



Metropolitan North Georgia Water Planning District

40 Courtland Street NE | Atlanta, Georgia 30303

Metropolitan North Georgia Water Planning District

Amendments to the Water Supply and Water Conservation Management Plan

(through June 16, 2015)

Amendment #1 (12/02/2010)

At the December 2, 2010 Metro Water District Board meeting, additional water conservation action items were adopted as well as additions to the existing District education measures.

The seven additional action items are added to Section 5 of the Plan and numbered accordingly as follows:

- The attached action items numbered 5.13 through 5.17 are for implementation only by the water systems that receive their water supply directly from Lake Lanier or the Chattahoochee River; this includes all of the water systems in Cobb, DeKalb, Forsyth, Gwinnett, and Hall Counties and those systems in Fulton County except for the cities of Palmetto, College Park, and East Point.
- The attached action items numbered 5.18 and 5.19 apply throughout the entire Metro Water District.

The attached additions to the Metro Water District educational activities are added to Section 12 page 12-7.

ACTION ITEM 5.13 – EXPEDITED WATER LOSS REDUCTION

ACTION ITEM

Expedite existing programs to identify and reduce both real and apparent water losses.

OBJECTIVE

The objective of this measure is to expedite planned programs to identify and reduce: (1) real water loss from system leakage; and (2) apparent water loss from illegal water use, billing and metering errors.

DESCRIPTION OF MEASURE

Action Item 5.6 in the 2009 Metro Water District Plan includes actions to identify and reduce both real and apparent water losses. This measure seeks to expedite the existing programs to achieve the same water loss savings in a shorter timeframe.

Water loss as defined by the International Water Association/ American Water Works Association (IWA/AWWA) includes real losses and apparent losses. Real losses are those associated with leakage in the distribution system. Apparent losses include illegal water use, billing errors, and metering errors. Figure 1 shows the elements that comprise water loss within the water balance based on the IWA/AWWA definitions.

Each water provider must identify methods to reduce water loss in an expedited fashion based on knowledge of the distribution system. The previous goal targets communities with water losses greater than 10%. These communities will cut the difference between their water loss and 10% in half by 2035 (for example, a water provider with a 16% water loss would reduce water loss by 3% to 13% by 2035). Under this Action Item, the savings planned for 2035 will be accelerated and met 10 years earlier, or by 2025. This goal will be revisited in 5 years based on the implementation of the AWWA Free Water Audit Software© and considering state benchmarks created as part of the Water Stewardship Act.

Responsible Party

- Local Water Provider
- Local Government
- Other: Metro Chattahoochee River & Lake Lanier Water Systems ONLY

In Coordination With

- Local Water Providers
- Local Wastewater Provider
- Local Government
- Other: Fire & Police Departments

FIGURE 5-1

Water Balance Categories based on IWA/AWWA Definitions

Water From Own Sources (corrected for known errors)	System Input Volume	Water Exported	Authorized Consumption	Billed Authorized Consumption	Billed Water Exported	Revenue Water
		Water Supplied			Unbilled Authorized Consumption	
Billed Unmetered Consumption						
Apparent Losses	Unbilled Metered Consumption		Non-revenue Water			
	Unbilled Unmetered Consumption					
Real Losses	Unauthorized Consumption					
	Customer Metering Inaccuracies					
	Systematic Data Handling Errors					
Water Imported				Water Losses		Leakage on Transmission and Distribution Mains
			Leakage and Overflows at Utility's Storage Tanks			
					Leakage on Service Connections Up to Point of Customer Metering	

Source: Reprinted from *Water Audits and Loss Control Programs (M36), Third Edition*, (p. 9), by American Water Works Association, 2009, Denver, CO: American Water Works Association. Copyright 2009 by American Water Works Association.

SPECIFIC SUB-TASKS

Sub-Task	Description
Assess existing program for identifying and reducing real and apparent water losses	Assess the existing program's ability to achieve planned water loss reductions in an expedited timeframe. In 2011, consider increasing existing programs or adding new programs to achieve greater water loss savings.
Review/revise goal for real water losses	Each system should assess water losses as part of Action Item 5.6 annually and revise their program as necessary.

ACTION ITEM 5.14 – MULTI-FAMILY HET REBATES

ACTION ITEM

Implement a program to convert older, inefficient toilets to high-efficiency toilets (HET) in multi-family homes (e.g. apartments, townhomes, and condominiums).

