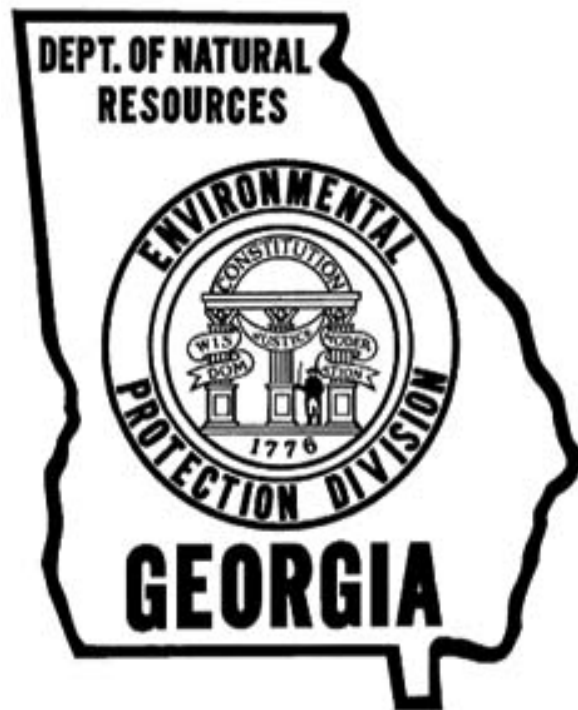


# **The Report to the Governor on Georgia's Capacity Development Program**



**Georgia Environmental Protection Division  
Watershed Protection Branch  
Drinking Water Program  
September 2008**

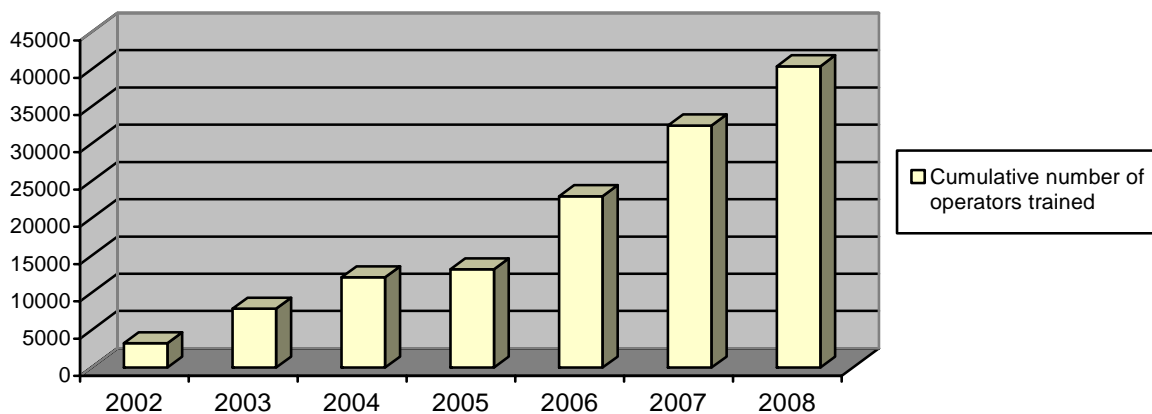
## EXECUTIVE SUMMARY

This report is prepared to outline the progress that is being made in the implementation of Georgia's capacity development program. Georgia's Environmental Protection Division (EPD) has an established program that provides a solid foundation for present and future activities to help insure all Georgians are provided safe and reliable drinking water on a continuous basis. Overall, the quality of drinking water served to the citizens of Georgia is very good. There are no known man-made contaminants in the treated public water supplies in Georgia that may affect public health. Compliance with the health-related drinking water standards remains high.

Currently, Georgia has approximately 2,485 active public water systems serving a population of approximately 8.4 million people. This means approximately 87% of the more than 9.4 million citizens get their drinking water from one of the regulated public water systems in the State. The rest obtain water from their privately owned water sources, such as wells and springs located on their properties.

Approximately, 66% of all public water systems in the State are privately owned and operated. Federal, State, and local governments own the rest. Unfortunately, the smaller privately owned and operated water supply systems do not have the resources available to the larger systems. These systems face many challenges and often struggle to comply with the safe drinking water rules and regulations. In Georgia, as well as other parts of the country, these small private water systems continue to have greater frequency and occurrence of compliance violations. In order to improve their status, as this report will show, continuous efforts are being made towards the education, training and certification of the owners and operators of these smaller water systems (refer to Figure 1). The Georgia Rural Water Association, Georgia Association of Water Professionals, and Georgia Environmental Facilities Authority partner with EPD in this widespread effort and play a very significant role. We are getting good results. In recent years, Georgia has recorded the highest compliance rates for safe drinking water in the southeast United States.

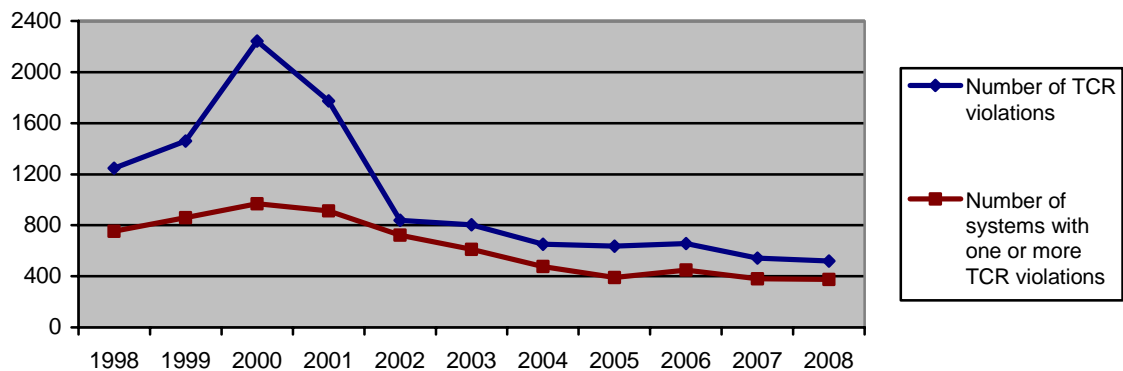
Figure 1. Cumulative number of operators trained by reporting year.



The U.S. Environmental Protection Agency (USEPA) approved Georgia's capacity development strategy program on September 21, 2000. Since then, significant progress has been made towards improving the technical, managerial, and financial capacity of the public water systems in Georgia. New systems are being designed and constructed to meet more stringent standards

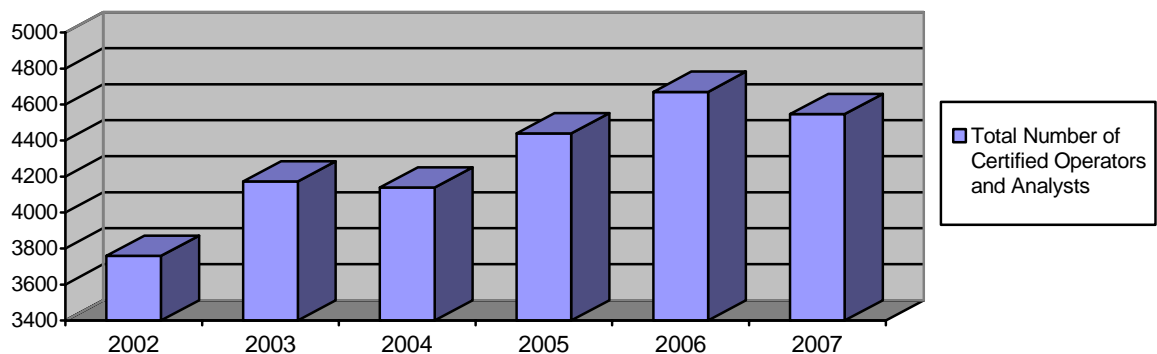
for quality and reliability, and new owners are required to demonstrate adequate managerial and financial capacity through submission of business plans prior to commencing operation of a public water system. Recently, Georgia has seen an overall decrease in the number of new public water systems becoming significant non-compliers (SNCs) with the federal drinking water rules and regulation. According to our records, USEPA's 2007 SNC did not contain any new water system approved or permitted during the last three years.

Figure 2. Total Coliform Rule compliance data for the past decade.



Since 2002, there has been significant improvement in the overall microbial quality of the drinking water being provided to the public. Available data indicate that Total Coliform Rule (TCR) compliance rates in Georgia have improved over the past decade as the total number of violations have decreased over time and remained fairly constant since 2004 (refer to Figure 2). We attribute this success to improved water system operation and management as a result of increased efforts towards the training and certification water system operators and laboratory analysts (see Figure 3).

Figure 3. Total number of certified operators and laboratory analysts.



Improving the TMF capacity of water systems is a gradual, long-term process. Over the next several years, as a result of capacity development efforts, we expect the success to continue. As detailed in the report, under the various capacity development strategy efforts, all public water systems in Georgia are being offered or provided assistance to help them acquire and maintain technical, managerial, and financial capacity. The assistance includes, but is not limited to, technical engineering review of all water system projects, direct on-site technical

assistance, in depth sanitary surveys and more frequent inspections, proactive compliance and enforcement initiatives, inexpensive and convenient training opportunities, low interest financing to correct system deficiencies, affordable monitoring and testing services, and other local government initiatives. Whenever possible, deficient or poorly run public water systems are being encouraged, through various compliance and enforcement mechanisms, to consolidate or merge with nearby governmentally owned and operated water systems or water authorities.

The Georgia Environmental Facilities Authority is the primary State agency for assisting local governments in financing the construction, extension, rehabilitation, repair and replacement of environmental facilities, as well as other security improvements. Georgia utilizes a large portion of the grant to provide low interest loans to eligible public water systems needing infrastructure improvements to achieve or maintain compliance with the SDWA requirements or to protect public health. As of June 2008, more than \$192.5 million in project assistance has been awarded for 243 water system improvement projects that have directly benefited 101 water systems and 2,058,559 citizens in Georgia.

While EPD has the lead role and regulatory authority for the capacity development program, this agency cannot be able to fully achieve the goals of the program without the active ongoing involvement of our various stakeholder and partner organizations. These organizations, as mentioned throughout the report, have played a major role in the capacity development program and contributed immeasurably to the success that has been achieved so far. In the future, EPD will continue to evaluate the success of the capacity development program, maximize the use of all available resources to help the systems most in need, and maintain effective working relationships with other State and local agencies and organizations.

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## **LIST OF ABBREVIATIONS**

GA SDWA	Georgia Safe Drinking Water Act of 1977
Minimum Standards	Minimum Standards for Public Water Systems, May 2000
O & M Plan	Operations & Maintenance Plan
Rules	Rules for Safe Drinking Water, Chapter 391-3-5

## **LIST OF ACRONYMS**

ACCG	Association County Commissioners of Georgia
ARC	Atlanta Regional Commission
CCR	Consumer Confidence Report
CWS	Community Water System
DNR	Georgia Department of Natural Resources
DWP	Drinking Water Program
DWPEP	Drinking Water Permitting & Engineering Program
DWSRF	Drinking Water State Revolving Fund
EPD	Georgia Environmental Protection Division
GEFA	Georgia Environmental Facilities Authority
GMA	Georgia Municipal Association
GWAP	Georgia Association of Water Professionals
GWPCA	Georgia Water & Pollution Control Association
GRWA	Georgia Rural Water Association
GWWI	Georgia Water & Wastewater Institute
MCL	Maximum Contaminant Level
NOV	Notice of Violation
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-Transient Non-Community Water System
PPG	Performance Partnership Grant
PWS	Public Water System
RDC	Regional Development Center
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SMP	Scheduled Maintenance Plan
SNC	Significant Non-Compliance
SOP	Standard Operating Procedure
SWAP	Source Water Assessment Program
TMF	Technical, Managerial and Financial
TNCWS	Transient Non-Community Water System
USEPA	U.S. Environmental Protection Agency
WSID	Water System Identification Number

## **INTRODUCTION**

The 1996 Safe Drinking Water Act (SDWA) Amendments emphasized prevention and assistance to resolve significant problems small public water systems were having providing safe and reliable drinking water to their customers. The legislation included incentives, in the form of Drinking Water State Revolving Fund (DWSRF) withholdings, for States to develop:

- (1) A capacity development authority program to ensure that all new community water systems (CWS) and non-transient non-community water systems (NTNCWS) commencing operation after October 1, 1999, demonstrate adequate technical, managerial, and financial (TMF) capacity to comply with all National Primary Drinking Water Regulations (NPDWRs); and
- (2) A capacity development strategy to assist all existing public water systems in acquiring and maintaining TMF capacity.

The Environmental Protection Division (EPD) has established a capacity development strategy program for Georgia. USEPA approved Georgia's program on September 21, 2000. Since then, EPD has fully and successfully implemented the strategy, which provides targeted, voluntary, and mandatory assistance to public water systems in need of acquiring and maintaining adequate TMF capacity.

Since January 1, 1998 several new rules became effective relative to the permitting of new privately owned public water systems. These include, but are not limited to, requirements for the following: development of a "business plan"; execution of a trust indenture; development of a back-up water source; connection to an existing local government owned system when feasible; and, concurrence from the nearest governmental entity for the development of the privately owned CWS in that jurisdiction. The main objective of these requirements is to assure that new CWS and NTNCWS have adequate TMF capacity to comply with all current and future drinking water regulations and provide safe, reliable service to their customers.

The information provided in this report shows that a substantial amount of activity and workload has been associated with both the capacity development authority program (new water systems) and capacity development strategy program (existing water systems). Measurements of success of the strategy and the improvement in the TMF capacity of public water systems include, but are not limited to, the following: SNC lists, TCR compliance data, the number of business plans developed by public water systems, the attendance at operator training sessions and certification examinations, the number of "circuit-rider" type technical assistance visits, the consolidation of private public water systems with local governmental entities, and etc. This report clearly demonstrates that the Georgia EPD is making significant progress towards improving the TMF capacity of public water systems throughout the State.

## **ABOUT THIS REPORT**

In the preparation of this Capacity Development Program Report, we have followed the criteria that have been recommended by the USEPA. The report primarily covers a period of at least three years, from July 1, 2005 to June 30, 2008, and addresses the two main issues mandated under Section 1420(c)(3) of the federal Safe Drinking Water Act: (1) efficacy of the capacity development strategy, and (2) progress made towards improving technical, managerial, and financial capacity of public water systems. The report shows how Georgia promotes the importance of safe drinking water through the implementation of the Capacity Development Program and demonstrates the benefits of improving technical, managerial, and financial capacity of public water systems in the State.

In assessing the efficacy of the established strategy, the report describes the major objectives of the strategy, accomplishments associated with those objectives, and the progress being made in implementing the strategy. One of the main objectives is to increase the technical, managerial and financial ability of new and existing privately owned community water systems to comply with drinking water regulations and provide safe drinking water service to the citizens of Georgia on a continuous basis. The State is putting tremendous effort collectively with the other professional water organizations in the State to achieve success. Our partners, such as Georgia Rural Water Association, Georgia Association of Water Professionals and Georgia Environmental Facilities Authority play a significant role in helping water system owners and operators achieve compliance by either providing technical or financial assistance. One can see the result of these accomplishments by the steady decline in the compliance failure rate, especially in meeting the drinking water standards that may pose an immediate threat to public health. In an effort to demonstrate the progress that has been made since the implementation of the strategy, a period of more than the required last three years is being showcased in the report. This gives the reader a better understanding of the progress being made against earlier baseline measurements.

As one can see in the report, the very small privately owned and operated water supply systems continue to face many challenges in complying with the drinking water regulations. They do not have the resources of the larger systems and, therefore, account for the most number of compliance violations. This is mainly attributed to their inability to retain trained and certified operators, their lack of understanding of the very complex regulations, and their inability to maintain and access sufficient funds for infrastructure improvements. Although, most of the violations committed by the smaller water systems are associated with failure to comply with the monitoring and reporting requirements, nevertheless, they are still violations. However, it should be noted that the size of the population impacted by these violations is considerably small in comparison to the overall population served water by all the public water systems in the State. As this report shows, continuous efforts are being made towards the education and training of the owners and operators of these smaller water systems, as well as consolidation of these systems with larger governmentally owned public water systems. EPD's partners play a significant role in this effort.

This report will be made available to the public by posting it on the EPD's website (<http://www.gaepd.org>) and by making copies available at each EPD District Office for public viewing. We will also request our stakeholders to place the report either on their websites or provide a linkage to the EPD's website.

## **PAST AND PRESENT**

The protection of Georgia's public water supplies can be traced back to 1903 when the State Board of Health was established. One of the duties of the newly established State Board of Health included investigation and reporting on drinking water supplies and sewerage. However, it was not until 1920, when the Board created a Sanitary Engineering Division, that a fully active public water supply and water quality control program began. In the mid-1920s, a water supply laboratory was created for the analysis of drinking water. In 1964, the Georgia Health Code was rewritten and included a chapter entitled "Water Supply Quality Control Act" designating the Board of Health as the administrative agency to establish drinking water standards, regulate water supply sources and give prior approval for the construction and operation of water supply systems. For the next 13 years this Act governed the procedures for ensuring safe drinking water. The State Reorganization Act of 1972 abolished the Board of Health and the Department of Public Health and transferred the administration of the public water supply program to the Environmental Protection Division in the newly created Department of Natural Resources.

In 1977, to meet the requirements of the Federal Safe Drinking Water Act of 1974, the Georgia Safe Drinking Water Act of 1977 was enacted and a new set of rules (Rules for Safe Drinking Water, Chapter 391-3-5) was adopted, including the mandated federal drinking water standards and monitoring requirements. Included in the rules were State requirements for water supply source approval, prior approval of engineering design plans and specifications for water system construction, and obtaining a permit to operate a public water system. The Federal Safe Drinking Water Act of 1974 further provided that any State meeting all the federal requirements could make application to USEPA for supervisory and enforcement authority of the safe drinking water program. The Environmental Protection Division made the application and was delegated "primacy" supervisory and enforcement authority on August 9, 1977.

