

Section 5: WATER CONSERVATION PROGRAM

Water conservation is a critical element in meeting the water supply needs within the Metro Water District. This Section presents the water conservation measures selected for the 2008 Water Supply and Water Conservation Management Plan. When fully implemented, these water conservation measures have the potential to reduce the Metro Water District's water demand up to 13 percent beyond the trend without conservation by the end of the planning period.

Much progress related to water conservation has been achieved since the adoption of the 2003 Water Supply and Water Conservation Management Plan. The Metro Water District's plan has been instrumental in making water conservation a priority in north Georgia. The Metro Water District is the only major metropolitan area in the country with more than 100 jurisdictions that is implementing such a comprehensive long-term water conservation program that is required and enforced. Tiered water conservation rates have been put in place throughout the Metro Water District. All the largest water systems have implemented programs to reduce system water loss. Toilet rebate programs are in place and ahead of schedule.

The updated plan builds upon 10 measures in the 2003 Plan and advances the Metro Water District's conservation efforts even further. The 10 measures from the 2003 Plan, as amended, will continue to be implemented with revisions to 3 of those measures. The revisions include the following:

- Measure 5.1 – Conservation Pricing: If local water providers allow irrigation meters, at a minimum, the rate for irrigation use should be equal to or greater than 200 percent of the first tier rate.
- Measure 5.2 – Replace Older, Inefficient Plumbing Fixtures: By 2014, local water provider's toilet replacement programs will only include high efficiency toilets (HET).
- Measure 5.10 – Implement Education and Public Awareness Plan: Minimum annual requirements are identified for education and outreach activities and public participation and involvement activities. An optional toolbox is provided as examples of how to meet the annual requirements.

In addition, two new required measures have been added including the following:

- Measure 5.11 – Installing HET and High Efficiency Urinals in Government Buildings
- Measure 5.12 – Require New Car Washes to Recycle Water

All measures are currently required unless provided for otherwise. The implementation schedule for these water conservation measures is presented in Section 13, Implementation Plan.

ACTION ITEM 5.1 – CONSERVATION PRICING

ACTION ITEM

Implement water conservation pricing.

OBJECTIVE

The objective of this measure is to reduce excessive discretionary water use, especially outdoor irrigation, by increasing the cost of water as the volume of use increases.

DESCRIPTION OF MEASURE

Single Family Residential

In general, tiered rate structures encourage water conservation by charging higher rates for customers with higher water use. Local water providers should perform a rate and revenue analysis to determine what percent of customers will typically fall into each tier to produce an estimated revenue stream over time. The rate and revenue analysis is needed for the following reasons:

- To determine the rates to assign each tier;
- To determine the effect on the revenue stream; and
- To maintain fair and equitable billing rates.

All Metro Water District water providers should be implementing at least a 3 tiered rate structure. It is important to note that local water providers may elect to create more than three tiers to further enhance water conservation and revenue needs. Table 5-1 provides a guideline for setting effective conservation rates. However, each local water provider should establish rate structures based on a local rate study and an understanding of the local customer base. While rate structures may vary by customer category, decreasing block rate structures are not allowed within the Metro Water District.

TABLE 5-1

Water Conservation Tiered Rate Structure (Example)

Tier	Water Use	Rate
First Tier (Conservation Tier)	125% of the average winter use for the customer type/ meter type	Base rate
Second Tier (Middle Tier)	Bound by the first tier and the third tier	At least 25% above base rate
Third Tier (High Use Tier)	Highest 5-10% of customers or the customers who use 10-20% of the total water volume	At least 200% above base rate

Responsible Party

Local Water Provider
 Local Government
 Other: _____

In Coordination With

Local Water Providers
 Local Wastewater Provider
 Local Government
 Other: _____

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The average winter use, which is the basis of the conservation tier, is calculated by the billing system for the residential customer category. Outdoor water is typically not used during the winter months so the average winter use reflects baseline indoor water use. The lowest tier should be calibrated against average winter single-family residential water use numbers. The AWWA Research Foundation estimated a typical single-family winter use of 69.3 gallons per capita per day or 6,000 gallons per single-family account per month, nationally, is common for conservation use estimates¹. Once the winter use baseline is determined for the residential customer category, the first tier rates can be established.

As conservation rates achieve success, use in the top tier should reduce; therefore, conservation rates should be re-analyzed periodically. Periodic rate adjustments may be needed to ensure that the funds needed for regular operations are not jeopardized.