OBJECTIVE

The objective of this measure is to provide HET rebates to multi-family homes in order to reduce indoor water use and speed the conversion of older, inefficient toilets towards lower flow models. Toilets are one of the highest water users in the home and replacement of older, inefficient models will reduce water use.

DESCRIPTION OF MEASURE

Multi-family properties built in or prior to 1993 may contain inefficient toilets. Before the 1950s, toilets typically used 7 gallons or more for each flush. By the end of the 1960s, toilets were designed to flush with 5.5 gallons, and in the 1980s the new toilets being installed were using only 3.5 gallons. Beginning in early 1990's the requirements changed to require 1.6 gallons per flush or more efficient models. In June 2010, Georgia adopted new standards to require more efficient plumbing fixtures with the Water Stewardship Bill. Starting in July 2012 high efficiency toilets (HETs) that use no more than 1.28 gallons of water per flush will be required. Replacing an inefficient toilet with a HET model will conserve water.

Each local water provider should offer a program to convert older, inefficient toilets (3.5 gallons per flush or greater) to a 1.28 gpf models for multi-family properties built in or prior to 1993 within their community. Local water providers should implement a strategy to distribute, install, or provide incentive to replace higher flow fixtures in multi-family properties built in or prior to 1993. The program must specifically address toilet replacement rather than provide toilet retrofit devices. Examples of such programs include:

1. Rebate incentive program – Customer receives a credit to water bill, cash, or voucher offsetting the cost for new low-flow toilets.
2. Direct install program – Customer exchanges older toilet for low-flow toilets with discounted installation through the local water provider.
3. Other – Any program that provides at least the same rate of replacement as the above examples. The local water provider must estimate exchange rate.

Due to the high value of rebate programs for multi-family properties, the local water provider should include an inspection element in the rebate program to prevent possible fraud.

Responsible Party

- Local Water Provider
- Local Government
- Other: Metro Chattahoochee River & Lake Lanier Water Systems ONLY

In Coordination With

- Local Water Providers
- Local Wastewater Provider
- Local Government
- Other: _____

SPECIFIC SUB-TASKS

Sub-Task	Description
Establish a program for replacement of multi-family toilets	Research and develop a multi-family toilet rebate program for properties built in or prior to 1993 that includes an inspection component.
Implement multi-family replacement program	Implement the program to replace older, inefficient toilets with HET toilets for properties built in or prior to 1993 in 2012.

ACTION ITEM 5.15 – INSTALL METERS WITH POINT OF USE LEAK DETECTION

ACTION ITEM

Develop a point of use leak detection program to notify customers of possible leaks using the most appropriate meter technology.

OBJECTIVE

The objective of this measure is to identify and notify customers of leaks to encourage timely repairs.

DESCRIPTION OF MEASURE

The EPA estimates that 10% of all homes have leaks of 90 gallons or more per day. Customer water leaks often start very small and increase over time. Point of use meters record very small continuous volume leaks; allowing customers to identify and correct leaks more quickly. The goal of this measure is to develop a program, using the most appropriate metering technology, to notify customers of possible leaks.

Advancements in customer metering technology currently offer water providers more sophisticated tools to identify customer leaks. Technologies such as Automated Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) offer features such as flagging accounts with continuous water usage that might indicate a small leak. The best metering solution will be specific to the characteristics of the system.

As part of this measure, water providers will evaluate and adopt the best metering technology for their system. Water providers may elect to be industry leaders by either adopting new metering technologies with advanced leak detection capabilities or implementing a pilot program to evaluate the new technologies for use within their systems. The goal is to have a program with sufficient capabilities to notify customers of leaks, including small and continuous leaks.

Regardless of the metering technology, water providers will implement a program to notify customers of possible leaks. The system will generate a report that identifies customers with usage that suggests a leak. The water providers will follow a standard procedure for notifying customers of irregular usage. Methods of notification may include door hangers, letters, phone calls, or other forms of contact.

Local water providers with billing systems that do not have the exception report capabilities should include this capability as part of any major billing system upgrades.

Responsible Party

- Local Water Provider
- Local Government
- Other: Metro Chattahoochee River & Lake Lanier Water Providers ONLY

In Coordination With

- Local Water Providers
- Local Wastewater Provider
- Local Government
- Other: _____

SPECIFIC SUB-TASKS

Sub-Task	Description
Implement a program to notify customers of continuous usage	Develop a program in 2012 to identify, notify, and track the customers with continuous usage.
Initiate installation of new metering technologies or implement a pilot program	Begin installing new metering technologies with enhanced water conservation capabilities as part of a meter maintenance program or begin a pilot program to evaluate such technologies in 2013.

