

**CITY OF LOGANVILLE, GEORGIA**



**WATER CONSERVATION PLAN**

**JANUARY 2023**

**Prepared By:**



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**ATTACHMENTS**

**Interconnected Water System Agreements**

**Gwinnett County**

**City of Monroe**

**Walton County**

**I. INTRODUCTION**

The City of Loganville (City) provides water service to approximately 5,300 residential, commercial and institutional customers, serving a population of about 13,324. Located approximately 35 miles east-northeast of Atlanta, the city limits include a 1.4 square mile area in southeastern Gwinnett County and 6.0 square mile portion in western Walton County. In 2021, the average daily demand for the City’s water system was 1.26 million gallons per day (MGD). The City is a wholesale user of water supplied through its interconnections with the City of Monroe, Gwinnett County and Walton County.

This Water Conservation Plan has been developed in accordance with water conservation guidelines listed in subsection 391-3-6-.07 (3) of the Georgia Department of Natural Resources (DNR), Environmental Protection Division’s (EPD) Rules and Regulations for Water Quality Control.

**II. SYSTEM MANAGEMENT**

**A. Water Supply Balance**

Table 1 gives the water balance for the City's water system from January - December 2021, as calculated in its 2021 Certified Water Audit Report:

**Table 1. Loganville Water System Water Balance**

Water Exported 0.0 MG	Billed Water Exported			Revenue Water 0.0 MG
Water Supplied 459.3 MG	Authorized Consumption 356.0 MG	Billed Authorized Consumption 325.6 MG	Billed Metered 325.6 MG	Revenue Water 325.6 MG
			Billed Unmetered 0.0 MG	
	Water Losses 103.3 MG	Unbilled Authorized Consumption 30.4 MG	Unbilled Metered 24.7 MG	Non-Revenue Water 133.7 MG
			Unbilled Unmetered 5.7 MG	
		Apparent Losses 9.1 MG	Unauthorized 1.1 MG	
			Customer Metering Inaccuracies 7.1 MG	
		Systematic Data Handling Errors 0.8 MG		
	Real Losses 94.2 MG	Includes Leakage on: <ul style="list-style-type: none"> <li>• Transmission/distribution mains</li> <li>• Storage tank overflows</li> <li>• Service connections</li> </ul>		

At 133.7 million gallons, Non-Revenue Water (NRW) represents 29.1% of the total volume of water supplied by the City in 2021.

**B. Water Purchases**

Monthly volumes of water purchased from the City's 3 suppliers in 2021 are shown in Table 2:

**Table 2 – 2021 Water Supply Purchases (gal.)\***

Month	Monroe	Gwinnett	Walton	Totals
January	0	7,917,779	31,936,723	39,854,502
February	0	7,180,416	28,346,140	35,526,556
March	0	9,049,767	31,580,707	40,630,474
April	0	8,692,085	30,650,389	39,342,474
May	0	11,220,409	30,366,565	41,586,974
June	0	11,581,352	30,272,060	41,853,412
July	0	8,554,658	31,194,852	39,749,510
August	0	8,686,424	31,385,635	40,072,059
September	429,460	7,049,877	29,477,913	36,957,250
October	7,334,933	5,293,632	29,030,373	41,658,938
November	2,031,688	4,733,981	27,605,587	34,371,256
December	29,842,905	321,854	2,136,349	32,301,108
<b>Total</b>	<b>39,638,986</b>	<b>90,282,234</b>	<b>333,983,293</b>	<b>463,904,513</b>

\* Volumes reflect measurements prior to Water Audit accuracy corrections.

**C. Current and Planned Programs to Reduce Unaccounted for Water (UAW)**

1. Leak Detection - The City understands that leaks in distribution piping can be a significant source of water loss and, therefore, has made leak detection and repair a top priority. In accordance with its Water Loss Plan, issued in 2021, the City's leak detection program starts with investigation of the oldest parts of the distribution system and continues each year until the entire system has been checked.

