

## Encouraging Voluntary Water Conservation and Enhancing the State's Water Supply

### Annual Report on State Agency Activities December 2011

**Submitted by:**

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## List of Acronyms

BMPs	Best Management Practices
DCA	Department of Community Affairs
DNR	Department of Natural Resources
DPH	Department of Public Health
EPD	Environmental Protection Division
GAWP	Georgia Association of Water Professionals
GDA	Department of Agriculture
GEFA	Georgia Environmental Finance Authority
GFC	Georgia Forestry Commission
GSWCC	Georgia Soil & Water Conservation Commission
NRCS	Natural Resources Conservation Service (U.S. Department of Agriculture)
SRF	State Revolving Funds
UGA	University of Georgia
USACOE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USGS	United States Geologic Society

## Overview

Senate Bill 370 (SB 370), enacted in 2010, is commonly called the Water Stewardship Act. The first section of the Act recognizes the need to create a culture of water conservation and plan for water supply enhancement in Georgia. The Department of Natural Resources is directed to coordinate with the Environmental Protection Division, Georgia Environmental Finance Authority, Georgia Department of Community Affairs, Georgia Forestry Commission, Georgia Department of Public Health, Georgia Department of Agriculture, and Georgia Soil and Water Conservation Commission to work together, as appropriate, to develop programs for water conservation and water supply.

Section 2 of SB 370 calls on these agencies to review activities, policies, and rules to identify opportunities to enhance programming and incentives for voluntary water conservation as well as the state's water supply.

Comprehensive results of this review were presented in an August 2010 inventory titled *Water Stewardship Act: Final Report on Agency Activities*, establishing a baseline for the five annual reports required by the Act. As shown in Table 1 and described in the August 2010 report, a range of activities are underway to meet the goals of SB 370. The August inventory and December 2010 annual report are available at [www.gaepd.org/Documents/index\\_water.html](http://www.gaepd.org/Documents/index_water.html).

This annual report begins by highlighting technical assistance offered to public drinking water providers, a major focus of activities in 2011. A summary of other agency activities in 2011 and agency goals for 2012 follows.

**Table 1. Agency activities to encourage water conservation and enhance water supply**

Activities to encourage water conservation	DNR	EPD	GEFA	DCA	GFC	DPH	GDA	GSWCC
Local comprehensive planning				X				
Water loss abatement by public water systems		X	X	X				
State-wide water campaigns and public outreach programs	X	X	X	X	X	X	X	X
Water efficient fixtures and equipment: Residential and commercial retrofits		X	X	X		X		
Water efficient landscaping and irrigation: Installation and retrofits in residential and commercial settings		X	X	X				
Rain water and gray water use	X	X	X	X		X		X
Submetering of existing multifamily and multiunit complexes		X		X				
Incentives for conservation pricing		X	X	X				
Water conservation guidelines in permit applications		X						
Public water systems' financial management: Full cost accounting and rate management			X					
Activities to enhance the state's water supply								
Funding	X		X	X	X			X
Permitting and inventory of water supply sources		X						
Evaluation of water supply alternatives		X	X					X

## 2011 Focus: Assistance to Drinking Water Providers

In 2011, state agencies and drinking water providers made significant investments to increase the capacity to measure and abate water loss and to track water conservation savings. These investments will pay off as water providers complete water audits, implement loss detection programs, and undertake other water conservation activities.

SB 370 requires that water providers serving populations over 3,300 conduct water system audits and implement water loss detection programs. About 250 water systems, which provide 80% of the potable water distributed to Georgians, are affected. When doing a water audit, water providers examine a system's overall performance and the accuracy of equipment and system records. Results identify, quantify, and verify water loss and revenue loss. Larger systems are to submit initial water audits to the Environmental Protection Division (EPD) by March 2012, with smaller systems to submit initial audits by March 2013.

For some drinking water providers, these requirements represent a major change, and many systems were not prepared to respond by the Act's deadline. To assist these systems, EPD partnered with the Georgia Association of Water Professionals (GAWP) to provide technical assistance and develop the *Georgia Water System Audits and Water Loss Control Manual*, with funding provided by the Drinking Water State Revolving Fund, a USEPA grant administered by the Georgia Environmental Finance Administration (GEFA).

The *Manual* defines minimum standards and best practices for monitoring and improving the efficiency of public water systems, including calculation of performance indicators such as the infrastructure leakage index required by SB 370 or other appropriate measures based on the size of the system. The manual also describes how to assess and improve the validity of results for individual systems. The audit results and validity measures will provide a baseline for tracking improvements in the performance of individual systems over time.

