

**OCONEE COUNTY
BOARD OF COMMISSIONERS**



WATER CONSERVATION PLAN

FEBRUARY 2020

Prepared By:



WATER CONSERVATION PLAN

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE NO.
1.	Introduction	1
2.	Background Information	1
3.	System Management	2
	A. Unaccounted For Water	2
	B. Leak Detection Program	2
	C. Availability of Accurate Water System Maps	3
	D. Meter Maintenance and Replacement Program	3
	E. Prevention of Tank Overflows	3
	F. Hydrant Flushing	3
	G. Inter-Connections with Other Systems	3
	H. Prevention of Unauthorized Water Use	4
	I. Unmetered Service Connections	4
4.	Treatment Plant Management	4
5.	Rate Making Policies	5
6.	Plumbing Ordinance and/or Codes	6
7.	Recycle - Reuse	6
8.	Current and Planned Educational Programs	7
9.	Progress Report	7
10.	Water Use Data	7
11.	Long Range Planning	7
12.	Additional Water Conservation Activities	11
13.	Approvals	11

APPENDICES

Appendix A: Water Purchase Agreements

1. Introduction

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.

2. Background Information

Oconee County (County) provides water service to approximately 11,000 residential, commercial, and institutional customers. The County also provides water to the Walton County Water Department through its interconnection on U.S. Highway 78. In 2018, the annual average daily demand served by the County water system was 2.6 million gallons per day (MGD). Customers are supplied with potable water through 9 EPD-permitted wells, as well as by treated water from the Bear Creek Water Treatment Plant. Groundwater supply provided 5 percent of the system demand with Bear Creek supplying 95 percent. As the County's service area continues to develop, the demand for potable water will continue to increase.

The County's goal is to obtain water source independence as a partner in the Hard Labor Creek Reservoir. As one of the four Upper Oconee Basin Water Authority partners, the County has access to up to 5.6 MGD (average day demand) of treated water from the Bear Creek Regional Reservoir (BCRR) project. This water source, while maintaining the existing groundwater sources for meeting peak demands, will only be able to supply the County with sufficient potable water to around 2035. Beyond 2035, purchasing excess capacity from its BRCC partners and/or the new Hard Labor Creek Reservoir will be needed to ensure the County continues their water source independence into the future.

The following sections describe the County's existing and planned programs for water conservation. The document is organized in similar order as presented in the guideline:

- System Management
- Treatment Plant Management
- Rate Making Policies
- Plumbing Ordinances and Codes
- Recycle-Reuse
- Public Education Programs
- Progress Report
- Water Use Data
- Long-Range Planning
- Additional Water Conservation Activities

3. System Management

Oconee County currently owns and operates the water distribution system, consisting of approximately 290 miles of distribution lines. The County is committed to minimizing the unaccounted for water (UAW) by continuing to enforce programs to improve system management and to reduce its water loss percentage. The following sections discuss the estimated UAW and the County's current and planned system management programs to minimize water loss.

A. Unaccounted for Water

Table 1 gives the water balance for the County's water system from January - December, 2018 as calculated on its 2018 Certified Water Audit Report.

Table 1. Oconee County Water System Water Balance

Water Exported 11.7 MG	Billed Water Exported			Revenue Water 11.7 MG
	Billed Authorized Consumption 827.6 MG	Billed Metered 827.6 MG	Billed Unmetered 0.0 MG	
Water Supplied 929.6 MG	Authorized Consumption 828.7 MG	Unbilled Authorized Consumption 1.1 MG	Unbilled Metered 0.0 MG	Revenue Water 827.6 MG
Water Losses 100.9 MG		Unbilled Unmetered 1.1 MG	Unauthorized 2.3 MG	Non-Revenue Water 102.0 MG
			Customer Metering Inaccuracies 8.4 MG	
			Systematic Data Handling Errors 2.1 MG	
			Includes Leakage on: <ul style="list-style-type: none"> • Transmission/distribution mains • Storage tank overflows • Service connections 	

B. Leak Detection Program

The County relies on customer reporting for leak detection. Once a leak is reported, immediate action is taken to repair the leak. Water system personnel are also trained to watch for leaks in the course of their regular work duties. To date, leak detection efforts have been on an informal basis, but the results indicate they can have a significant and direct impact on reducing UAW. Therefore, the County plans on including a formal leak detection component as part of its Water Loss Control Plan which is planned to be completed and implemented by June 1, 2020.

