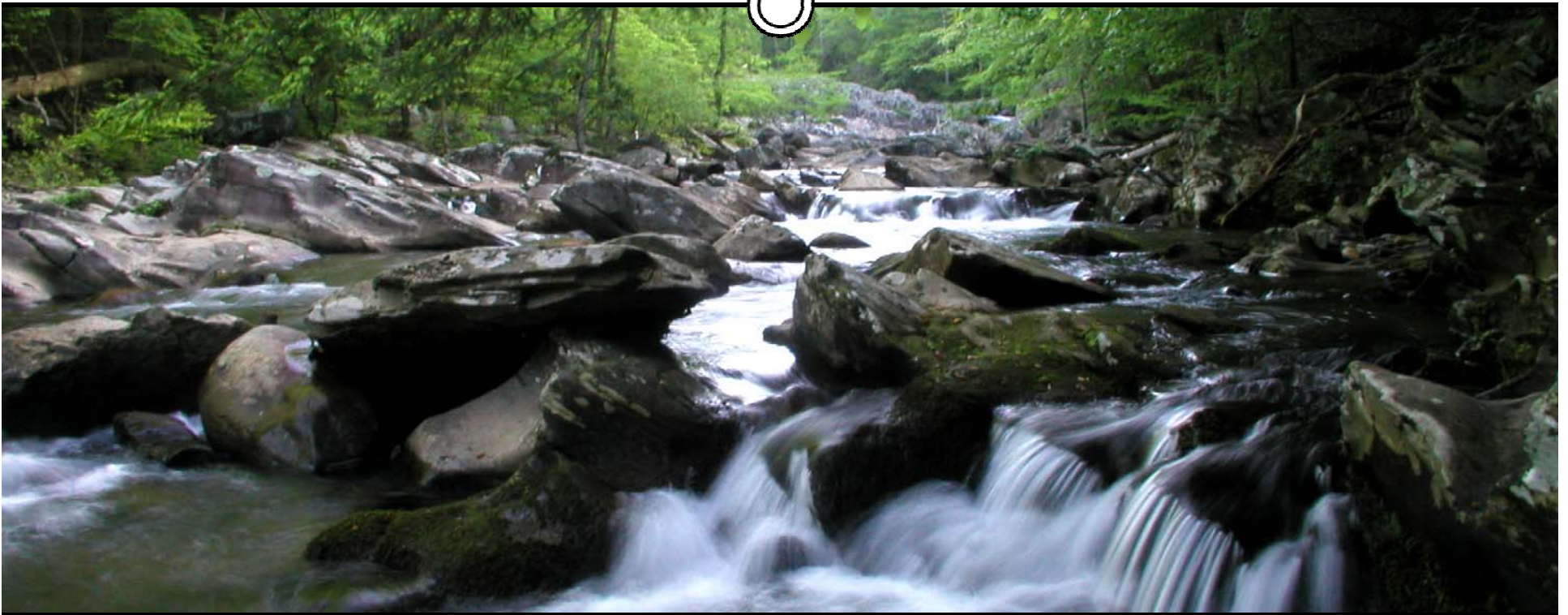


How Georgia's Plans for Water Management & Conservation will affect you!



September 27, 2011

Dan Loudermilk, P.E. - Sustainable Systems Engineer

What is on the books so far....