Since 1926, the number of water systems submitting water samples to the Division's Water Laboratory has grown from 178 systems to almost 2,300 systems in 2008. In 1926, the analyses of water were limited to microbiological quality and basic chemical quality for pH, alkalinity, hardness and carbon dioxide. Times have changed. Since the enactment of the Safe Drinking Water Act, the number of drinking water regulations has increased and have become more complex. Currently, National Primary Drinking Water Regulations are set for 92 contaminants. These include turbidity, 7 microbials or indicator organisms, 4 radionuclides, 11 disinfection by-products, 16 inorganic contaminants, and 53 organic contaminants. Maximum contaminant levels have been set for 83 contaminants, and 9 contaminants have treatment technique requirements. Furthermore, maximum residual disinfectant levels have been set for 3 disinfectants and secondary standards are recommended for 15 contaminants to ensure the aesthetic quality of drinking water. The number of regulated contaminants is expected to increase in the future as the new drinking water regulations are enacted by USEPA.

As the number of regulated contaminants has increased so has the number of people served by the regulated water systems in the State. In 1984, approximately 3.8 million citizens were served by surface water supply systems and about 1 million people by ground water systems. By the end of 2007, approximately 6.6 million people were served by surface water systems and 1.7 million people by ground water systems. This indicates a 74% increase in the consumptive water demand for the surface water supplies in the past 20 years and a 70% increase for the ground water supplies in the same time period.

Overall, the quality of drinking water served to the citizens of Georgia is very good. There are no known man-made contaminants present in the treated public water supplies that may affect public health. Compliance with the health related drinking water standards remains high.

## **GENERAL INFORMATION**

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 work together to ensure that systems acquire and maintain the TMF capacity needed to achieve the public health protection objectives of the SDWA.

**What is water system capacity?** Water system capacity is the ability to plan for, achieve, and maintain compliance with applicable drinking water standards. Capacity has three components: technical, managerial, and financial. Adequate capability in all three areas is necessary for a system to have "capacity."

**What is water system capacity development?** Capacity development is the process of water systems acquiring and maintaining adequate technical, managerial, and financial capabilities to enable them to consistently provide safe drinking water. The Safe Drinking Water Act's capacity development provisions provide a framework for the States and the water systems to work together to ensure that public water systems acquire and maintain the technical, managerial, and financial capacity needed to meet the Act's public health protection objectives.

**What is public water system (PWS)?** A public water system is a "system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year." Currently, there are about 2,485 PWSs in Georgia that serve approximately 8.4 million people. This category includes CWSs, NTNCWSs, and TNCWSs. Some of these PWSs are very small water systems. Approximately 75% of the PWSs in Georgia serve populations less than 500 people.

**What is a community water system (CWS)?** A community water system is a "public water system" which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents." Currently, there are about 1,765 CWSs in Georgia that serve more than 8.3 million people.

Nationally, slightly more than 86% of community water systems are "very small" (serving fewer than 500 persons) or "small" (serving fewer than 3,300 persons). Although a significant majority of CWS, these systems serve just over 10% of the year-round service population. CWS can be privately owned or publicly owned. A substantial number of privately owned systems are "ancillary systems" they provide water as an ancillary function of their principal business. An example is mobile home parks, which provide water as an adjunct to their principal business. Nationally, approximately 53% of CWS serving between 25 and 100 persons are ancillary systems.

**What is a non-transient non-community water system (NTNCWS)?** A non-transient non-community water system is "a public water system that is not a community water system" and that regularly serves at least 25 of the same persons over 6 months per year." NTNCWSs are generally commercial or institutional establishments having their own water supply, which serves 25 or more of the same people on a regular basis. Examples include schools, factories, office and industrial parks, and major shopping centers. In Georgia, there are 217 NTNCWSs that serve a total population of 64,717 people. Nationally, approximately 20,000 NTNCWSs serve some 6 million people. In Georgia, approximately 98% of NTNCWSS use ground water

as their primary source. 99% of NTNCWSs are "very small" or "small" and most are privately owned.

**What is a transient, non-community water system (TNCWS)?** A transient, non-community water system is a "non-community water system" that does not regularly serve at least 25 of the same persons over six months per year." TNCWSs are generally commercial or not-for-profit establishments having their own water supply, which serves 25 or more people per day, but not the same people on a regular basis. Examples include restaurants, roadside stops, campgrounds, and hotels. In Georgia, there are approximately 503 TNCWSs serving a total population of 78,392 people. Almost all of them are groundwater systems and most of them are privately owned and operated.

**What is technical capacity?** Technical capacity is the physical and operational ability of a water system to meet Safe Drinking Water Act requirements. Technical capacity refers to the physical infrastructure of the water system, including the adequacy of source water and the adequacy of treatment, storage, and distribution infrastructure. It also refers to the ability of system personnel to adequately operate and maintain the system and to otherwise implement requisite technical knowledge.

**What is managerial capacity?** Managerial capacity is the ability of a water system to conduct its affairs in a manner enabling the system to achieve and maintain compliance with Safe Drinking Water Act requirements. Managerial capacity refers to the system's institutional and administrative capabilities. Managerial capacity can be assessed through key issues and questions, including:

**What is financial capacity?** Financial capacity is a water system's ability to acquire and manage sufficient financial resources to allow the system to achieve and maintain compliance with Safe Drinking Water Act requirements.

**How are technical, managerial, and financial capacity related?** Many aspects of water system operations involve more than one kind of capacity. Infrastructure replacement or improvement, for example, requires technical knowledge, management planning and oversight, and financial resources. A deficiency in any one area could disrupt the entire effort.

## BACKGROUND

For the reporting period ending June 30, 2008, the State of Georgia had approximately 2,485 active PWS serving a population over 8.4 million people. Based on the latest census figures, this means 87% of the citizens get their drinking water from one of the regulated public water systems in the State. The rest obtain water from their privately owned water sources.

Specifically, there are 111 water production systems that use surface water or Groundwater Under the Direct Influence (GWUDI) of surface water as their sources of water supply. After these systems treat the water, they distribute it directly to their own customers and sell it to an additional 118 other communities for distribution. Together, these systems that depend upon surface water supplies provide drinking water to approximately 6.6 million of the State's population. The other 2,256 water systems mainly use groundwater sources (wells and springs) as their water supplies to serve approximately 1.7 million citizens.

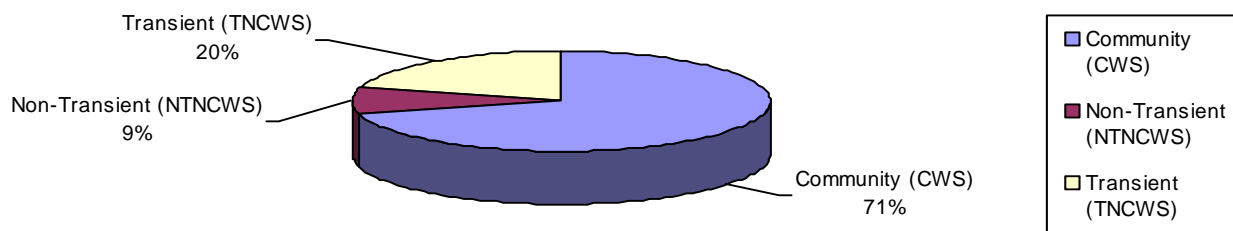
Approximately 1,765 of the total 2,485 public water systems (71%) provide water to residential customers. These systems are referred to as CWSs and serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents at least 60 days out of the year. 220 of the total number of CWSs (13%) are supplied by surface water sources and the remaining 1,545 (87%) are served by groundwater sources.

In addition, there are 217 NTNCWSs that regularly serves at least 25 of the same persons over 6 months per year. Examples of these systems are hospitals, day care centers, major shopping centers, children's homes, institutions, factories, office and industrial parks, schools, and etc.

Finally, there are 503 TNCWSs that do not regularly serve at least 25 of the same persons over six months per year, such as restaurants, highway rest areas, campgrounds, roadside stops, and hotels. With the exception of 5 NTNCWS and 3 TNCWS that use surface water supplies, all of the NTNCWSs and the TNCWSs use primarily groundwater sources for their drinking water needs. Please refer to Figure 4 for a graphical representation of the number of each type of public water system in Georgia.

While some of the public water systems are large and provide water to millions of people, majority of them are small and serve water to very small communities. 1,846 of the total 2,485 public water systems (75%) serve populations of less than 500 people. Approximately 1,630 of all public water systems (65%) are privately owned and 855 (35%) are publicly owned by local governments.

Figure 4. Breakdown of types of public water systems in Georgia.



## CAPACITY DEVELOPMENT AUTHORITY

Georgia's capacity development authority program to ensure that all new CWSs and NTNCWSs demonstrate adequate TMF capacity for compliance with the NPDWRs began on October 1, 1999. There are two major control points included in the authority program. They are: (1) technical review and approval of proposed public water systems prior to construction; and, (2) issuance of a Permit to Operate a Public Water System. An important part of the capacity development authority program is the requirement that the owner submit a multi-year "business plan", which adequately demonstrates the water system's managerial and financial capacity to comply with all drinking water regulations in effect, or likely to be in effect.

Since adoption in the 1970s, the Georgia Rules for Safe Drinking Water, Chapter 391-3-5, have required privately owned CWSs to provide a mechanism to assure the continuity of service, such as a third party trustee. In some cases, CWS owners have entered into trust agreements with the local government in which the system is located. In other cases, the owners have used non-government trustees.

Since January 1, 1998 several new rules became effective relative to the permitting of new privately owned public water systems. These include, but are not limited to, requirements for the following: development of a "business plan"; execution of a trust indenture; development of a back-up water source; connection to an existing local government owned system when feasible; and, concurrence from the nearest governmental entity for the development of the privately owned CWS in that jurisdiction. The main objective of these requirements is to assure that new CWS and NTNCWS have adequate TMF capacity to comply with all current and future drinking water regulations and provide safe, reliable service to their customers.

**CONTROL POINTS:** As stated above, EPD has two control points in ensuring that new CWSs and NTNCWSs demonstrate adequate TMF prior to commencing operation. The first control point is the requirement for any person to obtain EPD's approval before constructing a public water system [Section 391-3-5-.04 (1) of the Rules for Safe Drinking Water]. EPD's Drinking Water Permitting & Engineering Program (DWPEP) is responsible for the review and approval of proposed surface public water supply systems. This includes all required engineering documentation (such as engineering reports, plans and specifications), drinking water source quantity and quality data, business plans, local government concurrence and all pertinent data required for issuance of a permit to operate a public water system. The information that a person must submit to EPD for review and approval and for issuance of a permit to operate is discussed in the EPD's "Minimum Standards for Public Water Systems" (Minimum Standards). The requirements also include submittal of a multi-year "business plans". Upon completion of review and approval of the projects, the District Offices send the relevant documents to the Drinking Water Permitting & Engineering Program in Atlanta for the permit issuance.

Any person who desires to develop a public water system is required to first evaluate connecting to an existing governmentally owned public water system if one is available within one mile or less of the proposed system. If connection to a governmentally owned system is demonstrated to not be available or feasible, then the requirements outlined in the Minimum Standards must be satisfied. Failure to submit all of the required information for obtaining EPD's approval to construct a public water system will result in EPD stopping its review and returning the project to the owner unapproved. In order for the project to be reconsidered for approval, the owner must resubmit the project with all required supporting information.

The second control point is the requirement for any person who owns or operates a public water system or desires to commence operation of a public water system to obtain a permit from the

Director of EPD. The Drinking Water Permitting & Engineering Program will not prepare the operating permit for issuance by the Director of EPD until the owner/operator has satisfied all requirements outlined in the Rules and Minimum Standards necessary to demonstrate adequate TMF capacity. Should an applicant for a permit refuse to provide the required documentation, the Director will deny the Permit to Operate a Public Water System. The table below indicates the number of new systems and business plans submitted each year from FY 2003 to FY 2008.

	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
New Water Systems	56	24	59	64	26	50
Business Plans Submitted	107	63	99	55	53	48
Cumulative Business Plans	294	357	456	511	564	612

EPD has successfully implemented all aspects of the new systems program as demonstrated by the following ongoing efforts made by the State of Georgia to improve the technical, managerial, and financial capacity of both new and existing public water systems:

- EPD continues to require a business plan for all new community water systems and nontransient noncommunity water systems, as well as existing public water systems that change ownership. As of June 30, 2008, a total of 612 business plans have been received from both new and existing water systems.
- During the three-year period from July 1, 2005 to June 30, 2008 a total of 156 business plans were received from 140 new public water systems and 16 existing systems. All new public water systems commencing operation during this time period submitted a business plan during the permitting process in order to demonstrate adequate TMF capacity.
- During the three-year period from July 1, 2005 to June 30, 2008, the Drinking Water Permitting & Engineering Program and the EPD District Offices performed a total of 2,031 sanitary surveys and conducted a total of 1,620 on-site inspections in order to identify and address deficiencies posing potential threats to public health.
- Under Georgia's capacity development program, new and existing systems constructing or expanding surface water or GWUDI treatment plants are required to develop and submit an operations and maintenance plan (O & M Plan) prior to start-up and permitting of the facilities. As of June 30, 2008, at least 54 surface water or GWUDI systems have submitted detailed O & M Plans for EPD review and approval.
- During the three-year period from July 1, 2005 to June 30, 2008 approximately 9,000 water system projects for new and expanding public water systems were reviewed and approved under EPD's regulatory authority. EPD's engineering staff approved 2,207 of the water system projects and the rest were approved under the EPD's delegation of authority program. The projects included, but were not limited to, the design and construction of new water source facilities (intakes, wells, and purchased water connections), water treatment plants (surface water and ground water facilities), finished water storage tanks, pumping facilities, water plant sludge/waste handling and disposal facilities, and water main additions and extensions to existing water distribution systems.

Under Georgia's capacity development authority program, local governments have been delegated with the responsibility of deciding how water and wastewater services will be provided in each service area. Before any person may initiate construction of a new privately owned and operated water system, that person must receive concurrence for the project from the local government within its jurisdiction. In addition, the person must first evaluate connecting to an existing governmentally owned public water system if one is available within one mile or less. Next, plans and specifications, prepared by professional engineer licensed to practice in the State of Georgia, must be submitted to EPD for review and approval. The design and construction must conform to the minimum acceptable design criteria published in Georgia EPD's "Minimum Standards for Public Water Systems." An important part of the capacity development authority program is the requirement that the owner submit a multi-year business plan to demonstrate adequate managerial and financial capacity to comply with the existing and future National Primary Drinking Water Regulations. This document should be submitted along with the plans and specifications.

Prior to issuance of a permit, the owner of a privately owned community water system must also provide an executed "trust indenture" or other legal document to assure the continuity of operation and maintenance of the water system. All proposed public water systems must also demonstrate that a "certified operator" is available to operate and maintain the water system. The Director will issue no permit until the new water system owner/operator has satisfied all of the requirements in the Rules for Safe Drinking Water and "Minimum Standards for Public Water Systems."

The State of Georgia's legal authority to implement the new systems program has not changed within this reporting period. Furthermore, there have not been any changes, revisions or modifications to the State's control points (review and approval of proposed public water systems prior to construction and the issuance of an Permit to Operate a Public Water System). No water systems that have adequately demonstrated technical, managerial and financial capacity have been denied approval and an operating permit by EPD.

EPD's decision to place engineering positions in the District Offices has enabled the technical staff to visit and inspect the new water systems while they are under construction, prior to permitting, or soon after commencing operation in an effort minimize early violations and other compliance problems. Currently, EPD has 13 engineering positions in the Albany, Athens, Augusta, Brunswick, Cartersville, Columbus, and Savannah District Offices. These engineers continue to review plans and specifications, provide and offer technical assistance, assist in the preparation of business plans, conduct inspections, including those under construction, in an effort to help ensure smaller groundwater public water systems have adequate technical capacity. We plan to increase the number of engineers at District Offices, as the resources become available, in order to improve efficiency and effectiveness of the current capacity development program activities. This will also enable us to provided better customer service.

**SYSTEMS WITH SIGNIFICANT NON-COMPLIANCE (SNC):** In regards to capacity development, a water system with a history of Significant Non-Compliance (SNC) is defined as a community water system or a non-transient non-community water system which has been a SNC in at least three quarters during the last three years. From FY 1994 to FY 1996, the State of Georgia had 67 historical SNCs. From FY 1997 to FY 1999, the number of historical SNCs increased to 87. The increase in the number of SNCs was mainly due to complexity of the new federal monitoring requirements associated with the new drinking water regulations.

As seen in the table below, the majority of SNCs are due to monitoring and reporting violations. Very few of the SNCs are a result of Maximum Contaminant Level (MCL) violations only, which pose an immediate threat to public health. In that respect, one can easily conclude that those public water systems that are considered significant non-compliers and that may pose adverse health effects are very low in the State. Nevertheless, continued efforts are being made by EPD to reduce the SNC numbers. Additional resources will be needed in the Drinking Water Compliance Program to improve the in-house information systems capability to better track water systems with poor monitoring and reporting histories. This will help the Program provide better technical assistance by identifying the needy ones better, which would ultimately result in improved monitoring and reporting compliance rates.

During the most recent year, a total of 121 systems have been identified as SNCs. Only 9 of the SNCs were due to MCL violations and the remaining 112 SNCs were mainly due to monitoring and reporting violations.

As is the case nationally, very small public water systems accounted for a disproportionate number of the SNCs. Very small systems are those defined as serving populations of 500 people or fewer. In Georgia, there are approximately 1,900 very small public water systems that serve less than 500 people. These very small systems comprise 74% of the total inventory of public systems but accounted for approximately 88% of the SNCs (106 out of 121 SNCs) during the period from July 1, 2007 to June 30, 2008. Systems serving greater than 500 persons accounted for 13 SNCs and systems serving greater than 3,300 persons accounted for the remaining 2 SNCs.