Commercial

Commercial, multi-family, institutional and industrial categories should be analyzed to determine the best approach to encourage conservation. Office, institutional and multi-family categories that use outdoor irrigation and have similar use patterns to single-family may benefit from tiered rates set with appropriate bases for those categories. However, many commercial customers have water use patterns that are appropriate for uniform rates. The type of conservation rate for commercial accounts is left to the discretion of the local water provider. At a minimum, a uniform rate structure should apply.

Irrigation Meters

If local water providers allow the use of irrigation meters, the irrigation rate should be significantly higher than the rate for indoor use. The true cost of peak demand as a result of irrigation can be calculated through a rate study. At a minimum, the rate for irrigation use should be equal to or greater than 200 percent of the first tier rate. Discouraging irrigation meters through high fees for irrigation meters purchase and/or installation is also encouraged.

Water customers have traditionally requested irrigation meters to avoid sewer charges that accompany water rates. Water rates typically are equal to or less than rates for indoor use. However, irrigation often poses an added burden to the local water provider by creating very large peaks in water demand. Rate schedules for irrigation meters should recognize the impact that the high peak demand of irrigation places on the local water system and encourage conservation of our region's limited water supplies.

It is important to note that this measure does not require the use of irrigation meters. If a local water provider does not have any active irrigation meters, no action is required for that local water provider with respect to this conservation measure. Local water providers that currently offer and/or have active irrigation meters must establish an irrigation rate structure that reflects the impact on the local water system.

Billing System Functionality

New billing systems could potentially represent a multi-million dollar investment and two-year implementation time-frame for most local water providers. While local water providers in the

¹ American Water Works Association Research Foundation "Residential End Uses of Water," Mayer, 1999.

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Metro Water District are not required to update existing billing software, as existing billing software is replaced it should include certain functionality to facilitate conservation.

Functionality that should be available in new billing system packages in the Metro Water District include:

- Ability to sub-divide customers into the following customer categories; single-family residential, multi-family residential, commercial, industrial and institutional.
- Include both current and historical water use information on bills.
- Include an explanation of the conservation pricing. This information will allow the customer to set goals for water use to avoid the top pricing tier.
- Clearly identify the billing units, with preference given towards gallon-based units. Most customers are familiar with gallons as a unit of measure and less familiar with other units.

The increased billing functionality over time will provide water customers in the Metro Water District with more information to make water use choices. Additionally, the proper classification of customer categories will assist with future forecast updates as well as the future evaluation of the benefit of the regional conservation program.

SPECIFIC SUB-TASKS

Sub-Task	Description
Perform a rate and revenue analysis	Perform a rate analysis to develop a minimum 3-tiered water conservation pricing schedule.
Commercial rates	Determine appropriate commercial rates for the service area.
Irrigation meter pricing	If irrigation meters are allowed, develop an irrigation meter pricing schedule that recognizes the impact on peak demand from irrigation.
Billing system functionality	As local water providers replace existing billing systems, they will assess the functionality of new software to facilitate conservation.
Review and update pricing	Periodically review and adjust conservation pricing to respond to changes in demand and ensure sufficient operation and maintenance funds are available. At least every 5 years, review rates specifically for effectiveness of conservation pricing.

ACTION ITEM 5.2 – REPLACE OLDER, INEFFICIENT PLUMBING FIXTURES

ACTION ITEM

Implement a program to convert older, inefficient toilets to low flow toilets.

OBJECTIVE

The objective of this measure is 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 and replacement of older, inefficient models will reduce water use.

DESCRIPTION OF MEASURE

Homes 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. Today, a new toilet uses no more than 1.6 gallons of water and high efficiency toilets (HETs) use no more than 1.28 gallons of water per flush. Replacing an inefficient toilet with a low flow model will conserve water.

Each local water provider should offer a program to convert older, inefficient toilets to 1.6 gallons per flush (gpf) models and / or 1.28 gpf models within their community. Local water providers should implement a strategy to distribute, install, or provide incentive to replace higher flow fixtures on accounts owning pre-1993 built homes. The program must specifically address toilet replacement rather than provide toilet retrofit devices and implementation should begin no later than 2009. Examples of such programs include:

1. Rebate incentive program – Customer receives a credit to water bill, cash, or voucher offsetting the cost for a new low-flow toilet.
2. Direct install program – Customer exchanges older toilet for a low-flow toilet 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.