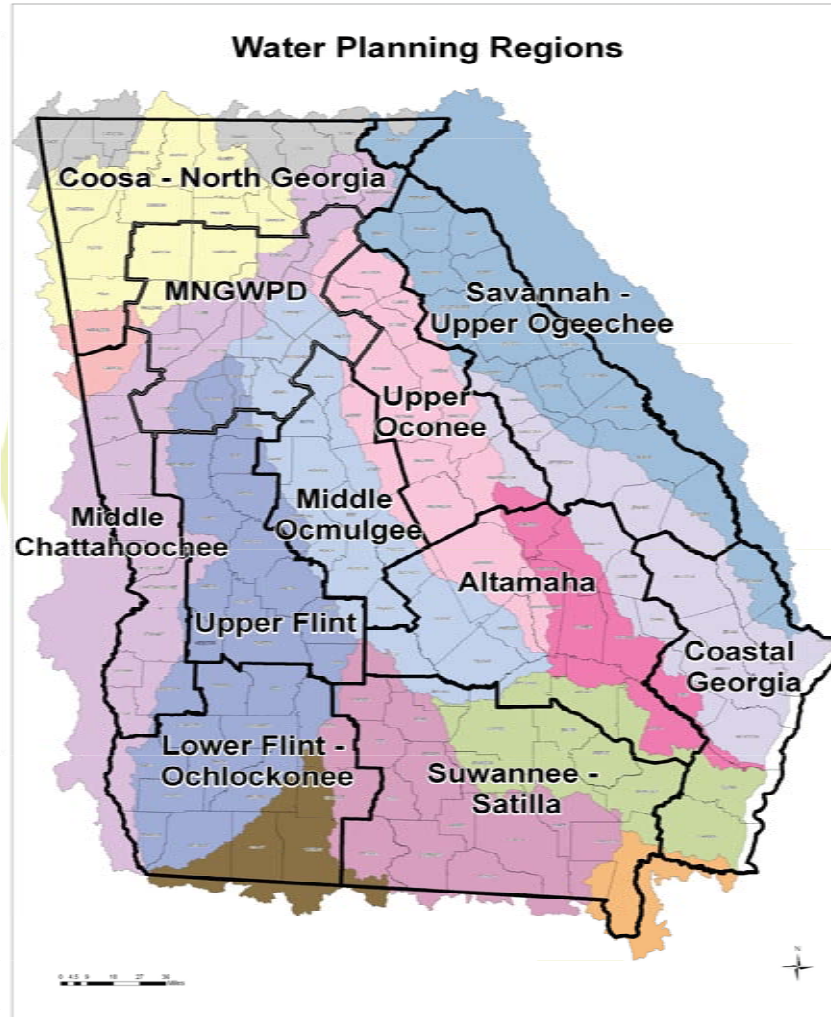


- Statewide Water Management Plan
 - Regional Water Plans – under review by EPD & Public
 - Update based on EPD & Public comments
 - Implement

<http://www.georgiawaterplanning.org>

- Water Stewardship Act of 2010
 - Major requirements will take effect in 2012

Georgia Water Planning Regions



DEPARTMENT OF NATURAL RESOURCES
SUSTAINABILITY DIVISION

State-Wide Water Management Plan



Comprehensive State-wide Water Management Plan 3 Year Implementation Schedule	2008			2009												2010			2011								
	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
1 Resource Assessments																											
2 Data Management and Compilation (SWAVAIL); (SWQUAL); (GW)																											
3 Unimpaired Flow Development (SWAVAIL)																											
4 Current Consumptive Use Assessment Modeling & Report (SWAVAIL)																											
5 Model Development and Calibration (SWQUAL)																											
6 Current Assimilative Capacity Modeling & Report (SWQUAL)																											
7 Conceptual Model and Calibration (GW)																											
8 Determine Sustainable Yield & Report (GW)																											
9 Forecasting																											
10 Population and Employment																											
11 Irrigated Acreage and Crop Type / Agricultural Water Use																											
12 Energy Water Use																											
13 Land Use																											
14 Guidance Development*																											
15 Technical Guidance on Best Practices																											
16 Water Conservation Implementation Plan																											
17 Water Planning Guidance																											
18 Water Conservation Guidance																											
19 Rulemaking																											
20 Permitting Water Withdrawals and Discharges (Plan Section 3)																											
21 Water Conservation (Plan Section 8)																											
22 Interbasin Transfer (Plan Section 10)																											
23 Water Quality Standards - Dissolved Oxygen (Plan Section 12)																											
24 Water Quality Standards - Bacteria (Plan Section 12)																											
25 Coordinated Environmental Planning (Plan Section 13)																											
26 Regional Planning (Plan Section 14)																											
27 Regional Planning																											
28 Regional Planning Boundaries																											
29 Nominations/ Appointments																											
30 Kickoff Meeting, Training, MOA																											
31 Regional Visioning																											
32 Municipal and Industrial Water and Wastewater Forecasting																											
33 Presentation of Assessments and Forecasts to Councils																											
34 Prepare Plan's Background Sections																											
35 Initial Selection of Management Practices																											
36 Initial Future Assessments (Modeling)																											
37 Refinement of Management Practices																											
38 Future Assessment Refinement (Modeling)																											
39 Final Selection of Management Practices																											
40 Final Future Assessments (Modeling)																											
41 Recommended Draft Regional Plans to EPD																											
42 EPD Review / Public Comment																											
43 Councils Revise Plans																											
44 EPD Adopts Regional Plans																											