<b>Fiscal Year</b>	<b>Number of SNCs</b>	<b>SNCs due to MCL</b>	<b>SNCs due to M/R</b>	<b>CWS and NTNCWS (500-3,300)</b>
2001	139	9	130	12
2002	63	10	53	0
2003	128	3	125	20
2004	269	4	265	27
2005	62	6	56	11
2006	57	10	47	7
2007	128	8	120	14
2008	121	9	112	13

In contrast, there are about 400 small public water systems in Georgia that serve a population between 500 to 3,300 persons. This group of systems comprises 17% of the total inventory of public systems, but accounted for only 11% of the SNCs during the reporting period of July 1, 2007 to June 30, 2008. Nine of the systems in this group were SNCs for failing to submit CCR reports, three systems were SNCs for a health based drinking water standard, and one system was SNC for monitoring and reporting violations.

There are only two systems serving populations greater than 3,300 persons categorized as SNCs during the period July 1, 2007 to June 30, 2008. These represent 2% of the total number of SNCs. One system was a SNC for failing to submit a CCR reports and the other was a SNC for a health based drinking water standard.

For the reporting period from July 1, 2007 to June 30, 2008, SNCs account for only 4.9% of the total inventory of public water systems. EPD's diligent efforts to assist public water systems in developing and maintaining technical, managerial and financial capacity is lowering the number of SNCs.

In its capacity development strategy, Georgia ha committed to utilizing compliance rates to establish a baseline and measure improvement in the technical, managerial and financial capacity of water systems. In addition to the data on SNCs, EPD has decided to track the total number of Total Coliform Rule (TCR) violations and the number of systems with these violations. TCR violations are often a result of a failure to monitor or report, collect and have

analyzed to correct number of samples, or perform the required repeat testing. These types of violations can be minimized through capacity development efforts that improve operations and management, such as education, operator training, technical assistance, and compliance and enforcement initiatives. By tracking violations of the TCR only, the compliance data will not be affected by new regulations and should be more indicative of improvements made towards helping water systems comply with the National Primary Drinking Water Regulations.

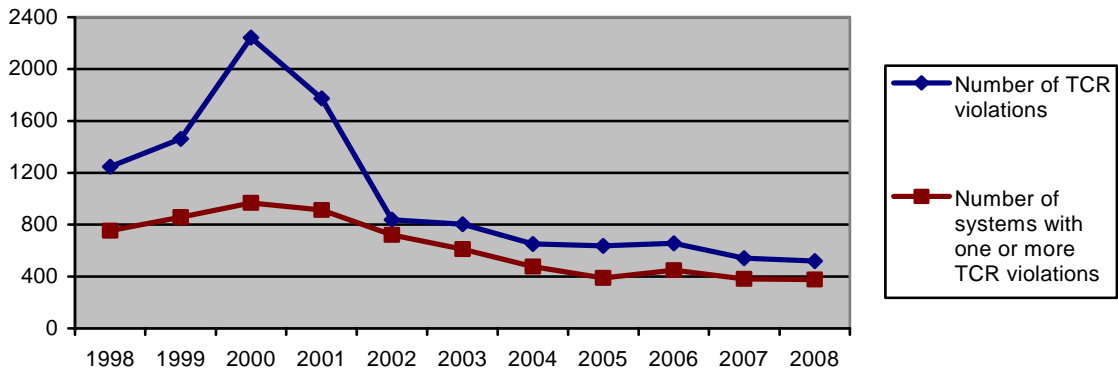
For the TCR, an MCL is exceeded if any of the following apply: more than one sample tests positive for total coliform (for systems collecting less than 40 routine samples per month); more than 5% of the samples test positive for total coliform (for systems collecting 40 or more routine samples per month); any repeat sample is positive for fecal coliform or *E. Coli*; or a routine sample which is positive for fecal coliform or *E. Coli* is followed by a positive total coliform sample. It is important to note that any system with a positive for fecal coliform or *E. Coli* must notify EPD immediately and appropriate measures are taken to protect public health, such as issuing Boil Water Advisories. The MCL violations, although very serious, are generally brief in duration and quickly resolved by EPD.

The table below displays the compliance data for the TCR and indicates that, in any given year, an average of 627 water systems incurred an average of 1,034 TCR violations during the period from FY 1998 through FY 2008. The data is shown graphically in Figure 5. An average of 103 systems (13%) had an MCL exceedance.

Fiscal Year	Number of TCR violations			Number of Systems with One or More TCR Violations		
	Total	MCL	Non-MCL	Total	MCL	Non-MCL
1998	1247	228	1019	753	160	593
1999	1461	151	1310	858	111	747
2000	2242	197	2045	968	117	851
2001	1775	155	1620	913	121	792
2002	839	135	704	722	108	514
2003	803	135	668	610	112	498
2004	651	98	553	476	80	396
2005	637	99	538	390	83	334
2006	657	129	528	448	102	371
2007	542	92	450	381	72	326
2008	520	83	437	376	68	327
<i>Average</i>	<i>1034</i>	<i>137</i>	<i>897</i>	<i>627</i>	<i>103</i>	<i>523</i>

The data show that significant achievement has been made in compliance with the Total Coliform Rule during the past four years. For the period from 2006 to 2008, the total number of systems with TCR violations has decreased from 657 to 520. Likewise, the total number of violations due to MCL exceedances has also decreased from 129 to 83 during the same time period. This decrease can be contributed to the EPD's continued emphasis in the operator certification program and other outreach efforts to raise awareness in public health protection. We believe, the better the operators are informed about the regulatory requirements and understand the importance and the benefits of operating a public water system in conformance with drinking water standards, the greater effort they will make to preserve and protect the quality of the water they supply to the public. We also recognize the reason we are not seeing more reduction in TCR violations is mainly due to systems' continued struggle to comply with the disinfection by-products rule (D/DBPR) as they continue to make adjustments to their disinfection practices.

Figure 5. Total Coliform Rule compliance data since 1998.



For the period from July 1, 2007 to June 30, 2008, the data in the above table further indicates that 376 of the total 2,485 public water systems (15%) have one or more TCR violation(s). Only 68 of these water systems (less than 3%) had a TCR violation resulting from an MCL exceedance.

**EVALUATING PROGRAM SUCCESS:** EPD will continue to evaluate program success by comparing the Safe Drinking Water Act compliance record of new public water systems with the compliance record of systems constructed before the new regulatory requirements and procedures went into effect.

## **CAPACITY DEVELOPMENT STRATEGY**

USEPA approved Georgia's capacity development strategy program on September 21, 2000. EPD has fully implemented the strategy, which provides targeted, voluntary, and mandatory assistance to public water systems in need of acquiring and maintaining adequate technical, managerial and financial capacity.

Under Georgia's capacity development strategy, all public water systems in Georgia are being offered or provided assistance to help them acquire and maintain technical, managerial, and financial capacity. The assistance includes, but is not limited to, technical engineering review of all water system projects, direct on-site technical assistance, in depth sanitary surveys and inspections, proactive compliance and enforcement initiatives, inexpensive and convenient training opportunities, low interest financing alternatives to correct system deficiencies, affordable monitoring and testing services, and other local government initiatives. EPD has fully implemented the strategy, which provides targeted, voluntary, and mandatory assistance to public water systems. Targeted assistance is directed at systems most in need of acquiring adequate technical, managerial and financial capacity. Systems are identified and prioritized based upon the knowledge gained by EPD staff through compliance records, sanitary surveys/inspections, complaints, and the potential impact of new regulations.

Targeted assistance is directed at systems most in need of acquiring adequate technical, managerial and financial capacity. Systems are identified and prioritized based upon the knowledge gained by EPD staff through compliance records, sanitary surveys/inspections, complaints, and the potential impact of new regulations. Examples of targeted assistance include, but are not limited to, on-site technical assistance, guidance and support for new rules and regulations, compliance initiatives to reduce the number of monitoring and reporting and violations, and formal enforcement actions aimed at improving the technical, managerial and financial capacity of deficient or poorly run water systems. To date, the targeted assistance has proven to be most challenging, due to the lack of a strong automated information systems capability, coordination between EPD District Offices, programs and the other organizations participating in the capacity development effort and the lack of a formal ranking scheme for the identification and prioritization of systems most in need of assistance. EPD will continue to work with the District Offices, stakeholders and other organizations to improve in this area.

Voluntary assistance is available to all public water systems in Georgia to help them to acquire and maintain technical, managerial and financial capacity. Public water systems that voluntarily choose to improve their technical, managerial and financial capacity will be able to more consistently comply with all regulatory requirements. Although the assistance is voluntary, compliance with the federal and State rules and regulations is mandatory, and failure to comply may lead to enforcement action, including penalties. Examples of this type of assistance include, but are not limited to, on-site technical assistance by the Georgia Rural Water Association (GRWA) and the Peer Review Program, compliance monitoring and testing at a reasonable cost through EPD's drinking water fee system, Consumer Confidence Report (CCR) assistance, and operator training conducted by the Georgia Rural Water Association (GRWA) and the Georgia Water & Wastewater Institute (GWWI).

Mandatory assistance is provided by EPD under the authority of the "Georgia Safe Drinking Water Act of 1977" (GA SDWA) and the Rules promulgated thereunder. This type of assistance is provided as part of the normal duties of EPD regulatory staff. The assistance is provided to existing systems on a scheduled or triggered basis or to existing systems undergoing changes that may affect the technical, managerial and financial capacity of the system. For example, EPD conducts sanitary surveys on a scheduled basis to identify and correct deficiencies that

pose a potential threat to public health or that may lead to future compliance problems. EPD also reviews plans and specifications for systems experiencing growth/expansion in order to assure technical adequacy of the additions, extension, or modifications. In addition, a new owner is required to submit a business plan to adequately demonstrate managerial and financial capacity prior to transfer of an existing operating permit.

Notices of Violations (NOVs) are beneficial enforcement and compliance mechanism used by EPD to assist public water systems in acquiring and maintaining adequate technical, managerial and financial capacity. The NOVs provide the water system personnel with official, written documentation of violations of the Safe Drinking Water Act and/or the Permit to Operate a Public Water System and offer the system an opportunity to return to compliance (in order to avoid further enforcement, including possible civil penalties).

In recent past, EPD has taken additional measures to reduce the number of monitoring and reporting violations. To improve in this area, the Drinking Water Compliance Program (DWCP) began utilizing the Safe Drinking Water Information System (SDWIS) to identify systems that fail to submit quarterly microbiological samples or annual nitrate/nitrite samples before the end of the monitoring period. Reminder notices are then sent to these water systems in advance of the possible violations in order to allow them to perform the required testing and remain in compliance. In addition, multiple violation reports, which list systems with a pattern of repetitive violations, are sent to the EPD District Offices on a regular basis to help them identify systems that may need additional attention. Finally, monitoring schedules have been made available to any water systems that request them. All these additional efforts have contributed to the reduction in the number of federal monitoring and reporting violations, and the number of systems classified as SNCs.

EPD's capacity development strategy is dynamic and will change with the priorities established by EPD. In its efforts, EPD continues to utilize a large portion of the available Drinking Water State Revolving Fund set-asides to fund activities necessary to assist public water systems in acquiring and maintaining adequate technical, managerial and financial capacities. The following sections highlight a few of the on-going activities throughout the State of Georgia.

**PLAN REVIEWS/APPROVALS & THE "MINIMUM STANDARDS FOR PUBLIC WATER SYSTEMS":**

Georgia has had a plan review requirement for public water systems since the State legislature enacted the Georgia Safe Drinking Water Act (GA SDWA). This requirement helps ensure that new and existing public water systems have the technical capacity to provide safe drinking water to their customers.

The Rules for Safe Drinking Water (Rules) promulgated under the GA SDWA established the policies, procedures, requirements, and standards to implement the GA SDWA. The Rules require that a person obtain EPD's approval before erecting, constructing, or operating a public water system or making substantial enlargements, extensions, additions, modifications, renovations or repairs. Furthermore, the Rules specify the requirements for the preparation and submission of engineering reports/plans and specifications for new or existing public water systems. A professional engineer, licensed to practice in the State of Georgia, must complete the engineering report/plans and specifications.

In January 1998, EPD's Minimum Standards for Public Water Systems" (Minimum Standards) became effective and provided the minimum acceptable design criteria for public water systems in Georgia. The Rules require that beginning January 1, 1998, all new public water systems and additions or extensions to existing systems must be designed in accordance with the latest edition of EPD's Minimum Standards.

This year, approximately 2,200 water system projects for both new and expanding public water systems are being reviewed and approved under EPD's regulatory authority, which includes the delegated authority. The approved projects included, but were not limited to, the design and construction of new water source facilities (intakes, wells, and purchased water connections), water treatment plants (surface water and ground water facilities), finished water storage tanks, pumping facilities, water plant sludge/waste handling and disposal facilities, and water main additions and extensions to existing water distribution systems. EPD environmental engineers also conducted inspections of public water systems, including those under construction, to help ensure these systems have adequate technical capacity.

**BUSINESS PLAN AND OPERATIONS & MAINTENANCE PLAN:** In May 2000, the Minimum Standards were revised to include technical guidance for the development of a business plan and Operations & Maintenance Plan (O & M Plan). EPD currently requires completion of a business plan and O & M Plan for new systems (prior to issuance of Permit to Operate a Public Water System) and for existing systems changing ownership. Systems constructing or expanding surface water treatment plants are also required to submit O & M Plans prior to start-up and permitting of the facilities. In a few instances, business plans and O& M Plans have been required as part of formal enforcement actions in an effort to improve the managerial and financial capacity of these water systems.

Subparagraph 391-3-5-.04(7)(c) of the Rules requires a new owner to submit a multi-year "Business Plan", which adequately demonstrates the water system's managerial and financial capacity to comply with all drinking water regulations in effect, or likely to be in effect. The business plan must be prepared in accordance with the latest edition of the Division's Minimum Standards. The business plan is required be updated at intervals determined by the Director.

Paragraph 391-3-5-.17(8) of the Rules also state that a permit may be transferred due to a change in ownership. The succeeding owner shall, upon the request of the Director, provide such additional information as is necessary to enable the Director to transfer the permit including, but not limited to, proof of ownership and a business plan.

As of June 30 2008, a total of 612 business plans have been received from new and existing public water systems. During the three-year period from July 1, 2005 to June 30, 2008 a total of 156 business plans were received from 140 new public water systems and 16 existing systems. A business plan may be submitted by the owner of an existing water system for three reasons: 1) the owner recently acquired ownership of the water system and was required to submit the business plan, as per Section 391-3-5-.17 of the Rules for Safe Drinking Water; 2) the owner acquired ownership of another water system and submitted a business plan covering all systems under his/her ownership; or 3) formal enforcement action required the owner to submit the business plan.

Under Georgia's capacity development strategy, new and existing systems constructing or expanding surface water or GWUDI treatment plants are required to develop and submit an O & M Plan prior to start-up and permitting of the facilities. As of June 30, 2008, a total of 54 surface water or GWUDI systems have submitted detailed O & M Plan. Two of these O & M Plans were received during the current year.

**SANITARY SURVEYS AND INSPECTIONS:** EPD regularly conducts scheduled sanitary surveys of all public water systems in Georgia. The principal purpose of the sanitary surveys is to identify and resolve problems that may pose a threat to public health. EPD also uses the sanitary surveys to identify improvements that need to be made to improve the technical, managerial and financial capacity of the water systems. The sanitary survey report provides official, written documentation to the water system officials of the improvements that need to be made to protect public health and to improve the overall capacity of the water system.

EPD also performs inspections and provides on-site technical assistance and training to water systems. On-site technical assistance is very beneficial since most violations result from a failure of the owner or operator to understand the operational treatment processes, complex monitoring regulations and perform the required testing and reporting. EPD has always attempted to target the water systems with poor track records and visit them more often than systems that do not have any compliance problems.

During the period from July 1, 2007 to June 30, 2008, the DWPEP conducted 41 sanitary surveys and 146 on-site inspections of water systems treating surface water or treating groundwater under the direct influence of surface water. In addition, EPD District Offices performed 746 sanitary surveys and 531 on-site inspections of groundwater systems during the same time period.

These on-site visits include, but are not limited to the following: water treatment plant site visits; operator training; emergency assistance; laboratory inspections; unscheduled system inspections; on-site technical assistance; special sample collection; complaint investigations; construction inspections; records review; source water inspections; locational data collection; cross-connection inspections or investigations; watershed evaluations; and public hearings.

<p><b><u>Between July 1, 2002 to June 30, 2003</u></b> Sanitary Surveys performed: 1,662 On-site Inspections conducted: 693</p> <p><b><u>Between July 1, 2003 to June 30, 2004</u></b> Sanitary Surveys performed: 472 On-site Inspections conducted: 228</p> <p><b><u>Between July 1, 2004 to June 30, 2005</u></b> Sanitary Surveys performed: 450 On-site Inspections conducted: 80</p> <p><b><u>Between July 1, 2005 to June 30, 2006</u></b> Sanitary Surveys performed: 571 On-site Inspections conducted: 444</p> <p><b><u>Between July 1, 2006 to June 30, 2007</u></b> Sanitary Surveys performed: 673 On-site Inspections conducted: 499</p> <p><b><u>Between July 1, 2007 to June 30, 2008</u></b> Sanitary Surveys performed: 787 On-site Inspections conducted: 677</p>
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The sanitary surveys address eight sanitary survey components required by USEPA including the following: water source; treatment; distribution system; finished water storage; pumps, pump facilities and controls; monitoring and reporting and data verification; system management and operation; and operator compliance with State requirements.

The sanitary survey system evaluation forms were revised January 2001 to include areas for the DWPEP staff to verify written procedures, policies, programs, and other documentation that may affect the TMF capacity of these systems. Such items include, but are not limited to, Standard Operating Procedures (SOPs), Scheduled Maintenance Plans (SMPs), O & M Plans, Emergency Plans, Safety Programs, material and construction standards, business plans, water system security plans, organizational charts, plant schematics, distribution maps, documentation of repairs and complaints, unaccounted-for-water, monitoring plans, and field log books. EPD expects the number and frequency of surveillance of the surface water systems to increase in the future. To meet the increased workload, the DWPEP brought the total number of surface water system inspectors to four at the end of 2007.

**GROUND WATER UNDER THE DIRECT INFLUENCE OF SURFACE WATER PROGRAM:** The determination of groundwater under the direct influence of surface water process is an important way to monitor drinking water quality and the impact of development on the environment. The method for making these investigations and determinations in Georgia is based on documentation of source construction characteristics, geology, topography, site-specific measurements of biological water quality and field evaluation.

