

***FINAL DRAFT***

# **Georgia Water Use and Efficiency Reporting Guidance for Public Water Systems**

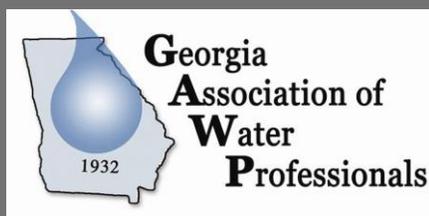
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*The Georgia Association of Water Professionals*



# Georgia Water Use and Efficiency Reporting Guidance for Public Water Systems

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# Water Use and Efficiency Reporting

## *Guidance for Public Water Systems*

### OBJECTIVES AND GOALS

This guidance packet is designed for Georgia water utilities to standardize reporting on water use and document efficient practices within their utility operations as well as any demand-side programs they may offer. This information can be valuable to the State's next regional planning process, as it will enhance the water use data that is used in updating the plans. In addition, the data will provide the State of Georgia with better information from which to tell the story of the water efficiency work taking place throughout the state.

The primary goals of the guidance packet are:

- Give guidance to utilities for calculating a historical baseline of water use.
- Create guidance for calculating water use annually, based on the data utilities currently have available e.g. with existing customer classes, etc.
- Create guidance for water utilities to improve water calculations by providing a customer class breakdown and reporting methodology to be considered in future billing system upgrades to refine and standardize the water use data.
- Provide a simple format for water utilities to report efficient activities that are relevant to their utility: process improvements at the plant, operational efficiencies, water loss abatement programs, or demand side customer based programs.

### BACKGROUND

This guidance packet describes methods and provides reporting forms for establishing baseline water use information and tracking water use efficiency in Georgia. The information provided herein describes methods, calculations, and data sources needed to complete water efficiency reports, to understand customers' water use, determine how efficiently water is used within the service area, and document the impacts of water conservation programs on water use.

The methods in this packet are focused on characterizing *water use and efficiency metrics*, specifically gallons of water use per capita and gallons per account per day (GPCD and GPAD). If the information is not available for calculating per capita water use the utility can begin by calculating water use per account, and work toward calculating the recommended per capita water use. The American Water Works Association (AWWA) defines a metric as a unit of measure that can be used to assess the rate of water use during a given period of time at a given level of data aggregation. AWWA recommends that water utilities use such quantifiable measures to assess their own success in water efficiency implementation or achieving water efficiency goals (AWWA 2010).

To facilitate the implementation of the methods described in this guidance packet, the Addendums provide EXCEL reporting forms and links to resources for efficiency program

development. The addendum material will help ensure consistency in calculations and reporting and may help public water systems present water use and efficiency information to government agencies, as necessary.

The guidance packet is divided into the following components:

Section I.) Baseline Water Use and Efficiency Profile completed in calendar year 2013 by utilities with a service area population of 10,000 or greater; and in calendar year 2014 by utilities with a service population of 3,300 to 10,000.

Section II.) Annual Water Efficiency Report (completed every calendar year) report should be submitted to EPD by April 1) the year after the baseline report is submitted.

Section III.) Water Conservation Implementation Progress Report (completed and submitted to the Division every three or five years)

Addendums:

Form I – Baseline Water Use and Efficiency Profile

Form II – Annual Water Use Report

Form III – Water Use and Efficiency Progress Report

Resources for efficiency program development

- o The methods and reporting forms in this guidance packet complement the best practices outlined in the *GA Water System Audit and Water Loss Control Manual (09/2011)*. Additionally, data and information used to complete the AWWA Water Audit Software© should be used, whenever possible, to complete the reporting forms.
- o The reporting forms in the Addendums can be downloaded online from the GA Association of Water Professionals ([www.gawp.org](http://www.gawp.org)) or the GA Environmental Protection Division ([www.ConserveWaterGeorgia.net](http://www.ConserveWaterGeorgia.net))

All data/information should be collected electronically and, if possible, submitted to the Division electronically.

## **GLOSSARY**

**ANR:** Active Non-residential customers

**ASFR:** Number of Active Single Family Residential Customers or Accounts.

**Baseline Years:** The years from which water use data is being used to calculate an average baseline water use for a minimum of 5 years and a maximum of 10 years (utility specific).

**Consumptive Use:** The difference between the total amount of water withdrawn from a water body, and the total amount of that withdrawn water that is returned to that same water body over a specified period of time.<sup>1</sup>

**Demand-side Management** – Programs and activities designed to encourage end users (customers) to reduce water consumption.

**Distribution System Input Volume:** The volume of water entering the distribution system to provide service to customers. It is equal to the water volume derived from the water system's own source water, plus water imported or purchased, less water exported, and minus the net change in water storage (if applicable and significant).

**Gallon per Account per Day (GPAD):** Total number gallons of water provided to non-residential customers in the calendar year divided by the number of non-residential accounts and divided by 365 days.

**MFU:** Number of housing units in multi-unit structures.

**MGD:** Unit of measuring water Millions of Gallons per Day.

**MGY:** Unit of measuring water Millions of Gallons per Year

**Overall Per Capita (for all users) (GPCD):** Total water use divided by 365 days divided by total population served. Includes all customers (residential, commercial, industrial, and institutional, etc.)

**PPH:** Persons per household from the US Census Bureau or Regional Water Plans.

**Public Water System:** A system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year.

**Residential Per Capita:** Residential water sales divided by total population. Includes residential customers only.

**Total Water Use:** Synonymous with the terms "Distribution System Input Volume" and "Water Supplied" used in Georgia-approved methods for water system auditing.

**Statewide Water Management Plan (SWP):** The water management plan adopted by the Georgia Legislature in 2008 to ensure Georgia manages water resources in a sustainable manner to support the state's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens.

**Water Conservation:** the beneficial reduction of water use, water waste and water loss.<sup>1</sup>

**Water Conservation Implementation Plan (WCIP):** A resource guide on water conservation actions for Georgia's seven major water use sectors in an effort to help sustain the state's water resources and provide for a secure water supply in the future.

**Water Efficiency:** Generally addresses how efficiently water is used or the act of achieving a water use function with the minimal amount of water that is technically and economically feasible.<sup>1</sup>

**Water Supplied:** Synonymous with Distribution System Input Volume.

**Water Use:** The utilization of water for natural and human uses.<sup>1</sup>

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<sup>1</sup> Georgia Comprehensive State-wide Water Management Plan (2008). Section 2: Definitions.

**Water Withdrawal:** The removal of water from a natural water body, such as a river, stream or aquifer.<sup>2</sup>

## **INTRODUCTION: Benefits of Calculating Water Use and Tracking Efficiency**

Data and information collected following the methods described in this guidance packet can help quantify how water is used within a local community and at a regional planning council level providing better data for future planning. Additionally, it can demonstrate how efficiently water is used statewide and provide better data for future planning.

At the community level, public water systems' efforts to collect water use information can help demonstrate the effectiveness of efficient water management and conservation programs; as well as demonstrate the benefits of multi-year investments in these programs.

