

Georgia Water Use and Conservation Profiles

TM 1 - Data Collection

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Introduction

Georgia's population is increasing, and the available water supplies are remaining constant or becoming more cost prohibitive to develop. Therefore, it becomes necessary to ensure water is used efficiently to extend the life of existing water supplies and defer the cost of developing new ones. The municipal sector is the second largest user of water in Georgia after thermoelectric use, is the fastest growing use sector in the state, and perhaps holds the most potential for savings. Water conservation programs and efficiency practices are usually implemented for one of two reasons; first because they are perceived as being important, such as public education efforts, or because they have the potential to be very cost-effective at saving water, such as a water use device replacement program. Some level of analysis should be performed to determine the cost-effectiveness of a water conservation program before implementation.

Throughout Georgia, some conservation measure evaluations have been performed, but not on a large scale. In the 16-county Metropolitan North Georgia Water Planning District (MNGWPD), detailed characterization and analysis of water use was performed. Using this analysis, specific conservation programs were recommended that were cost effective and/or showed the most potential for water savings. Most municipal water suppliers in Georgia have water conservation plans, but the level of implementation is uncertain. A few other municipal water suppliers throughout the state have incorporated water conservation programs and the resultant savings into their long-term water supply planning.

This project will select communities in Georgia outside the MNGWPD in an attempt to characterize the diverse nature of municipal water use in Georgia, and identify some specific conservation measures that could be cost-effective, if implemented properly. This Technical Memorandum (TM) describes the process of selecting the communities to be included in this study and the data to be collected from these water systems.

Community Selection

The selection of communities for this study was based on representing as much as possible of the diverse nature of water use in Georgia.

Criteria

Several criteria were used for selection of communities in the study. These included the following:

- Size (population served and water withdrawal)
- Water source (surface or ground water)
- Geographic location (and river basin)
- Major water use type (residential, commercial, etc)

Georgia EPD water permit records and water withdrawal records for 2004 were used in the selection, based on size, water source, and location. Census data and the EPA Safe Drinking Water Information System (SDWIS) were used in selection based on population served. The major use type was selected based on existing knowledge.

It should also be noted that for each community selected, a personal contact was made to identify someone supportive of this project.

Selections

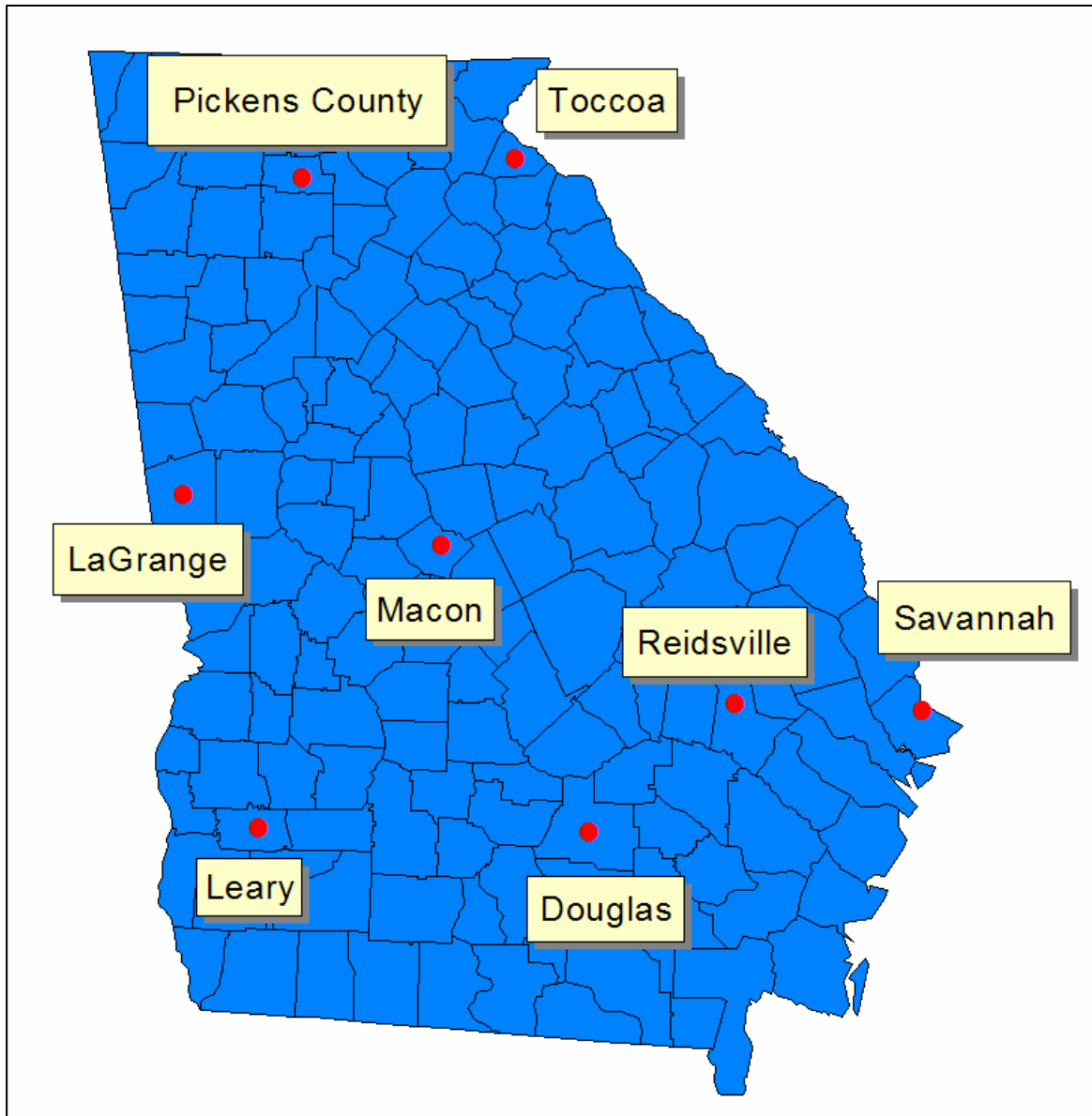
Table 1 summarizes the eight communities that were selected; the communities are shown on Figure 1.

