

BUILDING A STATE OF WATER CONSERVATION: GA EPD STRENGTHENS WATER CONSERVATION IN POLICY AND PLANNING

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Abstract. Without water conservation, Georgia will not be able to meet instream and off stream water demands of the future. Water conservation is the “beneficial reduction in water use, waste and loss” (Vickers 2001) and is proven to be the most economical and environmentally protective management tool for meeting water supply challenges (Gleick et al. 2003, Levin et al. 2002, U.S. EPA 2002, Vickers 2001, Gleick 2000). Internationally and nationally, water management agencies are proactively investigating and adopting water conservation programs to safeguard water resources and ensure the long-term health of citizens and ecosystems. Water conservation has held a place in Georgia’s water management strategies for many years, but not until recently has it become an EPD priority. Georgia is embarking on a period of long-term water planning and policy-making unlike any before, and water conservation is at the forefront. This report outlines the documented benefits of conservation, emphasizes EPD’s directives to incorporate water conservation into comprehensive water planning, and highlights issues EPD will address throughout the planning process.

INTRODUCTION

To meet the escalating challenges of water resource management, Georgia Environmental Protection Division (“EPD”), a division of the Georgia Department of Natural Resources (“DNR”), is enhancing its commitment to water conservation. Since the 1990s, EPD has endeavored to enforce the conservation-oriented laws passed by the Georgia General Assembly and rules and regulations adopted by the DNR Board. However, as water resource protection becomes more complex, Georgia’s leaders and citizens are calling for *comprehensive* water resource plans and policies, initiated by aggressive water conservation. To satisfy these expectations, EPD and other state agencies are pursuing a more coordinated and aggressive approach to water conservation as method to manage water, not just a remedy for drought conditions.

BACKGROUND

The State of Georgia currently faces many water management challenges. As Georgia continues to withdraw water from aquifers and rivers shared with other

states, interstate water management remains an issue (with Alabama, Florida and South Carolina). Federal officials and public interest groups closely watch Georgia’s management practices to ensure threatened and endangered aquatic species are not further imperiled. Local governments vie with each other for authority to deliver drinking water and provide wastewater services. Aging water infrastructure and outdated equipment are becoming more unreliable every year. To help ease these inter- and intra-state challenges, Georgia is investing in water conservation.

Making the case for conservation in Georgia

Without water conservation, Georgia will not be able to meet instream and off stream water demands of the future. Water conservation is the “beneficial reduction in water use, waste and loss” (Vickers 2001) and is proven to be the most economical and environmentally-protective management tool for meeting water supply challenges (Gleick et al. 2003, Levin et al. 2002, U.S. EPA 2002, Vickers 2001, Gleick 2000). Localities in Georgia and municipalities around the United States (“U.S.”) provide documented success of water conservation initiatives. Many states, communities, water providers and distributors are ahead of the curve and already implementing innovative conservation-oriented management strategies. Reducing water use, waste and loss can provide many benefits. The many benefits of conservation, and examples of successful efforts, include, but are not limited to:

- ◆ Distribution efficiency - Clayton County, GA (Jones 2004) and Asheville, NC (Maddaus et al. 2004)
- ◆ Efficient agricultural practices – Evans et al. (1998) and Texas WDB (2004)
- ◆ Efficient business operations - WellStar Health System (Ashley 2001), Southwire (2002), and Athens-Clarke County (Pearson 2004)
- ◆ Expansion of existing supplies - Athens Clarke County, GA (Pearson 2004) and Cary, NC (2000)
- ◆ Financial stability - Cobb County-Marietta Water Authority (GWMC 2000) and Irvine Ranch Water District, CA (Wong et al. 1999)
- ◆ Fortification of infrastructure - Clayton County, GA (Jones 2004) and Massachusetts (2005)

- ◆ Preservation of waste assimilation capacity – Metropolitan North Georgia Water Planning District (O.C.G.A. §12-5-571(a))
- ◆ Protection of environmental integrity - Flint River Basin, GA (O.C.G.A. §12-5-541) and Washington State (2003)
- ◆ Protection of groundwater sources – Savannah and Chatham Co., GA (1996) and Arizona DWR (1980)
- ◆ Protection of water quality - New York City, NY (Swanson and Tonjes 2001)