Groundwater Under the Direct Influence of Surface Water is defined as any water beneath the surface of the ground with: a significant occurrence of insects or other macro organisms, algae, or large diameter pathogens such as *Giardia lamblia*; or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity or pH which closely correlate to climatological or nearby surface water conditions.

In its determination, the Division decided that the focus for proof of GWUDI would be on the first part of the definition (biological indicators) and uses the second part (physical parameters) for additional evidence or as a priority red flag. If living surface water organisms are present in the source, it is concluded that the groundwater is contaminated. A microscopic analysis that concentrated on finding living biological surface water indicators is used for this determination. Microscopic Particulate Analysis (MPA) is a technique used to examine groundwater for the presence of biological surface water indicators. The indicators include plant debris (containing chlorophyll), algae, protozoa, cyanobacteria, living diatoms, nematodes, rotifers, crustaceans, insects, insect parts, spores, pollen, and human pathogens such as *Amoeba*, *Giardia* cysts, and *Cryptosporidium*. A significant occurrence of indicators would mean that the groundwater source is under the direct influence of surface water (GWUDI).

All of the public groundwater sources that are deemed high priority are being monitored using microscopic analysis. Several factors were considered for risk assessment such as location, historical data, microbiological quality, chemical quality, physical parameters, well/spring construction, hydrogeology, geology, and aquifer type. The sources with the greatest risk are those in karst areas (where water-soluble limestone is perforated by channels, caves, sinkholes, and underground caverns), springs without filtration, and old wells with broken sanitary seals, cracked concrete pads, faulty well casings, not grouted into the unweathered rock formation. In Georgia, the northwest and portions of the southwest and south central contain areas of karst topography. Those sources found to have evidence of GWUDI, appropriate action were taken to correct the problem. The action taken may include constructing a new source and

abandoning the old one, connecting to another permitted public water system, or installing an approved treatment system.

From July 1, 2002 to June 30, 2005, a total of 327 MPAs were performed on 214 drinking water sources (154 wells and 60 springs) operated by 130 separate public water systems. Upon analysis, 30 wells and 21 springs

were declared to be ground water under the direct influence of surface waters. EPD worked with each affected water system and provided technical assistance in identifying and correcting the deficiencies that were contributing to the

GWUDI Activities	FY2003 - FY2005	FY2006
Total number of PWS tested	100	30
Total MPAs Performed	257	70
Number of Wells Tested	117	37
Number of Wells UDI	21	9
Number of Springs Tested	45	15
Number of Springs UDI	16	5

contamination of the sources. This action assured these systems to maintain technical capacity to stay in compliance with the drinking water standards. Most of the springs were impacted due to faulty containment area and the wells were impacted mainly because of bad casings. All of the effected springs were cleaned, repaired and tested before they were placed back into service. The wells were repaired, abandoned, or pumped to a surface water treatment plant for treatment.

From July 1, 2005 through June 30, 2006, a total of 70 MPAs were performed on 52 drinking water sources (37 wells and 15 springs) operated by 30 separate public water systems. Only 9 wells and 5 springs were declared to be under the direct influence of surface waters. A very small number of the wells and the springs are currently under investigation for contamination. The other identified sources have either been abandoned or repaired and placed back into service.

The GWUDI program is a very important element in Georgia's capacity development strategy by providing targeted technical assistance to those public water systems in need of acquiring and maintaining adequate technical, managerial and financial capacity. As discussed above, the assistance includes, but is not limited to, technical engineering evaluation of the targeted water systems, direct on-site technical assistance, in depth inspections, proactive compliance and enforcement initiatives, low interest financing alternatives to correct deficiencies, and affordable monitoring and testing services. EPD is fully implementing this strategy. Systems are identified and prioritized based upon sources that are considered at risk of being under the influence of surface water.

To date, the targeted assistance under the GWUDI program has proven to be successful and by minimizing or eliminating microbial risk from sources with questionable water quality.

The EPD Microbiological Laboratory began conducting the GWUDI related testing in 2008. The DWCP Source Water Assessment Program will collect samples and coordinate testing with the EPD Laboratory. EPD will continue to implement this program to ensure the safety of the drinking water supplies in the State.

**AREA WIDE OPTIMIZATION PROGRAM:** EPD continues to actively participate in USEPA's multi-state Area Wide Optimization Program (AWOP). Implementation of AWOP is an important part of EPD's Crypto Strategy. The goal of the program is to provide maximum protection against microbial contamination by optimizing the performance of existing surface water treatment plants. The program stresses the multiple barrier approach (source water, flocculation, sedimentation, filtration, and disinfection) and evaluates facilities with respect to

more stringent optimization performance goals. In AWOP, the most resource-intensive evaluation tools, such as Comprehensive Performance Evaluations (CPEs) and Performance Based Training (PBT) are focused on the systems presenting the greatest risk to public health.

A Comprehensive Performance Evaluation is a thorough review and analysis of a facility's design capabilities and associated administrative, operational and maintenance practices as they relate to achieving optimum plant performance. Currently, three (3) engineers and one (1) inspector from the Drinking Water Permitting & Engineering Program are certified to conduct regulatory Comprehensive Performance Evaluations. There are plans to enroll eight (8) additional technical personnel in the certification program. Over the last five (5) years, multi-state CPEs have been conducted in Georgia as well as other facilities located in Kentucky, Alabama, South Carolina, and North Carolina.

EPD has made significant progress in analyzing and tracking plant performance for all surface water and GWUDI plants in Georgia. This is time-consuming, but allows EPD to determine which plants meet optimized goals each year. Recently, an award program for systems meeting AWOP goals was implemented and certificates were presented to systems that met the AWOP goals for all of 2005 at the 2006 spring conferences of GAWP and GRWA. Presentations about AWOP were also made at other conferences to increase awareness and improve participation. Due to our efforts, a few more water systems have shown interest in the AWOP program.

The greatest improvement in the Georgia's AWOP program is the addition of five new engineering staff members to the DWPEP. The new engineers are excited about the opportunity to learn, work closely with other States and Region, and contribute to the future success of the program. The new staff must be trained to perform microbial CPEs and this emphasizes the need to coordinate and attend multi-State CPE events in order to receive certification from Region 4. Currently, Pete Zorbanos, Ray Hashemi, Samantha Luo, and Kirk Chase are certified to conduct regulatory CPEs in Georgia.

Georgia EPD has recently named five people to serve as Assistant Branch Chiefs for the Watershed Protection Branch. The effect of these positions on the AWOP program is unknown at this time, but little to no impact is expected. More recently, Pete Zorbanos of the Drinking Water Permitting & Engineering Program was named to replace Amy Kruse as the Georgia AWOP Coordinator and has been attending the USEPA Region 4 quarterly planning meetings.

There has always been great support for the AWOP program from upper management, supervisors, engineers, and inspectors in the Drinking Water Permitting & Engineering Program. However, an ever-increasing workload, combined with recent employee turnover, has caused a temporary setback in an otherwise very successful program. AWOP remains a top priority within the Drinking Water Permitting & Engineering Program

The DWPEP has made significant progress and achievement in the AWOP program during recent years. The percentage of the Georgia population served by permitted facilities that are being served optimized water almost doubled from approximately 702,000 to 1,290,187 people. This is very significant for the citizens of Georgia. This impact is attributable to more systems participating in AWOP and striving to meet the optimization goals. Award certificates and public praise from the Drinking Water Permitting & Engineering Program at technical conferences have provided incentives for systems to work towards meeting optimized goals and the formal ranking scheme developed has even lead to some competition among water systems in the State.

<b>AWOP Activities</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
Total # Optimized Plants	19	27	34
Population Served Optimized Water	702,104	1,290,069	1,290,187
% CWS Population Served Optimized Water	7.7%	16.8%	15.7%
# Plants Meeting Settled Goals	53	63	51
# Plants Meeting Filtered Goals	56	62	60
# Plants Meeting Settled and Filtered Goals	29	35	34

**TECHNICAL ASSISTANCE, EDUCATION, AND OUTREACH:** During the period between July 1, 2005 and June 30, 2006, the Drinking Water Permitting & Engineering Program staff conducted ten (10) one-day workshops on the new federal drinking water regulations that impact all of the water systems. The new regulations include the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and Stage 2 Disinfectants/Disinfection Byproduct Rule (Stage 2 D/DBPR) which were signed on December 15, 2005 and published in January 2006.

The LT2ESWTR training was directed to all surface water production systems (Schedules 1, 2, 3 and 4 systems) with a focus on Schedule 1 water systems (those serving 100,000 or more people). The Stage 2 DBPR training was mainly focused on those water systems classified as Schedule 1 and Schedule 2 water systems (serving greater than 50,000 people). These water systems were required to submit their Initial Distribution System Evaluation (IDSE) documents no later than October 1, 2006. The presentations also included discussions on the future drinking water regulations (GWR, TCR and DSR, UCMR2, Radon, etc.). More than 600 water operators attended to these 10 workshops.

Stage 2 DBPR Workshops (Schedule 1 and 2)

<b>Date</b>	<b>Location</b>
February 28, 2006	Gainesville Flat Creek Water Reclamation Facility
March 2, 2006	EPD Tradeport Conference Room in Atlanta
March 7, 2006	Douglasville-Douglas County WS Authority Board Room
March 8, 2006	Athens-Holiday Inn (E. Broad and Lumpkin Streets)
March 22, 2006	Cobb County Water System Laboratory Training Facility
March 28, 2006	Clayton County Water Authority Community Use Building

LT2ESWTR Workshops (Schedule 1-4)

<b>Date</b>	<b>Location</b>
April 18, 2006	Gainesville Flat Creek Water Reclamation Facility Training Room
April 19, 2006	Douglasville-Douglas County WS Authority Board Room
April 25, 2006	Athens-Holiday Inn (E. Broad and Lumpkin Streets)
May 9, 2006	City of Barnesville Civic Center

The Stage 2 DBPR training was mainly focused on those water systems classified as Schedule 1 and Schedule 2 water systems (serving greater than 50,000 people). These water systems were required to submit their Initial Distribution System Evaluation (IDSE) documents no later than October 1, 2006. The workshops covered the following topics: a general overview of the new rules; developing a sample site plan for disinfection byproduct monitoring; Stage 1 DBPR

review; Stage 2 DBPR overview; IDSE-Very Small System Waivers; IDSE-40/30 Certification; IDSE-Standard Monitoring; IDSE-System Specific studies; IDSE Standard Plan preparation; IDSE Report; SWTR Review; LT2ESWTR Overview; Crypto, E. Coli and Turbidity Source Water Monitoring Schedules; Bin Classification; Microbial Toolbox; Disinfection Profiling and Benchmarking; Source Water Monitoring under LT2ESWTR; DCTS and IPMC database modules for tracking submissions and compliance status.

For the Schedule 3 water systems that serve 10,000 to 49,999 people, nine (9) additional workshops were conducted primarily by GRWA under contract with EPD. This group of water systems was required to submit their IDSE documents to EPD no later than October 1, 2007.

Stage 2 DBPR Workshops (Schedule 3)

<b>Date</b>	<b>Location</b>
July 31, 2007	City of Barnesville Civic Center
August 1, 2007	City of Braselton Municipal Building
August 2, 2007	City of Calhoun, The Depot
August 14, 2007	City of Tifton Utility Building
August 15, 2007	City of Dawson, Hooks Hanner Center
August 22, 2007	City of Waycross, SE Georgia RDC
August 23, 2007	City of Statesboro Wastewater Treatment Plant
September 6, 2007	Athens-Holiday Inn (E. Broad and Lumpkin Streets)
September 26, 2007	City of Barnesville Civic Center

Identical workshops were conducted at twelve additional locations by GRWA for the Schedule 4 water systems that serve 10,000 to 49,999 people. This group of water systems was required to submit their IDSE documents to EPD no later than April 1, 2008.

Stage 2 DBPR Workshops (Schedule 4)

<b>Date</b>	<b>Location</b>
February 11, 2008	City of Barnesville Civic Center
February 13, 2008	City of Ellijay Municipal Building
February 14, 2008	City of Braselton Municipal Building
March 3, 2008	City of Dawson, Hooks Hanner Center
March 5, 2008	City of Helen Municipal Building
March 6, 2008	City of Calhoun, The Depot
March 10, 2008	City of Barnesville Civic Center
March 11, 2008	City of Waycross, SE Georgia RDC
March 12, 2008	City of Savannah
March 13, 2008	City of Braselton Municipal Building
March 25, 2008	City of Tifton Utility Building
March 26, 2008	Athens-Holiday Inn (E. Broad and Lumpkin Streets)

In addition to the above scheduled seminars, similar presentations are being made at Spring and Annual Conferences held by GRWA and GAWP. Written training material, forms, and

instructions were distributed to all attendees to assist in compliance with these new regulations. Similar handout material are also made available at the EPD website.

**GEORGIA RURAL WATER ASSOCIATION (GRWA):** An EPD contract (DWSRF 15% set-aside) with the Georgia Rural Water Association enabled GRWA to develop and conduct workshops to assist public water systems understand and comply with the LT1ESWTR and Stage 1 DBPR, LT2ESWTR and Stage 2 DBPR, Sanitary Survey Requirements, and Monthly Electronic Operating Reports. Between July 1, 2007 and June 30, 2008, GRWA conducted a total of 21 workshops throughout the State of Georgia training approximately 592 operators and water system personnel. In addition, GRWA provided on-site technical assistance to 39 water systems to help them comply with the LT1ESWTR and Stage 1 DBPR. The workshops and technical assistance have been critical in helping water system owners and/or operators comply with the new State and Federal drinking water regulations. In addition to the above, under the same contract, the GRWA also provided technical assistance solely to 43 groundwater system operators to help them address challenges related to operation of small groundwater systems.

Between July 1, 2007 and June 30, 2008, as part of the technical assistance, education and outreach efforts, the Georgia Rural Water Association offered two (2) educational conferences at Helen (October 28-30, 2008) and Jekyll Island (May 18-20, 2008). Over 2,400 water and wastewater treatment plant operators, maintenance personnel, and laboratory analysts have attended to these events. These events encourage knowledge transfer and greatly benefit the public water system owners and operators in improving their technical, financial and managerial capacities to comply with the current and the future drinking water regulatory requirements by staying current.

**TECHNICAL ASSISTANCE:** As an important part of this joint effort is for GRWA to provide on-site technical assistance to affected water systems to assist them as they comply with the requirements of Stage 1 DBPR, LT1ESWTR, IDSE, LT2ESWTR and other State and Federal requirements. Technical assistance is available for any affected water system. During this reporting period, GRWA conducted more than 82 on-site field visits to provide technical assistance to Georgia's surface, ground and purchased water systems.

**TRAINING:** Between July 1, 2007 and June 30, 2008, GRWA provided 70 one-day classroom training sessions to a total of 1,135 water system operators and personnel on the following topics: Class IV Operator Training; Basic Water Training; Advanced Water Training; Backflow Training; Water Distribution Training; Water Lab Training; Water Exam Review Training; Fluoride Training; Management Training; and Basic Mathematics.

**RESULTS:** The training and technical assistance provided to date have been successful in helping water systems comply with the LT1ESWTR and Stage 1 DBPR, including:

- Many water systems have lowered their DBP levels by implementing recommendations discussed during the training and technical assistance visits. The recommendations include: ceasing/reducing pre-chlorination; increasing/improving distribution flushing; better management of finished water storage; and better management of raw water sources and reservoirs.
- A number of systems made changes to their water treatment and plant operation in order to better comply with DBP precursor removal requirements.
- Many systems were provided on-site technical assistance to assist with important monitoring and reporting requirements, including the new web-based MOR, DBP

quarterly reports, TOC removal reports, daily *Giardia* log inactivations, and disinfection profiling and benchmarking requirements.

- A few systems significantly improved other important types of treatment, such as iron and manganese removal.

FUTURE: Through our continued partnership with GRWA, we look forward to continue our assistance to water systems in 2007 and beyond with LT1ESWTR and Stage 1 DBPR issues and the challenges posed by early implementation of the LT2ESWTR and Stage 2 DBPR.

**GEORGIA ASSOCIATION OF WATER PROFESSIONALS (GAWP) AND GEORGIA WATER AND WASTEWATER INSTITUTE (GWWI):**

The Georgia Water and Wastewater Institute (GWWI) goes beyond typical classroom type training in efforts to reach the needs of the operators in the State of Georgia. In doing so, GWWI participates in many events coordinated by its parent organization, the Georgia Association of Water Professionals (GAWP). GAWP conducts numerous conferences and workshops focused on providing continuing education opportunities for professionals in the water and wastewater industry. At these events, GWWI participates in the presentation of technical papers and “short” training sessions throughout the conference and/or event. GWWI also participates in the exhibiting functions of these events by having a display booth explaining and advertising the training opportunities offered by GWWI. GAWP also conducts planning sessions for small, medium, and large utility directors as well as Association-wide District Director Meetings in efforts to better address the needs of the profession around the State. At these planning type meetings, GWWI attends, not only to make utility directors statewide aware of the training programs and offerings, but also to serve as a resource to the utilities as they plan for the future. This has proven to be a very effective tool for both the utility as well as GWWI in making sure the operators receive the types of training that are needed and required. GWWI annually offers approximately 105 courses with a total attendance of over 1,100 students and is dedicated to education and dissemination of technical and scientific information.



During the reporting period of July 1, 2007 – June 30, 2008, the following activities took place:

**DWSRF 15% Set-aside Funds: Class 4 Water Operator Training**

Relating to the Class IV Water Operator Training Program, GWWI completed the following during the 2007 fiscal period of July 1, 2007 - June 30, 2008:

- Conducted 3 Class IV Water Training Courses
- Successfully trained 8 operators

While attending these courses, the operators were informed on Georgia’s groundwater sources, including types of aquifers and wells, groundwater protection, water treatment, and proper operation of a small water plant under state and federal guidelines. Major topics include

Groundwater Resources in Georgia, The Safe Drinking Water Act, Monitoring Requirements, and Basic Mathematics.