The Metro Water District currently administers a toilet rebate program for single family residences that replace older toilets with either 1.6 gpf or 1.28 gpf toilets as a service for water providers in the Metro Water District that choose to participate. Local water providers not currently participating in the Metro Water District’s toilet rebate program should adopt a program, either independently or through the Metro Water District, to replace 3.5 gpf or higher toilets.

The Metro Water District website includes a summary by county of older plumbing fixtures that includes the number of housing units built by decade and maps showing the density of homes

<p style="text-align: center;">Responsible Party</p> <p><input checked="" type="checkbox"/> Local Water Provider <input type="checkbox"/> Local Government <input type="checkbox"/> Other: _____</p> <p style="text-align: center;">In Coordination With</p> <p><input type="checkbox"/> Local Water Providers <input type="checkbox"/> Local Wastewater Provider <input checked="" type="checkbox"/> Local Government <input type="checkbox"/> Other: _____</p>
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constructed prior to 1993. These summaries include estimates by county and calculate the number of homes that are anticipated to need retrofits based on natural conversion of older plumbing fixtures. These summaries are helpful to local water providers in developing their local program.

This water conservation measure will be enhanced in the future, as the HET technology matures. HETs are a relatively new technology and are not as widely available as 1.6 gpf toilets. By 2014, the technology is expected to be widely available to the Metro Water District and local water providers will be required to provide only 1.28 toilet rebates, either through the Metro Water District rebate program or their own local program.

SPECIFIC SUB-TASKS

Sub-Task	Description
Establish a replacement strategy (through the Metro Water District program or local program)	Participate in the regional program or implement a local rebate or other incentive program for the replacement of pre-1993 toilets.
Enhance replacement program	As HET technology matures, encourage the replacement of older toilets to HET toilets.

ACTION ITEM 5.3 – REQUIRE PRE-RINSE SPRAY VALVE RETROFIT EDUCATION PROGRAM

ACTION ITEM

Develop an education program targeting food service establishments on retrofitting with low-flow pre-rinse spray valves.

OBJECTIVE

The objective of this measure is to speed the installation of low-flow pre-rinse spray valves in food preparation establishments to reduce water demand.

DESCRIPTION OF MEASURE

A pre-rinse spray valve is a handheld device that uses a spray of water to remove food and grease from dishware, utensils and pans before placing them in the dishwasher. A low-flow pre-rinse spray valve uses only 1.6 gallons per minute (gpm) or less. A typical pre-rinse spray valve uses 3 gpm and older spray valves use up to 7 gpm.

The dishwashing operations in a typical restaurant consume over two-thirds of all the water used. In some cases, nearly one-half of the water used in dishwashing is consumed by the pre-rinse spray valve. A low-flow pre-rinse spray valve is one the easiest and most cost effective water saving devices available to the food service operator. New efficient low-flow valves can reduce rinse water usage by 30 to 70 percent compared to older spray valves.

Each local water provider must develop an education program that targets food service establishments such as grocery stores, restaurants, cafeterias, and institutional housing facilities. This program is to begin no later than January 2009. The Energy Policy Act of 2005 sets the maximum flow rate of pre-rinse spray valves at 1.6 gpm. Pre-rinse spray valve education programs will not be required after 2013 since the market will be saturated with low-flow spray valves.

The Metro Water District has created a pre-rinse spray valve brochure, available on the website, that local water providers may distribute to meet the requirements of this measure. The Metro Water District website also includes a summary of the number of food service establishments, both full service restaurants and limited service eating places, by county that can assist in the development of the program and the level of effort in each area.

Other optional program suggestions are to distribute brochures during grease trap inspections of food service establishment, other site visits, direct mailings or rebate or direct installation programs.

SPECIFIC SUB-TASKS

Sub-Task	Description
Develop a pre-rinse spray valve retrofit educational program	Using the Metro Water District brochure or other media, develop a program targeting food service operators.

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

ACTION ITEM 5.4 – RAIN SENSOR SHUT-OFF SWITCHES ON NEW IRRIGATION SYSTEMS

ACTION ITEM

Implement state law requiring the installation of rain sensor irrigation shut-off switches for all new properties.

OBJECTIVE

The objective of this measure is to reduce water wasting by requiring rain sensor shut-off switches on irrigation systems, so they do not operate during or immediately following a rain event.

DESCRIPTION OF MEASURE

In 2004, the Georgia General Assembly passed a law (Georgia Code Section 12-5-6), which requires rain sensor shut-off switches on new landscape irrigation systems for both residential and nonresidential properties within the Metro Water District. The law took effect on January 1, 2005; therefore, all new in-ground residential and commercial landscape irrigation systems in the Metro Water District will have rain sensor shut-off switches. At the local level, building inspection checklists should be updated to reflect rain sensor requirements for new construction with irrigation systems.