The benefits of water conservation are multi-faceted, as are the components of a successful program (Keyes et al. 2004 and Vickers 2001). When the components of a conservation program work in concert, many benefits can be realized locally. Such coordinated efforts also help state agencies ensure water resources are sustainable, available for current use and the use of future generations. **Investments in water conservation are investments in the future.**

Georgia's conservation directives

Georgia's leaders have heard the powerful messages about the promise of water conservation and are calling for action. In an October 2003 Executive Order, Governor Sonny Perdue called all state agencies to develop water conservation plans for their facilities and operations (GA Exec. Order 2003). The Georgia General Assembly passed the Comprehensive State-wide Water Management Planning Act in 2004, mandating EPD to create the first state-wide water management plan. This act elaborates that "Water resources are to be managed in a sustainable manner so that current and future generations have access to adequate supplies of quality water that support both human needs and natural systems" (O.C.G.A. §12-5-522(b)(2)). Furthermore, a statewide survey on water issues revealed that citizen respondents felt their number one constraint to saving water was the lack of state efforts to conserve and help them conserve (Responsive Management 2003).

The Georgia DNR has been building its water conservation efforts since the early 1990s. In 1994 the governing board of DNR ("DNR Board") adopted federally mandated rules requiring municipalities to implement new, efficient energy standards, which included water-conserving plumbing codes. Another 1994 amendment to the Georgia rules and regulations required that a water conservation plan accompany a new or expanded non-farm water withdrawal permit application of or exceeding 100,000 gallons per day. In 2001, the DNR Board adopted a series of policies described in the Water Issues White Paper. This white paper included recommendations that the state "Facilitate the integration of water conservation into all water resource planning initiatives..." (emphasis *not* added) (GA DNR 2001). In March 2003, the DNR Board approved a Drought

Management Plan that underscores pre-drought mitigation strategies designed to minimize the potential effect of drought (GA DNR 2003). These strategies included a statewide outdoor watering schedule limiting outdoor watering to no more than three days a week during non-drought periods. Additionally, DNR has drafted two water conservation plans since 2002, but the plans were never finalized (Elfner and McDowell 2004 and GA DNR 2004).

ISSUES TO BE ADDRESSED

The state's water conservation directives, provided by the Governor, DNR Board, EPD Director, and most importantly, the citizens of Georgia, are clear: help sustain the state's water resources through water conservation. EPD and other state agencies are investigating and researching the overlooked potential of water conservation. At publication, EPD is beginning the creation of the state's first comprehensive state-wide water management plan (O.C.G.A. §12-5-524). The comprehensive plan will include policies to help to reduce water withdrawals through water conservation and reuse (GA Water Council 2005). The water conservation components of the comprehensive plan, will inform EPD's efforts to finalize Georgia's first water conservation program, to date the state's most coordinated and aggressive effort to reduce water use, loss and waste.

Research shows that in order to produce a successful statewide conservation program, several components must be enacted concurrently (Keyes et al. 2004, Vickers 2001, U.S. EPA 1998, Maddaus Management 1997, Billings and Jones 1996). EPD is in the process of assessing available information, identifying information gaps, and developing a strategy to ensure water conservation is implemented. At publication, EPD has identified several issues to be addressed. These include, but are not limited to:

Identify state water conservation goals and expectations. EPD will use the aforementioned directives, success stories, and draft plans to develop far-reaching and distinct water conservation goals. Where possible these goals will be consistent statewide, and where necessary, will reflect diverse, regional challenges, water use patterns, technology limitations, and water availability.

Strengthen and enhance guidelines for conservation. Many groups and individuals have encouraged EPD to provide: 1) clearer and more productive water conservation guidance for municipalities, 2) specific guidance for industrial, institutional, and agricultural water use, 3) rules and regulations for reuse, and 4) stronger partnerships to advance technical assistance and incentive programs. EPD staff will carefully consider and evaluate the current guidance and enabling rules, regulations in order to recommend to the director

modifications and new initiatives to ensure Georgia is moving toward more efficient water management.