(SWAVAIL) = Surface Water Availability Assessment
 (SWQUAL) = Surface Water Quality Assessment
 (GW) = Groundwater Quantity and Quality Assessment
 *Additional Guidance may be completed if necessary

**Supplemental information regarding these implementation items are provided on the following pages.

Posted by EPD 11/7/08

1

Metropolitan North Georgia Water Planning District (MNGWPD) Water Conservation Plan



Overview

Watershed Management Plan

Wastewater Management Plan

+ Water Supply & Conservation Plan

Plan Compliance

Water Supply and Water Conservation Management Plan

The Water Supply and Water Conservation Management Plan includes a framework for water supply facilities and strategies for resource management. The plan provides for the continued use of existing reservoirs, the completion of three new reservoirs that are in the planning process, three additional reservoirs needed in the future, and the construction of two new storage facilities to drought proof and extend existing supply sources. The plan also calls for the expansion of 28 existing water treatment plants and the construction of six new water treatment plants. Management strategies call for intensive demand management and an aggressive water conservation program. Returning highly treated wastewater to source water is included as part of the District's comprehensive approach to water resources management. The plan also outlines an education plan to raise public awareness of water supply and water conservation issues.

Water Supply and Water Conservation Management Plan - May 2009

On May 7, 2009 the Metro Water District Board adopted the updated Water Supply and Water Conservation Management Plan. The updated plans replace the Metro Water District's September 2003 plans as amended.

[Plan Amendments through June 2011](#)

[Water Supply and Water Conservation Management Plan \(Complete Document\)](#)

[Cover and Table of Contents](#)

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[Section 4: Water Conservation Analysis](#)

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[Appendix A: Plan Accountability Index](#)

[Appendix B: County Level Summaries](#)

<http://www.northgeorgiawater.com/html/88.htm>

DEPARTMENT OF NATURAL RESOURCES
SUSTAINABILITY DIVISION

Requirements in the 2009 MNGWPD Water Conservation Plan

Continue 10 water conservation measures from the 2003 Plan:

- Conservation pricing
- Replace older, inefficient plumbing fixtures
- Pre-rinse spray valve retrofit education program
- Rain sensor shut-off switches on new irrigation systems
- Sub-meters in new multi-family buildings
- Assess and reduce water system leakage
- Conduct residential water audits
- Distribute low-flow retrofit kits to residential users
- Conduct commercial water audits
- Implement education and public awareness plan

Requirements in the 2009 MNGWPD Water Conservation Plan (Cont.)



Strengthen 3 of those 10 water conservation measures:

- Irrigation meter pricing at 200 percent of the first tier rate
- 1.28 gpf toilet rebate program only by 2014
- Minimum local education requirements and optional toolbox of examples is provided.