The City's leak detection program includes the following elements:

- i. Water system staff have been instructed to be observant of unusual wet spots, depressions in pavement, etc. and report these immediately to the Public Utilities Director. All reports are promptly investigated and any resulting needed repairs are made without delay.
- ii. The City has contracted a private firm, Rye Engineering, to perform an annual inspection of 20% of all distribution lines, including service connections to water meters. The inspections use ultrasonic equipment to identify leaks not visible on the ground surface. Once identified, the leaks are promptly repaired. The inspection schedule will enable the entire system to be inspected every 5 years.
- iii. The City developed a leak detection and repair log which is utilized to record the dates and locations of leaks and estimates of the volume of water lost from each leak.

2. Water System Maps - The City keeps its color-coded maps of the water system current as modifications are made. The water system is completely mapped in an AutoCAD system with GIS data and on paper. Updates and maintenance of the mapping system is performed by a private consulting firm, Terremark Geospacial. The mapping system activities are coordinated by the Public Utilities Director.

3. Meter Maintenance, Testing, Replacement and Calibration

In 2009, the City completed its meter change out program which replaced all customer meters with radio read (AMR) technology. In support of the change out program's improvements in water use accounting and reductions in water loss, the City is engaged in the following activities related to the maintenance of its customer and water supply meters:

- i. Meter readers are trained to look out for and, when found, report leaks to water system staff. Meter readers are responsible for assuring that readings are logged correctly and transmitted to the Utility Department for customer billing.
- ii. Master meters are calibrated annually and checked and recorded daily.
- iii. Development of a meter inventory is underway so as to provide up-to-date information on all customer and water supply meters.
- iv. A program was on-going to test 20% of the system's customer meters per year for accuracy and to repair and/or replace, as needed. The program will enable all water meters to be inspected every 5 years.

4. Prevention of Tank Overflows - There are two storage tanks in the City's distribution system with a total capacity of 1.15 million gallons. Both are elevated storage tanks with water levels reported to the Utility Department office via SCADA. The SCADA system is able to alarm staff of any high level status before the tanks reach the overflow level to allow staff to respond.

5. Flushing Program - City personnel regularly conduct flushing and checking of dead-ends and at other areas of the distribution where water quality problems have been identified. Flushing of dead-end lines is performed at least twice per year. Water quality at problem areas is checked bi-weekly, weekly or monthly depending on location, line size and other factors. The number of lines flushed per month is dependent on the time of year, weather and customer complaints. Flow measurements are included as part of the flushing activities in order to account for the volume of non-billable water used in the program.

6. Prevention of Unauthorized Use

The City does not allow for any unauthorized water use. Water system personnel have been advised to look for and report any unauthorized water use. Any illegal or unauthorized water taps shall be investigated by the Utility Department and the appropriate law enforcement agency. The guilty party shall be prosecuted under the applicable law.

To minimize unauthorized water use, the City monitors temporary water usage by contractors and construction activities. Contractors are required to check out a temporary water meter to purchase water used in flushing and sterilizing new lines. The quantity of water used is read from the meter and a bulk rate is charged for the water used.

Fire Department personnel are authorized to withdraw water from fire hydrants in the course of, or preparation for, fire fighting activities. The Fire Department is responsible for keeping records of the volumes of water used per month. Fire Department usage is transmitted to the Utilities Director each month.

7. Un-metered Water Service Connections - Un-metered water service connections are not permitted. There are no known un-metered service connections in the water system.

**D. Interconnections With Other Water Systems/Large Volume Customers**

The City has interconnections with three adjacent water systems. The interconnections are identified in Table 3 below by water system owner and current use. Copies of the water supply/purchase agreements are included at the end of this Plan.

**Table 3 – Interconnected Water Systems**

System Name	Water Use Type	Agreement Details
City of Monroe	Wholesale supplier to Loganville	Issued 4/9/18 - Expires 4/9/28; 2.00 MGD
Gwinnett County	Wholesale supplier to Loganville	Issued 1/17/17 - Expires 1/17/27; 1.00 MGD
Walton County	Wholesale supplier to Loganville	Issued 2/11/21 - Expires 12/31/32; 2.00 MGD

**III. TREATMENT PLANT MANAGEMENT**

The City currently does not operate a potable water treatment facility and, therefore, does not currently have a plan for plant management.