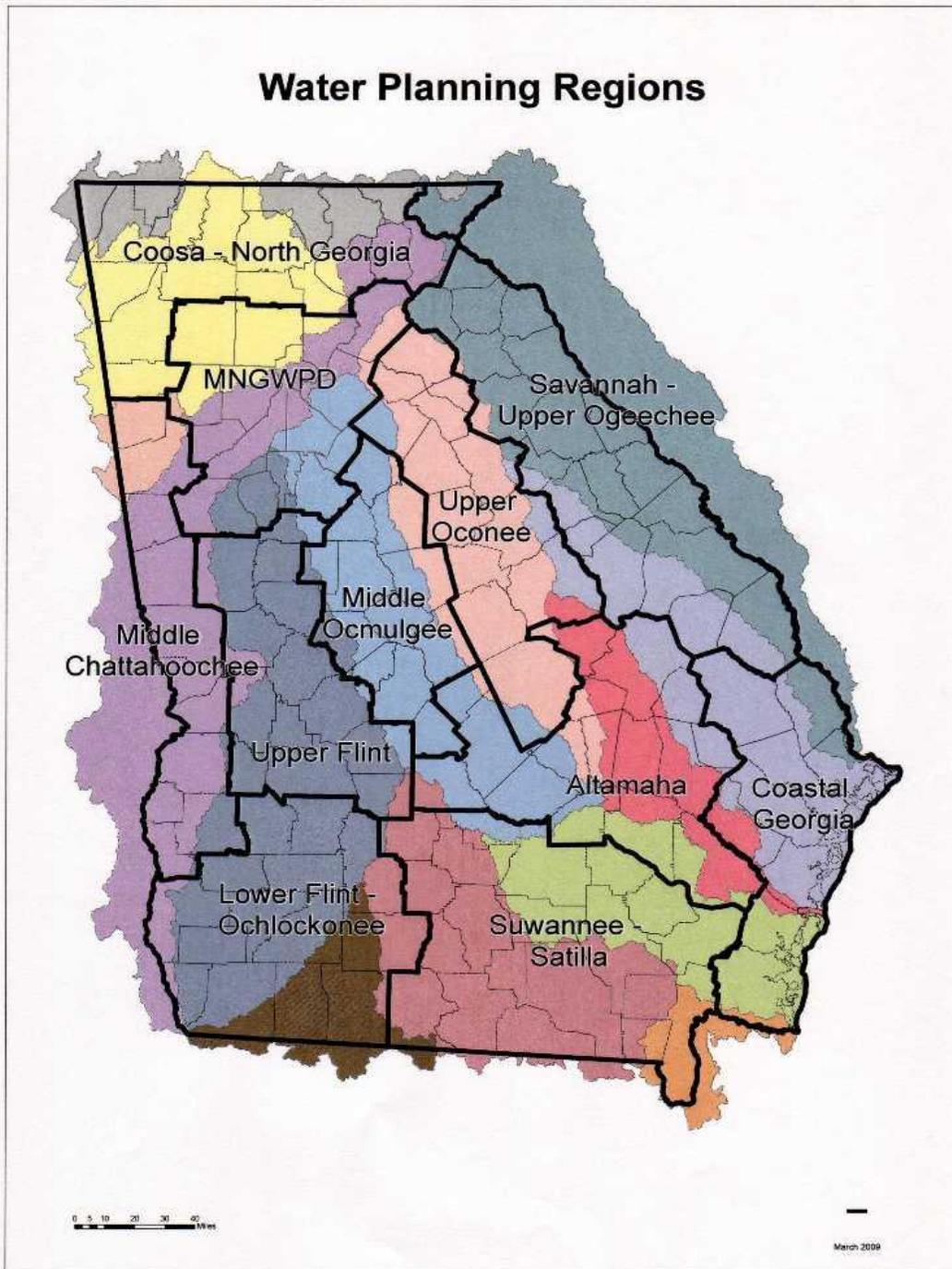
At the regional and state level, information collected using consistent/similar methods and forms can be helpful to regional water management planning in Georgia. By observing trends in water use over time, regional water planning councils may be better equipped to evaluate and recommend effective practices implemented by water users within their region.

### **Georgia's Policy Drivers**

Georgia's Statewide Water Management Plan advances a demand management policy that states, that measurable progress must be made toward water conservation goals and more efficient use of water (section 8, page 20). In support of this policy and to varying degrees, based on the condition and availability of the water resources, each of Georgia's 11 regional water management planning councils, Figure 1, recognize the need for the water users in their region to practice and promote water efficiency. Furthermore, each of the regional water plans recommends the State improve the information base for water planning and resource management.

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<sup>2</sup> See O.C.G.A. Section 12-5-31



**Figure 1: Georgia's 11 Regional Water Planning Areas**

## Implementation of the Guidance

- o All public water systems in Georgia should follow the methods described herein and complete the reporting forms provided in the Addendums of this guidance packet, using the best available information, in order to provide data for more accurate water planning and demonstrate the efficient management of Georgia's water resources.
- o Because public water systems vary by size, water use and efficiency reporting should be completed based on size of the service area:
  - Systems serving more than 10,000 individuals should follow these methods and complete the baseline water use profile April 2014.
  - Systems that serve more than 3,300 individuals should follow these methods and complete the baseline water use profile by April 2015.
  - Systems that serve less than 3,300 individuals should prepare to incorporate the methods and complete the forms to the best of their ability using additional guidance for small systems to be developed over the next 3 years.

## Multiple Permit Holders

Providers with multiple permits: Public water systems that hold multiple withdrawal permits may wish to complete forms for each individual system or complete one form by combining all service areas.

## Technical Assistance

Technical Assistance is provided to public water systems in three forms.

- 1) Written guidance – The three sections of this guidance packet and the *GA Water System Audit and Water Loss Control Manual* (<http://www.gawp.org/audits.php> and [http://www.conservewatergeorgia.net/documents/water\\_loss\\_audits.html](http://www.conservewatergeorgia.net/documents/water_loss_audits.html))
- 2) Guidance from trained state agency associates (from the Georgia Department of Natural Resources, Environmental Protection Division), the Department of Community Affairs, and water conservation experts are available to public water systems. Contact the Environmental Protection Division for more information. ([www.gaepd.org](http://www.gaepd.org) )
- 3) Training workshops and events hosted by Georgia's water associations – Georgia Association of Water Professionals ([www.gawp.org](http://www.gawp.org)) and the Georgia Rural Water Association ([www.grwa.org](http://www.grwa.org))

## History of Water Efficiency in Georgia

As one of the first states to adopt water efficient plumbing standards in 1978, Georgia has a long history of water conservation efforts. Georgia law requires water providers and industries to

develop a water conservation plan (including a drought contingency plan) as a condition of new, expanded or renewed water withdrawal permits (in excess of 100,000 gallons of water a day) or for any modification of a water supply treatment plant operating permit. As water management practices have evolved, water providers have demonstrated leadership in adopting effective conservation programs for their unique customer base. For example, the City of Savannah's toilet voucher program, created due to high inventory of older housing stock and a high percentage of low income customers, replaced 4012 toilets. Athens-Clark County developed a tailored rate structure in order to reduce outdoor water use. Cobb County developed a "Give them an inch" program to address outdoor water use as well. The City of Atlanta funded a multi-family residential toilet rebate program to address many apartments with older inefficient plumbing fixtures. Beginning in 2003, water systems in metro Atlanta have been required to implement the comprehensive water conservation measures in the Metropolitan North Georgia Water Planning District's [Water Supply and Water Conservation Management Plan](http://www.northgeorgiawater.org) ([www.northgeorgiawater.org](http://www.northgeorgiawater.org)). These are only a few anecdotal examples, many other utilities across the state have implemented innovative/successful programs.