TABLE 1
 Summary of Selected Communities

Water System	Location	River Basin	Water Source Type	Size	SDWIS Population Served	2004 Reported Usage (MGD)
Douglas	South	Suwanee	Ground	Medium	13,902	4.503
LaGrange	West	Chattahoochee	Surface	Medium	41,852	9.348
Leary	Southwest	Flint	Ground	Small	750	0.071
Macon	Central	Ocmulgee	Surface	Large	128,378	30.411
Pickens Co.	Northwest	Coosa	Both	Small	3,744	0.172
Reidsville	East	Altamaha	Ground	Small	2,730	0.249
Savannah	Southeast	Savannah	Both	Large	163,688	35.453
Toccoa	Northeast	Savannah	Surface	Medium	24,960	4.067

Note: EPA SDWIS = <http://www.epa.gov/enviro/html/sdwis/>

FIGURE 1
Selected Communities



Data Collection

To characterize the water use of each water system, detailed billing data were collected. The data were then analyzed and are summarized in TM 2 Data Analysis.

Requested Data

The data to be requested from each water system were based on the goal of the analysis. The purpose of collecting the data is to tracking the water used by the customers of the water system. Therefore, documentation of the water pumped into the distribution system, as well as metered leaving the distribution system, was requested. These data were requested on a monthly basis. Specifically, the following data were requested from each water system:

- 5 years of data (2 years minimum)
- Electronic format, not hard copy
- Water withdrawal data or plant pumping records
- Retail water billing data (monthly, including volume of water per customer class and number of accounts per customer class)
- Wholesale water purchases and sales to and from other providers (monthly)
- Number of customers on sewer (for information only)

Each water system's representative was mailed a letter listing the data requested and a followup phone call was made to coordinate the contact person to deliver the data from the water system, and to answer any questions.

Types of Different Data Received

The types of data received varied between water systems. For example, most water systems categorize customers by use type, but some use meter size as the classification. This may be because of financial studies or rate setting. For those water systems that use type categories, such as residential and commercial, a variety of categories are used. Also, data retrieval can sometimes be difficult for several reasons. For example, the data may be maintained by a separate department outside the water department such as the finance department. Also, the data are often archived or even deleted after a period of time, usually 2 to 5 years. Finally, if an issue comes up where there is an unexplained data anomaly, water system personnel may not be able explain the anomaly.

Data Submission

In most cases, each of the eight water systems included in the study submitted data promptly and accurately. The units of measurement for the billing volumes must be established, as some water systems use gallons, some use thousand gallons, and some use hundred cubic feet. Table 2 summarizes the data received from each participant in the study.

TABLE 2
Data Collected

Water System	Production Data	Billing Data	Customer Categories
Douglas	July 2002-March 2006 (45 months)	Volume = July 2002-March 2006 (45 months) # of Customers = July 2003-March 2006 (33 months)	Residential, Commercial, Residential Irrigation, Commercial Irrigation
LaGrange	January 2001-December 2005 (60 months)	June 2000-March 2006 (70 months)	Residential, Commercial-14, Commercial-21, Government, Industrial (14 and 21 are codes to determine billing due date for customers)
Leary	January 2004-February 2006 (26 months)	January 2004-March 2006 (27 months)	Residential, Commercial
Macon	October 2000-April 2006 (67 months)	January 2000-December 2005 (72 months)	Residential-Single, Residential-Multi, Residential-Irrigation, Commercial-Single, Commercial-Multi, Commercial-Irrigation, Industrial-Single, Industrial-Multi, Industrial-Irrigation
Pickens	January 2003-March 2006 (39 months)	April 2002-February 2006 (47 months)	Meter size: 3/4", 1", 2", 3", 6", City of Jasper, Cherokee County
Reidsville	January 2003-December 2005 (36 months)	January 2003-March 2006 (39 months)	General, Residential, Commercial, City
Savannah	January 2000-December 2005 (72 months)	January 2000-February 2006 (74 months)	Meter size: 5/8", 1", 1 1/2", 2", 3", 4", 6", 8", 10"
Toccoa	January 2004-December 2005 (24 months)	January 2004-March 2006 (27 months)	Inside Residential, Outside Residential, Inside Commercial, Outside Commercial, Inside Industrial, Outside Industrial, Irrigation, Franklin County, Blowoffs

Notes: All data collected were in electronic format except one, which was entered in manually.