ACTION ITEM 5.16 – REQUIRE PRIVATE FIRE LINES TO BE METERED

ACTION ITEM

Adopt an ordinance or policy to meter private fire lines in commercial buildings to identify and reduce improper water use.

OBJECTIVE

The objective of this measure is to meter private fire lines in commercial buildings to identify and reduce water leakage/loss of unbilled and unmetered water.

DESCRIPTION OF MEASURE

The purpose of this measure is to meter all new private fire lines and install meters as practicable on existing fire lines.

Although meters that measure volume are preferred, meters can be simple detector check valves that indicate the presence of water flow. An option would be to adopt a policy to require a meter for any private fire line that shows use on a detector check for some specified period (for example, over 3 consecutive months).

This measure will assist in identifying leaks and unlawful use of water from the fire line(s) for anything but fire-fighting activities. As a best practice, fire lines should be kept in good repair and not interconnected with other service pipes. Water drawn from the fire lines is for fire protection purposes only and not to be used for other non-fire related purposes.

SPECIFIC SUB-TASKS

Sub-Task	Description
Adopt an ordinance or policy to require private fire lines to be metered	Adopt an ordinance or policy to require private fire lines in commercial buildings to be metered in 2012.
Incorporate requirement into new development review process	Check new development plans for meters on private fire lines in compliance with the ordinance or policy in 2012.

<p align="center">Responsible Party</p> <p><input type="checkbox"/> Local Water Provider</p> <p><input type="checkbox"/> Local Government</p> <p><input checked="" type="checkbox"/> Other: <u>Metro Chattahoochee River & Lake Lanier Water Systems ONLY</u></p>
<p align="center">In Coordination With</p> <p><input type="checkbox"/> Local Water Providers</p> <p><input type="checkbox"/> Local Wastewater Provider</p> <p><input checked="" type="checkbox"/> Local Government</p> <p><input type="checkbox"/> Other: _____</p>

ACTION ITEM 5.17 – MAINTAIN A WATER CONSERVATION PROGRAM

ACTION ITEM

Provide sufficient funding and staffing to implement the required water conservation measures.

OBJECTIVE

The objective of this measure is to ensure sufficient funding and staffing to maintain a water conservation program.

DESCRIPTION OF MEASURE

Maintaining a strong water conservation program requires sufficient funding. Methods for funding a water conservation program may include earmarking 1% of all revenues, setting aside revenues earned from water sold at the highest tier, or another method of providing a continuous source of funds. Each water provider should identify a method of ensuring that sufficient funds are available to implement the water conservation measures included in this Plan.

Sufficient staff is also important to the success of a water conservation program. Staff roles might include educating customers, responding to questions about water conservation measures, and facility audits for large customers.

SPECIFIC SUB-TASKS

Sub-Task	Description
Provide for sufficient funding to implement the water conservation measures.	Identify a continuous source of funding to implement the water conservation measures.
Provide for sufficient staffing to implement the water conservation measures.	Hire and maintain sufficient staff to implement the water conservation measures.

<p style="text-align: center;">Responsible Party</p> <p><input type="checkbox"/> Local Water Provider</p> <p><input type="checkbox"/> Local Government</p> <p><input checked="" type="checkbox"/> Other: <u>Metro Chattahoochee River & Lake Lanier Water Systems ONLY</u></p>
<p style="text-align: center;">In Coordination With</p> <p><input type="checkbox"/> Local Water Providers</p> <p><input type="checkbox"/> Local Wastewater Provider</p> <p><input checked="" type="checkbox"/> Local Government</p> <p><input type="checkbox"/> Other: _____</p>

ACTION ITEM 5.18 – WATER WASTE POLICY

ACTION ITEM

Adopt a water waste policy or ordinance to reduce outdoor water waste.

OBJECTIVE

The objective of this measure is to adopt a water waste policy or ordinance to reduce water waste such as outdoor leaks and improper irrigation.

DESCRIPTION OF MEASURE

Water waste means the excessive application of water that results in water flowing down any curb and gutter, street, storm drain, or onto an adjacent property. Water waste policies and/or ordinances can range from simple statements that prohibit the wasting of outdoor water to more detailed policies that specify the types of outdoor water waste. The level of detail may vary by local water provider.

Non-compliance with such provisions may be treated as a municipal code violation. Violators should be warned and could potentially be subject to monetary penalties or termination of water service.