Recognizing that a manual alone is not enough, EPD worked with GAWP to provide training on approved methods for conducting water systems audits and implementing water loss control. Five full-day workshops were completed, training more than 400 individuals from water providers across the state to apply these methods within their systems.

Beyond water loss control, additional water savings can be achieved through water conservation programs tailored to the mix of users served by each water provider. To help water providers develop effective conservation programs, EPD hosted workshops on planning for conservation and tracking conservation results. The workshops were conducted in partnership with five local water systems and the Alliance for Water Efficiency. About 150 people participated in two half-day workshops, with 20 then attending a full-day technical session on implementing a water conservation tracking tool in their community.

Training and planning are necessary first steps. Better efficiency and greater water savings, however, also require implementation of practices specific to each system. In 2011, GEFA adapted their funding programs to further enhance smaller water providers' capacity to complete audits and implement programs to control water loss.

GEFA operates three low-interest water infrastructure revolving loan programs that can finance water conservation by local government water utilities: the Georgia Fund, the Clean Water State Revolving Fund, and the Drinking Water State Revolving Fund. In 2011, GEFA began offering a 1% reduction in interest within the three loan programs to encourage

water conservation projects. Loans under these programs can fund a variety of water conservation practices, including leak repair, sub-metering of individual units in a multi-family building, incentives for upgrades to high-efficiency plumbing fixtures, and water reuse projects. Additionally, GEFA will provide free technical assistance to small utilities to assess water loss. The U.S. Environmental Protection Agency approved GEFA's use of \$640,000 of funding from the Drinking Water State Revolving Fund to help small water systems conduct water loss audits and detect leaks in their distribution systems, using methods consistent with Georgia's *Water Audit Manual*.

## Other Activities in 2011

### Encouraging Water Conservation

#### MULTIPLE AGENCIES

- Continued ongoing programs to encourage voluntary water conservation as described in August 2010 *Water Stewardship Act: Final Report on State Agency Activities*. [All agencies]
- Provided input and technical assistance to support development of the 2011 regional water plans, which include actions to increase water conservation in 10 Water Planning Regions. [EPD, DNR, DCA, GFC, GSWCC, GEFA]

#### ENVIRONMENTAL PROTECTION DIVISION

- Drafted revisions to DNR's Rules for Outdoor Water Use, Chapter 391-3-30, as provided by HB 1281 passed in 2008. Revisions incorporate stakeholder input on an earlier strawman rule and overviews. Amendments are expected to refer to pre-drought mitigation activities and describe drought indicators and drought response.
- Began a public process to amend DNR Rules for Water Conservation as provided by SB 370 passed in 2010 and the State Water Plan adopted in 2008. Rules are expected to be consolidated in Chapter 391-3-31, addressing procedures to reduce water loss and increase efficiency of operations by public water systems. Amendments are also expected to authorize the EPD Director to enhance conservation requirements for new and modified water withdrawal permits for non-farm use, as specified in the State Water Plan. Enhanced requirements may address demonstration of progress toward water conservation goals or water efficiency standards, conservation plan specifics, and annual reporting requirements.
- Executed a Memorandum of Agreement to partner with the Alliance for Water Efficiency to develop a water conservation tracking tool specific to Georgia. The tool is designed to support permitting of water withdrawal for non-farm uses by 1) assisting permit holders in implementing conservation activities specific to their systems, 2) aiding EPD staff in evaluation of permit applications and 3) compiling regional water use efficiency information.
- Developed the *Georgia Water System Audit and Water Loss Control Manual*, the official manual on minimum standards and best practices for improving a water provider's system efficiency.
- Conducted workshops on water audits, loss control, and water conservation planning and tracking, in partnership with the Georgia Association of Water Professionals, local experts, and the Alliance for Water Efficiency (details provided in preceding section of this report).
- Reviewed local government implementation of water conservation measures in the Metropolitan North Georgia Water Planning District's Water Supply and Conservation Plan. Participated in District meetings to review new water conservation measures for potential addition to the Plan and supported the District's water conservation education programs.

- Partnered with the University of Georgia Extension Service to promote the 40 Gallon Challenge, an educational campaign encouraging residents and businesses to reduce water use on average by 40 gallons per person per day ([www.40gallonchallenge.org](http://www.40gallonchallenge.org)).

