2
June 30, 2005	2,912	1,183	40.6	956	32.8	1,359	46.7	715	24.6	468	16.1	452	15.5
June 30, 2006	2,877	1,340	46.6	1,117	38.8	1,428	49.6	859	29.9	620	21.6	598	20.8
<i>Increase from 1st period*</i>		902	33.4	834	30.3	729	28.5	813	28.5	614	21.4	592	20.6

*% value indicates the increase in the percentage of public water systems that have completed the particular capacity development measure indicated since the 1st period (October 1, 1999 through June 30, 2000).

†The number of systems covered by complete Water System Management Plans (WSMPs) has been updated to include multiple systems under single ownership with a master Water System Management Plan..

“*Systems with Plans Submitted*” means the number of systems with at least one set of engineering plans and specifications submitted for review during the indicated period.

“*Systems with Plans Approved*” means the number of systems with at least one set of engineering plans and specifications reviewed and approved during the indicated period.

“*Systems with Water System Management Plan Complete*” means the number of systems with at least one water system management plan completed during the indicated period.

“*Systems with Engineer's Certification*” means the number of systems having at least one engineer's certification during the indicated period that a project whose plans were submitted on or after 10/1/99 was constructed according to approved plans and specifications.

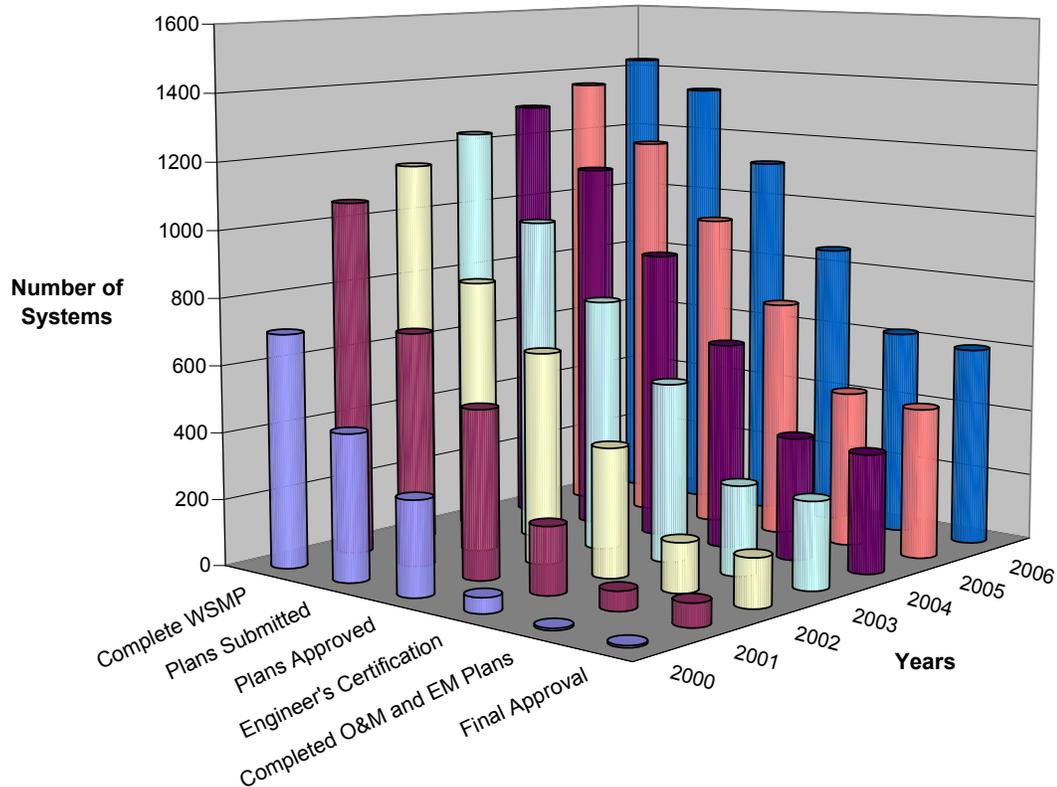
“*Systems with O&M and EM Plans*” means the number of systems having at least one owner's certification during the indicated period that a project whose plans were submitted on or after 10/1/99 has an operation and maintenance plan and an emergency management plan. It also signifies the number of systems meeting all of our capacity development requirements during the indicated period for a project whose plans were submitted on or after 10/1/99 and for which a permit to operate was issued.

“*Systems with Final Approval*” means the number of systems meeting all our capacity development requirements during the indicated period for a project whose plans were submitted on or after 10/1/99 and for which a permit to operate was issued.

Table 5 is summarized graphically in Figure 8 in order to illustrate the number of systems that have submitted plans to the PWS Section; obtained plan approval; and have developed Water System Management Plans, Operation & Maintenance Plans, and Emergency Management Plans; and have received final approval for projects.

Currently, the individual plan review engineer checks plan submittals to ensure a current Water System Management Plan is on file or is being submitted with the application. For the later case, the plan review engineer reviews the Water System Management Plans for completeness.