#### DWSRF 10% Set-aside Funds: Water and Wastewater and Laboratory Analysts Training

Relating to the Water, Wastewater and Laboratory Analysts Training, GWWI completed the following during the 2007 fiscal period of July 1, 2007 - June 30, 2008:

- Conducted 102 courses related to water, wastewater and/or laboratory operations.
- Successfully trained 1,111 operators

#### Technical Assistance, Education and Outreach

During the period from July 1, 2007 through June 30, 2008:

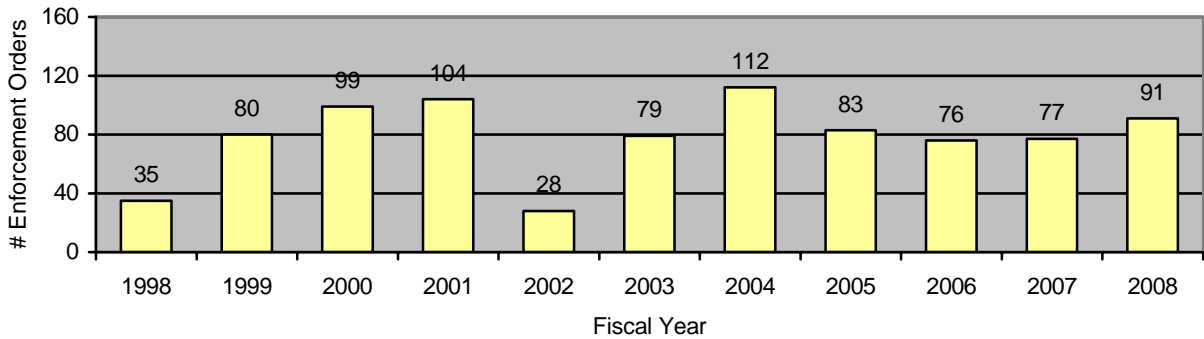
- GWWI participated in the Annual Conference & Expo, Fall Conference & Expo, Reuse Workshop, Industrial Conference & Expo, Small/Medium Systems Managers Forum, and Spring Conference & Expo.
- These activities reached a total of 2,692 water and wastewater treatment plant operators, maintenance personnel, laboratory analysts, design engineers, consultants, and other professionals concerned about Georgia water issues.
- Training topics included sessions on traditional topics such as water and wastewater treatment plant operations, maintenance and design, rules and regulations, laboratory operations, security and safety, as well as timely discussions on policy issues such as drought contingency planning, wastewater re-use, and legislative policy.

**COMPLIANCE AND ENFORCEMENT MECHANISMS:** EPD continues to utilize informal and formal enforcement actions, such as written Notices of Violations (NOVs), Consent Orders, and Administrative Orders to obtain compliance with the federal and State drinking water regulations. Enforcement is an important tool to deal with public water systems that lack adequate capacity. EPD's stringent enforcement program has been a significant factor in encouraging private public water systems with limited capacity to physically merge or consolidate with local governmentally owned water systems or water authorities.

The continued use of negotiated settlements in the form of Consent Orders seems to be the most effective enforcement mechanism, rather than mandatory fines or civil penalties. Consent Orders allow EPD the flexibility to set appropriate penalties based upon the level of deficiencies and the negotiated plan to correct the violations in a timely manner. Please refer to Figure 6 below for a graphical representation of the number of enforcement orders issued for violations of the SDWA and/or the Permit to Operate a Public Water System during the past decade.

During the period from July 1, 2007 to June 30, 2008, a total of 91 enforcement orders were issued relating to SDWA or permit violations. Since 1998, a total of 864 enforcement orders have been issued to correct violations of State and Federal drinking water standards.

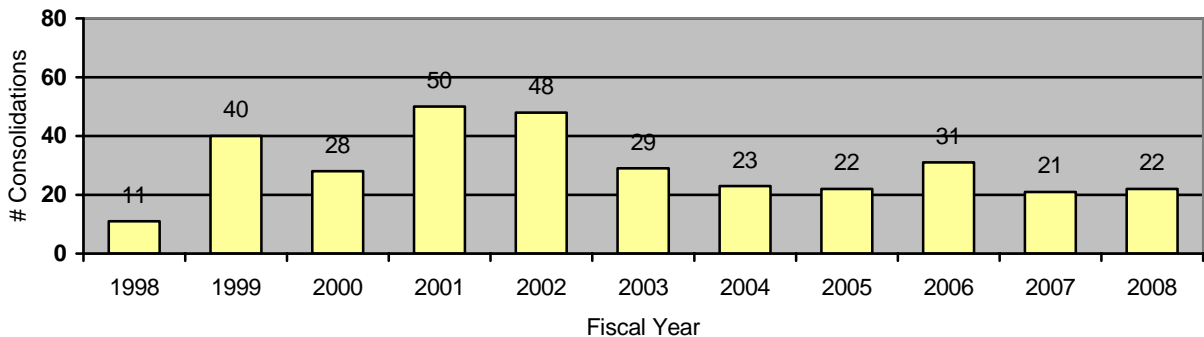
Figure 6. Enforcement orders for public water systems since 1998.



**WATER SYSTEM CONSOLIDATIONS:** Whenever possible, EPD encourages consolidation of a water system with a nearby local governmentally owned water system or water authority. If formal enforcement action is being taken on a private water system, EPD may offer lower penalties if the water system agrees to connect to a local governmentally owned water system or water authority within a reasonable period of time. These water systems have the best track records for compliance and customer service, are generally larger systems, and have the TMF resources to provide safe, reliable drinking water on a consistent basis.

As of June 30, 2008, a total of 325 privately owned and operated public water systems have consolidated with a nearby governmentally owned public water system or water authorities. Figure 7 displays the number of consolidations in Georgia each year since 1998 and indicates that in any one year approximately 29 water systems are successfully consolidated with a local governmentally owned public water system or water authority.

Figure 7. Consolidations with governmentally owned water systems or water authorities.



EPD expects the number of consolidations to increase in the future as a result of increased financial and managerial burdens associated with complying with the recently enacted regulations, specifically the Stage 1 Disinfection By-products Rule, Stage 2 Disinfection By-products Rule, Long-Term 2 Enhanced Surface Water Treatment Rule, and the recently enacted Ground Water Rule.

**DRINKING WATER FEE SYSTEM:** The drinking water fee system, established by EPD, makes compliance monitoring available to all public water systems at a very reasonable cost. Under an optional "Drinking Water Service Contract", EPD provides a water system with laboratory and related services that are consistent with the owner's need to comply with the National

Primary Drinking Water Regulations and related regulations. EPD specifically agrees to provide the required laboratory analyses, sampling containers and instructions (as monitoring is required), written reports on the results of the analysis of each sample, technical assistance regarding corrosion control treatment, and limited vulnerability assessments. The drinking water service fee is based on the total population served by the water system, the population type (community or non-community), the type of source water, and the number of entry points.

The voluntary "Drinking Water Laboratory Service Fee" program has been an invaluable and an economical alternative in providing laboratory services to the public water system owners and operators in Georgia. Its success can be measured with the high percent of the water systems participating in the program as well as the amount of savings realized by the water systems since its inception in 1992.

During this reporting period ending June 30, 2008, approximately 2,300 out of 2,485 public water systems were contracted with EPD for the laboratory services. This indicates that 93% of all public water systems are benefiting from the services provided by drinking water fee system at an average estimated annual savings of \$17.4 million to the water system owners and operators. More recent statistics were unavailable during writing of this report as the three-year contracts are currently being renewed and/or offered to all public water systems in the State.

After the 1986 amendments to the federal Safe Drinking Water Act, the EPD found it necessary to implement a voluntary contract fee system to expand its existing laboratory services to cover new and increase monitoring for Lead and Copper, Phase II and Phase V contaminants (synthetic organic chemicals, Inorganic chemicals, volatile organic chemicals, PCBs, etc). The Department of Natural Resources Board approved the voluntary Drinking Water Contract Fee System (DWCFS) in April 1992. In addition to the monitoring, the fee system also covers related services such as information management, compliance reporting, vulnerability assessment (asbestos, dioxin, cyanide), waiver program (monitoring reduction), training, technical assistance, corrosion control, on-site investigation, public education and information, enforcement, etc. With the implementation of the fee system, the Division maintained primacy for drinking water regulations while providing a valuable service to the public water systems. Without the drinking water fee system, many small public water systems would have difficulty complying with the NPDWR monitoring requirements due to the cost of testing and the complexity of the monitoring schedules.

The EPD will continue to provide this very cost effective laboratory service in order to help public water systems acquire and maintain financial and technical capacity to comply not with only the current drinking water regulations but also with the future regulations. Currently, all regulated chemical, physical, radiological and microbial tests are being performed under the fee system, including the TTHMs and HAA5s tests required for IDSE under the Stage 2 DBPR and source water monitoring for *Cryptosporidium* and *E. Coli* tests required under the LT2ESWTR.

**OPERATOR TRAINING:** Both GRWA and GWWI provide the majority of water and wastewater operator training in the State of Georgia, operating with financial assistance provided through contracts with EPD and modest tuition fees. These professional organizations conduct many meetings, seminars, workshops and conferences throughout the year. Operators regularly attend to these training sessions not only to obtain the necessary continuing education credits to renew their licenses, but to be informed about the latest technical developments in the water industry.

During the three-year period from July 1, 2005 to June 30, 2008, GRWA has conducted the following specific non-contracted training:

Year	Classes	Number Operators	Class Topics
2006	81	1,458	Class IV Operator; Basic and Advanced Water; Backflow Prevention; Distribution; Laboratory Analyst; Water Exam Review; Fluoride; System Management; and Basic Mathematics
2007	67	1,347	
2008	70	1,135	

**DWSRF 15% set-aside funds:** Through the use of DWSRF 15% set-aside funds, Georgia contracted separately with GWWI and GRWA to develop curriculum and training materials to prepare local water system personnel to successfully pass operator certification exams and comply with new drinking water regulations. GWWI and GRWA each conducted a number of classes and provide each attendee with course material. During the period from July 1, 2005 to June 30, 2008, the GWWI and GRWA collectively conducted 43 classes and trained approximately 1,267 operators. The table below shows the number of classes offered and the number of operators attending these training events that were provided by both the GRWA and GWWI under the 15% DWSRF set-aside funds.

Year	Classes	Number Operators
2006	14	509
2007	5	58
2008	24	700

**DWSRF 10% set-aside funds:** Through the use of DWSRF 10% set-aside funds, Georgia has also contracted with GWWI to provide training to all water and wastewater operators and laboratory analysts in a permanent facility dedicated for that purpose. The facility had to be capable of supporting a 12-month training program for approximately 2,000 students and/or 110 courses. Under the contract, funds were made available for renovation and modification of the existing training facilities in an effort to improve upon GWWI's training program.

The specific types of operator training courses offered by the GWWI are as follows: Georgia's groundwater sources, including types of aquifers and wells; groundwater protection; water treatment; and, proper operation of a small water plant under state and federal guidelines. Major topics include Groundwater Resources in Georgia, The Safe Drinking Water Act, Monitoring Requirements, and Basic Mathematics.

The table below shows the number of classes offered and the number of operators attended to these trainings that was provided by the GWWI under the 10% DWSRF set-aside funds.

Year	Classes	Number Operators	Class Topics
2008	102	1,111	Basic and Advanced Water; Backflow Prevention and Cross Connection Control; Laboratory Operations; Supervision and Management; Safety; and Maintenance

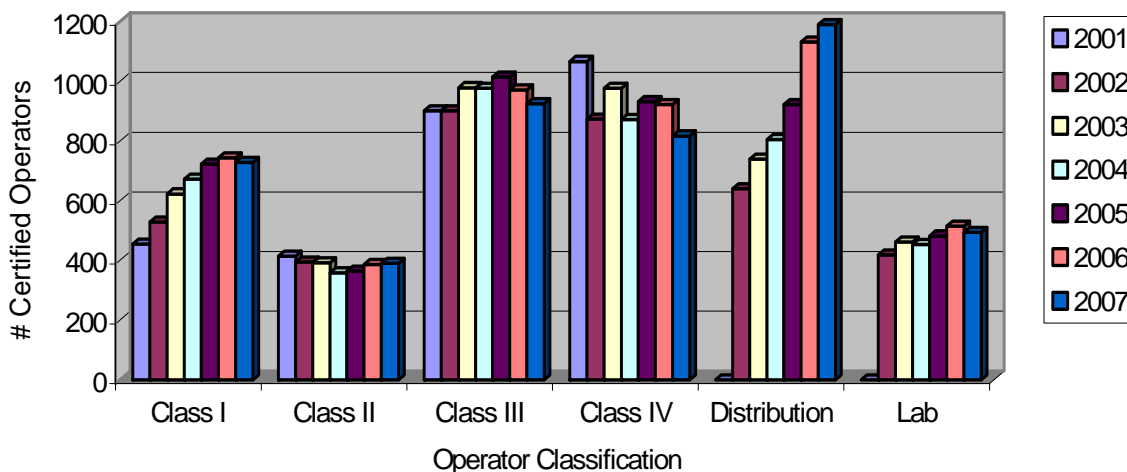
**Funds received from the State Legislature and other sources:** Georgia Rural Water Association (GRWA) has received additional funding from the State legislature and other sources to help support their entire statewide water and wastewater programs. The funding is used to help offset the costs associated with the day-to-day operations of delivering training and technical assistance to water and wastewater system operators, managers and other personnel located throughout Georgia.

**OPERATOR CERTIFICATION PROGRAM:** The State of Georgia obtained USEPA approval for its operator certification program on May 1, 2001, in conformance with Section 1419 of the SDWA, as amended. As part of this approval requirement, an annual report must be prepared in accordance with requirements of the “Final Additions to the Final Guidelines for the Certification and Recertification of the Operators of Community and Non-transient Non-community Public Water Systems” (published in the Federal Register on April 18, 2001) and submitted to USEPA to adequately demonstrate that the State of Georgia is implementing its operator certification program. In addition, Section 1419(b) of the Federal Safe Drinking Water Act (SDWA) requires EPA to withhold 20 percent of the funds that a State is otherwise entitled to receive under the SDWA Section 1452 unless a State has adopted and is implementing a program that meets the requirements of EPA’s operator certification guidelines.

Georgia’s operator certification program was revised to include an exam for Class IV Water Operators in accordance with the federal guidelines. The exam requirement for prospective Class IV Water Operators helps ensure that these licensed operators will have the required knowledge and ability to successfully operate and maintain groundwater systems serving populations of 25 to 999 people. The exams for all operator classification levels are developed and validated by the Association of Boards of Certification (ABC). In its capacity development strategy program, EPD has utilized many resources and placed a very high priority on operator training and certification. EPD realizes that experienced, certified operators have the knowledge and dedication needed to properly operate and maintain a PWS.

The graphical representation shown in Figure displays the number of certified operators by classification level for the period 2001 - 2007. The data is also used to establish a baseline for EPD to measure progress in operator training and certification.

Figure 8. Number of certified operators for 2001 – 2007.



EPD has also tracked the number of operators taking the various exams for each water system operator classification level and the corresponding passing percentages as part of the Capacity Development Strategy adopted to insure PWS have adequate technical, financial and managerial resources to comply with drinking water regulations (the Capacity Development Report to the Governor is currently available on the EPD Website). The information indicates how many new operators are attempting to obtain an initial Class IV, Class III, distribution, or laboratory analyst license and also indicates how many operators are attempting to increase

their level of certification. Table 1 contains operator examination data for the reporting period 2003 thru 2007 that was obtained from the State Board of Examiners for Water and Wastewater Operators and Laboratory Analysts. The data indicates that a substantial number of individuals are receiving operator training (a prerequisite for the certification exams) and are attempting to become licensed water system operators or laboratory analysts. In the future, EPD will continue to look for ways to help improve the passing rates for the various certification exams.

Table 1: Operator Exam Data 2003 – 2007.

Operator Class	2003		2004		2005		2006		2007	
	Number of Applicants	Passing (%)	Number of Applicants	Passing (%)	Number of Applicants	Passing (%)	Number of Applicants	Passing (%)	Number of Applicants	Passing (%)
Class I	141	53	161	32	144	15	135	26	138	7
Class II	130	65	156	40	188	33	139	38	132	36
Class III	307	63	272	42	272	34	336	29	377	31
Class IV	154	68	151	58	139	72	153	70	136	76
Distribution	285	39	308	50	271	49	373	49	343	53
Laboratory Analyst	60	73	50	76	60	67	46	72	45	67

**Georgia's Operator Certification Program:** The “Georgia State Board of Examiners for the Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts” was created by legislation enacted in 1969 for the purpose of protecting the public health, safety, and welfare by establishing minimum qualifications for persons who operate public water supply treatment plants, water distribution systems, wastewater treatment plants, wastewater collection systems, or who conduct certain tests of water or wastewater samples in conjunction with the operation of public water system or wastewater treatment plants.

The Certification Board is part of the Professional Licensing Boards Division of the Office of the Secretary of State and is comprised of six members appointed by the governor. Five are active in the profession and one is a member from the public at large. At least 2 of the 6 Board members must be operators. All members are appointed for terms of four years. The Board meets six times per year. During 2007, the Board met on January 25, March 15, May 22, July 26, August 16, and September 20.

The Board certifies six categories of licenses for public water system operators and laboratory analysts. Currently, there are 4,546 licensees who hold current certificates. Requirements for all categories include education, training, experience, and passage of a validated certification examination (ABC). Table 2 lists the number of water system operator licenses by certification or classification level for 2001 thru 2007.

Table 2: Number of Various Water Operator Licenses for 2001 – 2007.

License Type	Year						
	2001	2002	2003	2004	2005	2006	2007
Class I	455	529	623	672	723	744	729
Class II	414	395	392	359	364	386	391
Class III	901	902	979	977	1015	971	925
Class IV	1067	874	977	872	932	922	817
Distribution	x	640	739	805	923	1132	1190
Lab	x	419	462	454	482	515	494
Total	2837	3759	4172	4139	4439	4670	4546

x = Not Available

**Authorization:** During this reporting period, the State of Georgia adopted no regulatory changes to the operator certification regulations.