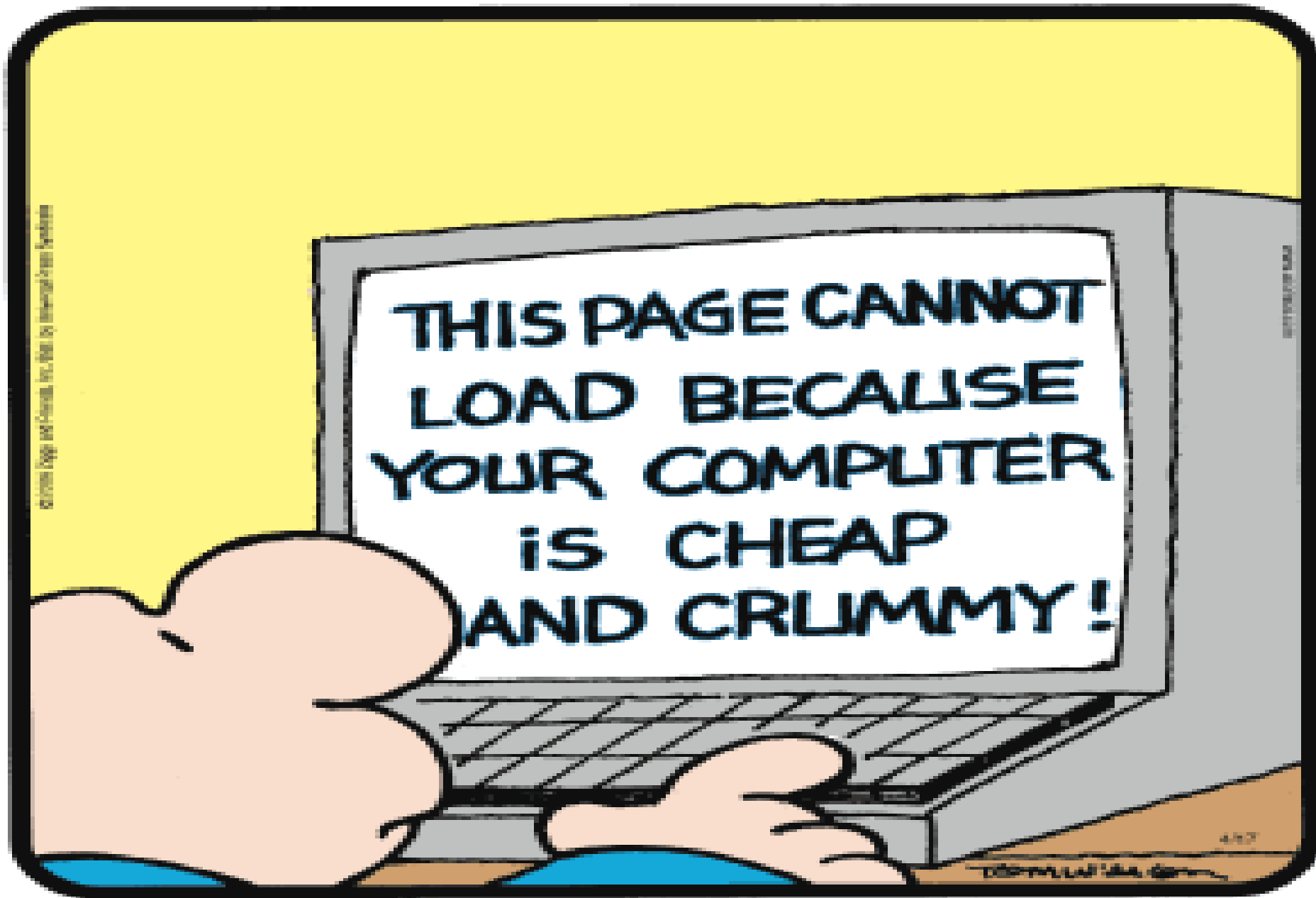
Add 2 new water conservation measures:

- Install 1.28 gpf toilets and low flow urinals in government buildings
- Require new car washes to recycle water.