C. Availability of Accurate Water System Maps

The County maintains water system maps of the entire service area. Computer Aided Drafting and Design (CADD) files of the system maps are maintained and updated as additional lines are installed. County regulations require electronic copies of as-built construction drawings for acceptance of all new mains and subdivision developments.

D. Meter Maintenance and Replacement Program

Smaller, residential meters are calibrated as necessary; however, industrial meter are monitored and calibrated annually. In 2017, the County initiated a system-wide replacement program. As of April 2019, approximately 4,000 of the estimated total of 11,000 residential and commercial meters have been replaced. Replacement of all residential and other small meters is projected to be completed by 2021.

E. Prevention of Tank Overflows

The County's water system currently uses three elevated storage tanks with a combined storage capacity of 1.75 MG. The tank levels are currently monitored by a SCADA system that is accessible at the County office, as well as the homes of Utility Director, Assistant Director and Water Supervisor allowing for 24-hour monitoring and control. Pumps and valves are controlled from the SCADA system to maintain tank levels and to prevent any overflows. Tank levels and pump operations are also available on the Bear Creek Reservoir SCADA system.

F. Hydrant Flushing

The County maintains an on-going flushing program to maintain water quality within the distribution pipelines. County staff perform flushing twice a week, on Tuesdays and Thursdays, after 10 PM, at different locations within the system, during low flow months. All usage is recorded and accounted for by OCWRD's Assistant Director in the County's water use records.

G. Inter-Connections with Other Systems

The County maintains contracts and connections with Athens Clarke County, Walton County and Barrow County water systems. The County has five connections to the ACC system and one connection with Walton and two with Barrow County. One connection delivers water from the Bear Creek Project to the County system. With the Bear Creek Project on-line, the County will sell water to Walton County. The County will encourage the resale customers to practice the same system management measures to reduce UAW.

In April 2018, the County entered into an agreement with Barrow County to lease up to 0.5 MGD of Barrow County's 8.0 MGD allotment of the existing 21.0 MGD Bear Creek Reservoir water treatment facility. The term of the lease is 5 years and includes the option for Oconee County to extend the term by up to two additional 1-year periods.

Copies of the water supply agreements are included in Appendix of this Plan.

H. Prevention of Unauthorized Use

The County does not allow for 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 is to be prosecuted under the applicable law.

To minimize unauthorized - water use, the County requires monitoring of temporary water usage by contractors and construction activities. In addition, monitoring is required for filling swimming pools. Contractors go to the Utility Department and check out temporary hydrant meters for monitoring water usage at a service fee of \$25. A deposit (\$250 for small hydrant meters and \$750 for large hydrant meters) is required on pick up, and is refunded in full upon return of the meter. The quantity of water used is read from the meter and the bulk rate is charged for the water used. The County also requires a 4 inch meter be installed on all new developments prior to any building permits being issued.

I. Unmetered Service Connections

Currently, there are no unmetered service connections in areas served by the County. The County does not allow any unmetered connections. Metered connections include all private and publicly owned facilities, such as churches, schools and City/County governments, in addition to residences, commercial businesses, and industries.

4. Treatment Plant Management

Oconee County currently does not own or operate a water treatment plant. Operations at the Bear Creek Water Treatment Plant are managed by the Upper Oconee Basin Water Authority. The facilities which will treat water from Hard Labor Creek Reservoir will be managed by the Walton County Water & Sewerage Authority. Design for the proposed treatment facility is approximately 50% complete and projections indicate that the new facility will be in operation by 2025 (see Section 11). The proposed treatment facility will be designed to minimize in-plant use and a management plan will be prepared and submitted to EPD as required.

5. Rate Making Policies

The current rate structure became effective July 1, 2017. As summarized in Table 2, the current residential 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. Table 3 provides a breakdown of meters by customer categories. A base rate charge for all water use up to 1,000 gallons is applied to all customers based on meter size. Additional water use over 1,000 gallons is charged based on customer category. A uniform rate structure is used for commercial/industrial users for water use greater than 1,000 gallons, as summarized in Table 2.