Georgia's Statewide Water Management Plan (adopted in 2008) enables regional-level water planning to guide water management decisions within eleven water planning regions. Among other policies, the SWP defines a water quantity policy to manage consumptive uses of surface water and groundwater to ensure that current water needs are met without unreasonably foreclosing the ability of future generations to meet their own water needs. (SWP, section 4, Water Quantity policy 2)

While some Georgia water utilities have tracked water use, the methodology for documenting various types of water use and tracking improvements in water efficiency over time has not been consistent from utility to utility. The importance of tracking water use consistently and understanding regional and local variations in water use became evident during the regional water planning efforts that took place between 2009 and 2011.

This guidance packet continues to build on the regional water planning effort and focuses on a gallons per capita per day (GPCD) metric for Georgia water providers. This packet includes forms and instructions for water providers to use to account for previous investments in water efficiency and improvements in water efficiency over time.

Success in water efficiency and conservation starts with developing a good understanding of how water is used within a water provider's service area. Once a water provider has that foundation, tracking investments in water efficiency programs becomes more feasible. The following organizations and agencies provide credible information and advice on ways to develop profiles of water customers and important considerations for developing water conservation plans.

- American Water Works Association (M36 manual) – [www.awwa.org](http://www.awwa.org)
- US Environmental Protection Agency (1998 guidance) – [www.epa.gov/watersense/pubs/guide.html](http://www.epa.gov/watersense/pubs/guide.html)
- Alliance for Water Efficiency – <http://www.allianceforwaterefficiency.org/>

Additionally, several Georgia-specific resources are available to help water providers determine the most appropriate conservation practices to implement within their community.

- Georgia Water Conservation Implementation Plan - [www.conservewatergeorgia.net/documents/wcip.html](http://www.conservewatergeorgia.net/documents/wcip.html)
- Georgia Regional Water Planning Guidance for Managing Demand - [http://www.georgiawaterplanning.org/pages/technical\\_guidance/regional\\_planning\\_guidance.php](http://www.georgiawaterplanning.org/pages/technical_guidance/regional_planning_guidance.php)
- Metropolitan North Georgia Water Planning District, Water Supply and Water Conservation Management Plan - [www.northgeorgiawater.com](http://www.northgeorgiawater.com)

# **I. Baseline Water Use and Efficiency Profile**

## *For Public Water Systems*

This Section of the GUIDANCE Packet provides information needed to complete REPORTING FORM I (Excel document)

### ***Introduction***

- o The purpose of developing a baseline water use and conservation profile is for public water systems in Georgia to document how water is used within each system and how water conservation programs have been implemented.
  - This baseline water use profile can be used as a starting point for documenting changes in water use and efficiency over time for each system.
  - The baseline water use profile can be calculated using a continuous multi-year water use period, to allow a water provider to account for prior investments in demand management and obtain credit for implemented conservation efforts.
  - The baseline water use profiles will be aggregated to inform any future statewide or regional water planning efforts.
  - The baseline water conservation profile can provide a snapshot of water efficiency and conservation programs implemented by the water provider.
- o The baseline water use and conservation profile will include the following components:
  - Total water use as a measure of the water supplied to the distribution system over 12-month calendar year and adjusted for changes in distribution system storage and deliveries to other water systems.
  - A list of customer classes and the number of customers in each class within the service area. If your system does not yet have a method of classifying customers, estimates can be used. The water provider should also indicate the year in which they expect the system to break out water use by customer class.
  - A volume of water distributed to each customer class (reported in gallons).
  - A calculation of baseline gallons per capita per day (GPCD) system total water use, a baseline single family residential gallons per capita per day (SF Res GPCD) water use, a baseline multi-family residential per capita per day (MF Res GPDC) if data is available, and a baseline non-residential customer per account per day GPAD) or broken down by GPAD for commercial, industrial and institutional if data is available.
  - A brief synopsis of water conservation and efficiency program implementation.

## *Profile Elements*

- Public water systems should generate a baseline water use and conservation profile using an applicable 5-10 year period preceding the reporting year and including both an extremely wet and extremely dry period to demonstrate the impact of climate variables upon water use. The baseline trend starting date should be no earlier than 1995, to ensure that the baseline is a relevant and timely benchmark.
- Baseline water use will be shown as a trend over the selected period referenced above and calculated as an average of total gallons of water used per capita per day (GPCD) and gallons of water used by customer classes if available
  - System total baseline GPCD allows a water provider to account for prior investments in system management and demand management programs.
  - Baseline *residential* GPCD provides a good measure of how efficient demand is within the community being served by the water system. Residential water use can be further aggregated by also calculating it for single family and multi-family accounts if this information is available.
    - Baseline *Single family residential* GPCD – provides a good measure of water used at a residential dwelling unit built with the intent of being occupied by one family. It may be detached or attached
    - Baseline *multi-family* GPCD provides a good measure of the variation in domestic water use often found in multi-family setting. If a system has a multi-family billing category this should be completed. If not just complete the baseline residential.
  - Baseline *Non-residential* gallons per account per day (GPAD) provides a way for water systems to benchmark or monitor water use trends among the commercial uses of water within the service area. However, Non-residential GPAD should not be considered a measure of how efficiently water is being used within a facility or non-residential operation. Non-residential per account can be further aggregated into the preferred customer classes below to provide a more detailed analysis of how water is used by specific sectors within a community. If the system does not yet have this information appropriate categories should be used or the non-residential metric described above can be utilized until more specific billing data is available.
    - Baseline *commercial* (GPAD) provides a way to account for water use consumed by a business (hotels, office buildings, restaurants, etc.).
    - Baseline *industrial* (GPAD) provides a way to account for water use consumed by manufacturers and processors in a service delivery area. This can be useful tool because the addition or loss of this type of use can often have a significant impact on overall water consumption in the service area.
    - Baseline *institutional* (GPAD) provides a way for water systems to benchmark or monitor water use trends in institutional facilities (government, schools,

hospitals, etc.) It should be used if the system has data delineated in this customer class.

- GPCD can be used to document changes in water use efficiency over time for each individual system.
- o Baseline water efficiency will capture a public water system's investment in activities that: conserve water used by the customers, minimize water loss within the treatment and/or distribution system, and reduce or eliminate water wasted within the system and by the customers. The baseline water efficiency profile should account for:
  - Ongoing and seasonal water conservation and efficiency programs implemented. These programs are also considered pre-drought mitigation efforts and should not include activities defined as response to drought conditions (such as outdoor water use bans or reductions.)
  - Level of implementation of programs: e.g. number of efficient fixtures, replaced, miles of pipe surveyed, number of meters replaced, tested, or calibrated.
  - Financial commitments to customer-side water conservation programs and system/supply-side improvements in efficiency.

## **I.A) Establishing Baseline Years**

- o The 5-10 year period should precede the reporting year and include both an extremely wet and extremely dry period to demonstrate the impact of climate variables upon water use. The baseline trend starting date should be no earlier than 1995
- o The baseline water use period shall be calculated using a 12-month calendar year (January through December).
- o If water use and/or population data are not available for the minimum 5-year baseline water use period, the water provider shall calculate baseline water use for the maximum number of years for which data are available.
- o On Form I, replace "Year 1, Year 2, etc" with the actual year of water use data.

## **I.B) Defining Service Area Population and Customer Classes**

### **B.1) Service Area Population**

To calculate baseline water use and report annual water efficiency, public water systems must use existing data on population, if available, or estimate the population of the areas they actually serve. Many of these areas do not coincide with either their jurisdictional boundaries or with the boundaries of the cities and counties.

- o The service area population value should be the actual or estimated service area for the report year.