A rain sensor shut-off switch is an electric device that detects and measures rainfall and turns off the irrigation system when a predetermined amount of rain has fallen. This prevents the irrigation system from watering when the landscape has already receiving enough water from the rainfall. Rain sensors reduce unnecessary watering during rainfall events.

There are over 1,500 outdoor service companies within the 15-county Atlanta region that employ approximately 13,000 people according to the 2006 Census County Business Patterns. These companies account for 60 percent of the outdoor service companies across the entire state of Georgia. Over 400 companies in the Atlanta region deal directly with installing irrigation systems.

In April 2006, the Metro Water District sent letters to all of the irrigation companies in the 15-county Atlanta region in an effort to reach out to these companies and ask for help implementing this water conservation measure. This letter was sent with the support of the Metro Atlanta Landscape and Turf Association (MALTA) and the Georgia Green Industry Association.

SPECIFIC SUB-TASKS

Sub-Task	Description
Enact rain sensor shut-off legislation	Require all new irrigation systems to include rain sensor shutoff switches.
Update building inspection checklists	Update checklists to inspect irrigation systems for shutoff switches.

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

ACTION ITEM 5.5 – REQUIRE SUB-METERS IN NEW MULTI-FAMILY BUILDINGS

ACTION ITEM

Adopt local ordinances or water provider policy that requires all new multi-family buildings (e.g. apartments, townhomes, and condominiums) be individually metered or sub-metered.

OBJECTIVE

The objective of this measure is to reduce water use in multi-family properties by allowing each unit to be billed based on volume of use.

DESCRIPTION OF MEASURE

Local water providers must adopt an ordinance or local policy to require sub-metering of multi-family buildings. The adoption of a local sub-metering ordinance is authorized by O.C.G.A. § 12-5-180.1. A local policy may be used in lieu of an ordinance. The Metro Water District website includes example language to assist in creating a local ordinance or policy.

The National Multiple Family Submetering and Allocation Billing Program Study shows that sub-metering reduced water use by 15.3% compared with traditional in-rent multi-family properties, providing a substantial savings. To accomplish sub-metering, local water providers may either install individual meters that will be billed by the local water provider on each unit or require the property owner to install sub-unit meters owned and managed by the property owner with a utility owned master meter. If sub-meters are installed, local water providers are not responsible for billing sub-metered units. Typically, multi-family properties will use a third party meter reading and billing service.

High water use detected by a sub-meter can also assist with leak detection efforts beyond the master meter. This is beneficial for the multi-family property management for several reasons: 1) the location of the leak can be more easily identified; and 2) since a leak will cause a resident’s water bill to be high they will be more likely to report leaks before they become a bigger problem.

SPECIFIC SUB-TASKS

Sub-Task	Description
Adopt a local sub-meter ordinance or policy	Adopt a local ordinance or require sub-meters as a condition of purchasing a master meter for multi-family properties.

Responsible Party

Local Water Provider
 Local Government
 Other: _____

In Coordination With

Local Water Providers
 Local Wastewater Provider
 Local Government
 Other: _____

ACTION ITEM 5.6 – ASSESS AND REDUCE WATER SYSTEM LEAKAGE

ACTION ITEM

Assess local water losses annually using the IWA/ AWWA water audit methodology.

Develop a program for identifying and reducing local water system loss.

OBJECTIVE

The objective of this measure is to reduce water losses within the water distribution system and water treatment facilities.

DESCRIPTION OF MEASURE

Water providers must identify methods to reduce leakage in their systems, and to reduce unbilled water. The first step is to determine the extent of water losses in the distribution system using the International Water Association (IWA) and American Water Works Association (AWWA) methodology, herein referred to as the IWA / AWWA method.

The IWA / AWWA methodology is recommended to quantify and classify non-revenue water because it addresses some of the major problems in estimating system water loss. The commonly used percentage of “unaccounted-for-water” method of determining system water loss does not provide a standard for measurement of water use and water loss. The IWA / AWWA methodology defines all uses and losses and is designed to function with different units and measures using a water balance format.

The methodology uses an Excel spreadsheet and is more comprehensive and accurate than previously available tools for water loss calculations. Within IWA/AWWA methodology, no water is considered “unaccounted for”, as it is allocated as either a consumption or loss. Water loss programs can then target the most significant categories of losses, which will vary for every local water provider. The spreadsheet provides benchmark information and allows utilities to easily set performance targets.