**IV. RATE MAKING POLICIES**

**A. Non-Billed Service Connections**

All of the City’s water service connections are metered and billed.

**B. Water Rate Structure**

The current rate structure became effective January 1, 2020. As shown in Table 4, the rate structure is an inclining block type, meaning that the more water a customer uses the more the water costs, which encourages customers to conserve water. For each of the customer categories (residential, senior citizen, commercial), a minimum charge is applied for all water use up to 2,000 gallons. Additional water use over 2,000 gallons is charged over a 3-tiered structure.

**Table 4 –Water Rates**

<b>Tier Structure</b>	<b>Residential</b>	<b>Rate*</b>
Minimum	1st 2,000 gal.	\$23.04
Tier 1	2,001 - 8,000 gal. Additional	\$6.66
Tier 2	8,001 - 14,000 gal. Additional	\$8.30
Tier 3	14,001 and over. Additional	\$13.27
<b>Tier Structure</b>	<b>Senior Citizen</b>	<b>Rate*</b>
Minimum	1st 2,000 gal.	\$17.79
Tier 1	2,001 - 8,000 gal. Additional	\$6.32
Tier 2	8,001 - 14,000 gal. Additional	\$7.89
Tier 3	14,001 and over. Additional	\$12.61
<b>Tier Structure</b>	<b>Commercial</b>	<b>Rate*</b>
Minimum	1st 2,000 gal.	\$24.49
Tier 1	2,001 - 8,000 gal. Additional	\$7.98
Tier 2	8,001 - 14,000 gal. Additional	\$9.54
Tier 3	14,001 and over. Additional	\$14.60

\* Rates for additional water use are for each 1,000 gallons.

**C. Landscape Irrigation and Sewer Meters**

The City has no policies concerning second meters for landscape irrigation or for use of sewer meters for billing.

**D. Water System Financing**

1. The City’s water system is financially self-supporting.
2. The City’s water system is not subsidized by any non-water/sewer system revenues.

**V. PLUMBING ORDINANCES AND/OR CODES**

**A. Compliance with State Water Conservation Law**

The City complies with Georgia water conservation requirements in the three basic areas; water loss, water demand management, and long range planning. Minimizing of water loss is discussed in Section II of this document. Water demand management is addressed by the tiered billing discussed in Section IV and required use of ultra-low flow plumbing fixtures in accordance with the Georgia State Minimum Standard Plumbing Code. There are currently no additional City-enacted local ordinances for use of ultra-low flow plumbing fixtures. Long range planning has also been completed by the City and is periodically updated.



**B. Ordinances/Codes, etc. Related To Outside Water Use**

The City's Planning and Development Department enforces all state plumbing requirements. There are currently no additional City-enacted local plumbing ordinances or codes pertaining to outdoor water use for landscape irrigation, commercial car washes, etc. beyond usage restrictions in response to droughts as established in the City's Drought Contingency Plan.

**C. Other Ordinances**

Local ordinance provides penalties and punishment for the unauthorized use of water.

**VI. RECYCLE AND REUSE**

The use of treated effluent from the City's wastewater treatment plant for non-potable reuse purposes is limited to the wastewater treatment facility's operations building. There are no other services connected to the City's non-potable water effluent.

The City does not have any cooling water to recycle or reuse.

**VII. EDUCATIONAL PROGRAMS**

**A. Current Activities**

The City currently utilizes its website as a resource of educational materials. Consumer Confidence Reports, Water Conservation Tips and recent events, specifications and a host of additional information concerning water use and conservation are made available. The website continuously updates outdoor water times and drought restrictions. The materials can be downloaded directly from the website or can be picked up at the Utility Department office.