Provide for technical assistance and stakeholder involvement. EPD will convene a technical advisory group to offer assistance in the development of a Georgia water conservation program. Diverse groups who have actively offered assistance in the past will be tapped to participate in such an advisory role. Public input will be solicited through extensive public forums and formal comment periods. Additionally, EPD will make every effort to clarify any new or changing water conservation requirements through formal presentations, speaking engagements, and a revised statewide water conservation website (www.conservewatergeorgia.net).

Improve water use data reporting and collection. EPD receives data from a variety of sources. The water withdrawal permitting process and associated water conservation plans (R&Regs 391-3-2 and 391-3-6.07), the progress reports required every five years (R&Regs 391-3-6.07(4)(b)(8), and the water use trend analysis conducted every five years (Fanning 2003) produce water withdrawal and delivery information as well as estimates on water use. Similar information also is being collected and analyzed for regional planning efforts, such as the Metropolitan North Georgia Water Planning District (O.C.G.A. §12-5-57), Flint River study area (O.C.G.A. §12-5-541), and the 24 coastal county region (CVI0G 2004). This data is valuable and will be used to inform water conservation planning. However, more information is needed to make accurate assessments of current and future water use, to set goals, and estimate conservation results more precisely. EPD will investigate methods of collecting, reporting and analyzing water use data in an effort to alleviate the uncertainties that plague resource managers, agricultural users, businesses and conservationists.

Develop and integrate a methodology for evaluating conservation plans and plan implementation. EPD has several regulatory program units devoted to water resource permitting, particularly related to water withdrawal permitting. These units have developed methods for evaluating the water conservation plans they receive, but methods of evaluation are not integrated across units. EPD will endeavor to develop a consistent methodology for evaluating local water conservation plans and implementation. Such a methodology must recognize statewide water issues, use trends and patterns, and also be sensitive to regional variations and watershed concerns.

Improve statewide system efficiency. Controlling water loss is an important factor in efficiently managing water resources. Several methods for detecting and reducing water loss from municipal water delivery systems have recently been developed (AWWA 2003 and Thornton 2002). Also, new information is being produced from many sources pertaining to water loss control in irrigation

practices (Texas WDB 2004 and Evans et al. 1998). The state will use this information and others to recommend the most appropriate and effective way of calculating and controlling water loss.

Identify funding opportunities for localities. Usually an initial financial investment is required to implement conservation initiatives, and generally the burden lies with localities. Fortunately, returns from such investments can be great (Jones 2004 and Wong et al. 1999). EPD will investigate funding options to help localities, water use sectors, and other interested parties initiate conservation programs. The state will also explore and recommend long-term funding options designed to encourage reduced water use and sound business practices, such as conservation-oriented rate structures.

CONCLUSION AND NEXT STEPS

EPD has the responsibility to ensure that water is used reasonably and in a sustainable manner throughout the State of Georgia. The Southeastern United States has amazingly rich water resources, and most communities have grown without a sense of scarcity that so many regions of the country face. However, as trends of increasing population, interstate conflicts, competition for use of resources, and imperiled species continue, Georgia's water management challenges escalate. EPD and other state agencies must rise to meet the challenges of the 21st Century with innovation and commitment to conservation.

At publication, EPD is drafting a comprehensive statewide water management plan. The agency has committed to building this plan on a foundation of water conservation. Currently, EPD is utilizing in-house experts and beginning to tap experts from other agencies and groups to evaluate Georgia's water conservation policies and those of other states. Simultaneously, EPD staff members have begun investigating ways to strategically implement water conservation in all EPD program areas.

EPD welcomes any feedback on this work in progress and the changes it may bring. Indeed, change will be difficult, but some changes are long overdue. As Sandra Postel stated in *Last Oasis: Facing Water Scarcity* (1997), "Water is the basis of life, and our stewardship of it will determine not only the quality but the staying power of human societies."

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