Local water providers must establish a goal for reducing the “real” water losses, or those associated with loss through all types of leaks, breaks and overflows on mains, service reservoirs and service connections, up to the point of customer metering. The goal for reducing the real component of water loss will be based on existing water loss, the specifics for the distribution system and the water loss program. The goal for real water loss established by each local water provider will be achieved over the next five years.

The IWA/AWWA identifies the areas of biggest water losses as well as their financial impact. Based on water loss data, each local water provider can develop a water loss program that will be

<p>Responsible Party</p> <p><input checked="" type="checkbox"/> Local Water Provider <input type="checkbox"/> Local Government <input type="checkbox"/> Other: _____</p> <p>In Coordination With</p> <p><input type="checkbox"/> Local Water Providers <input type="checkbox"/> Local Wastewater Provider <input checked="" type="checkbox"/> Local Government <input checked="" type="checkbox"/> Other: <u>Fire & Police Departments</u></p>
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beneficial to their particular water system. Optional example programs to reduce water losses include the following list. All options will not be appropriate for all water systems.

- Conduct an on-going meter calibration and/or replacement program. Older meters should routinely be checked for accuracy. Faulty meters almost always underestimate the amount of water used, resulting in significant amounts of non-billed water.
- Use leak detection equipment (sonar) and software to identify leaks. There are several different types of leak detection equipment on the market, ranging from hand-held listening devices to permanent and semi-permanent devices that are placed within the system to record leaks at low demand times (such as early morning hours, 3 am). Proactive leak detection programs have been successful in the Metro Water District in finding minor leaks that are not usually found, and can result in significant water losses over time.
- Maintain an understanding of the system through a current water distribution model. Optimization of the system and understanding of system challenges will allow for quicker identification of leaks and other losses.
- Establish DMAs (district metered areas) within the system to identify real losses. A DMA is a distribution system zone monitored routinely to produce a pattern for night flows. DMAs enable the identification and location of unreported breaks and leakage, or real losses.
- Actively manage system pressure by establishing different pressure zones for the system or by reducing pressures across the system. Care must be taken when lowering system pressure to adhere to minimum required pressures for daily operation and fire protection. Benefits of pressure management include: reduction in leakage volumes, reduction in new break frequencies, reduced hydraulic impact, and extension of the existing infrastructure.
- Work with intergovernmental departments (fire and police staff) to routinely inform the utility of standing water areas and potential leaks.
- Establish a strategy for prioritizing leak repairs. Although main breaks require swift response time, losses on smaller lines deserve as much or more attention, as small losses over long periods of time may result in significant losses.
- Address leaks or inefficiencies in the water treatment plant.
- Maintain an asset management program to track aging pipes and meters with a schedule for planned replacement.
- Maintain accurate billing system records through communication between meter reading, distribution maintenance and customer service staff. Lack of communication can sometimes result in customer service staff entering erroneous information into the system (wrong multiplier, active vs. inactive accounts, etc.). Periodic field checks of billing system data may help identify and correct these errors.

A leak detection and repair program to recover lost water may benefit the water provider in many ways because recovered lost water:

- delays the need for developing new water sources and infrastructure;
- is treated and ready for use by the customer;
- is pressurized to reach the customer;

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- generates additional revenue; and
- conserves energy.

SPECIFIC SUB-TASKS

Sub-Task	Description
Assess local water losses annually	Use the IWA/AWWA methodology annually to calculate the system water loss and causes of greatest water loss.
Develop a program for identifying and reducing local water system loss	Based on the water loss assessment and local knowledge, develop steps for reducing apparent and real losses as used in the AWWA Water Audits. These steps should be based on local conditions, such as the age and condition of the system and past efforts at reducing water losses.
Set a goal for real water losses	Each water system must set a goal for real water losses that will be achieved and/or maintained over the next five years.

ACTION ITEM 5.7 – CONDUCT RESIDENTIAL WATER AUDITS

ACTION ITEM

Provide residential water audit information to residential water customers.

OBJECTIVE

The objective of this measure is to reduce residential water use by educating residents on how they use water and how use can be reduced.

DESCRIPTION OF MEASURE

Residential water audits should be made available to the top 25% of water users. In addition, audits can be made available to customers who complain about high water bills. This guidance may be made available either through mailings, provided at the local water provider office or hosted on the website.

