

10 YEARS OF WATER CONSERVATION IN THE METRO WATER DISTRICT A RETROSPECTIVE OF THE WATER SUPPLY WATER CONSERVATION PLAN

Neela Ram¹ and Kim Shorter²

AUTHORS: ¹Metropolitan North Georgia Water Planning District, 40 Courtland Street NE, Atlanta, Georgia; ²AMEC, Environment & Infrastructure, 1075 Big Shanty Road, Suite 100, Kennesaw, GA

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Abstract. In 2001, the Metropolitan North Georgia Water Planning District (Metro Water District) was established by the Georgia Legislature to establish policy, provide guidance, and create plans to promote the intergovernmental coordination of water issues within the region. The Metro Water District includes 15 counties as well as 92 municipalities that participate in a framework for integrated water resource planning. Because water conservation is a critical component in meeting future water needs, the Water Supply and Water Conservation Management Plan was developed to provide specific strategies and recommendations for managing and preserving the resource within and downstream of the region. The measures contained within this plan promote a balanced water savings strategy that aim to meet the needs and water use patterns across various user sectors within the Metropolitan Atlanta area.

This paper will explore the Metro Water District's Water Supply and Water Conservation Plan and discuss its impact over the past ten years.

Background

The Georgia General Assembly created the Metropolitan North Georgia Water Planning District (Metro Water District or the District) in 2001. As the water planning organization for the Metropolitan Atlanta area, its purpose is to establish policy, create plans and promote intergovernmental coordination of water issues from a regional perspective for the 15 counties, 92 local governments, 7 water and sewer authorities, and 56 water systems within the District. The Metro Water District helps guide this intergovernmental coordination for stormwater management, wastewater treatment and water supply and water conservation issues through regional and watershed specific plans.

It is important to note that the Metro Water District is a regional water planning agency and does not

produce, sell, or distribute water to communities or customers. The local governments and water agencies that the District serves are responsible for the development of water supplies and the sale of water to customers. The Metro Water District's planning activities are primarily funded by membership dues from the jurisdictions it serves.



Figure 1. The Metropolitan North Georgia Water Planning District

The Metro Water District's Water Supply and Water Conservation Management Plan

The Metro Water District's Water Supply and Water Conservation Plan (the Plan) is a comprehensive plan implemented by local governments and water utilities. The state of Georgia enforces the plan through new or modified water permits as well as through determining eligibility for state grants and loans (OCGA § 12-5-584). Strategies and recommendations for effective water supply

management and conservation are detailed within the Water Supply and Water Conservation Plan. These strategies focus on intensive water demand management as well as aggressive conservation efforts.

The first Plan was completed and adopted in 2003 and included ten conservation measures. The first five-year update to the Plan, retained all and enhanced three existing measures, and added two new measures. The Plan was again amended in 2010 and seven new measures were adopted – two of these measures are applicable throughout the District and the other five apply to specific jurisdictions and water providers that rely on water withdrawn from Lake Lanier and the Chattahoochee River. Figure 2 lists the 19 conservation measures that are mandatory and enforced in all or parts of the Metro Water District (Metropolitan North Georgia Water Planning District, 2009, as amended).

Required Water Conservation Measures
5.1 Conservation Pricing
5.2 Replace older, inefficient plumbing fixtures
5.3 Pre-rinse spray valve retrofit education program
5.4 Rain sensor shut-off switches on new irrigation systems
5.5 Sub-unit meters in new multi-family buildings
5.6 Assess and reduce water system leakage
5.7 Residential water audits
5.8 Low-flow retrofit kits for residential users
5.9 Commercial water audits
5.10 Education and public awareness
5.11 Install high efficiency toilets and high efficiency urinals in government buildings
5.12 New car washes recycle water
5.13 Expedite existing programs to identify and reduce both real and apparent water losses*
5.14 Multi-family high efficiency toilet rebate program*
5.15 Install meters with point of use leak detection*
5.16 Require private fire lines to be metered*
5.17 Maintain a water conservation program*
5.18 Water waste policy to reduce outdoor water waste
5.19 High efficiency plumbing fixtures consistent with state legislation
* For Chattahoochee River and Lake Lanier water systems only

Figure 2. Required Conservation Measures for the Metro Water District

The Metro Water District’s comprehensive and balanced water conservation program was designed to meet the conditions and water use patterns in the greater Metropolitan Atlanta area. The implementation of ordinances and rates structures, in addition to incentive programs, like rebates, have allowed for maximum water efficiency.