Water Stewardship Act of 2010



- Requires state departments to implement water conservation practices by July 1, 2010;
- Standardizes leak reporting by public water utilities;
- Requires "sub-metering" of multifamily, commercial and industrial construction, beginning July 1, 2012;
- Requires high efficiency cooling towers, toilets, urinals and fixtures for all new construction beginning July 1, 2012;
- Tracks unused water withdrawal permits for agriculture purposes and establishes a process to revoke unused water withdrawal permits; and
- Requires outdoor watering occur between the hours of 4:00 p.m. and 10:00 a.m. to reduce evaporative loss.



DEPARTMENT OF NATURAL RESOURCES
SUSTAINABILITY DIVISION

Reduce Water Loss



- DNR estimates 117 million gallons a day is lost from Metro Atlanta Water Systems.
- All utilities should use the AWWA / IWA water balance approach to track water consumption.
- All utilities should undergo a system-wide water audit every five years to assess progress with respect to progress on the AWWA / IWA water balance approach. Areas reviewed should include:
 1. Proper metering of all authorized water uses;
 2. Development of better estimates of water use by the fire department; for line flushing; for street cleaning; and during water main breaks;
 3. Appropriate meter testing and main line maintenance, repair and replacement procedures; and
 4. Leak detection programs. Leak detection programs can range from simply detecting in-home leaks, such as toilet or sprinkler system leaks, to the use of more sophisticated leak detection equipment, such as mechanical or electronic sound intensifying instruments that "hear" water escaping from the water system.

Water Pricing



Currently, water is not priced at its true value; in fact, some utilities even provide incentives to encourage water waste. We could see up to a 22% decrease in consumption through meaningful conservation pricing such as:

1. Provide water at low prices for basic and essential needs, so all customers can afford it;
2. Reward conserving customers with lower rates;
3. Encourage efficient use by sending a strong price signal;
4. Assign water supply and development costs proportionately to those customers placing the highest burden on the supply system;
5. Provide a revenue source that can be used for other water conservation programs;
6. Stretch existing water supplies farther to avoid much of the cost, delay, and controversy resulting from large new water development projects; and
7. Do all of the above, while maintaining a stable flow of revenue to the utility.

Conservation pricing is required and exists in some form throughout most of the 15-county Metropolitan North Georgia Water Planning District.