## DEPARTMENT OF NATURAL RESOURCES

- Permanently terminated connection to municipal potable water source for landscape irrigation on Coastal Regional Headquarters campus. Landscaped area retrofitted with drought tolerant native species and irrigated with rainwater collected through rain barrels and distributed in a low flow drip irrigation system.

## GEORGIA ENVIRONMENTAL FINANCE AUTHORITY

- Operated three low-interest water infrastructure revolving loan programs that can be used by local government water utilities to finance water efficiency and water conservation projects: the Georgia Fund, the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF). GEFA has provided more than \$65 million in low-interest financing for such projects over the past five years.
- Increased support of water efficiency and water conservation by initiating a 1 percent interest rate reduction for stand-alone water efficiency and conservation projects funded through the CWSRF, DWSRF and the Georgia Fund. This incentive saves a borrower around 9 percent of monthly debt service and total loan payments - saving approximately \$115,000 to \$122,000 over the life of a \$1 million, 20-year loan.
- Received approval from USEPA for use of \$640,000 in DWSRF funds to help water systems with 3,300 to 10,000 customers complete a water loss audit consistent with the standards promulgated by EPD and to help those systems with the highest levels of water leakage to detect where those leaks are occurring in their distribution systems.

## DEPARTMENT OF COMMUNITY AFFAIRS

- Adopted revisions to the state minimum standard codes for construction in accordance with SB 370 passed in 2010:
  - 2011 Georgia state amendments to the 2006 International Plumbing Code regarding the requirements for high efficiency plumbing fixtures to be installed in all new construction permitted on or after July 1, 2012.
  - 2011 Georgia state amendments to the 2006 International Mechanical Code and the 2011 Georgia state supplements and amendments to the 2009 International Energy Conservation Code regarding the requirements for cooling towers installed in new construction permitted on or after July 1, 2012 to be in compliance with ASHRAE 90.1.
- Revised the WaterFirst Program to incorporate the requirements of SB 370 into the checklist of expectations for a WaterFirst Designated Community.
- Distributed “Every Drop Counts” cards to water providers for their use and provided technical assistance as requested by communities around the state.

## DEPARTMENT OF PUBLIC HEALTH

- Revised the rules and regulations for Tourist Accommodations and Public Swimming Pools, Spas & Recreational Water Parks to allow gray water use in toilets, urinals and commercial washing machines.

## GEORGIA SOIL & WATER CONSERVATION COMMISSION

- Secured partial funding to improve water use efficiency for agricultural irrigators through irrigation scheduling and pivot retrofits with the GSWCC Mobile Irrigation Lab. Funding provided through a USDA-NRCS partnership agreement.

- The Agricultural Metering Program supplied the state's irrigators with technical services to aid in effective management and use of water resources on Georgia farms. Published technical document jointly with USGS detailing analysis of metering data. Funding provided by the OneGeorgia Authority.
- Worked through the state's soil and water conservation districts to promote statewide water conservation programs and promote best management practices to increase water conservation in farming communities.

## GEORGIA FORESTRY COMMISSION

- Developed and implemented an agency-wide water conservation plan to reduce consumption and increase efficiencies at all GFC offices and facilities.

## Enhancing the State's Water Supply

### MULTIPLE AGENCIES

- Continued ongoing programs to provide technical assistance, permit, and fund water supply projects and to protect or improve water quality, thereby enhancing the state's water supply, as described in August 2010 Water Stewardship Act: Final Report on State Agency Activities. [All agencies]
- Offered the Water Supply Technical Assistance Team to provide guidance for local governments developing water supply projects, particularly new reservoirs or existing reservoirs being modified for water supply purposes. This service aims to streamline the process for developing new water supply projects and shorten the timeline for communities to complete water supply projects. [EPD, GEFA, DCA, GSWCC]
- Provided input and technical assistance to support development of the 2011 regional water plans, which include actions recommended to enhance water supply in 10 Water Planning Regions. [EPD, DCA, GFC, GSWCC, GEFA]
- Provided data and technical assistance to support activities of the Governor's Water Supply Task Force. [GEFA, EPD, DCA, GSWCC]

### ENVIRONMENTAL PROTECTION DIVISION

- Issued approximately 96 new and revised permits for non-farm water withdrawals and conducted over 1500 field inspections to assess compliance and assist permit holders. EPD maintains permits for approximately 800 withdrawals for non-farm uses, 21,800 withdrawals for farm uses, and 2500 public water supply systems.
- Continued classification of agricultural water withdrawal permits as active, inactive or unused.
- Worked with the US Army Corps of Engineers on revisions to the partnership agreement on coordination between Corps' activities under Section 404 of the federal Clean Water Act and related permitting by EPD (water withdrawal, Section 401 water quality certifications, safe dams, and drinking water).