The Metro Water District is a Leader in Conservation

Considerable progress has been made since the Metro Water District was first created in 2001. The 2003 Plan and the update in 2009 established water conservation goals that were calculated based on the implementation of the selected water conservation measures and also on their ability to reduce demands in Metropolitan Atlanta more efficiently and effectively. These aggressive measures have been successful in contributing to the reduction in water use. In the past ten years, the Metro Water District has established itself as a leader in the area of water conservation. The following observations help support this statement:

1. **The Metro Water District has seen a beneficial reduction in overall per capita water use.** Per capita water use is the measure of all the water the region has used divided by the number of people in the region, and is frequently used as a benchmark for water efficiency. The Metro Water District has seen a beneficial reduction per capita water use since 2000, with a downward trend reflecting more than a 20 percent decrease between 2000 and 2010 (Metropolitan North Georgia Water Planning District, 2011a) (Metropolitan North Georgia Water Planning District, 2012). This observation is especially notable considering that the population within the District increased by nearly 1 million people within this same period. Though highly variable weather patterns and the economic recession can influence water use, the aggressive conservation measures contained within the Water Supply and Water Conservation plan have had a significant

impact on water use trends within the District.

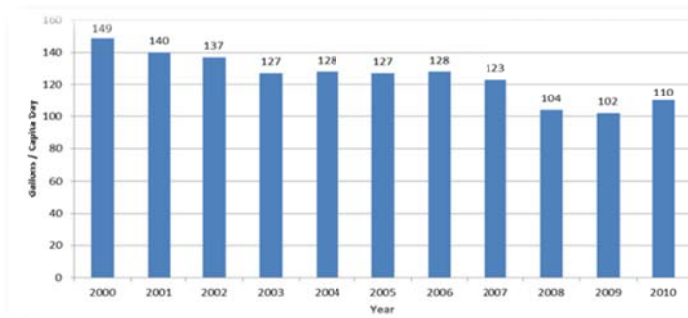


Figure 3. Metro Water District's Historical Per Capita Water Use

To further support this point, a survey was conducted to evaluate the region's efficiency when compared to other regions. Water use data was collected from the years 2005 through 2007 in order to discount any impacts from the economic recession as well as local drought conditions. Metro Atlanta's per capita water use was lower than most of the areas that were surveyed (Figure 3). (Maddaus Water Management and CH2M Hill, 2011)



Figure 4. Per Capita Water Use Comparison

- The Metro Water District has a low consumptive use of water.** Minimizing consumptive use to the maximum extent possible, while also balancing other considerations and priorities, is a major goal of the Plan. Low rates of consumption can also act as a signal for water efficiency. Consumptive water use is essentially water that is withdrawn but not returned to the same river basin for use by downstream communities. Examples of consumptive use include any outdoor water use or potable water that is treated by onsite sanitary sewage systems, or septic tanks.

The majority of the Metro Water District's water supply comes from the Chattahoochee Basin. The Georgia Environmental Protection Division's guidance indicates that the Metro Water District should aim to return on an annual average 58% of water withdrawn from the Chattahoochee Basin

(Metropolitan North Georgia Water Planning District, 2009, as amended). The Metro Water District has exceeded this goal, and has returned an average of 67% of what is withdrawn, which amounts to a net consumptive use of 33 percent (Metropolitan North Georgia Water Planning District, 2011a). Low consumptive use results in more water being returned to rivers and lakes.

Outdoor water use, which is one component of consumptive water use, comprises only 20 percent of the total water used within the District (Metropolitan North Georgia Water Planning District, 2009, as amended). While many communities promote water efficiency for outdoor irrigation through non-potable reuse systems that use reclaimed water, the Metro Water District recognizes that this practice is still considered a consumptive use. As a result, the policies and measures contained within the Water Supply and Water Conservation Management Plan focus on minimizing consumptive use as part of their balanced approach to promoting water efficiency.