Figure 8: Capacity Development Measures



“WSMP” indicates the documentation of the Water System Management Plan.

“O&M Plan” indicates Certification of the completion of an Operation and Maintenance Plan

“EM Plan” indicates Certification regarding the completion of an Emergency Management Plan

“Final Approval” indicates the completion of the requirements of the Capacity Development Program.

IV.C Discussion of Progress

As demonstrated in Figure 8, the Capacity Development Program has allowed the PWS Section to make steady progress in assuring that an increasing number of public water systems have evaluated their Capacity. Since 1999, over 1,300 systems entered the plan evaluation process with a total of 598 of these systems completing all of the requirements necessary to reach final approval status. Approximately 1,430 systems are covered by a Water System Management Plan self-assessment deemed satisfactory by the State. Multiple systems under single ownership, including those not expanding, may be covered by one master Water System Management Plan. As measured against the benchmark of the initial period, there has been a 104 percent increase in the number of public water systems with complete Water System Management Plans. Each year, more systems complete the Capacity Development Program. However, many systems that began the plan evaluation process have not achieved final approval status. Therefore, the PWS Section has begun developing a process to review the records, identify non-compliant systems and notifying them of their requirements.

Completion of the Capacity Development Program requirements indicates that a public water system has completed Operation & Maintenance and Emergency Management Plans. These plans are not only invaluable tools for the proper maintenance of the system, but they also provide incentive for the system to prepare for emergency and disaster events. With this requirement, the PWS Section built a strong foundation regarding recent security concerns and federal requirements for vulnerability assessments and disaster preparedness for public water systems.

The PWS Section is very pleased with the progress of the Capacity Development Program to date. The numbers show that there has been much effort and activity toward accomplishing the requirements of the program to assist in improving the Capacity of public water systems in North Carolina. The numbers also show that there is much more to do.

V. PROGRAM DIRECTION: *CAPACITY INITIATIVES*

V.A New Challenges and Opportunities

The PWS Section has been able to identify several challenges through the implementation of its Capacity Development Program. The greatest challenge facing the agency is how to identify and assist the individual needs of the smaller public water suppliers (those serving less than 500 people). These small systems are faced with a wide range of hurdles in attaining adequate Capacity as compliant water suppliers. Also, as mentioned previously, the resources necessary for the PWS Section to assist these systems presents a challenge.

The PWS Section wants to provide assistance to all public water systems regardless of size. Some of the opportunities that are available include:

- **Operator Certification:** The United States Environmental Protection Agency's guidelines require that all community and nontransient noncommunity public water systems be operated by a licensed operator in responsible charge or risk withholding of 20 percent of the State Revolving Fund Capitalization Grant. This mandate provides an opportunity to improve Capacity for these existing systems. The PWS Section expects the smaller systems to benefit greatly by having trained operators managing these systems. To assist small systems (serving 3,300 persons or less) with resources needed for initial training and continuing education to acquire or maintain certification, the state provides reimbursement for this training through the Expenditure Reimbursement Grant from EPA.
- **Emergency Management:** North Carolina received an initial grant during 2002 and subsequent amendments through federal fiscal year 2006 from the USEPA to initiate and maintain state level activities and/or strategies that assist in emergency response and recovery preparedness. The main guidance for Public Water Supply Section's work plan activities since 2002 has been the requirements of the Bioterrorism Act of 2002 (P.L. 107-188). This act amended the Safe Drinking Water Act by adding Section 1433 which outlined vulnerability assessment and emergency response plan responsibilities for public water systems serving over 3,300 persons.

The amended grant work plan includes a commitment to prepare an emergency response guidance document, primarily for PWS Section staff and other state agency responders, when they are responding to malicious acts directed at public water systems. Concurrent to guidance document completion is the conducting of statewide table top exercises to improve upon state level response procedures for harm intended incidents at public water system sites. An EPA Water Security handbook is available to water system owners and managers at: <http://www.epa.gov/watersecurity>.

An additional guidance for grant supported activities is the 2005 recommendations of the National Drinking Water Advisory Council that includes recommendations for Emergency Response and Recovery Plans. Also, the Governor's Proclamation calls for all emergency responders to become better prepared through training and exercises. PWSS has required its technical assistance staff to complete Incident Command System (ICS) 100 and 200 training. Also, during FY 2006, the same technical staff persons are required to complete the National Incident Management System (NIMS 700) course. A summary count on October 19, 2006 showed that 57 of 60 eligible staff had completed the ICS-100 course and the ICS-200 course, and 51 of 60 staff had completed the NIMS-700 course.

PWS Section staff, involved in emergency response preparedness and coordination, has been participating in workshops and web casts sponsored by the National American Water Works Association, the Disaster Preparedness Committee (DPC) of North Carolina Section of the American Water Works Association, EPA, and the Association of Drinking Water Administrators.