The Metro Water District will develop guidance to local governments to support local ordinance development.

SPECIFIC SUB-TASKS

Sub-Task	Description
Adopt a water waste ordinance or policy	Develop and adopt a water waste ordinance or policy in 2012.
Enforce the ordinance or policy	Enforce the ordinance or policy as water wasters are identified.

<p>Responsible Party</p> <p><input type="checkbox"/> Local Water Provider</p> <p><input checked="" type="checkbox"/> Local Government</p> <p><input type="checkbox"/> Other: _____</p> <p>In Coordination With</p> <p><input checked="" type="checkbox"/> Local Water Providers</p> <p><input type="checkbox"/> Local Wastewater Provider</p> <p><input type="checkbox"/> Local Government</p> <p><input type="checkbox"/> Other: _____</p>

ACTION ITEM 5.19 – REQUIRE HIGH EFFICIENCY PLUMBING FIXTURES CONSISTENT WITH STATE LEGISLATION

ACTION ITEM

Comply with the state legislation requiring high efficiency plumbing fixtures.

OBJECTIVE

The objective of this measure is to increase water efficiency by complying with the new plumbing code requirements for new plumbing fixtures.

DESCRIPTION OF MEASURE

State legislation passed in 2010 (Water Stewardship Bill) updates the state’s plumbing code requirements to require the use of more efficient toilets, urinals, and faucets in new construction beginning in July 2012. The new plumbing code requirements also apply to fixtures that are replaced for any reason. The requirements for plumbing fixture efficiency are summarized in Table 5-4.

Responsible Party
<input type="checkbox"/> Local Water Provider <input checked="" type="checkbox"/> Local Government <input type="checkbox"/> Other: _____
In Coordination With
<input checked="" type="checkbox"/> Local Water Providers <input type="checkbox"/> Local Wastewater Provider <input type="checkbox"/> Local Government <input type="checkbox"/> Other: _____

TABLE 5-4

Plumbing Fixture Standards (required in July 2012)

Plumbing Fixture	July 2012 Requirements
Toilets	≤ 1.28 gpf
Sinks	≤ 1.5 gpm
Kitchen Sink	≤ 2.0 gpm
Showerheads	≤ 2.5 gpm
Urinals	≤ 0.5 gpf

SPECIFIC SUB-TASKS

Sub-Task	Description
Revise plan review process as needed to reflect change in plumbing code	Local governments should support the state legislation by amending any internal documents or plan review procedures as needed to ensure they do not conflict with the new plumbing fixture requirements in July 2012.

Education Measures

The following additional education activities are added to the District's education work plan on pages 12-6 and 12-7.

- Educate homeowners on their plumbing systems, including pressure regulator valves, thermal expansion tanks, main shut-off valves, and leak detection
- Update the Do-It-Yourself Household Water Assessment
- Provide education on the use of alternative water sources in the landscape like graywater, rainwater harvesting systems, cisterns, rain barrels, etc.
- Educate homeowners on irrigation system operation and maintenance
- Provide education on outdoor water efficiency improvements, such as rain sensor shut-off devices, drip irrigation, water conservation landscaping, SMART irrigation controllers, and advanced irrigation controllers (i.e. soil moisture sensors)
- Provide WaterSmart or Xeriscape demonstration gardens on public or private land
- Work with the restaurant industry association to encourage restaurants to only serve water upon request
- Work with the hotel/motel industry association to encourage hotels/motels to provide customers with the option to not have linens laundered daily

These measures will be programmed by the Metro Water District public education technical coordinating committee and prioritized as appropriate with the existing education focus areas.

Amendment #2 (06/02/2011)

Page B-17 – Replace the Rockdale County Phasing Plan with the following:

Facilities	Source	By 2010			2011 to 2015			2016 to 2025			2026 to 2035		
		Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)
		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)	
Rockdale WTP	Big Haynes Creek (Randy Poynter Lake)	No expansions		22.1	Expand	5	27.1	No expansions		27.1	Expand	5	32.1
Demand Projections & Total Capacity (PD-MGD)				22.1	19 in Rockdale		27.1	22 in Rockdale		27.1	27 in Rockdale		32.1

Administrative Change #1 (06/06/2013)

Page B-5 – Replace the Clayton County Phasing Plan with the following:

Facilities (Note 1)	Sources	By 2010			2011 to 2015			2016 to 2025			2026 to 2035		
		Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)
		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)	
Clayton Hicks WTP	Blalock (Pates Creek) Reservoir and Smith Reservoir (fed by the Flint River)	No expansions		10.0	Expansion of one facility	23.0	65.0	Expansion of one facility	8.0	73.0	Expansion of one facility	6.0	79.0
Clayton Hooper WTP	Hooper Reservoir (Little Cotton Indian Creek)	No expansions		20.0									
Clayton Smith WTP	Smith/Shoal Creek Reservoir (fed by Flint River)	No expansions		12.0									
Demand Projections & Total Capacity (PD-MGD)				42	54 in Clayton		65	57 in Clayton		73	64 in Clayton		79

Notes:

- 1) Plan schedule shown above is intended to be a general guideline to identify treatment capacity needs. Expansion capacities should be in operation before the end of the periods shown above, while planning, design and expansions may begin in the previous period. Exact timing of expansions is to be determined by local water master planning. Specific conditions for withdrawal/operating permits will be determined by Georgia EPD.
- 2) The water sources for the Hicks WTP include up to 10 MGD from Blalock Reservoir (Pates Creek / Ocmulgee River Basin) and up to 5 MGD from the Smith Reservoir (fed by Flint River) for a total not to exceed 10 MGD.

Amendment #3 (06/16/2015)

Page B-15 – Replace the Henry County Summary of Needs and Phasing Plan with the following:

Summary of Needs

Water Demands & Treatment Capacities	2035 Annual Average Day (AAD-MGD)	2035 Peak Day (PD-MGD)
Henry County	43	69
Total Projected Demand	43	69
2006 Treatment Capacity	25	39.73
Additional Capacity Needed by 2035	19	30

Capital Projects

- Expansion of Towaliga and Tussahaw WTPs to meet future water needs. Towaliga can currently only support 42 PD-MGD.

Summary of Planned Sources

Source	Local Water Provider	Current Permitted Withdrawal (MGD) Monthly	Planned 2035 Withdrawal (MGD)	
			Monthly	Peak Day
Gardner (Indian Creek) Reservoir	Henry Co.	8	21.75	29
Rowland (Long Branch) Reservoir	Henry Co.	10		
Towaliga River Reservoirs (Strickland & Cole)	Henry Co.	Fills Gardner and Rowland Reservoirs		
Tussahaw Creek Reservoir	Henry Co.	13	39	52
Henry County Ocmulgee Reservoir	Henry Co.	0		
Fargason (Walnut Creek) Reservoir	McDonough	2.4	2.4	3.1
Brown Branch	Locust Grove	0.3	0.49	0.65
Sum		33.70	63.64	84.75

Phasing Plan

Facilities (Note 1)	Sources	By 2010			2011 to 2015			2016 to 2025			2026 to 2035					
		Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)	Proposed Projects		Plant Capacity at End of Period (PD-MGD)			
		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)		Project Type	Project Capacity (PD-MGD)				
Henry Towaliga River WTP	S. Howell Gardner (Indian Creek) Reservoir and Rowland (Long Branch) Reservoir fed by Towaliga River Reservoirs (Strickland and Cole Reservoirs)	No expansions		24	No expansions		24	Expand	5	29	No expansions		29			
Henry Tussahaw WTP	Tussahaw Creek Reservoir	Expand	13	26	No expansions		26	Expand	13	39	Expand	13	52			
	Henry Co. Ocmulgee Reservoir							New reservoir								
McDonough WTP	Fargason (Walnut Creek) Reservoir	Expand	0.82	3.1	No expansions		3.1	No expansions		3.1	No expansions		3.1			
Locust Grove WTP	Brown Branch	No Expansions		0.45	No Expansions		0.45	New Groundwater Wells		0.65	No Expansions		0.65			
Demand Projections & Total Capacity (PD-MGD)					53.55	39 in Henry			53.55	53 in Henry			71.75	69 in Henry		84.75

Notes:

1) Plan schedule shown above is intended to be a general guideline to identify treatment capacity needs. Expansion capacities should be in operation before the end of the periods shown above, while planning, design and expansions may begin in the previous period. Exact timing of expansions is to be determined by local water master planning. Specific conditions for withdrawal/operating permits will be determined by Georgia EPD.

Non-Capital Programs

The following non-capital programs are specific to Henry County. These programs are in addition to those that apply to all counties within the Metro Water District.

- Maintain interconnections and water supply agreements with DeKalb, Clayton, Newton, Butts and Spalding Counties.