- Default service area populations may come from federal or regional water planning data sources to estimate population. Best available data or calculation method should be used to determine service area population.
- The following variables can be used for calculating service area population :
  - PPH = Persons per household from the US Census Bureau or Regional Water Plans
  - #ASFR = Number of Active Single Family Residential Customers or Accounts
  - #MFU = Number of housing units in multi-unit structures

This information can be found at: <http://quickfacts.census.gov/qfd/states/13000.html>. If the system is not aligned with jurisdictional boundaries this information may be available through the local planning department.

- ANR = Active Non-residential customers
- To calculate service area population, public water systems should use the following formulas for the customer classes identified:
  - Single Family Residential Population (SFpop)
    - #ASFR x PPH
  - Multi-Family Residential Population (MFpop) If Available.
    - #MFU x PPH
- Complex situations that may affect future water consumption:
  - Actual distribution area may cover only a portion of the jurisdictional boundary using system's active accounts addresses this concern. For multi-unit dwellings local planning departments may be of assistance.
  - New customers outside the present distribution area may connect to the water provider system in the future for various reasons.
  - The water provider's distribution system can geographically expand over time as a result of economic and population growth.
  - Expansion or Contraction of Distribution Area
    - If two or more water providers merged wholly, or one water provider acquired a portion of another service area, during a year that falls in the baseline period, the merged entity should derive the baseline water use as if they were a single entity for the entire baseline period.
    - If during the baseline period a previously served portion of the distribution system is removed from a water provider's service area, the baseline water use shall be corrected to reflect only that portion of the service area that remained consistently supplied during the baseline years.

## B.2) Defining Customer Classes of Water Use

Water efficiency is best tracked when public water systems describe water use by customer class. Water systems can document water use by customer class by recording the number of accounts within each customer class, and the volume of water delivered to that specific customer class, and the percentage of total water used by that particular customer class.

In a restrictive sense, water use is defined as water that is actually used for a specific purpose (end use) or by a particular group, such as residential, commercial, industrial, or wholesale users. This guidance for public water systems further defines water use by customer class in the following way:

*Commercial water use* - means water use at a place of business, such as hotels, restaurants, office buildings, commercial businesses or other places of commerce. These do not include multi-family residences, agricultural users, or water uses that fall within the industrial or institutional classifications.

*Industrial water use* – Water users that are primarily manufacturers or processors of materials as defined by the Standard Industrial Classifications (SIC) Code numbers 2000 through 3999, and associated NAICS code.

*Institutional water use* - means water used at an establishment dedicated to public service. This includes schools, churches, hospitals, and government facilities. All facilities serving these functions are considered institutional regardless of ownership.

*Residential water use* - means water used for residential purposes, including household use, personal hygiene, drinking, and outdoor uses such as washing vehicles, power washing, and irrigation. Water may be obtained from a public supply or may be self supplied. Residential water use is often referred to as domestic water use.

*Single family residential water use* - means water used at a residential dwelling unit built with the intent of being occupied by one family. It may be detached or attached (i.e., townhouses, duplexes, etc.).

*Multi-family residential water use* - means water used at residential housing with multiple dwelling units, such as apartments and condominiums.

*Landscape water use* – is water billed by a separate meter that only measures water used for outdoor purposes, primarily landscape irrigation. If the water provider has irrigation meters, this use should be incorporated into the appropriate water use category: residential, commercial, industrial, or institutional based upon use by the applicable sector.

*Wholesale water use* – This is bulk water sold and conveyed out of the water distribution system. Typically this is water sold to a neighboring water utility.

Complex situations to consider:

- There are a variety of methods to categorize water customer classes, and some are more precise than others. The most straightforward and accurate method of classification is through direct observation and information about the type of customer, such as single-family residential, multi-family, commercial, institutional or industrial. If a system does not have these classifications field survey is one method for updating this information. For example when meters are read information on the type of dwelling can be noted and amended in the billing system to enable an easier transition to the preferred standardized billing categories: wholesale, residential, multi-family, commercial, institutional, and industrial.
- If the system does not yet have a method of classifying customers, or if it implements some other method of classifying customers (such as meter size or location), utilize the current categories and note that on the report. Provide the year in which it is expect the system will break out water use by customer class. Each water provider is encouraged to progress toward a system that classifies customers by the preferred minimum standard categories listed above. As each utility is unique additional categories may be appropriate to further assess water use.
- Categorizing water use by customer class may be difficult. Some water providers billing system only defines water use categories by meter size. In this situation usually the smallest meters are used for single family homes (and some small businesses). Larger meters are for apartment complexes, commercial establishments, schools and industries. This method can be used to break water use down into residential and non-residential categories, unless multi-family water use is the predominant type of residential dwellings.

### **I.C) Calculating Baseline Total Water Use**

Public water systems required to submit water system audits to EPD, per the Water Stewardship Act of 2010, can find this value on the AWWA Water System Audit Software Excel Reporting Worksheet© Line 19 Water Supplied.

### **I.D) Calculating Baseline Daily Per Capita Water Use**

Public water systems should calculate per capita water use using gallons per capita per day (GPCD) system total, residential GPCD, and non-residential gallons per account per day (GPAD). If the water system has data with more aggregated billing system categories that information can be utilized for a more detailed breakdown of usage. Information is provided above and options are present on the tabbed reporting forms. Systems should use the forms most appropriate to their data.

### **D.1) Calculating an Average of Baseline GPCD System Total:**

Calculating an average from the baseline GPCD reporting period requires water systems to calculate daily per capita water use for each year in the baseline period; sum the daily per capita values for each baseline year and divide by the number of years in the baseline period. To make this easier for utilities built in calculations are contained in the reporting forms for these calculations.

The result is an average of the Baseline Daily Per Capita Water Use for the selected reporting period.

- Average for Daily System Total Per Capita

$$\frac{\{Total\ water\ use\ per\ year\ in\ gallons\ / (Service\ Population)\ / 365\ days}{(Baseline\ year\ 1 + baseline\ year\ 2 + etc...) / total\ number\ of\ baseline\ years}$$

#### **D.2) Calculating Baseline GPCD Single Family Residential Water Use**

- Average Daily Single Family Per Capita:

$$\frac{(Gallons\ of\ water\ distributed\ to\ SFR\ customers\ per\ year / Annual\ SFpop) / 365\ days}{(Baseline\ year\ 1 + baseline\ year\ 2 + etc...) / total\ number\ of\ baseline\ years}$$

#### **D.3) Calculating Baseline GPCD Multi-Family Residential Water Use**

- Average Multi-Family Per Capita:

$$\frac{(Gallons\ of\ water\ distributed\ to\ MFU\ customers\ per\ year / Annual\ MFpop) / 365\ days}{(Baseline\ year\ 1 + baseline\ year\ 2 + etc...) / total\ number\ of\ baseline\ years}$$

#### **D.4) Calculating Non-residential Gallons per Account per Day (GPAD)**

If a water system has more aggregated data as described previously per account information can be calculated by the available categories. If a facility, with a significant impact on water use, is added to your community after the baseline has been calculated, the information should be noted in the appropriate annual report Form II. Calculations are contained in the reporting forms for ease of use.