### GEORGIA ENVIRONMENTAL FINANCE AUTHORITY

- Made numerous low-interest loans for new wells, well rehabilitation, water system interconnections, water storage tanks and water distribution system improvements.
- Supported development of the Governor's Water Supply Program (GWSP) and convened the Water Supply Task Force to provide expert guidance in developing the GWSP and to ensure interagency cooperation in GWSP implementation. The purpose of the GWSP is to assist local governments in developing new sources of water supply adequate to meet future water needs.

- Published a detailed engineering study outlining an emergency water supply plan for the Metropolitan North Georgia Water Planning District. As required by the Water System Interconnection, Redundancy and Reliability Act, the study examines the ability of qualified water systems to accept or share water with adjacent providers during emergencies. A total of 53 projects were identified for the 33 systems having a total cost of \$63 million. The study recommends that 16 systems build new interconnections or upgrade their existing interconnections.

## DEPARTMENT OF COMMUNITY AFFAIRS

- Administered the WaterFirst Program, which provides an incentive of a 1% reduction in rates on SRF loans provided by GEFA. Communities working regionally for water supply are ranked higher than communities that are not.

## DEPARTMENT OF PUBLIC HEALTH

- Provided well water assessment tool to ensure protection of individual water supplies.
- Worked with county health departments and/or county governments to improve performance and repair of on-site sewage management systems by tracking malfunctioning on-site sewage management systems; distributing educational DVDs on maintenance requirements; and providing a model ordinance for maintenance of advanced treatment on-site sewage management systems.

## GEORGIA SOIL & WATER CONSERVATION COMMISSION

- Continued partnerships with USDA-NRCS to provide farmers with cost-share program to implement water quality improvements on agricultural lands and reduce non-point source nutrient loading into surface waters.
- Analyzed key watersheds and identified opportunities to assist stakeholders across Georgia in water planning processes that improve water management, efficiency, and safety for aging dams with funding assistance from the American Recovery and Reinvestment Act.
- Protected water resources by reducing erosion from urban development sites through education and certification training for professionals and government officials via the Erosion and Sediment Control Program.
- Provided detailed water supply assessments of twenty eight flood control structures to counties as requested.

## GEORGIA FORESTRY COMMISSION

- Conducted forestry Best Management Practices (BMPs) training for forestry operators, landowners, county regulators, and other, using limited funding under Section 319(h) of the Clean Water Act.
- Conducted targeted monitoring to increase implementation of forestry BMPs and decrease water quality risks from ongoing forestry operations in watersheds of impaired streams.
- Investigated and mediated complaints about forestry activities impacting water, on behalf of EPD, USEPA, local governments designated as local issuing authorities, and Army Corps of Engineers.
- Partnered with Resource Conservation and Development Councils to provide technical advice on water conservation and water quality protection in forestry practices, including participation in public field days and workshops throughout the state.
- Provided technical and financial assistance through the Sustainable Community Forestry Program to help maintain urban tree cover in communities across Georgia, thereby contributing to water quality protection.



## Goals for 2012

### Encouraging Water Conservation

#### MULTIPLE AGENCIES

- Continue ongoing programs to encourage voluntary water conservation as described in August 2010 *Water Stewardship Act: Final Report on State Agency Activities*. [All agencies]

#### ENVIRONMENTAL PROTECTION DIVISION

- Continue work on amendments to DNR's Rules for Outdoor Water Use, Chapter 391-3-30, and Rules for Water Conservation (Chapter 391-3-31).
- Revise reporting forms submitted to EPD by permit holders to reflect new statutory requirements and amendments to rules, including pre-drought mitigation strategies and information on water efficiency.
- Work with the Alliance for Water Efficiency to finalize the Georgia water conservation tracking tool and train agency staff in its use. Integrate water system audit information into the tool and apply it to encourage permit holders to implement conservation activities and to evaluate permit applications that require demonstration of progress toward greater efficiency.
- Continue partnerships with Georgia Association of Water Professionals and Georgia Rural Water Association to train water utilities affected by SB 370's water system audit requirements. Focus on technical assistance to enhance the capacity of smaller water systems and improve the validity of data submitted by larger water systems.
- Establish a website or online repository for posting information on water system audits and water loss control efforts conducted by local water utilities.
- Enhance EPD databases to allow collection, review and evaluation of water audits by EPD associates. Track compliance with audit requirements and results of audits.
- Assist GEFA in evaluating applications submitted to the state through the Drinking Water SRF Two Percent Small System Technical Assistance Set-Aside program.
- Partner with other state agencies, local and regional manufacturers and distributors to publish information and educate Georgia citizens about new high-efficiency plumbing codes and building standards effective July 2012.
- Support implementation of water conservation practices recommended in regional water plans.