The Metro Water District has developed a “Do It Yourself Household Water Assessment” to assist water providers with residential water audits. The assessment process includes:

- Analyzing how much water you use;
- Detecting leaks (pipes, toilets, faucets);
- Checking for and using water-efficient appliances;
- Assessing outdoor water use; and
- Changing water use habits.

Copies of the assessment tool will be made available for display in local water provider billing offices. In addition, the local water provider may choose to mail the brochure with a bill and/or place on website. This measure may be conducted jointly with conservation measure #8 (distribute low-flow retrofit kits to residential users).

SPECIFIC SUB-TASKS

Sub-Task	Description
Develop a water audit program	Utilize the “Do It Yourself Household Water Assessment” or other materials to educate customers on their water use through a self-water audit.
Distribute water audits	Distribute the “Do It Yourself Household Water Assessment” or other materials to target audience.

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

ACTION ITEM 5.8 – DISTRIBUTE LOW-FLOW RETROFIT KITS TO RESIDENTIAL USERS

ACTION ITEM

Distribute low-flow retrofit kits to customers.

OBJECTIVE

The objective of this measure is to reduce residential indoor water use by retrofitting faucets, showerheads and other water-saving devices.

DESCRIPTION OF MEASURE

Retrofit kits are intended to target portions of the service area with homes built before 1993. Local water providers may advertise the availability of retrofit kits, direct mail, distribute at festivals, or other forms of distribution.

A low-flow retrofit kit is a package of water saving devices that can assist residents to save water at home and typically includes low-flow showerheads, faucet aerators, and other applicable retrofit items. It is important to promote water conservation in the home due to the fact that 54 percent of water used in the Atlanta region occurs in the home. The distribution of low-flow retrofit kits can accelerate the natural conversion of less efficient plumbing fixtures.

The recommended water conservation retrofit kit currently contains 5 products including a low-flow showerhead, a kitchen aerator, a low-flow faucet aerator, leak detection dye tablets and a flow meter bag. Each local water provider should tailor their kits toward their customer base. Detailed product descriptions are provided below.

Low-Flow Showerhead: A highly efficient showerhead uses 2.0 gallons/min. The showerhead uses air pressure instead of extra water to provide water at a comfortable rate. Low flow showerheads provide an even spray pattern and may also offer a variety of spray patterns.

Kitchen Faucet Aerator: A highly efficient kitchen aerator provides an even spray pattern at 2.0 gallons/ minute.

Low-Flow Lavatory Faucet Aerator: A highly efficient faucet aerator provides an even spray pattern at 1.0 gallons/min.

Leak Detection Dye Tablets: The leak detection dye tablets provide a way to check for leaks in toilets.

Flow Meter Bag: The flow meter bag helps with measuring the flow from a showerhead or faucet.

The Metro Water District provides a list of retrofit kit providers on their website. Local water providers with high outdoor use consumption may choose to include outdoor water saving devices in retrofit kits.

Responsible Party

- Local Water Provider
- Local Government
- Other: _____

In Coordination With

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

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SPECIFIC SUB-TASKS

Sub-Task	Description
Purchase low flow retrofit kits	Identify and purchase low flow retrofit kits appropriate for the local water service area.
Distribute low flow retrofit kits	Target the distribution of retrofit kits to customers in pre-1993 properties.

ACTION ITEM 5.9 – CONDUCT COMMERCIAL WATER AUDITS

ACTION ITEM

Develop a commercial water audit program that targets high water users.

OBJECTIVE

The objective of this measure is to reduce water consumption from commercial and industrial water users, by site specific assessments of use and potential for improved efficiency.

DESCRIPTION OF MEASURE

A commercial water audit program includes on-site water audits at commercial, industrial and institutional facilities. Water providers should inform customers of the program and offer the on-site water assessment. Interested customers will typically provide basic water use information about the facility prior to an on-site assessment. Local water providers may want to ask commercial and industrial facilities to make an early commitment to reduce water consumption.

Once an on-site assessment is performed, the water provider should provide the customer with recommended measures based on payback period. The Pollution Prevention Assistance Division (P2AD) has developed a spreadsheet for assessing water conservation opportunities based on the payback period for capital improvements. Following the audit, local water providers could periodically check in with facilities to encourage implementation.