- Average Non-residential Gallons per Account per Day:

$$\frac{\{Gallons\ of\ water\ distributed\ Non-residential\ customers\ /}{(total\ number\ of\ Non-residential\ accounts)\ / 365\ days}$$

$$\frac{(Baseline\ year\ 1 + baseline\ year\ 2 + etc...)\ /}{total\ number\ of\ baseline\ years}$$

- Average Commercial Gallons per Account per Day

$$\frac{\{Gallons\ of\ water\ distributed\ Commercial\ customers\ /}{(total\ number\ of\ Commercial\ accounts)\ / 365\ days\}}$$

$$\frac{(Baseline\ year\ 1 + baseline\ year\ 2 + etc)\ /}{total\ number\ of\ baseline\ years}$$

- Average Industrial Gallons per Account per Day

$$\frac{\{Gallons\ of\ water\ distributed\ Industrial\ customers\ /}{(total\ number\ of\ Industrial\ accounts)\ / 365\ days\}}$$

$$\frac{(Baseline\ year\ 1 + baseline\ year\ 2 + etc)\ /}{total\ number\ of\ baseline\ years}$$

- Average Institutional Gallons per Account per Day

$$\frac{\{Gallons\ of\ water\ distributed\ Institutional\ customers\ /}{(total\ number\ of\ Institutional\ accounts)\ / 365\ days\}}$$

$$\frac{(Baseline\ year\ 1 + baseline\ year\ 2 + etc)\ /}{total\ number\ of\ baseline\ years}$$

## **I.E) Previous Water Efficiency Programs and Activities**

This section provides a snapshot of previous water conservation and efficiency programs and activities implemented by the public water system. Information provided in this section provides a way for public water systems to account for resources invested in conservation and efficiency since the baseline (or before.) The American Water Works Association recently published a study showing a national trend of declining water use <http://www.awwa.org/files/Resources/Waterwiser/JAW0211rockaway.pdf>. Georgia's water use and efficiency reporting will enable the state to more accurately demonstrate water usage trends and account for efficiencies within the water industry.

*NOTE: This information can be helpful in determining effective water conservation programs to be implemented in the future. For assistance in documenting future savings or tracking progress over time, contact the Division.*

Specific water conservation programs and activities can be grouped into categories. The categories below are provided to guide the water provider to investigate types of water conservation and efficiency activities rather than mandating the activities for each system. As water providers understand more about water use within their specific system, a more detailed analysis can be done on the categories of water conservation and efficiency programs.

**Table X: EXAMPLE: CATEGORIES of WATER CONSERVATION PRACTICES AND ACTIVITIES TO BE CONSIDERED IN REPORTING**

| <b>Category</b>                 | <b>Level of Implementation</b>                              | <b>Estimated Investment by Water Provider</b>                                |
|---------------------------------|---|--|
| Example: Leak Detection Program | Surveyed 300 miles of our water system's 1200 miles of pipe | \$200,000 for the equipment about \$30,000.00 annually to manage the program |
| Supply Side Conservation        |   |  |
| Plant Operations                |   |  |
| Distribution System             |   |  |
| Education and Outreach          |   |  |
| Rates                           |   |  |
| Other Demand Management         |   |  |

## **II. Annual Water Use Report**

### *For Public Water Systems*

This Section of the GUIDANCE Packet provides information needed to complete REPORTING FORM II (EXCEL document)

### ***Introduction***

All public water systems serving customers in Georgia should complete an annual water use report to assist with tracking water use changes over time.

The Annual Water Use Report should cover each calendar year (January 1 to December 31) after the baseline water use and efficiency profile is completed. Water systems responsible for conducting and submitting water system audits, as required in the Water Stewardship Act of 2010, should consider completing the annual water use report at the same time.

This annual water use report should be compiled by public water systems to provide water use data to the Georgia Environmental Protection Division to improve future water use and data profiles for ongoing regional water planning.

- This annual water use report can be used to document changes in water use over time.
- The annual water use report can be used to track improvements in water efficiency over time and can be incorporated into the water conservation implementation progress report
- Annual water use reports provided to the Division can be aggregated to inform any future statewide or regional water planning efforts.

### **II.A) Service Area**

#### **A.1) Calculating System Total Water Use (in MGD):**

- Public water systems required to submit water system audits to EPD, per the Water Stewardship Act of 2010, can find this value on the AWWA Water System Audit Software Excel Reporting Worksheet© Line 19 Water Supplied.

#### **A.2) Service Area Population**

- The service area population value should be the actual or estimated service area for the report year.

- Default service area populations may come from federal or regional water planning data sources to estimate population. Best available data or calculation method should be used to determine service area population.
- The utility should use the same source for obtaining this information or method of calculating the service area population as utilized in the baseline calculations.

Information on service area population can be found at <http://quickfacts.census.gov/qfd/states/13000.html>.

## **II.B) Annual Water Use**

This section of the Annual Water Efficiency Report should include 1) total water produced during the reporting year 2) total water use and water used by sectors or customer classes.

### **B.1) Calculating Annual System Total GPCD:**

- Calculating annual GPCD system total requires water systems to calculate total water use for the report year and divide by the total population served for that year.

Annual System Total GPCD:

$$\frac{\textit{{Total water use per year in gallons}}}{\textit{{Service Area population}} / 365 \textit{ days}}$$

### **B.2) Water Use by Sector or Customer Class**

- Water use by sectors or customer class requires calculating per capita water use for residential customers and per account water use for non-residential accounts for the applicable reporting year. If more aggregated data is available the utility can break down these calculations to GPCD for single family residential and multi-family residential water use. Per account water use can be further aggregated by commercial, industrial, and institutional. This section provides an accounting of water use for planning purposes and can be used if the water provider plans to expand water services in the future.
- The recommended customer classes when planning an update to billing systems are: single family residential, multi-family residential, commercial, institutional, and industrial.
- If the system does not yet have water use broken out by customer class, report use by residential and non-residential customers at a minimum and indicate the year in which you expect your system to break out water use by customer class.
- These can be calculated using the methodology described in Section I.D of this guidance document.

**III. WATER USE and EFFICIENCY PROGRESS Report**  
*For Public Water Systems*

This Section of the GUIDANCE Packet provides information needed to complete  
REPORTING FORM III (EXCEL document)

***Introduction***

The purpose of the water use and efficiency progress report is to document individual public water system's investments in water conservation programs and efficiency practices. This form is used in place of the annual Water Use and Efficiency Report every 3-5 years. Georgia public water systems can complete this progress report every three to five years to track water savings accrued through water conservation and water efficiency activities. Allowance and credit for prior conservation efforts will allow a water utility to determine the level and nature of progress needed to be implemented.

**III.A) Service Area Information**

Accurate information regarding service area population, growth estimates and future service area characteristics are necessary to adequately account for the impact of any previous or future investment in conservation.

This information is critical to calculating the need for additional water supplies and the potential demand reduction any conservation programs may have on the service area.

A.1) Service Area Population:

- The service area population value should be the actual or estimated service area for the report year.
- Default service area populations may come from federal or regional water planning data sources to estimate population. Best available data or calculation method should be used to determine service area population.
- The utility should use the same source for obtaining this information or method of calculating the service area population as utilized in the baseline calculations.

Information on service area population can be found at  
<http://quickfacts.census.gov/qfd/states/13000.html>.

A.2) Annual Water Use

This section of the Annual Water Efficiency Report should include 1) total water produced during the reporting year 2) total water use and water used by sectors or customer classes.

A.3) Calculating System Total Water Use (in MGD): Public water systems required to submit water system audits to EPD, per the Water Stewardship Act of 2010, can find this value on the AWWA Water System Audit Software Excel Reporting Worksheet© Line 19 Water Supplied.

A.4) Peak Demand: provide information about the maximum demand period for water by the customers in your service area within a 12-month calendar year, no more than 3 months. Many times, for example, water providers serving primarily residential customers will have a peak season in the summer months due to heavy outdoor irrigation.

A.5) Persons in Household: ensures an accurate accounting of per capita water use. This can be found from the US Census Quick Facts, your community's comprehensive plan, or a phone call to your planning department. If this value is unknown, use the default value used by the Division Drinking Water Program - 2.6 persons per household.