3. **The water conservation program is mandatory and enforced by the Georgia Environmental Protection Division.** Unlike other states, the regional water conservation program is mandatory for all 107 local governments in the Metro Water District (OCGA § 12-5-584). The Plan is directly associated with new or modified water permits as well as eligibility reviews for grants and loans. This association with water permits, in addition to the region's commitment to water efficiency, has contributed to the declining per capita water use as well as the legitimacy of the efforts of the District.

Georgia EPD has established a schedule to audit each of these entities and has audited over 85 jurisdictions since 2009, including

water and wastewater authorities¹. This audit is comprehensive and thorough – it includes site inspections, a complete review of relevant documents, ordinances, and policies to ensure a good faith effort towards proper implementation of water conservation measures by local governments. To date, no permit has been challenged because the water providers and local governments have worked hard to implement the water conservation requirements.

4. **The Metro Water District and its local governments have a strong record of implementation of water conservation measures.** Metro Atlanta is the only major metropolitan area in the country with more than 100 jurisdictions implementing a comprehensive water conservation requirement that is both required and enforced. To date, some of these accomplishments include:
 - 99 percent of the total population is served by water systems that have tiered water conservation rates (Metropolitan North Georgia Water Planning District, 2011b). These rates help to reduce excessive discretionary water use, especially outdoor irrigation, by increasing the cost of water as the volume of use increases. Water systems within the Metro Water District help promote conservation by implementing at least a three tiered rate structure.
 - A total of 38 jurisdictions that cover 96% of the population offer a rebate incentive to replace old and inefficient toilets in single-family homes (Metropolitan North Georgia Water Planning District, 2011b). Toilets are one of the highest users of water, and the Metro Water District's program to replace older and inefficient models have contributed to the reduction in water use. Since the program began in 2008, 76,872

¹ http://www.gaepd.org/Documents/techguide_wpb.html

toilets within the Metro Water District have been replaced in single-family homes that were built prior to 1993 (Metropolitan North Georgia Water Planning District, 2012). Several jurisdictions also address replacing inefficient toilets in multi-family residences.

Local government highlight: The City of Atlanta was the first to offer a rebate program geared towards multi-family buildings. Since 2010, this program has replaced about 3,000 toilets in more than 40 properties (City of Atlanta, 2012).

- More than 80 percent of all water providers within the Metro Water District have developed a program that assesses and reduces water system leakage (Metropolitan North Georgia Water Planning District, 2011b). These programs seek to reduce water losses within water distribution systems and water treatment facilities by assessing annual water losses and developing a program to identify and reduce such loss.

Local government highlight: Henry County Water and Sewerage Authority started their leak detection program in 2007. The Authority installed new equipment to locate leaks and hired dedicated staff to manage the program. To date, the Authority has detected over 300 leaks, which has amounted to a savings of more than 300 million gallons of water (Henry County, 2012).

- More than 98 percent of the population within the Metro Water District is targeted through education and outreach programs by local governments (Metropolitan North Georgia Water Planning District, 2011b). The Metro Water District's "My Drop Counts" campaign, which was launched in 2011, reaches out to individuals, families, businesses, schools, and local governments to encourage water conservation through various in-home and in-office water saving

techniques (Metropolitan North Georgia Water Planning District, 2012).

Local government highlight: Fulton County has demonstrated the effectiveness of outreach and education through their "Our Water, Our Future" program. Through this program, they installed a community garden to demonstrate the benefits of water efficient gardens by utilizing irrigation audits, removing invasive species and installing low maintenance plant materials. This project was a catalyst for water efficient landscaping for other County renovations and new construction (Fulton County, 2012).

Summary

The Metro Water District and the communities within the District are committed to aggressive water conservation efforts. The measures contained within the Plan were designed to promote the most effective conservation practices for the greater Metropolitan Atlanta region. The results of these efforts are clearly demonstrated by the widespread adoption of these measures across the many jurisdictions within the District, and more importantly, through the overall reduction in per capita water use over the past decade.

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