Commercial, Industrial and Institutional (CII) uses are variable and complex. Examples of types of facilities may include, but are not limited to, commercial and retail centers, office buildings, hotels and motels, coin and card operated laundries, auto service and repair shops, restaurants and fast food, bakery and pastry shops, beverage manufacturers, commercial printers, fuel service stations and convenience stores, vehicle washes, schools, grocers, hospitals, industrial bakers, industrial laundries and dry cleaners, laboratories, metal finishers, paper manufacturers, water features and pools and landscapes. A facility's water use can be related to those they serve, such as industrial processes, number of hotel customers, students at a school or patients at a hospital. Different types of facilities will have different water use characteristics and potential efficiencies; however, this may also vary within the same type of facility. Therefore, an on-site water audit of a facility provides a more accurate assessment than estimating efficiencies of certain types of facilities. Commercial water audits include a site visit, characterization of existing water uses, and recommended changes to process and operations to reduce water usage.

<p style="text-align: center;">Responsible Party</p> <p><input checked="" type="checkbox"/> Local Water Provider</p> <p><input type="checkbox"/> Local Government</p> <p><input type="checkbox"/> Other: _____</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 type="checkbox"/> Local Government</p> <p><input checked="" type="checkbox"/> Other: <u>P2AD</u></p>

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SPECIFIC SUB-TASKS

Sub-Task	Description
Train personnel	Train personnel to conduct commercial water audits using the P2AD water audit spreadsheet or other method of assessing water conservation potential.
Advertise water audit program	Contact highest commercial water users or otherwise advertise the audit program.
Conduct audits with interested commercial partners	Perform water audits with interested commercial partners based on the local program.
Report results to commercial partners	Provide recommendations of cost-beneficial water conservation measures based on the site audit.

ACTION ITEM 5.10 – IMPLEMENT EDUCATION AND PUBLIC AWARENESS PLAN

ACTION ITEM

Develop a local public education program with both education and outreach activities.

OBJECTIVE

The objective of this measure is to enhance public cooperation and support for water conservation by conducting information and outreach programs.

DESCRIPTION OF MEASURE

There are a number of regional education programs outlined in Section 12, Public Education and Awareness. Based on the regional program, local water providers must implement a local water conservation education and outreach program. Local water providers must implement a minimum number of education and outreach activities based on Table 5-2. The optional education toolbox is provided in Table 5-3 to provide ideas for enhancing existing local public education programs.

Responsible Party
<input checked="" type="checkbox"/> Local Water Provider
<input type="checkbox"/> Local Government
<input type="checkbox"/> Other: _____
In Coordination With
<input type="checkbox"/> Local Water Providers
<input checked="" type="checkbox"/> Local Wastewater Provider
<input checked="" type="checkbox"/> Local Government
<input checked="" type="checkbox"/> Other: <u>Keep America Beautiful</u> <u>Affiliate, Environmental</u> <u>Education</u>

TABLE 5-2
Minimum Local Education and Public Awareness Program Annual Requirements

Population	Education and Outreach Activities	Public Participation and Involvement Activities
<50,000	2	2
>50,000	3	3

TABLE 5-3
Optional Education Toolbox

Education and Outreach Activities	Public Participation and Involvement Activities
Bill stuffers or newsletters	Water treatment facility tours
Brochures at municipal facilities	Citizen advisory group
Website with water conservation information	Water festivals
Local Cable or Government TV station programming	School classroom education
Speakers bureau presentations	Technical training to target audiences
Press releases	Retrofit kit distribution

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Education and Outreach Activities	Public Participation and Involvement Activities
Provide historical water use on water bills	Essay contests
Adopt a water waste ordinance	Coloring book contest
Xeriscape demonstration garden	Community workshops
Promote toilet rebate program	Interactive kiosks / exhibits
Other innovative education and outreach activities	Other innovative public participation and involvement activities

Local water providers are encouraged to work with the local wastewater providers, local government staff, extension service agent, and Keep America Beautiful affiliates to include water conservation in existing programs and events.

In addition to the regional education and public awareness program, as described in Section 12, the Metro Water District may consider the following:

- Research Homeowner Association conditions that mandate irrigation and determine approach to prohibit mandatory irrigation.
- Develop a model “water waste” ordinance.
- Promote water efficiency aspects of green building.
- Assist with development of a new home efficiency award program.
- Sponsor an annual awards program for water saving businesses.
- Offer cooling tower education and training.
- Add additional emphasis to outdoor watering education including developing educational materials on rainwater harvesting and efficient water use for pools, spas, pressure washing and non-commercial car washing.
- Provide education on energy and water savings possible through implementing water conservation practices.