A.6) Homes built before 1992: Prior to the Energy Policy Act of 1990, water fixtures used a greater amount of water than ones manufactured today. By estimating the number of homes built before 1992, the date new efficiency standards went into effect, water providers can estimate possible water savings from programs that replace inefficient fixtures with efficient ones. **This information only needs to be provided upon the first submission.** Subsequent progress reports can just note it was submitted with the original progress report.

County and city-wide information can be found from the US Census, your community's comprehensive plan, or a phone call to your planning department.

A.7& A.8 Evapotranspiration (inches per year) precipitation (inches per year) are available through the Water Balance Calculator on the UGA Extension website – <http://www.griffin.uga.edu/aemn/cgi-bin/AEMN.pl?site=AAAA&report=w> . If your city is not listed on the scroll-down menu, chose the closets location on the list.

### III.B) Service Area Demand and Customer Information

The information provided in this section will help document changes in the water system since the “Baseline” (used in your baseline water use report, submitted for 2013 or 2014). Changes in service area customer base and service area demands can be used to justify the request for additional water use permits or expanded service area.

B.1 & B.2) Peak month demand (MGD) and Off peak month demand (MGD) describes the daily volume of water distributed during the time of year when water use is at its highest and when daily water use is at its lowest.

B.3) Customer classes

- Number of Billed Accounts should document the total number of accounts in each customer class. *NOTE: this column should only reflect the total number of accounts in each class, and should NOT reflect the total population served by each account.*
- Demand (in gallons) should document the demand volumes for each customer class if available. If that information is not available use residential and non-residential classifications.

- Percent of Demand will be calculated using total system water use and the volume entered in the water use by each sector block.

B.4) Current Water use by Customer Class provides a detailed examination of the water use by each customer class in the water system for the **current year**. Public water systems should calculate per capita water use using gallons per capita per day (GPCD) system total, residential GPCD, and non-residential gallons per account per day (GPAD). If the water system has data with more aggregated billing system categories that information can be utilized for a more detailed breakdown of usage. Information is provided in Section I.D and options are present on the reporting forms. Systems should use the categories most appropriate to their data. This information can be compared to the previously submitted data and can be used to show any changes in the volume of water used per sector (for example decrease in industrial or residential use, or the addition of commercial customers...) For planning purposes, this data can be used to determine effective efficiency actions or programs for the system to adopt in the future.

Complex situations to consider:

- There are a variety of methods to categorize water customer classes, and some are more precise than others. The most straightforward and accurate method of classification is through direct observation and information about the type of customer, such as residential, commercial, institutional or industrial. If a system does not have these classifications field survey is one method for updating this information. For example when meters are read information on the type of dwelling can be noted and amended in the billing system to enable an easier transition to the preferred standardized billing categories: residential, multi-family, commercial, institutional, industrial, and wholesale.
- If your system does not yet have a method of classifying customers, or if your system implements some other method of classifying customers (such as meter size or location), utilize the applicable categories or use residential and non-residential as described above. Provide the year in which you expect your system to break out water use by customer class. Each water provider is encouraged to progress toward a system that classifies customers by these preferred minimum standard categories. As each utility is unique additional categories may be appropriate to further assess water use.

### **III.C) Current Water Efficiency Practices and Program Activity**

This information will be used to track the effectiveness of water conservation and efficiency activities implemented (to date) by the water system. Effective conservation activities can be demonstrated by a change in total water use, a change in water use by customer class, a reduction in peak ratio, or a flattening of water demand. Water systems should use this form to outline the

number of programs implemented during the 3-5 year window since the baseline or most recent implementation plan was submitted.

Additionally, this information can be used to determine effective water conservation programs to be implemented in the future. For assistance in documenting future savings or tracking progress over time, contact the Division.

## **Addendums**

Forms I, II and III are to be completed in Excel which have embedded formulas for ease of use

# FORM I

## Baseline Water Use and Efficiency Profile for Public Water Systems

This form (including all applicable worksheets) is to be completed following the guidance issued by EPD Watershed Protection Branch (2012)

|                                  |
|----------------------------------|
| <b>WSID:</b>                     |
| <b>Public Water System Name:</b> |
| <b>County:</b>                   |

|                      |
|----------------------|
| <b>Water Source:</b> |
|----------------------|

| <b>Baseline GPCD System Total</b> |                                   |  |  |
|-----------------------------------|-----------------------------------|--|--|
| (A)<br>Baseline<br>Years*         | (B)<br>Service Area<br>Population | (C)<br>Total Water Use (in<br>gallons) | (D.1)<br>Daily per capita water<br>use (column 3/ column<br>2) |
| Year 1                            |                                   |  | #DIV/0!  |
| Year 2                            |                                   |  | #DIV/0!  |
| Year 3                            |                                   |  | #DIV/0!  |
| Year 4                            |                                   |  | #DIV/0!  |
| Year 5                            |                                   |  | #DIV/0!  |
| Year 6                            |                                   |  | #DIV/0!  |
| Year 7                            |                                   |  | #DIV/0!  |
| Year 8                            |                                   |  | #DIV/0!  |
| Year 9                            |                                   |  | #DIV/0!  |
| Year 10                           |                                   |  | #DIV/0!  |
| Total of Column (4)               |                                   |  | #DIV/0!  |
| Average GPCD for Baseline Period  |                                   |  | #DIV/0!  |
|                                   |                                   |  |  |

\*Enter the Actual year of the data in this column. The reporting period should encompass a wet period and a dry period and should start no earlier than 1995.

### TOTAL GPCD

# FORM I

| <b>SINGLE FAMILY RESIDENTIAL</b>           |                                   |  |   |
|--|-----------------------------------|--|---|
| <b>Baseline GPCD Residential Water Use</b> |                                   |  |   |
| (A)<br>Baseline Year*                      | (B)<br>Service Area<br>Population | (C)<br>Water Use by<br>SF residential<br>customers (in<br>gallons) | (D.2)<br>Daily residential<br>per capita Water<br>use (column 3/<br>column 2) |
| Year 1                                     |                                   |  | #DIV/0!   |
| Year 2                                     |                                   |  | #DIV/0!   |
| Year 3                                     |                                   |  | #DIV/0!   |
| Year 4                                     |                                   |  | #DIV/0!   |
| Year 5                                     |                                   |  | #DIV/0!   |
| Year 6                                     |                                   |  | #DIV/0!   |
| Year 7                                     |                                   |  | #DIV/0!   |
| Year 8                                     |                                   |  | #DIV/0!   |
| Year 9                                     |                                   |  | #DIV/0!   |
| Year 10                                    |                                   |  | #DIV/0!   |
| Total of Column (4)                        |                                   |  | #DIV/0!   |
| Average SF GPCD for Baseline Period        |                                   |  | #DIV/0!   |
|  |                                   |  |   |

\*Enter the Actual year of the data in this column. The reporting period should encompass a wet period and a dry period and should start no earlier than 1995.