**B. Future Activities**

Potential activities aimed at encouraging water conservation by the City's customers include:

1. Providing outreach to local schools and community groups by system personnel and guest speakers.
2. Expanding the printing and distribution of educational materials via water bills and other mailings.
3. Initiating programs to encourage efficient methods of outdoor water use, including drip irrigation and mulching.
4. Increase public notification during droughts or other water emergencies by placing notices in each publication of the local newspaper and daily public service announcements on local radio stations.
5. Hold periodic public meetings to solicit input and ideas from the public for water conservation programs.

## VIII. PROGRESS REPORT

Five years after the renewal of the Water Conservation Plan, the City will submit to the Director of the Environmental Protection Division a progress report that outlines all actions and/or improvements The City has made to conserve water and reduce water losses within the water system.

This report will include actions such as leak detection and repair, meter installation, calibration, and replacement, summer and/or peak use surcharges, enforcement of ultra-low flow plumbing fixture requirements, etc.

## IX. LONG RANGE PLANNING

Future water system improvements will be defined based on projected water demand. Water conservation is considered an integral component of the City's long-range water supply planning. Demand reductions in all water use categories are expected as a result of implementation of a conservation program.

The City's water demand and population projections for the 10-year period from 2022 through 2032 are shown in Table 5. The rationale used for the projections is as follows:

- The City's water service area generally follows the City limits with a small section of the City inside Gwinnett County's service area and a few small sections within Walton County and bordering the City limits served by Loganville. Therefore, the City's service population is assumed to follow the same rate of growth as the City's population.
- The projections are based on the 2020 U.S. Census population of 14,127.
- An average annual growth of 2.00% was used for projecting City and water system service populations from 2020 to 2032. U.S. Census data for 2000-2020 and the latest state-wide county population projections by the Georgia Office of Planning (OPB) were used to determine this rate as follows:
  - + Average annual rates of growth in Gwinnett County and Walton County were similar during the 10-year period from 2000 to 2010 (3.19% for Gwinnett and 3.28% for Walton) as well as for the 10-year period from 2010 to 2020 (1.74% for Gwinnett and 1.44% for Walton).
  - + Average annual rates of growth for the 2000-2010 (6.76%) and 2010-2020 (3.05%) periods for Loganville were about double those for the two counties.
  - + OPB projections of annual average growth for Gwinnett and Walton counties for 2020-2032 are just over 1% (1.10% and 1.29% respectively). Therefore, Loganville's average annual rate of growth is assumed to be remain approximately double the counties' rates at 2.00%.
- The water system service population in 2021 was 92.5% of the projected City population (13,324/14,410). The projections assume that the service area-City population ratio remains the same during the 2020-2032 period.

**Table 5 – Loganville Water Demand Projections: 2022-2032\***

<b>Year</b>	<b>2022</b>	<b>2024</b>	<b>2026</b>	<b>2028</b>	<b>2030</b>	<b>2032</b>
Loganville Population	14,698	15,292	15,909	16,552	17,221	17,916
Water System Service Population	13,590	14,140	14,711	15,305	15,923	16,567
Average Day Water Demand, MGD	1.29	1.34	1.39	1.45	1.51	1.57
Peak Day Water Demand, MGD <sup>1</sup>	1.93	2.01	2.09	2.17	2.26	2.35
Available Water Supply, MGD <sup>2</sup>	5.00	5.00	5.00	5.00	5.00	5.00
<b>Additional Average Day Water Supply Capacity Required, MGD</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Additional Peak Day Water Supply Capacity Required, MGD</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

1. Peak day usage = 1.5 x Average Day Demand.
2. Available water supply equals the combined maximum volume of water available from the three suppliers. Potential hydraulic limitations within the distribution system to accommodate this flow number are not considered herein.

**X. ADDITIONAL WATER CONSERVATION ACTIVITIES**

In addition to the water conservation measures previously discussed, other water measures will be implemented as recommended or required by the Georgia Environmental Protection Division during drought or other water emergency conditions. The City will also support future state legislation on water conservation.

**XI. APPROVALS**

The City of Loganville Department of Public Utilities has read the above document and approves the requirements and recommendations set forth for the customers of the City's water system.

Loganville Public Utilities Representative

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Name and Title

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Date