SPECIFIC SUB-TASKS

Sub-Task	Description
Develop a local public education program	In conjunction with the regional educational efforts, each local water provider will implement a local education program.
Perform public education and outreach activities	Perform activities to educate the public either individually, or in combination with other agencies/partners.
Perform public participation and involvement activities	Perform activities to engage the public either individually, or in combination with other agencies/partners.

ACTION ITEM 5.11 – INSTALL HIGH EFFICIENCY TOILETS AND HIGH EFFICIENCY URINALS IN GOVERNMENT BUILDINGS

ACTION ITEM

Develop a program and schedule for the replacement of inefficient toilets and urinals within government buildings with high efficiency toilets and high efficiency urinals.

OBJECTIVE

The objective of this measure is to demonstrate leadership in water conservation and reduce water use by replacing older plumbing fixtures with high efficiency toilets and high efficiency urinals within government buildings.

DESCRIPTION OF MEASURE

Local governments and local water providers should demonstrate leadership in practicing water conservation. Replacing inefficient fixtures with high efficiency fixtures in government buildings not only conserves water for the local government, it provides an opportunity for public awareness and education. High efficiency replacement fixtures include HET toilets, 1.28 gpf or less, and high-efficiency urinals, 0.5 gpf or less.

This measure focuses on government buildings and includes public administration buildings, local water provider administration buildings, public libraries, and court buildings. This action item only requires the retrofit of 3.5 gpf or higher toilets and urinals greater than 1.0 gpf.

Funding for this measure can come from a variety of sources including local water provider budgets, City or County general funds or building renovation funds. Options for implementation of this action item include; direct replacement programs, establishing a new toilet replacement line item in department budgets to cover replacement costs, or providing rebates for government buildings.

HETs are a relatively new technology that is not available at all retail locations within the Metro Water District. This measure will not be required until the technology is widely available, with replacement programs initiated by 2014 and all of the listed buildings retrofitted by 2020.

SPECIFIC SUB-TASKS

Sub-Task	Description
Develop a list of eligible government buildings	Develop a list of all public administration buildings, local water provider administration buildings, public libraries, and court buildings with the approximate number of fixtures to retrofit.
Develop a retrofit schedule and program	Determine the schedule and funding mechanism for retrofitting the less efficient fixtures. Programs should begin by year 2014.
Retrofit fixtures	Replace all toilets greater than 3.5 gpf with HET toilets and all urinals greater than 1.0 gpf by 2020.

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

ACTION ITEM 5.12 – REQUIRE NEW CAR WASHES TO RECYCLE WATER

ACTION ITEM

Adopt an ordinance that requires all new drive-through car washes to recycle water.

OBJECTIVE

The objective of this measure is to reduce water consumption from drive-through car wash facilities by requiring them to recycle water.

DESCRIPTION OF MEASURE

This measure requires local governments to pass ordinances or regulations requiring all new drive-through car washes, including in-bay and conveyor washes, to recycle water. In lieu of an ordinance, local water providers may require car washes to recycle water in order to get a water meter or local governments may incorporate the requirement in local development guidance. A local policy may be used in lieu of an ordinance.

Car washes are estimated to use an estimated 1.7 MGD in the State of Georgia, according to the Southeastern Car Wash Association. The number of carwashes in the Metro Water District is estimated at 200. Recycling water at car washes is estimated to potentially reduce car wash water usage by 35%.

There are three main types of car washes: self-service, in-bay, and conveyor. The self-service car washes are typically coin-operated with spray wands and brushes operated by the customer. In-bay automatic car washes are characterized by a wash bay in which the customer stays in their car as the carwash equipment uses either spray nozzles or brushes, or a combination of both to process the individual cycles. The conveyor car wash is usually installed in a tunnel, and includes a series of cloth brushes or curtains and arches from which water is sprayed while the car is pulled through the tunnel on a conveyor chain. The self-service car wash typically uses 15 gallons per wash, while the in-bay and conveyor washes typically use 50 and 35 gallons per wash, respectively. Because the self-service washes use less water, these facilities do not generally recycle water. However, the in-bay and conveyor washes will be subject to recycle requirements.

The Metro Water District should develop guidance for an ordinance to require recycling of water at drive-through car washes.

SPECIFIC SUB-TASKS

Sub-Task	Description
Adopt a local ordinance or regulation	Require all new drive-through car washes to recycle water by 2010.
Update plan review procedures	Update plan review procedures, as needed, to ensure new drive-through car washes recycle water.

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: _____

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