### **SF Res GPCD**

# FORM I

| <b>MULTI-FAMILY RESIDENTIAL</b>                 |                         |  |   |
|---|-------------------------|--|---|
| <b>Baseline GPCD Multi-Family Res Water Use</b> |                         |  |   |
| (A)   | (B)                     | (C)  | (D.3)   |
| Baseline Year*                                  | Service Area Population | Water Use by MF residential customers (in gallons) | Daily residential per capita Water use (column 3/ column 2) |
| Year 1  |                         |  | #DIV/0!   |
| Year 2  |                         |  | #DIV/0!   |
| Year 3  |                         |  | #DIV/0!   |
| Year 4  |                         |  | #DIV/0!   |
| Year 5  |                         |  | #DIV/0!   |
| Year 6  |                         |  | #DIV/0!   |
| Year 7  |                         |  | #DIV/0!   |
| Year 8  |                         |  | #DIV/0!   |
| Year 9  |                         |  | #DIV/0!   |
| Year 10   |                         |  | #DIV/0!   |
| Total of Column (4)                             |                         |  | #DIV/0!   |
| Average MF GPCD                                 |                         |  | #DIV/0!   |
|   |                         |  |   |

\*Enter the Actual year of the data in this column. The reporting period should encompass a wet period and a dry period and should start no earlier than 1995.

### **MF Res GPCD**

# FORM I

| <b>Institutional</b>                                   |  |  |   |
|--|--|--|---|
| <b>Institutional GPAD</b><br>(A)<br><br>Baseline Year* | (B)<br><br>Number of Institutional<br>accounts | (C)<br><br>Water Use by insttutional<br>customers (in gallons) | (D.4)<br><br>Daily Institutional per<br>account Water use<br>(column 3/ column 2) |
| Year 1   |  |  | #DIV/0!   |
| Year 2   |  |  | #DIV/0!   |
| Year 3   |  |  | #DIV/0!   |
| Year 4   |  |  | #DIV/0!   |
| Year 5   |  |  | #DIV/0!   |
| Year 6   |  |  | #DIV/0!   |
| Year 7   |  |  | #DIV/0!   |
| Year 8   |  |  | #DIV/0!   |
| Year 9   |  |  | #DIV/0!   |
| Year 10  |  |  | #DIV/0!   |
|  |  | Total of Column (4)  | #DIV/0!   |
|  |  | Average Commercial<br>GPAD                                     | #DIV/0!   |
|  |  |  |   |

**Institutional GPAD**

# FORM I

| <b>Industrial GPAD</b><br>(A) | <b>Industrial</b>                       |  |  |
|-------------------------------|---|--|--|
| Baseline Year*                | (B)<br>Number of Industrial<br>accounts | (C)<br>Water Use by industrial<br>customers (in gallons) | (D.4)<br>Daily industrial per<br>account Water use<br>(column 3/ column 2) |
| Year 1                        |   |  | #DIV/0!  |
| Year 2                        |   |  | #DIV/0!  |
| Year 3                        |   |  | #DIV/0!  |
| Year 4                        |   |  | #DIV/0!  |
| Year 5                        |   |  | #DIV/0!  |
| Year 6                        |   |  | #DIV/0!  |
| Year 7                        |   |  | #DIV/0!  |
| Year 8                        |   |  | #DIV/0!  |
| Year 9                        |   |  | #DIV/0!  |
| Year 10                       |   |  | #DIV/0!  |
|                               |   | Total of Column (4)                                      | #DIV/0!  |
|                               |   | Average Commercial<br>GPAD                               | #DIV/0!  |

## Industrial GPAD

# FORM I

| <b>COMMERCIAL</b>                 |                                     |  |   |
|-----------------------------------|-------------------------------------|--|---|
| <b>Commercial<br/>GPAD</b><br>(A) | (B)                                 | (C)  | (D.4)   |
| Baseline Year*                    | Number of<br>Commercial<br>accounts | Water Use by<br>commercial customers<br>(in gallons) | Daily commercial per<br>account Water use<br>(column 3/ column 2) |
| Year 1                            |                                     |  | #DIV/0!   |
| Year 2                            |                                     |  | #DIV/0!   |
| Year 3                            |                                     |  | #DIV/0!   |
| Year 4                            |                                     |  | #DIV/0!   |
| Year 5                            |                                     |  | #DIV/0!   |
| Year 6                            |                                     |  | #DIV/0!   |
| Year 7                            |                                     |  | #DIV/0!   |
| Year 8                            |                                     |  | #DIV/0!   |
| Year 9                            |                                     |  | #DIV/0!   |
| Year 10                           |                                     |  | #DIV/0!   |
|                                   |                                     | Total of Column (4)                                  | #DIV/0!   |
|                                   |                                     | Average Commercial<br>GPAD                           | #DIV/0!   |

## Commercial GPAD

# FORM I

| <b>NON-RESIDENTIAL<br/>Non-Residential GPAD</b> |                                    |   |  |
|---|------------------------------------|---|--|
| (A)   | (B)                                | (C)   | (D.4)  |
| Baseline Year*                                  | Number of non-residential accounts | Water Use by non-residential customers (in gallons) | Daily non-residential per account Water use (column 3/ column 2) |
| Year 1  |                                    |   | #DIV/0!  |
| Year 2  |                                    |   | #DIV/0!  |
| Year 3  |                                    |   | #DIV/0!  |
| Year 4  |                                    |   | #DIV/0!  |
| Year 5  |                                    |   | #DIV/0!  |
| Year 6  |                                    |   | #DIV/0!  |
| Year 7  |                                    |   | #DIV/0!  |
| Year 8  |                                    |   | #DIV/0!  |
| Year 9  |                                    |   | #DIV/0!  |
| Year 10   |                                    |   | #DIV/0!  |
| Total of Column (4)                             |                                    |   | #DIV/0!  |
| Average Non-Residential GPAD                    |                                    |   | #DIV/0!  |
|   |                                    |   |  |

\*Enter the Actual year of the data in this column. The reporting period should encompass a wet period and a dry period and should start no earlier than 1995.

**Non-Res GPAD**

## FORM I

| Category                        | Level of Implementation                                     | Estimated Investment by Water Provider                                       |
|---------------------------------|---|--|
| Example: Leak Detection Program | Surveyed 300 miles of our water system's 1200 miles of pipe | \$200,000 for the equipment about \$30,000.00 annually to manage the program |
| <b>Supply Side Conservation</b> |   |  |
|                                 |   |  |
|                                 |   |  |
| <b>Plant Operations</b>         |   |  |
|                                 |   |  |
|                                 |   |  |
| <b>Distribution System</b>      |   |  |
|                                 |   |  |
|                                 |   |  |
| <b>Education and Outreach</b>   |   |  |
|                                 |   |  |
|                                 |   |  |
| <b>Rates</b>                    |   |  |
|                                 |   |  |
|                                 |   |  |
| <b>Other Demand Management</b>  |   |  |

### History of Programs

## FORM II

### Annual Water Use Report

This report should be completed annually beginning the year after the Baseline Report is submitted to EPD. Using the Guidance prepared by EPD 2012

|                                  |              |
|----------------------------------|--------------|
|                                  | <b>WSID:</b> |
| <b>Public Water System Name:</b> |              |
| <b>County:</b>                   |              |
| <b>Year:</b>                     |              |
| <b>Water Source:</b>             |              |
| <b>Water Planning Region:</b>    |              |

|           |                                     |  |
|-----------|-------------------------------------|--|
| <b>A)</b> | <b>Service Area</b>                 |  |
| A.1.      | System Total Water Use (in gallons) |  |
| A.2       | Service Area Population             |  |

**B) Annual Water Use**

|     |                          |         |
|-----|--------------------------|---------|
| B.1 | Annual GPCD System Total | #DIV/0! |
|-----|--------------------------|---------|

B.2. Water Use By Sector and Customer Class - Use categories that correspond with available data

**Single Family Residential GPCD**

|                         |  |                                   |
|-------------------------|--|-----------------------------------|
| Service Area Population | Water Use by SF Residential Customers (in gallons) | GPCD For SF Residential Customers |
|                         |  | #DIV/0!                           |