**Classification of Systems, Facilities and Operators:** EPD classifies public water systems (PWSs) in accordance with Section 10 of the Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act. Systems are classified on the basis of plant size or population served, type of source water, and treatment complexity in accordance with Section 391-3-5-.39 of the Georgia Rules for Safe Drinking Water (see **Attachment “A”**). The system classification determines the level of certification the operator in responsible charge (ORC) of the system must possess. During this reporting period there have been no changes made regarding public water system classification for Community and Nontransient Noncommunity systems.

As of January 2008, the State of Georgia had a total of 2,472 active PWSs. Of these systems, there were 1,757 community water systems (CWSs), 217 non-transient non-community water systems (NTNCWSs), and 498 transient non-community water systems (TNCWSs).

Of the 1,757 CWSs, 104 systems obtain their water from a surface water source, 108 systems purchase treated surface water for distribution, and 1,545 systems obtain their water from groundwater, purchased groundwater, or groundwater under the direct influence of surface water. Further analysis of the CWSs and NTNCWS in Georgia indicates that in addition to the 104 systems that treat surface water sources and 108 systems that purchase treated surface water for distribution, there are 6 systems that treat ground water under the direct influence of surface water (GWUDI) sources, 6 system purchases treated ground water for distribution, and 1,533 systems treat ground water. Table 3 (for CWSs) and Table 4 (for NTNCWSs) show the required minimum operator certification or classification levels for different sources of public water supply. Table 5 displays the combined totals of each certification or classification level for all CWSs and NTNCWSs in Georgia.

Table 3: Community Water System Classification Levels by Source Type.

Source Type	CWS Classification Level					Total
	Class 1	Class 2	Class 3	Class 4	Distribution	
Surface Water	68	36	0	0	0	104
Purchased Surface Water	0	0	0	0	109	108
GWUDI	1	5	0	0	0	6
Groundwater	2	27	199	1305	0	1,533
Purchased Groundwater	0	0	0	0	6	6

Table 4: Non-Transient Non-Community Water System Classification Levels by Source Type.

Source Type	NTNCWS Classification Level					Total
	Class 1	Class 2	Class 3	Class 4	Distribution	
Surface Water	1	1	0	0	0	2
Purchased Surface Water	0	0	0	0	4	4
Groundwater	0	0	11	200	0	211

Table 5: Minimum Classification Levels for Community and Non-Transient Non-Community Water Systems.

Classification Level	Number of Systems	% of Total
Class 1	72	4
Class 2	69	3
Class 3	210	11
Class 4	1505	76
Distribution	118	6

Although it is not a requirement of the Federal Safe Drinking Water Act, Georgia also classifies and requires certified operators for all TNCWS. As of January 2008, there was a total of 498 TNCWSs in Georgia. Three systems purchase treated surface water and are classified as distribution systems; and, 495 systems obtain their raw water from ground water and are classified as Class 4 systems.

**Operator Qualifications:** The State of Georgia did not use the grand-parenting option in its operator certification program; therefore, this section does not apply.

**Enforcement:** EPD is the primary agency in Georgia for enforcing compliance with Georgia's Operator Certification Program. When EPD determines a PWS has violated Georgia's operator certification requirements, EPD takes whatever action is deemed necessary to ensure the PWS obtains or returns to compliance. In most cases, this starts as a written notice of violation to the system owner with a time schedule to return to compliance. Failure to comply with the established compliance schedule or repeating the same offense will result in the use of formal enforcement to obtain compliance with the operator certification requirements.

During 2007, 5 out of a total of 568 site visits (0.9%) documented in SDWIS-State Version 8.0 listed the lack of a certified operator (OC1) as a significant deficiency. One site visit included a deficiency for the operator having an inadequate or improper level of certification (OC2). In this instance, written documentation was provided to the owner requiring corrective action to address the violation.

During the same period, EPD records of formal enforcement indicate that 5 out of a total of 91 formal consent or administrative orders (approximately 6%) were issued to water systems without a certified operator or ORC. Table 6 contains a list of these systems and the action that was taken by the Division. The other 86 enforcement orders were issued for various other State and federal violations, such as monitoring and reporting and violations (VOC, SOC, IOC, nitrate, coliform, lead and copper, radionuclide, and etc.), acute and non-acute MCL violations, CCR violations, pressure and flow problems, permit violations, and failure to comply with other State requirements. These were not specific violations of the operator certification program.

Table 6: Consent Orders Issued To Systems Without Certified Operators During 2007.

WSID#	Water System Name	Type of Order	Action Taken
GA0810006	Ricconnuck Knoll S/D	EPD-WS-2513 (C)	System given 30 days to obtain a Certified Operator. Fined \$500
GA1330075	Durhamtown Plantation	EPD-WS-2517 (C)	System given 30 days to obtain a Certified Operator. Fined \$600
GA0810006	Ricconnuck Knoll S/D	EPD-WS-2569 (C)	System given 15 days to obtain a Certified Operator. Fined \$2,250
GA1990005	City of Woodbury	EPD-WS-2580 (C)	System shall have certified operator on duty at all times. Fined \$400
GA1110050	Forge Mills Corners	EPD-WS-2586 (C)	System given 30 days to obtain a Certified Operator. Fined \$500

The Operator Certification Board and the Professional Licensing Boards Division of the Office of the Secretary of State handle specific enforcement actions against certified operators. During 2007, the Board investigated several operators for falsification issues and other violations of the Rules. Two cases were referred to the Attorney General's Office to pursue revocation and/or suspension of the licenses issued to an individual due to providing false information on the certificate application.

**Certification Renewal and Training:** During this reporting period, EPD contracted with the Georgia Water & Wastewater Institute (GWWI) and the Georgia Rural Water Association (GRWA) to provide training on security and vulnerability, backflow prevention, as well as the new Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and Stage 2 Disinfectants/Disinfection Byproduct Rule (Stage 2 D/DBPR). Although not directly related to operator certification, these training opportunities were very valuable and helped many water system personnel complete their vulnerability assessments, implement backflow prevention programs, and comply with critical deadlines and requirements for LT2ESWTR and Stage 2 D/DBPR.

Training for all classes of water system operators and laboratory analysts continues to be provided by GRWA (at locations throughout the State) and GWWI (at a permanent facility). During the 2002 thru 2007 reporting period, over 18,240 water system personnel attended approximately 1,197 training classes. The training covered all classification levels and all areas of water system operation and maintenance.

The GRWA and the Georgia Association of Water Professionals (GAWP) (formerly named the Georgia Water Pollution & Control Association) also conduct many meetings, seminars, workshops and conferences throughout the year. Operators regularly attend to obtain the necessary continuing education credits required for certification renewal. Operators can also

obtain continuing education credits by other means such as attending AWWA, NRWA and other national conferences or completing online training. Training for continuing education credits must be acceptable to the Certification Board and applicable to the field in which the certification is issued. During the reporting period between 2002 and 2007, over 21,490 water system personnel attended approximately 33 water related conferences to obtain continuing education credits required for the certification renewals.

A summary of training related activities for the reporting period is provided in Table 7. Certification training classes are those which prepare the operator to take the certification licensing exam – class 1, 2, 3, 4, Distribution, or Lab Analyst. The one-day trainings are special classes related to new regulations, or other special topics. Conferences include GRWA Spring and Fall Conferences and the GAWP Spring, Annual and Fall Conferences.

Table 7: Training Summary for Reporting Period.

	Number of Training Events	Number of Participants
Conferences	5	5300
Certification Training Classes	40	827
One Day Training Classes	38	931
Manager/Elected Official Classes	1	27
<i>Total</i>	<i>84</i>	<i>7085</i>

**OPERATOR CERTIFICATION EXPENSE REIMBURSEMENT GRANT:** The State of Georgia Environmental Protection Division (EPD) submitted an application to the US EPA Region IV for grant funds reserved under Section 1419(d) of the Federal Safe Drinking Water Act (SDWA) for small system operator training and certification reimbursement Program. Georgia’s initial allotment under EPA’s proposed Program was \$2,015,584 with a potential total allotment of \$3,613,200. Under the original application, Georgia applied for and received notice of grant award May 6, 2003 in the amount of \$1,694,754 to be used to reimburse and/or otherwise defray the cost of training, certification and re-certification for operators of community or non-transient non-community water systems serving 3,300 persons or fewer. Georgia applied for and received notice of amendment grant award September 7, 2004 in the amount of \$1,758,144. Amendment #2 in the amount of \$160,300 was applied for and awarded on September 19, 2005. Georgia’s total award amount is currently \$3,613,198. EPA previously approved Georgia’s Operator Certification Program on May 1, 2001.

Since receiving the initial grant award, Program implementation for the State of Georgia was delayed due to State budget issues that temporarily delayed the filling of the Grants Assistant position for this project. This position was filled on March 1, 2005. As such, reimbursements were begun with a start date of July 1, 2004 for those expenses for which qualified operators/systems were able to produce appropriate receipts and/or backing documentation.

As stated in the 2006 Annual Report, the Program work plan adheres to the following parameters:

1. All reimbursement requests are submitted directly to EPD upon completion of approved training, certification and re-certification requirements in accordance with Georgia’s approved operator certification Program. No contracts will be issued with training, testing or certification providers.

2. Reimbursements are made to operators/systems for mileage and per diem for training and re-certification training as provided for under the federal notice.
3. As implementation was delayed for a year, the Program has been extended to cover one full certification renewal cycle (all certifications must be renewed by June 30 of odd number years). Therefore, the Program will reach its' close on an odd numbered year, covering the period July 1, 2004 – June 30, 2011.

Georgia's current work plan will continue to move forward in Program implementation as stated. Continued efforts will be made to:

- a) Define and redefine Program as needed to meet the goals of the Program
- b) Promote continued team effort with Georgia's training agencies
- c) Develop various means of Advertising/Promotion for Program
- d) Address pertinent Reimbursement issues

The Georgia Program has been in operation for three years. Notification of Program implementation has been distributed via mass mailing to qualified systems and operators, via the GA EPD website, and via Georgia Rural Water Association and Georgia Association of Water Professionals conferences. Responses to the Program and requests for expense reimbursement are being received slowly but fairly steadily, generally peaking right after training class/conference attendance.

Upcoming plans for increasing Program awareness include operating a booth at the Georgia Rural Water Association Annual Conference to be held May 17-20, 2008, and at the Georgia Association of Water Professional's 2008 Annual Conference and Expo to be held July 2008.

**2007 Year to Date Program Summary for Operator Expense Reimbursement Grant.**

Initial Grant Allotment	\$2,015,584.00
Total Grant Allotment	\$3,613,240.00
Initial Grant Awarded	\$1,694,754.00
Amendment #1	\$1,758,144.00
Amendment #2	<u>\$ 160,300.00</u>
Total Awarded as of 4/30/08	\$3,613,198.00

Georgia's ERG Program is slated to cover operator expense reimbursements beginning July 1, 2004 through June 30, 2011. As of January 31, 2008, approximately \$3,281,940.00 remains for continued implementation of Georgia's ERG Program, \$50,426.33 being expended as reimbursement to eligible operators and systems according to Program guidelines with a current total of 173 reimbursements made.

**Compliance Tracking:** EPD determines actual compliance with operator certification requirements during sanitary surveys and field. Tracking ORC compliance is accomplished by using the Site Visit Maintenance module to record all significant deficiencies identified during a sanitary survey in the Deficiency Maintenance List, including the lack of a certified operator (OC1) and/or an improper level of certification (OC2).

The Drinking Water Permitting & Engineering Program (DWPEP) in Atlanta is responsible for performing sanitary surveys and inspections of all PWSs that treat surface water (108 PWSs) or

treat GWUDI (6 PWSs). Based on the most recent sanitary surveys and/or inspections, the rate of compliance with the ORC requirements for this group of 114 PWSs is 99.1% (113 systems are in compliance with the operator certification and classification requirements). The DWPEP has taken the necessary steps to ensure compliance in the near future.

The EPD District and Regional Offices are responsible for performing sanitary surveys and inspections of all PWSs using ground water or purchasing treated water for distribution. Based on the information contained in the Site Visit module of SDWIS-State Version 8.0, the ORC compliance rate is approximately 99.1% (refer to Enforcement section of this report, which indicates 0.9% non-compliance).

During this reporting period, EPD continued to enter ORC information in SDWIS-State Version 8.0 each time a sanitary surveyor or inspection was completed or the water system inventory was updated with new information. The ORC for each PWS in Georgia is designated in the Points of Contact Maintenance List. The professional license information for each operator in the State is entered in the Legal Entity Maintenance List. The license classification is stored in the Professional Qualification field and the license number is stored in the Employee ID No. field. SDWIS-State currently contains records for 1,974 active CWSs or NTNCWSs. Approximately 1,973 or 99.9% of these have a designated operator; 1,595 or 81% have a designated ORC; and 1,553 or 77% have a designated ORC with the certification class and license number listed in the appropriate fields.

**Resources Needed to Implement the Program:** The resources needed to implement the program remain adequate. The Certification Board has significantly improved customer service and has developed a very helpful web page (<http://www.sos.state.ga.us/plb/water>). EPD, with its commitment to SDWIS-State, is continuing to build the information system that will be the tool to track PWSs compliance with operator certification and other SDWA requirements.

**Stakeholder Involvement:** The Certification Board meets six times per year to conduct its business. The meetings are open to the public and are regularly attended by representatives of GRWA, GAWP, and other stakeholders. To increase the opportunity for stakeholder involvement, the Board holds its May meeting at the GRWA annual training conference held on Jekyll Island and its November meeting is held at the GAWP Fall Conference. Hundreds of operators and other water and wastewater industry professionals attend these two meetings and have an opportunity to observe the Board in action and provide their input.

Some stakeholder items that have been discussed by the Board during 2007 include increasing the amount of continuing education credit required for certificate renewal and actions that can be taken to improve the exam passing percentages. Table 1 shown previously displays the number of applicants taking each exam during the reporting period (2003 through 2007) and the corresponding passing rates for each. During 2007, EPD also conducted a comprehensive external review of the operator certification program, which provided for additional stakeholder participation in the operator certification program (see program review below).

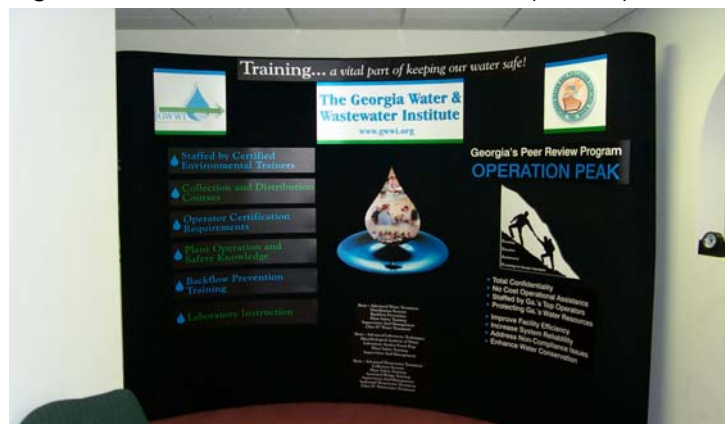
Due to the especially poor passing rates for operators taking the Class III, Class II, and Class I exams, the Board continues to consider requiring more training before a candidate can take these exams. In addition, the Board has tabled a proposal to separate lab analyst training into two separate sessions (classroom and laboratory training) until more information becomes available.

**Program Review:** In 2004, the Board completed a formal Internal Review Procedure for conducting an internal review of the operator certification program. A copy of the Internal Review Procedure and other documentation was included in the 2004 Operator Certification Report as attachment “B”. In the internal review, the Board reviewed the following items: “Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts Act,” OCGA 43-51; the “Rules of State Board of Examiners for the Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts,” Chapter 750; training course approval process; training needs (based on exam performance); the budget; the staffing level; the data management system; the examinations; enforcement procedures; compliance with the certification program; and the endorsement procedure. The internal review determined program resources were adequate for current level of activities. The Division will request a second Internal Review beginning in late 2008.

During 2007, EPD conducted a formal external review of Georgia’s Operator Certification Program. The external review was administered by the Georgia Association of Water Professionals (GAWP) in accordance with an approved work plan. The purpose of the external review was to assess the status and efficacy of Georgia’s Operator Certification Program via an in-depth survey process that included both online and written survey completion. Both certified operators and licensed professional education providers were solicited to participate in this critical feedback opportunity. The items evaluated during the review included: the testing and examination process; training course relevancy and availability, enforcement of operator certification, PWS compliance rates, etc. The data obtained from the online and written surveys were reviewed and compiled by GAWP and a final report was submitted to EPD on March 4, 2008. A copy of the work plan, online survey and final report for Georgia’s Operator Certification Program External Review are included as attachments. When the External Review is completed, the Division plans to present the results to the Certification Board in order to further identify potential changes or improvements to enhance the current certification program.

**PEER REVIEW PROGRAM:** Georgia’s Small System Peer Review Program was initially started in 1996 by a collaboration of The Georgia Association of Water Professionals, The Georgia Rural Water Association, The Association of County Commissioners of Georgia, The Georgia Municipal Association, The Georgia Environmental Protection Division, The U. S. E.P.A. Region 4, Georgia Environmental Facilities Authority, and Department of Community Affairs.

EPD continues to support the Peer Review Program through the training of peer review team volunteers and its involvement with Georgia Water and Wastewater Institute (GWWI). The responsibility for implementation of the Peer Review Program was transferred to GWWI in 2000. In 2001, GWWI implemented a massive advertising campaign aimed at increasing local government officials’ awareness of the benefits of the Peer Review Program. Mailers and post cards were developed and distributed to over 1,000 local officials. In addition, GWWI developed an exhibit and displayed it the GAWP Spring Conference in Columbus; the ACCG Annual Conference in Jekyll Island; and the GMA Annual Conference in Savannah. In addition, GAWP hosted a workshop with their national



partners to discuss Peer Review Programs in other States and the Tribes. The workshop included an exchange of ideas on the common problems and challenges faced by the Peer Review Program.