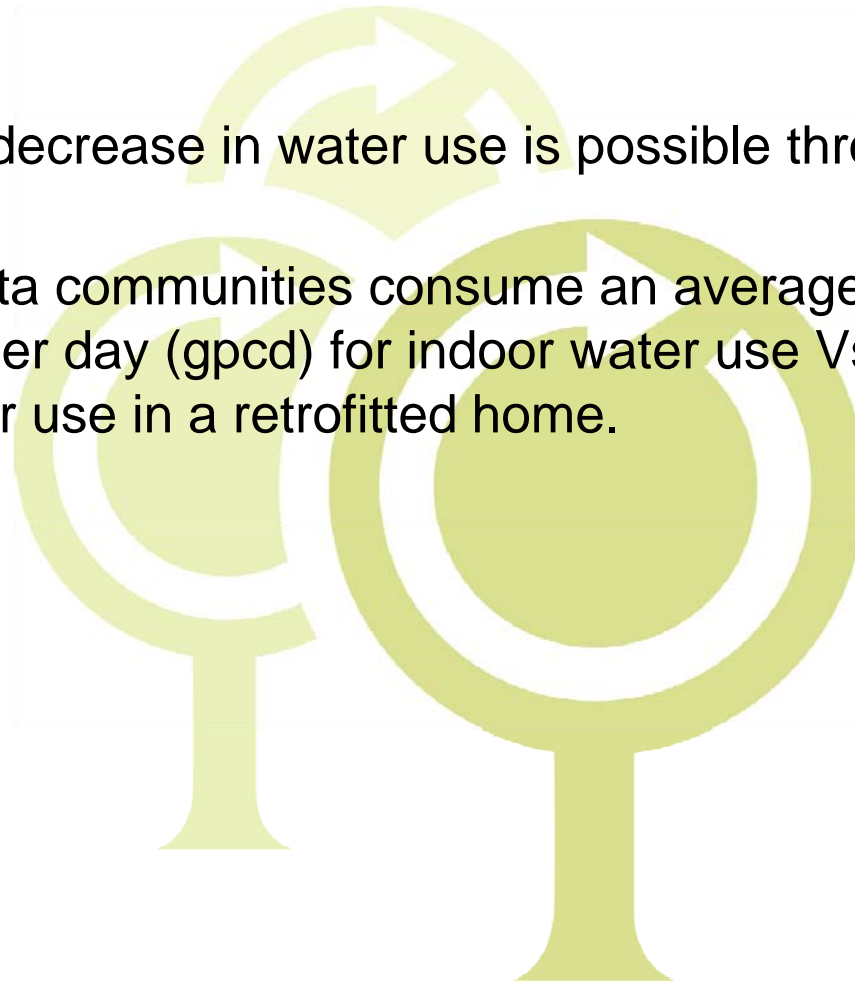
Meter all Water Uses

- Submetering multiple dwelling unit buildings and businesses:
 - encourages accountability and allows individual customers to assess and modify their water usage.
 - Reduces risk and costs for the building or business owner by making the individual water consumers accountable for their use.
 - Can yield a 15% water savings over single meter properties.
 - Provides useful information for the management of irrigated landscapes, which constitute approximately 50% of municipal water use.
 - Has a benefit / cost ratio in the range of 5.0 - 6.0 for new properties.
 - Has a benefit / cost ratio in the range of 3.0 - 4.0 for existing properties.
- Separate metering of landscape and domestic use provides new opportunities to identify and implement targeted practices to encourage more efficient water use in both categories.

Retrofit All Buildings With Water Efficient Fixtures



- Up to 35% decrease in water use is possible through retrofits alone.
- Metro Atlanta communities consume an average, 69 gallons per capita per day (gpcd) for indoor water use Vs. 45 gpcd for indoor water use in a retrofitted home.