**Multi-Family Residential**

|                            |  |                                   |
|----------------------------|--|-----------------------------------|
| MF Service Area Population | Water Use by MF Residential Customers (in gallons) | GPCD for MF Residential Customers |
|                            |  | #DIV/0!                           |

**Residential GPCD**

|                         |   |                                |
|-------------------------|---|--------------------------------|
| Service Area Population | Water Use by Residential Customers (in gallons) | GPCD for Residential Customers |
|                         |   | #DIV/0!                        |

**Commercial GPAD**

|                               |  |                               |
|-------------------------------|--|-------------------------------|
| Number of Commercial Accounts | Water Use by Commercial Customers (in gallons) | GPAD for Commercial Customers |
|                               |  | #DIV/0!                       |

**Industrial GPAD**

|                               |  |                               |
|-------------------------------|--|-------------------------------|
| Number of Industrial Accounts | Water Use by Industrial Customers (in gallons) | GPAD for Industrial Customers |
|                               |  | #DIV/0!                       |

**Institutional GPAD**

|                                  |   |                                  |
|----------------------------------|---|----------------------------------|
| Number of Institutional Accounts | Water Use by Institutional Customers (in gallons) | GPAD for Institutional Customers |
|                                  |   | #DIV/0!                          |

**Non-residential GPAD**

|                                    |   |                                    |
|------------------------------------|---|------------------------------------|
| Number of Non-residential Accounts | Water Use by Non-residential Customers (in gallons) | GPAD for Non-residential Customers |
|                                    |   | #DIV/0!                            |

|  |  |
|--|--|
| If you used the non-residential and residential calculaitons, do you have an approximate timeline for aggrgating data to listed classes? |  |
|--|--|

|  |  |
|--|--|
| Has there been any significant changes to your customer base or service area you want to note? |  |
|--|--|

**Annual Water Use Report**

## FORM III

### Water Use and Efficiency Progress Report

This report is to be completed every 3-5 years in place of the Annual Water Use Report and submitted to EPD. Using the Guidance Prepared by EPD 2012.

|                                  |  |
|----------------------------------|--|
| <b>WSID:</b>                     |  |
| <b>Public Water System Name:</b> |  |
| <b>County:</b>                   |  |
| <b>Year:</b>                     |  |
| <b>Water Source:</b>             |  |
| <b>Water Planning Region:</b>    |  |

|     |                                 |         |
|-----|---------------------------------|---------|
| A.1 | <b>Service Area</b>             |         |
| A.2 | <b>Total System Water Use</b>   |         |
| A.3 | <b>Annual Water Use</b>         |         |
| A.4 | <b>Annual GPCD System Total</b> | #DIV/0! |

**A.5 Peak Seasonal Use**

| Peak Months | Volume of Water Provided (MGD) |
|-------------|--------------------------------|
|             |                                |
|             |                                |
|             |                                |

A.6 Persons Per Household

|  |
|--|
|  |
|--|

A.7 Number of homes built before 1992 in Service Area

|  |
|--|
|  |
|--|

A.8 Evapotranspiration Rate (inches per year)

|  |
|--|
|  |
|--|

A.9 Precipitation (inches per year)

|  |
|--|
|  |
|--|

**B. Service Area Demand and Customer Information**

B.1 Peak Month Usage (Highest water use month in reporting year in MGD)

|  |
|--|
|  |
|--|

|     |  |
|-----|--|
| B.2 | Off Peak Month (Lowest water Use month in reporting year in MGD) |
|     |  |
|     | Peaking Factor   |
|     | #DIV/0!  |

**Current use by Customer Class** - Use the classes most appropriate for your system. The total percentage for completed categories should not exceed 100%

B.3

**Single Family Residential GPCD**

|                         |  |                                   |                       |
|-------------------------|--|-----------------------------------|-----------------------|
| Service Area Population | Water Use by SF Residential Customers (in gallons) | GPCD For SF Residential Customers | % of total System use |
|                         |  | #DIV/0!                           | #DIV/0!               |

**Multi-Family Residential**

|                            |  |                                   |                       |
|----------------------------|--|-----------------------------------|-----------------------|
| MF Service Area Population | Water Use by MF Residential Customers (in gallons) | GPCD for MF Residential Customers | % of total System use |
|                            |  | #DIV/0!                           | #DIV/0!               |

**Residential GPCD**

|                         |   |                                |                       |
|-------------------------|---|--------------------------------|-----------------------|
| Service Area Population | Water Use by Residential Customers (in gallons) | GPCD for Residential Customers | % of total System use |
|                         |   | #DIV/0!                        | #DIV/0!               |

**Commercial GPAD**

|                               |  |                               |                       |
|-------------------------------|--|-------------------------------|-----------------------|
| Number of Commercial Accounts | Water Use by Commercial Customers (in gallons) | GPAD for Commercial Customers | % of total System use |
|                               |  | #DIV/0!                       | #DIV/0!               |

**Industrial GPAD**

|                               |  |                               |                       |
|-------------------------------|--|-------------------------------|-----------------------|
| Number of Industrial Accounts | Water Use by Industrial Customers (in gallons) | GPAD for Industrial Customers | % of total System use |
|                               |  | #DIV/0!                       | #DIV/0!               |

**Institutional GPAD**

|                                  |   |                                  |                       |
|----------------------------------|---|----------------------------------|-----------------------|
| Number of Institutional Accounts | Water Use by Institutional Customers (in gallons) | GPAD for Institutional Customers | % of total System use |
|                                  |   |                                  |                       |

|  |  |         |         |
|--|--|---------|---------|
|  |  | #DIV/0! | #DIV/0! |
|--|--|---------|---------|

**Non-residential GPAD**

|                                    |   |                                    |                       |
|------------------------------------|---|------------------------------------|-----------------------|
| Number of Non-residential Accounts | Water Use by Non-residential Customers (in gallons) | GPAD for Non-residential Customers | % of total System use |
|                                    |   | #DIV/0!                            | #DIV/0!               |

**Non-Revenue Water**

|  |  |                       |
|--|--|-----------------------|
|  | Volume Reported on Annual Audit (in gallons) | % of total System use |
|  |  | #DIV/0!               |

**Current Water Efficiency Practices and Program Activities:** Activities undertaken since the baseline reporting period. These can be: supply side conservation, plant and operational improvements, distribution system enhancements, education and outreach, rate programs, or other demand management strategies.

**C**

| Category                        | Level of Implementation                                     | Estimated Investment by Water Provider                                       |
|---------------------------------|---|--|
| Example: Leak Detection Program | Surveyed 300 miles of our water system's 1200 miles of pipe | \$200,000 for the equipment about \$30,000.00 annually to manage the program |
|                                 |   |  |
|                                 |   |  |
|                                 |   |  |
|                                 |   |  |
|                                 |   |  |
|                                 |   |  |

**Water Use and Efficiency Progress Report**

## RESOURCES

- AWWA Resources [www.awwa.org](http://www.awwa.org)
- Metro District [www.northgeorgiawater.com](http://www.northgeorgiawater.com)
- Regional Water Management Plans: <http://www.georgiawaterplanning.org/>
- Water Conservation Implementation Plan: <http://www.georgiawaterplanning.org/>
- Alliance for Water Efficiency Resource Library:  
<http://www.allianceforwaterefficiency.org/resource-library/default.aspx>
- The US Census Quick Facts: <http://quickfacts.census.gov/qfd/states/13000.html>
- The Georgia End Use Study
- Georgia Water Loss Audit Technical Guidance