Training is provided on well water sources, water treatment, distribution, storage, pumps and pumping facilities, solids handling, monitoring and reporting, management and operations, and related items. This program consists of comprehensive evaluations of small systems throughout Georgia, both public and private; to determine strengths and weaknesses these systems may have regarding financial, managerial, and technical issues. The program is administered by the Georgia Water and Pollution Control Association and makes use of volunteers to participate in review of systems that request assistance.

The main goal of the Peer Review Program is to help small water systems comply with current federal and State regulations, including the Safe Drinking Water Act. These benefits are achieved by having a participating water system complete a comprehensive self-assessment of their water system in order to identify existing problems and deficiencies. A peer review team then conducts an on-site evaluation of the system. The team is made up of trained volunteers from surrounding communities (local cities and counties within each respective District) that are able to provide a wide range of expertise in water system management and operations. Upon completion of the in depth evaluation, the peer review team presents their results to the management of the participating system, along with recommendations for improved operations. One of the attractive features of the Peer Review Program is that all activities and written reports are held in the strictest confidence between the peer review team and the participating system. The Peer Review Program is geared towards small, rural communities, but it is not limited by size or function.

Since the program's initiation, well over 100 volunteers have been trained by EPD staff, as well as other professional trainers, and have successfully conducted reviews of well over 100 small water systems throughout Georgia. The result of these reviews has been improved management techniques, as well as overall improvement in compliance to drinking water regulations; resulting in safe drinking water for thousands of Georgians. The program's goal is to continue an active volunteer reviewer-training program in Georgia, and to increase the visibility and accessibility of these volunteer evaluators to small systems throughout the state.

In order to continue and expand this vital evaluation program, it was imperative that an active network of peer review evaluators be developed and maintained. Many volunteer evaluators have dropped out of the program because of retirement and must be replaced. In addition, the training of the evaluators must be enhanced to include updates on new regulations and issues such as the Consumer Confidence Report and Capacity Development.

Since inception of the program, there have been many changes in the management and ownership of particular water systems, and these new owners and managers may not be aware that the Peer Review Program is available to them and their systems. To effectively reach this potential clientele, an up-to-date Peer Review Program information flyer with all pertinent details regarding the benefits of the program, was developed and mass mailed to all water systems.

With the development and implementation of the Consumer Confidence Reporting requirements, there was an increased awareness of water quality issues in the general public, as well as within small water systems. To address these concerns, additional water quality training was developed for evaluators. Further, water quality training materials and field guides to address water quality issues were developed to accompany the training.

The following tasks were completed:

1. Developed and produced an up-to-date process for systems in need of assistance to call and receive technical and/or operational assistance. This project was called **Operation P.E.A.K. (Providing Education, Assistance and Knowledge to Georgia Operators)**
2. Developed a comprehensive mailing, which was sent to all small water systems in Georgia, to inform them of the availability and benefits of the Peer Review Program.
3. Enhanced training and training materials that were available to the Peer Review Evaluators, so as to increase their knowledge of Water Quality Issues, as well as any other new developments in the water and wastewater industries.
4. Developed marketing materials and trade show type display to advertise the Peer Review Program at venues such as the GAWP, ACCG, GMA and other conventions throughout the state of Georgia.
5. Worked in conjunction with the Georgia Association of Water Professional's Small Systems Utility Forum to further the outreach and enhance the knowledge of the small systems managers of the Peer Review Program. The Small Systems Utility Forum is dedicated to the small system managers around the State.
6. Revised Peer Review work plan to have additional staff reach local utilities, which may be in need of assistance and increase the awareness of the Peer Review Program in Georgia.

In an effort to revitalize the Peer Review Program and assist in the implementation of Operation PEAK, an entirely new program was developed which replaced the three, 1 ½ day training sessions, as noted in the contract. Previously, workshop sessions were developed to train ALL Peer Review evaluators on how to deal with ALL issues that may surface when participating in the Peer Review Program. A more efficient program was developed and a Peer Review "Headquarters" was established to better serve the program. Instead of publishing a printed manual with many evaluators and many phone numbers, the Peer Review Program "Headquarters" phone number was published with one central point of contact. A database was also created and evaluators around the state were polled on their respective areas of expertise. This data was input into an evaluator database and available only to the program administrator. When a support need was brought to the attention of the Peer Review Program, the main point of contact then researched the evaluator database and located an evaluator that was in close proximity to the system in need, and who also had the knowledge and expertise to assist the system. This procedure proved to be successful in several cases and also cut down on the administrative duties of the volunteers, which were brought about by the previous assistance techniques. The updated method of the Peer Review Headquarters assured the system in need of prompt, professional and knowledgeable water and/or wastewater assistance.

**CIRCUIT-RIDER TECHNICAL ASSISTANCE VISITS** : Using DWSRF 2% technical assistance set-aside funds, EPD has contracted with Georgia Rural Water Association (GWRA) through the Georgia Environmental Facilities Authority (GEFA) to provide a number of "circuit rider" type technical assistance visits each year on an as needed or as requested basis. Under the provisions of this original contract, GWRA is required to provide up to 10% of the visits within 48 hours of notification by EPD in order to quickly address problems posing an immediate threat to public health.

The visits made by the Georgia Rural Water Association technicians are in the following broad categories: actual compliance, potential compliance, water conservation, managerial/finance, operation/maintenance, and water treatment. The variety of technical assistances provided by the circuit-rider technicians include, but is not limited to: rate studies, water audits and leak detection surveys, pipe and valve location services, infrastructure assessments, source water protection, operation and maintenance programs, on-site operational assistance, troubleshooting and problem-solving, fluoridation equipment evaluations and inspections, and the identification of financing alternatives.

The table on the next page shows the number of circuit-rider Visits (face-to-face contacts) by each calendar year and the reasons for them.

In FY 2003 GEFA expended monies from the 2% Technical Assistance set-aside account to help public water systems, serving populations less than 10,000, comply with existing and proposed drinking water regulations. The objectives of the Technical Assistance Program are to 1) assist targeted systems in developing operations and managerial capacity; 2) assist small systems in a non-regulatory manner to meet the minimum standards of the SDWA; 3) educate system operators in the best technology and methods for their specific infrastructure design and size, raw source water and customer needs; and 4) help maintain the monitoring waiver program [which allows EPD to reduce and/or waive certain required monitoring for synthetic organic contaminants (SOCs) under the federal drinking water regulations] by assisting the water system designated by EPD with the proper collection, handling & transportation of quarterly SOC samples to the EPD laboratory for analysis.

The contract with the Georgia Rural Water Association utilized four full-time technicians or "circuit riders" that completed 3,167 on-site face-to-face field visits with water system owners/operators from July 1, 2002 through June 30, 2008. The purpose of these field visits is to improve the public water system's technical and managerial capacity to comply with the State and Federal Drinking Water Regulations. Field visits were performed at both public and private water systems. Of those 3,167 on-site face-to-face visits, 2,210 (70%) were made to private systems and 957 (30%) were made to public systems. 2,389 (75%) of these visits were to systems serving fewer than 3,300 customers. In addition, in order to provide uniform assistance to all Georgia regions, the GWRA performed on-site face-to-face visits in all 5 EPD District Offices.

For the contract period from July 1, 2007 to June 30, 2008, a total of 518 on-site visits were made. 112 of the on-site technical assistance visits were made to private water systems and 406 were made to governmentally owned water systems. 134 (26%) of the circuit rider visits were made to systems serving a population of less than 3,300. In addition to the number of public water systems visited for technical assistance under this contract, 435 systems were also visited for the collection of SOC samples.

Better coordination between EPD and GRWA is being accomplished to more effectively target systems that are most in need of assistance. Copies of the list of CWS and NTNCWs with a history of significant non-compliance are being provided to the GRWA field technicians. In the future, EPD plans to continue forwarding running base SNC lists or multiple violation reports for follow-up by GRWA personnel in an effort to reduce the number of historical SNCs.

Fiscal Year	Total Visits	Private systems	Government Systems	Systems Serving < 3,300 Persons	Reasons for the Visit
2001	1007	677	324	941	Actual Compliance: 102 Managerial/financial: 307 Potential compliance: 23 Operation/maintenance, and treatment: 285 Sampling and Water Quality Parameters: 290
2002	750	619	131	729	Actual Compliance: 239 Managerial/financial: 73 Potential compliance: 30 Operation/maintenance, and treatment: 64 Conservation: 37 Sampling and Water Quality Parameters: 307
2003	791	637	154	752	Actual Compliance: 378 Potential compliance: 10 Conservation: 5 Managerial/financial: 71 Operation/maintenance, and treatment: 1 Sampling and Water Quality Parameters: 326
2004	731	626	105	676	Actual Compliance: 342 Potential compliance: 22 Managerial/financial: 269 Operation/maintenance, and treatment: 178 Conservation: 20 Sampling and Water Quality Parameters: 300
2005	478	220	258	104	Actual Compliance: 251 Potential compliance: Managerial/financial: 74 Operation/maintenance, and treatment: 114 Conservation: 27 Sampling and Water Quality Parameters: 12
2006	417	108	309	128	Actual Compliance: 141 Potential compliance: Managerial/financial: 68 Operation/maintenance, and treatment: 122 Conservation: 8 Sampling and Water Quality Parameters: 78
2007	477	334	143	165	Actual Compliance: Potential compliance: Managerial/financial: Operation/maintenance, and treatment: Conservation: Sampling and Water Quality Parameters:
2008	518	112	406	134	Actual Compliance: Potential compliance: Managerial/financial: Operation/maintenance, and treatment: Conservation: Sampling and Water Quality Parameters:

**CLERK, MANAGER, AND ELECTED OFFICIAL TRAINING:** GRWA has contributed to the clerk and manager training programs conducted at the Carl Vinson Institute of Government of each February and September. Previous topics include, but are not limited to: Safe Drinking Water Act compliance issues, water rates, water conservation, distribution systems, customer service, operator training, record keeping, sampling, and Consumer Confidence Report (CCR) requirements. GRWA anticipates including security issues during future sessions.

Georgia Water and Wastewater Institute, under its parent organization Georgia Association of Water Professionals, also conducts numerous workshops and trainings focused on providing continuing education opportunities for professionals in the water and wastewater industry, including managers and utility directors. During the previous year, a total of 27 managers and/or elected officials attended the “Small/Medium Systems Managers Forum” meeting held at

City of Cartersville on April 9-10, 2008. During the meeting, planning and networking forum was provided for managers of Georgia's small and medium water systems around the State. It should also be noted that GWWI also conducts "Train the Trainer" sessions for the GAWP's District Directors to ensure operator training, support and recertification opportunities are offered equally statewide and to promote the benefits of operator training program.

**SOURCE WATER ASSESSMENT AND DELINEATION:** USEPA approved Georgia's Source Water Assessment and Protection Implementation Plan on May 1, 2000. Georgia's deadline for completion of surface water source water assessments (SWAPs) was November 1, 2003. Georgia's deadline for completion of ground water SWAPs was June 2005 for community systems, December 2005 for non-transient non-community systems, and December 2006 for transient non-community systems.

Efforts to fund regional surface water system SWAP initiatives using DWSRF 15% set-asides have been completed. Over \$2.5 million of contracts were negotiated with various entities to assist EPD with SWAP implementation. Ground water SWAPs are being completed utilizing in-house staff. Currently we are in the process of performing SWAPs on all privately-owned groundwater systems. For the privately owned ground water systems, approximately 1,133 SWAPs have been prepared through June 30, 2007. During the period from July 1, 2006 to June 30, 2007, approximately 19 SWAPs were completed for privately owned community ground water systems, 39 SWAPs for non-transient non-community ground water systems and 42 SWAPs for transient non-community ground water systems. This activity for the privately owned ground water systems will continue until completion.

**GEORGIA WARN PROGRAM:** Following the impacts of Hurricane Katrina, it became apparent that even with the extraordinary efforts of utilities, water associations, and state regulatory agencies, the demand for resources and knowing where those resources were available overwhelmed the ability to effectively coordinate the initial response. Realizing that utilities needed a different approach, leaders in the water community and state agencies have joined together to create the Georgia Water/Wastewater Agency Response Network (GA WARN).

The State of Georgia initiated the formation of the GA WARN in August 2006. The mission of the program is to support and promote statewide emergency preparedness, disaster response, and mutual assistance for public and private water and wastewater utilities for natural and man-made events. It is a network of utilities helping utilities to prepare for emergencies and to organize response according to established requirements. This program will be consistent with other statewide mutual aid and assistance programs and the National Incident Management System (NIMS).

The GA WARN program is in its final stages of development. The WARN's steering committee board members consist of state's Environmental Protection Division staff, public utilities' staff, Georgia Association of Water Professionals' staff and Georgia Rural Water Association's staff and meet approximately every sixty (60) days to discuss progress of the program. We already have several large and small water systems that have signed the Mutual Aid Agreement and became a part of the GA WARN network.

Georgia is also currently working on developing an interactive website program where water utilities will be able to request help, respond to incidents and upload their resources into the program. The GA WARN program is a critical step in water incident and disaster preparedness. There is no cost to participate in the program. Other benefits of the program that make it more

appealing to water utilities include enhanced access to specialized resources, insurance for access to resources during an emergency without pre-contractual limitations or retainer fees, expedited arrival of aid, indemnification and workers' compensation provisions to protect participating utilities, and reimbursement of costs, as needed. The program launched on March 29, 2007. The GA WARN Mutual Aid and Assistance agreement is available to all public and private water and wastewater utilities in the State.

The GA WARN had its first activation in response to the Iowa flooding in June of 2008. No actual deployment was necessary, however it was an excellent preparatory and learning opportunity to prove how important the GA WARN is to water and wastewater utilities. The GA WARN is a great tool to provide hope and restoration to affected water and wastewater utilities throughout the State of Georgia and outside the state for both natural disasters and man-made ones. With the current hurricane season, the GA WARN is taking a stand, reaching out to its members and utility staff to know their resources and be prepared to respond to utilities in the affected areas if needed.

**CONSUMER CONFIDENCE REPORTS:** EPD initially established a three-year contract with the Georgia Association of Water Professionals (GAWP), using Performance Partnership Grant (PPG) funds, to assist community water systems in completing the consumer confidence report (CCR) requirements of the 1996 Federal SDWA Amendments. As part of the contract, GAWP prepared and distributed the "Consumer Confidence Report Guidance and Preparation Manual, May 1999", to water systems affected by the new rule, directly trained over 750 water system personnel in a formal classroom setting, fielded over 1,400 technical support calls, presented material on the CCR program to Georgia Municipal Association (GMA), the Association County Commissioners of Georgia (ACCG), the Carl Vinson Institute of Government, Georgia's Peer Review Program, numerous Rural Development Centers (RDCs), nine GAWP conferences, and provided direct technical support by various other means.

During this reporting period, the GAWP continued to field technical support requests relative to the distribution of Georgia's CCR guidance booklets and templates. GAWP held a number of CCR workshops at various locations across the State, which consisted of detailed presentation on the CCR Rule and gave the opportunity for water systems to receive direct technical support while attending. The workshops are designed specifically to give direct technical and managerial assistance to systems with a population under 1,000. "Hands-on" report assistance is being provided at these meetings. Since 2004, evening classes are also being offered to target those full time employees who are also operating very small water systems and are unable to attend normally scheduled daytime classes. This "short course" training has been proven to be successful and additional evening classes are being incorporated into the future schedules.

The table below summarizes the existing compliance data for the CCR Rule. Based on the compliance history, the CCR assistance was a success and reduced the rate of non-compliance for a new, complex regulation that affected many small water systems in Georgia.

However, it should be noted that the initial compliance rates for the regulation were significantly lower. For example, for the 2000 reporting year, the initial compliance rate for water systems meeting the July 1 delivery deadline was less than 70% and for the 2003 reporting year, it was less than 63%. In order to obtain better compliance, both formal and informal enforcement actions were taken by EPD. As the table shows, as a result of increased enforcement and follow-up efforts, compliance rate with the CCR Rule had been high until 2003. Beginning July 1, 2003, this compliance rate began

Fiscal Year	CCRs Received	CCRs Required	Compliance Rate (%)
1999	1,591	1,597	99.6
2000	1,622	1,628	99.6
2001	1,569	1,584	99.1
2002	1,586	1,595	99.4
2003	1,594	1,607	99.2
2004	1,574	1,637	96.1
2005	1,481	1,651	89.7
2006	1,601	1,646	97.3
2007	1,613	1,659	97.2
2008	1,553	1,694	91.7

to decline mainly due to lack of resources by EPD to follow-up on the non-compliers. However, we have taken steps to correct this. Recently, we hired a new associate to focus primarily on the CCR Rule in the Drinking Water Compliance Program's Enforcement Unit. As a result, compliance rates for the FY 2006 reporting period increased noticeably from 89.7% to 97.3% and have remained steady into FY 2007. In order to achieve a compliance rate of 97.3% in FY2006, EPD had issued 675 violations, 289 Notices of Violations (NOVs) and 175 "second notice" NOVs. This year, EPD has already issued 586 Notices of Violations (NOVs) to improve the 91.7% compliance rate.

**DRINKING WATER STATE REVOLVING FUND:** With the passage of the 1996 Amendments to the Safe Drinking Water Act (SDWA) (Pub. L. 104-182) the Administrator of the U.S. Environmental Protection Agency (EPA) was authorized to establish a Drinking Water State Revolving Fund (DWSRF) loan program to assist States in financing local public water system infrastructure needed to achieve or maintain compliance with SDWA requirements in order to protect public health.

The Georgia General Assembly created the Georgia Environmental Facilities Authority (GEFA) in 1986 as the successor agency of the Georgia Development Authority Environmental Facilities Program. GEFA is the primary State agency for assisting local governments in financing the construction, extension, rehabilitation, repair and replacement and securitization of environmental facilities necessary for public water purposes. Georgia utilizes a large portion of the grant to provide low interest loans to eligible public water systems needing infrastructure improvements to achieve or maintain compliance with the Safe Drinking Water Act requirements or to protect public health. The areas of infrastructure improvement funded through the DWSRF program include treatment, sources of public water supply, transmission (water mains and pumping facilities), and storage.