- **Improved Database Management:** The Public Water Supply Section successfully completed data migration from our traditional data management system (FOCUS) to EPA's Safe Drinking Water Information System (SDWIS) in April 2006. A new web-enabled version from EPA is scheduled for deployment by first quarter of 2007. Migration to the new environment has improved the Section's capacity by reducing our dependency on the knowledge base of key individuals while at the same time providing increased functionality.
- **Central Coastal Plains Capacity Use Area:** This area, located in Eastern North Carolina, is underlain by Cretaceous aquifers that are threatened by excessive groundwater withdrawal and by saltwater encroachment. Systems that withdraw more than 100,000 gallons per day are required to begin curtailing water production by as much as 25 percent by 2008 with future reductions up to 75 percent by 2016. Access to alternative water sources must be developed and funded to meet public demands. Strategies for managing demands while meeting withdrawal reductions include construction of new surface water treatment plants, interconnects with other systems, drought management planning and preparation of water conservation plans. A significant portion of available Drinking Water State Revolving Funds are being allocated to systems meeting these challenges.
- **2007 Infrastructure Needs Survey Strategy:** Water systems make significant investments to construct and manage infrastructure in order to deliver safe drinking water and protect public health. Every four years, EPA with the assistance of states, conducts a survey of the anticipated costs of these investments and reports the results to Congress. The results also determine the amount of funding North Carolina receives for its Drinking Water State Revolving Fund program, which funds the types of projects identified in the survey. In anticipation of the 2007 Infrastructure Needs Survey, the Public Water Supply Section intends to provide advance information, training, and technical assistance in Capital Finance Planning including management of critical assets. Initially the focus will be on large and selected medium sized systems. After completion of the 2007 survey, outreach efforts will include the remainder of the medium systems and small systems as resources allow.

- **Disadvantaged Communities Program:** Many systems, especially small ones, lack the resources needed to provide consistent safe drinking water to the public as required by EPA. This frequently results in long-term non-compliance. The Public Water Supply Section has developed a strategy to consolidate “problem” systems with more reliable water suppliers in the immediate vicinity. The pilot for the development of this program was funded by state unanticipated bond grant monies. The initial phase of the North Carolina Disadvantaged Communities Program, allowed by the 1996 Amendments to the Safe Drinking Water Act as part of the Drinking Water State Revolving Fund, will incorporate this strategy. Subsequent phases will assist other small systems by consolidation with larger systems.
- **Development of Capacity Development Assistance Team:** Systems that are recurrent violators remain non-compliant for various reasons. The Public Water Supply Section believes that many systems can become compliant with the proper assistance and guidance. To meet this challenge, the Capacity Development Assistance Team has been developed. This group plans to draw resources from all facets of the Public Water Supply Section to correct any technical, financial, and/or managerial problem these systems have. During FY 2006, three systems selected for assistance received comprehensive Capacity Development evaluations and subsequent follow-ups by PWSS field staff.
- **New System Assistance:** From the current data analysis, systems that began operation within the last three years appear to have highly variable annual compliance levels as well as difficulty complying with monitoring and reporting requirements of “*The Rules Governing Public Water Systems.*” Therefore, the Public Water Supply Section will continue to investigate new system progress and is considering ways to provide more focused assistance to new systems during their early years of operation. New staff that will be added once the increased operating permit fees are fully implemented will pilot developed procedures.

V.B Future Reports

Section 1420(c)(3) of the 1996 Safe Drinking Water Act Amendments require that:

“Not later than 2 years after the date on which a State first adopts a capacity development strategy under this subsection, and every three years thereafter, the head of the State agency that has primary responsibility to carry out this title in the State shall submit to the Governor a report that shall also be available to the public on the efficacy of the strategy and progress made toward improving the technical, managerial, and financial capacity of public water systems in the State.”

The PWS Section must provide the governor of the State of North Carolina with the required report on the dates specified, starting from September 30, 2002 (2005, 2008...), until otherwise notified by the United States Environmental Protection Agency. The Section plans to prepare an updated report annually and publish it on its web site at: <http://www.deh.enr.state.nc.us/pws>.

VI. PUBLIC AVAILABILITY OF THE 2006 CAPACITY DEVELOPMENT REPORT

As required by the EPA, the PWS Section makes this report available to the public. The Internet web page of the PWS Section contains a link to the report. The web page can be found at:

<http://www.deh.enr.state.nc.us/pws>

This Internet web page also has links to the following supporting documentation and recent reports regarding the Capacity Development Program of the North Carolina PWS Section:

North Carolina's Capacity Development Report for Public Water Systems, September 2005.

North Carolina's Capacity Development Report for Public Water Systems, September 2004.

North Carolina's Capacity Development Report for Public Water Systems, September 2003.

North Carolina's Capacity Development Report for Public Water Systems, September 2002.

North Carolina's Capacity Development Strategy Implementation Report, August 2001.

North Carolina's Capacity Development Strategy for Existing Public Water Systems, August 2000.