Landscape To Minimize Water Waste

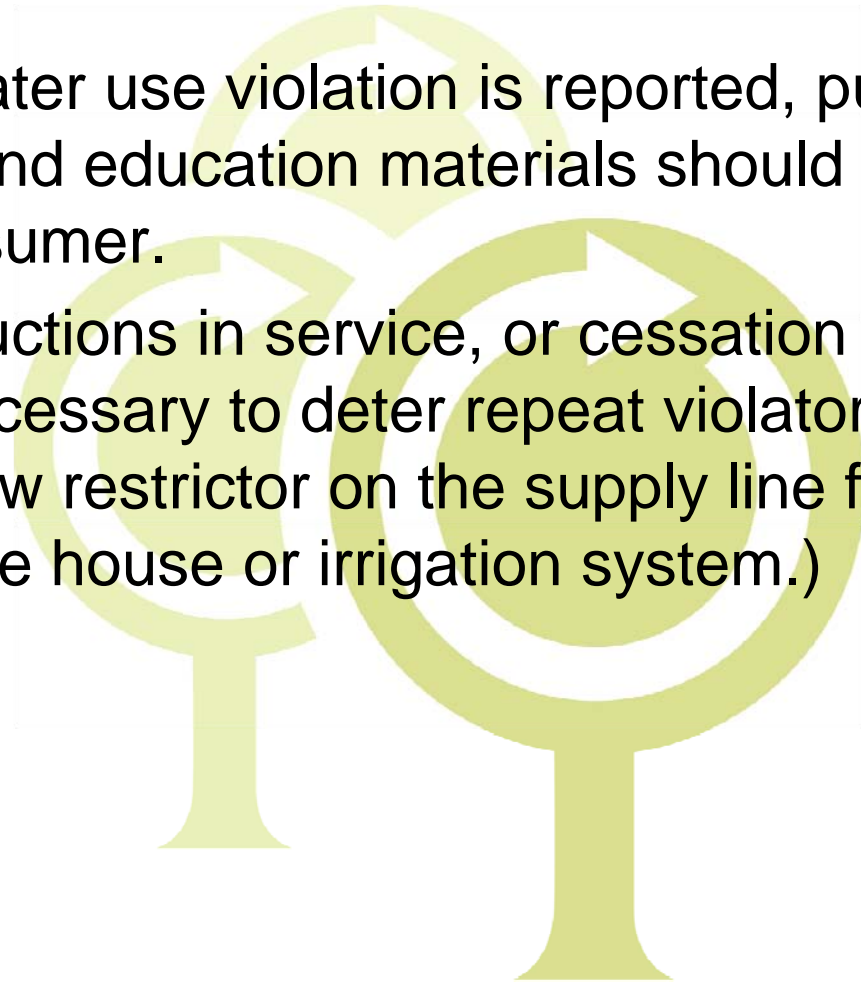


- On average, 30% of household drinking water is used to water lawns, tree, and shrubs. Of this water, 50% an average is wasted.
- At least 25% savings is possible through proven outdoor water use programs.
- The peaks in demand generated by outdoor water use drive the need to develop new water sources and expand water infrastructure. By reducing the peak, we extend the life of existing water infrastructure and can eliminate the need for new sources.
- Costs for rain sensor shut-off device programs in Georgia per 1,000 gallons saved range from \$0.00 to \$1.70.

Increase Public Understanding



- When a water use violation is reported, public outreach and education materials should be provided to the consumer.
- Fines, reductions in service, or cessation of service may be necessary to deter repeat violators. (Example: Install a flow restrictor on the supply line from the meter to the house or irrigation system.)



Water Efficiency Program Steps



- Establish commitment
- Line up support and resources
- Identify and prioritize water management options... get team's input
- Conduct water audit & identify significant water using equipment / practices
- Prepare a plan and implementation schedule to address significant water use
- Track results and publicize success
- Review and revise plan
- Continue.....Forever!

Waste Hierarchy Diagram



The Tri-State Water Wars!

Federal Court Rulings July 17, 2009 U.S. District Court, Middle District of Florida - Judge Magnuson:

- The only authorized purposes for Lake Lanier are hydropower, flood control and navigation.
- Delayed implementation three years for parties to obtain approval from Congress for the operational changes that are necessary to allow use of Lake Lanier for water supply purposes. Otherwise, Operation of Buford Dam reverts back to “base line” operations of the mid-1970s.
- The State of Georgia, the other Georgia parties (ARC, Cobb County Marietta Water Authority, the City of Atlanta, DeKalb County, Atlanta-Fulton Water Resources Commission, the City of Gainesville and Gwinnett County) and the U.S. Army Corps of Engineers appealed the ruling in September 2009.
- The 11th Circuit agreed to hear the appeal

The Latest Ruling

Issues Resolved by rulings of the 11th Circuit, June 28, 2011:

- The July 2012 deadline is gone. The 11th Circuit overruled Judge Magnuson's order
- Determined that the 1946 legislation authorizing the construction of Buford Dam also authorizes the Corps to operate Lake Lanier to support metro Atlanta's water withdrawals from the river downstream of Buford Dam.
- The appeals court also rejected Judge Magnuson's analysis of the Water Supply Act of 1958 and determined that the act provides additional authority, over and above the authority provided by the original legislation, to operate the reservoir for water supply.
- The appeals court granted the Corps one year to determine the full extent of this authority.

What we can do for you...



The Sustainability Division staff can assist you with your water efficiency efforts. The following free, confidential services are available to industry, commercial businesses, and institutions (including local, state and federal government programs) that operate in Georgia:

- Water audits (Includes use of portable ultrasonic flowmeter if needed)
- On-site water efficiency assessments
- On-site water efficiency training
- Facilitate solutions with water efficiency teams
- Water efficiency information center

For more information...



- Visit www.gasustainability.org
- Toolkit Modules are on our website
- Partnership Program information also online
- Email Dan.Loudermilk@gadnr.org
- 404-657-5204