The primary goal of the DWSRF program is to better protect public health. To accomplish this goal, the DWSRF program directs funds toward the most pressing compliance and public health related needs. As of June 2008, \$26.8 million of the total \$192.5 million in loans (14%) has been to help non-compliant systems achieve compliance with drinking water standards and \$162.6 million (84%) has been to help utilities maintain compliance with drinking water regulations. As stated in the Intended Use Plan, Georgia also tries to use at least 30% of the funds available to assist systems serving less than 10,000 people. As of June 30, 2008, 79 of the total 101 water system improvement projects funded through the DWSRF program were for water systems serving less than 10,000 people.

DWSRF Assistance by Population Size	Annual Number of Projects Receiving Assistance									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Less than 500	0	0	1	5	0	3	5	4	4	2
501 – 3,300	0	0	4	2	4	5	4	3	5	3
3,3001 – 10,000	0	0	3	3	0	0	3	1	2	1
10,001 – 100,000	0	0	1	0	2	1	0	5	0	3
100,001 and Above	0	1	1	0	0	0	1	2	0	0
Total Number of Agreements	0	1	10	10	6	9	13	15	11	9
<i>Cumulative Number of Agreements: 84 (through 2006)</i>										

DWSRF Assistance by Population Size	Annual Number of Projects Receiving Assistance									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Less than 500	2	2								
501 – 3,300	3	3								
3,3001 – 10,000	2	0								
10,001 – 100,000	4	1								
100,001 and Above	0	0								
Total Number of Agreements	11	6								
<i>Cumulative Number of Agreements: 101 (through 2008)</i>										

A secondary goal of the DWSRF program is identified as supporting the continuation of prevention programs to ensure compliance with drinking water standards. Georgia EPD attempts to utilize 100% of the Public Water System Supervision set-aside from each Capitalization Grant to accomplish this goal.

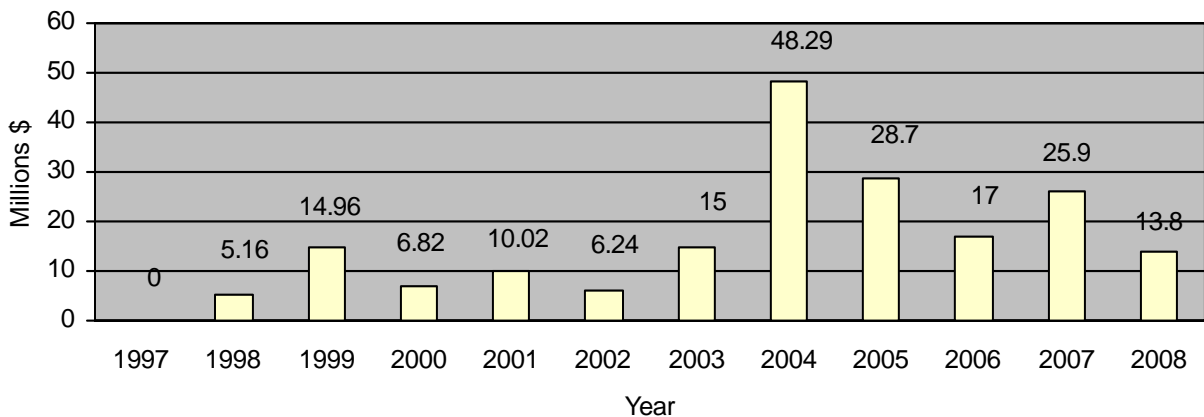
Since the inception of the DWSRF program in 1997 through fiscal year 2008, Georgia has received federal capitalization grants totaling \$179,924,445. The State of Georgia has matched that dollar figure with \$34,525,643 in funding from the sale of General Obligation (G.O.) Bonds. Through an interagency agreement with the Georgia Environmental Protection Division (EPD), certain project management services (i.e. engineering, technical reviews, construction inspections, etc) are provided by EPD to assist in the administration of the DWSRF Program.

Annual Federal Grants Received	
1997	\$ 25,775,000
1998	0
1999	\$ 15,253,300
2000	\$ 15,986,900
2001	\$ 16,615,100
2002	\$ 16,683,800
2003	\$ 25,423,000
2004	\$13,146,000
2005	\$13,118,800
2006	\$14,808,945
2007	\$23,116,000
2008	NA

Through June 30, 2008, more than \$192,495,826 in DWSRF project assistance has been awarded for 243 water system improvement projects. During this reporting period ending June 30, 2008, binding commitments were made to six (6) communities, totaling more than \$13,838,205. Five (5) of these communities are “small systems” where the population served

less than 10,000 people. Figure 9 below displays the total dollar amount of DWSRF project assistance provided to water systems each year from 1997 through 2008 (in million \$).

Figure 9. Project assistance through DWSRF program.



The tables below displays detailed statistics on DWSRF project assistance for the period from 1997 through June 30, 2008.

Category	Total Projects	Yearly Assistance in Millions (1997 – 2005)									
		1997	1998	1999	2000	2001	2002	2003	2004	2005	
Treatment	36	0	0	7.5	0.54	0	0.106	2.7	18.3	14.2	
Transmission	96	0	0	5.2	3.3	8.2	2.8	6.1	22.8	10.3	
Source	51	0	5.16	1.8	1.11	0.93	0.73	1.4	1.06	1.6	
Storage	54	0	0	0.4	1.7	0.92	2.4	4.8	5.0	2.6	
Other	6	0	0	0.052	0.17	0	0.17	0	1.0	0.02	
Number of Systems		0	1	23	22	12	26	31	24	34	
Cumulative Number		0	1	24	46	58	84	115	139	173	
<i>Cumulative Total Dollar Amount: \$135,216,124 (through 2005)</i>											

Category	Total Projects	Yearly Assistance in Millions (2006 – 2007)									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	
Treatment	36	1.95	11.75	0.06							
Transmission	96	11.79	13.24	8.53							
Source	51	1.41	0.396	1.19							
Storage	54	2.32	0.572	4.06							
Other	6	0	0								
Number of Systems		27	22	21							
Cumulative Number		200	222	243							
<i>Cumulative Total Dollar Amount: \$192,495,826 (through 2008)</i>											

Further analysis of the above project assistance tables shows the following percentages in each project category and loan amounts since 1997 through June 30, 2008:

Category	Number of Projects	Percent of Total Projects (%)	Loan Amount (Million \$)	Percent of Total Loan Amount (%)
Treatment	36	14.8	57.1	29.7
Transmission & Distribution	96	39.5	58.7	30.5
Source	51	21.0	33.6	17.4
Storage	54	22.2	16.8	8.7
Other	6	2.5	24.8	12.9

Throughout this reporting period, GEFA continued to concentrate on strengthening the Authority's internal processes in anticipation of the future maturity of the DWSRF program. GEFA has also strived to meet the timely and expeditious use of projects funds to meet the binding commitment requirements of the DWSRF Program.

**COMPREHENSIVE STATEWIDE WATER MANAGEMENT PLAN:** Of all Georgia's natural resources, none is more important to the future of our state than water. The wise use and management of water is critical to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens. Georgia has abundant water resources, with fourteen major river systems and multiple groundwater aquifer systems. These waters are shared natural resources. Streams and rivers run through many political jurisdictions. The rain that falls in one region of Georgia may replenish the aquifers used by communities many miles away. And, while water in Georgia is abundant, it is not an unlimited resource. It must be carefully managed to meet long-term water needs.

Georgia is one of the fastest growing states in the nation, and population growth and economic prosperity in the state are tied to our water resources. As the state's population and economy grow, demands on the state's water will grow as well. Over the past several decades, decisions about water management were made largely in response to specific issues or needs. Meeting future water challenges will require a more proactive and comprehensive approach. To prepare for a future in which we better balance increasing and sometimes conflicting demands on the state's water resources, the General Assembly charged the Environmental Protection Division (EPD) with developing a draft Comprehensive Statewide Water Management Plan and presenting it to the Water Council. The Water Council was charged with providing oversight in the plan's development and submitted a final plan to the Georgia General Assembly for action during the 2008 legislative session. It was written by the water council with extensive public involvement (approximately 70,000 volunteer hours) and assistance from agencies including EPD. The legislature passed and the governor signed the comprehensive Statewide Water Management Plan on February 6, 2008.

In preparing the plan, EPD, in cooperation with the Water Council, assembled basin advisory committees, a statewide advisory committee, and technical advisory committees to discuss potential water policies and management practices and to consider regional concerns. Hundreds of individuals representing agricultural and business interests, local governments, nonprofit agencies, trade associations and others have provided input into the plan's development through an extensive public involvement process. What has emerged is a blueprint that, when executed, will guide future decisions about water management across the

state. It provides a flexible framework for regional water planning that will follow in the years to come.

Early on, the Water Council and EPD recognized that flexibility and adaptability are essential for any effective plan. Water resources and water needs vary widely by region, and future growth and development will occur differently in each region. The plan allows for these regional differences while also providing statewide policies and management practices to support regional planning. Some of these statewide policies and practices will require rulemaking, which will include a public involvement process before being brought to the Board of Natural Resources for consideration.

The Water Council and many stakeholders also recognized a need for better information about how much water we have and how much water we will need. New jobs, homes, schools, and businesses all require water and wastewater services. But currently, we do not have good measurements of how much water is available from Georgia's streams and aquifers, or how much waterborne pollutants our streams and rivers can safely assimilate. In addition, there are no reliable forecasts of how much water the state will need, or how much wastewater will be discharged, as the state continues to grow.

We cannot effectively plan for and manage what we do not measure. Better information is needed on water quantity as well as water quality. The State must determine how much water can be removed from rivers, lakes, and aquifers without causing unacceptable negative impacts and determine how much wastewater and stormwater streams can handle before water quality begins to degrade. Georgia also must develop a better understanding how much water is, and needs to be, returned to our natural systems, and must consider alternative ways to meet our long-term water needs. These assessments will provide the foundation for regional planning decisions across the state.

The Comprehensive Statewide Water Management Plan hinges on development of regional water plans. Regional forecasts of future needs for water and wastewater will be completed. Then, regional plans will be developed to identify the management practices to be employed, following state policy and guidance, to ensure that the anticipated demands can be met. Once the regional plans have been developed and approved, the State and the regions must partner to implement the plans. Regional plans primarily will be implemented by the various water users in the region, with state permitting and financial assistance as consistent with the regional plan.

Looking toward a future with increasing demands on water resources, it is clear that coordinated water planning will be an on-going need. The Comprehensive Statewide Water Management Plan provides a framework to measure water resources, to forecast how much water supply and assimilative capacity will be needed to support future growth, and to identify regional solutions to water needs. This plan will help guide the stewardship of Georgia's precious water resources to ensure that those resources continue to support growth and prosperity statewide while maintaining healthy natural systems.

The purpose of the plan is to guide Georgia in managing water resources in a sustainable manner to support the State's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens. The plan lays out statewide policies, management practices, and guidance for regional planning. The plan employs concepts that are innovative for Georgia. The first is the use of thorough evaluation of resources, called Water Resource Assessments. We cannot effectively plan for and manage what we do not measure. Selecting the optimum water management strategies requires precise information about the capacities of

Georgia's water resources. EPD must determine how much water can be consumed from the state's major rivers, lakes, or aquifers without causing unacceptable negative impacts; this amount of water is also called the consumptive use assessment, which is intended to reflect the capabilities of these resources under dry year conditions. EPD also must determine the assimilative capacity, which is the amount of wastewater and stormwater streams can assimilate before water quality begins to degrade. EPD will begin the process of assessment by identifying the hydrologic boundaries of watersheds and aquifers to be used for assessment purposes. EPD will analyze existing information, and when that information is not sufficient, undertake enhanced monitoring.

The second new concept is the development of regional forecasts of water supply and assimilative capacity demands. These forecasts will be developed for planning regions that are designed to reflect jurisdictional boundaries and economic interdependencies as well as hydrologic boundaries. Regional forecasts will be compared with the water resource assessments for each planning region so that areas that may face water challenges in the future can be identified. A package of management practices, tailored to local needs and resource conditions, can then be selected to meet those challenges.

The third concept is the regional water development and conservation plans. These plans, which will be developed for all of the planning regions, will describe the water management practices to be employed in each area. Since water resources, their conditions, and their uses vary greatly across the state, selection and implementation of management practices on a regional and local level is the most effective way to ensure that current and future needs for water supply and assimilative capacity are met. The management practices specified in the water development and conservation plans for each region will be supported by statewide guidance.

All three of these water management concepts are supported by and consistent with current Georgia law. State law provides the foundation for development and implementation of a comprehensive statewide water management plan, and this plan is designed to be consistent with Georgia's current statutes. Most fundamentally, the regulated riparian legal doctrine as described by Georgia case law from its appellate courts and the O.C.G.A., including provisions regarding reasonable use, will continue to guide water management in Georgia.

Other provisions of our management systems will remain in place. For example, this plan will not affect current provisions in State law that provides the Director the authority, during an emergency period of water shortage, to impose restrictions on water use beyond those that might be identified in this plan or subsequent regional water development and conservation plans. Additionally, this plan will not affect provisions in current law that set up a system of water use priorities during emergency periods of water shortage; which includes the provision "...first priority to providing water for human consumption and second priority for farm use." Similarly, the plan will not change or replace current statutory provisions for permitting of water withdrawals (including provisions therein recognizing the economic consequences and preference for an existing water user) and wastewater discharges, or replace the rules promulgated under those statutes. It also will not compel interbasin or intrabasin transfers, or favor one area of the state over another.

The plan builds upon Georgia's current statutory framework to create a more integrated water management policy consistent with the vision and guiding principles presented in O.C.G.A. §12-5-522. The process is a cycle, rather than a one-time plan. Based on current State laws and policies, the cycle has four major steps that will be addressed in regional planning conducted following the provisions of this plan:

1. The cycle begins with completion of a set of water resource assessments by EPD. These assessments will define the capabilities of Georgia's water resources in terms of water supply and capacity to assimilate pollution.
2. A regional water planning council will then be responsible for using regional population and employment estimates to forecast needs for water and assimilative capacity within a water planning region.
3. A regional water development and conservation plan will be prepared by EPD and by regional water planning councils , as described in Section 14. The plan will identify the management practices to be employed to ensure that the forecasted regional water and wastewater needs can be met without exceeding the water quantity and water quality capacities identified in the resource assessments. In some situations, the regional water plan may identify management practices that will supplement the resource capacities in a manner that conforms to policies and criteria presented in this plan. The regional water management plans will be reviewed and adopted by the EPD if they are consistent with established guidance.
4. Once adopted, the plans would be implemented by the water users in the water planning region and EPD will make water permitting decisions based on the plans.

EPD, in cooperation with federal agencies, local governments, and other partners, will continue to monitor water resources to maintain and update information on the status and condition of the state's waters. This information will support future revisions in resource assessments and management practices.

The plan is intended to guide long-term planning for Georgia's water resources and is not intended to address responses to extreme conditions, like drought, or emergency circumstances that may result. It will be implemented in conjunction with the State Drought Management Plan, the Flint River Drought Protection Act, and other statutes and regulations that guide responses to drought or other emergency circumstances.

This plan has four major components:

- Integrated water policies that will govern water management decisions in the State;
- Provisions for assessment of the capacities of the state's water resources;
- A "toolbox" of water quantity and water quality management practices; and
- Provisions for regional planning to select the management practices that best fit the resource conditions and uses in different regions throughout the state.

A portion of the actions required to implement this plan can be taken by EPD within its current statutory authority and administrative procedures specified in the rules and regulations promulgated to date by the Board of Natural Resources. Other actions will require amendment of the rules and regulations promulgated by Board of Natural Resources.

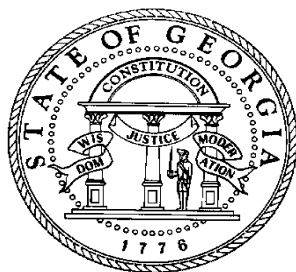
Many of the measures identified in the Statewide Water Management Plan should be eligible for funding under GEFA and DWSRF programs.

## **CONCLUSION**

This report has been prepared to outline the progress made in developing and implementing Georgia's capacity development authority and strategy programs. The efforts described above are on going. EPD has established a program that provides a solid foundation for current and future activities to help insure all Georgians are provided safe, reliable drinking water. To date, significant progress has already been made towards improving the technical, managerial, and financial capacity of the public water systems in Georgia. New systems are being designed and constructed to meet more stringent standards for quality and reliability, and new water system owners and operators are required to demonstrate adequate managerial and financial capacity prior to commencing operation. At the same time, deficient or poorly run public water systems are being encouraged, through various compliance and enforcement mechanisms, to consolidate or merge with nearby governmentally owned and operated water utilities.

Under the various current capacity development strategy efforts, all public water systems in Georgia are being offered or provided assistance to help them acquire and maintain technical, managerial, and financial capacity. The assistance includes, but is not limited to, technical engineering review of all water system projects, direct on-site technical assistance, in depth sanitary surveys and more frequent inspections, proactive compliance and enforcement initiatives, inexpensive and convenient training opportunities, low interest financing to correct system deficiencies, affordable monitoring and testing services, and other local government initiatives. EPD has fully implemented the strategy, which provides targeted, voluntary, and mandatory assistance to public water systems. Targeted assistance is directed at systems most in need of acquiring adequate technical, managerial and financial capacity. Systems are identified and prioritized based upon the knowledge gained by EPD staff through compliance records, sanitary surveys/inspections, complaints, and the potential impact of new regulations.

While EPD has the lead role and regulatory authority for the capacity development program, this agency will not be able to fully achieve the goals of the program without the active ongoing involvement of our various stakeholder and partner organizations. These organizations, as mentioned throughout the report, have played a major role in the capacity development program and contributed immeasurably to the success that has been achieved so far. In the future, EPD will continue to evaluate the success of the capacity development program, maximize the use of all available resources to help the systems most in need, and develop effective working relationships with other State and local agencies and organizations to further achieve Georgia's long-term goals.



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