#### DEPARTMENT OF NATURAL RESOURCES

- Seek funding to install gutters and attached cisterns on the main office building of the Coastal Regional Headquarters to supply non-potable water.
- Continue to provide outreach and technical assistance on water conservation to the general public and local governments and guidance on applying for project funding through the Georgia Coastal Management Program's Coastal Incentive Grants.
- Continue to maintain water conservation measures and standards instituted by the Parks, Recreation, and Historic Sites Division in 2008 and 2009.

## GEORGIA ENVIRONMENTAL FINANCE AUTHORITY

- Increase the number of applications received for loans for water conservation projects as a result of the 1 percent interest rate reduction for stand-alone water efficiency and conservation projects funded through the CWSRF, DWSRF and the Georgia Fund.
- Use funding under the DWSRF to help small water systems conduct water loss audits and detect water leaks in their distribution systems. The program will be launched in tandem with the roll-out of the *Georgia Water System Audits and Water Loss Control Manual*, recently completed by the Georgia Environmental Protection Division (EPD).

## DEPARTMENT OF COMMUNITY AFFAIRS

- Begin holding quarterly Community Planning Institute (CPI) – Water Workshops with a section addressing water conservation and requirements of SB 370.
- Coordinate with EPD and GAWP on outreach on water audit requirements and implementation assistance.

## GEORGIA SOIL & WATER CONSERVATION COMMISSION

- Support water conservation efforts on Georgia farms by seeking funding for the GSWCC Ponds Program and promoting irrigation efficiency on agricultural lands.
- Continue to partner with the state soil and water conservation districts to provide soil and water conservation education on a community level, as well as resource conservation program support and cost-share opportunities.
- Provide current agricultural water use data and analysis to Georgia's leaders to support statewide water policy.
- Continue partnership with USGS to analyze water use data through statewide telemetry tools and provide easy-to-access online data to increase public awareness of rainfall and agricultural water usage in Georgia.

## GEORGIA FORESTRY COMMISSION

- Continue to expand GFC's agency commitment to water conservation at all of GFC's facilities statewide.

## Enhancing the State's Water Supply

### MULTIPLE AGENCIES

- Continue ongoing programs to provide technical assistance, permit, and fund water supply projects and to protect or improve water quality, thereby enhancing the state's water supply, as described in August 2010 *Water Stewardship Act: Final Report on State Agency Activities*. [All agencies]

### ENVIRONMENTAL PROTECTION DIVISION

- Continue direct technical assistance and permitting to support use of new or expanded water supplies and to assist public water systems. Continue classification of agricultural water withdrawal permits as active, inactive or unused.
- Support implementation of water supply practices recommended in regional water plans.

## GEORGIA ENVIRONMENTAL FINANCE AUTHORITY

- Begin funding projects under the Governor's Water Supply Program (GWSP), which commits \$300,000,000 for water supply projects over a four-year period beginning July 1, 2011. These funds include bond funding available through GEFA and the Georgia Department of Community Affairs (DCA) and funds to be secured by GEFA for the GWSP.
- Continue to commit funds in the Georgia Reservoir and Water Supply Fund to critical water supply projects.

- As requested, assist qualified water systems in financing redundancy and reliability projects identified in the report completed under the Water System Interconnection, Redundancy and Reliability Act.

## DEPARTMENT OF COMMUNITY AFFAIRS

- Begin holding quarterly Community Planning Institute (CPI) – Water Workshops with a section addressing water supply historically, currently, and future possibilities.

## GEORGIA FORESTRY COMMISSION

- Continue outreach efforts to forest landowners, foresters, loggers, timber buyers and other traditional partners for education in forestry BMPs and water quality protection. Initiate outreach to non-traditional groups such as Riverkeepers, Save Georgia's Coast, and other water advocacy groups to increase awareness of forestry BMPs and water quality protection.

## GEORGIA SOIL & WATER CONSERVATION COMMISSION

- Continue to provide water supply studies to communities as possible sites for conversion of flood control structures.