Oconee County has no policies concerning second meters for landscape irrigation or for use of sewer meters for billing.

The County water system is financially self-supporting. System expenditures are not subsidized by non-water/sewer system revenue.

Table 2
Existing Rate Structure for Oconee County
(Effective July 1, 2017)
Monthly Water Rates

Base Rate – All Categories	
Meter Size	Minimum Charge (0 to 1,000 gallons)
3/4"	\$19.99
1"	\$39.94
1 1/2"	\$73.20
2"	\$113.11
3"	\$206.22
4"	\$339.25
6"	\$400.42
Residential Rates	
Quantity (gallons)	Rate per 1,000 gallons after minimum
1,001-7,000	\$5.18
7,001-14,000	\$7.09
14,001 and over	\$8.99
Commercial, Industrial and Institutional	
Quantity (gallons)	Rate per 1,000 gallons after minimum
1,001 and over	\$6.23

Table 3
Breakdown of Customers by Category
(as of 2017)

Category	Number of Meters	Percentage of Total
Residential	9,885	91
Commercial/Industrial/ Institutional	1013	9
Total	10,898	100

6. Plumbing Ordinance and/or Codes

The County has adopted the 2000 International Plumbing Code, which is in compliance with the State Water Conservation Law. Specifically, Section 406 of Georgia State Amendments to the Standard Plumbing Code (Revised January 1, 2000), which requires installation of the ultra-low flow plumbing fixtures, is included. A summary of the plumbing fixture requirement for new construction is presented in Table 4.

Table 4
Maximum Allowable Water Usage for Plumbing Fixtures

Fixture	Maximum Water Use
Toilet	1.6 gallons per flush
Urinal	1.0 gallons per flush
Kitchen Faucets	2.5 gallons per minute
Bathroom and Lavatory Faucets	2.0 gallons per minute
Showerheads	2.5 gallons per minute

Oconee County does not have any additional ordinances for landscape irrigation systems, commercial car washes, etc. beyond usage restrictions in response to droughts as established in the County's Drought Contingency Plan.

7. Recycle – Reuse

The County has constructed and is currently operating a land application system for reuse purposes. The treated wastewater is applied onto various land plots, which have been planted with perennial grasses for hay production. The County intends to use the hay on construction projects for erosion and sedimentation control measures.

The County is studying the feasibility of incorporating facilities for treating a sidestream of the water discharged at its Calls Creek Water Reclamation Facility (WRF) to reuse quality to be used for irrigation of County parks and other potential large wholesale customers.

8. Current and Planned Education Programs

Consumer confidence reports (Drinking Water Quality Report) are distributed annually to every water customer. This report reinforces positive messages about the high water quality and stringent safety standards in the County. Speaking engagements also are part of the Department's education program. Representatives from the Utility Department educate local elementary, middle, high school, and University of Georgia students about the need and benefits of water conservation. Facility tours were a recent addition to the program after the Bear Creek WTP was constructed and placed on-line.

During droughts or emergencies, the County disseminates water restriction via an emergency radio frequency and notifies various news media such as newspapers, radio, text messaging and local television channels. These methods are used to inform users of water conditions and explain the stage of conservation.

9. Progress Report

Five years after the renewal of the Surface Water Withdrawal Permit for the Hard Labor Creek Reservoir, Oconee County will assist Walton County submit a progress report to EPD on conservation methods and education.

10. Water Use Data

The Utility Department will submit an annual water use report to EPD, including information on UAW for the past 12 months, in accordance with the annual water use report that is required pursuant to subsection 391-3-6-.07(15).

11. Long Range Planning

Long-Range population and water demand projections have been developed as part of the County's water supply master planning to include planning and permitting of the Hard Labor Creek Reservoir project. Water system improvements will be defined based on the projected demand. Water conservation is considered an integral component of the County's long-range water supply planning. Demand reductions in all water use categories are expected as a result of implementation of a conservation program. Similarly, all wholesale customers will be encouraged to adopt comparable water conservation measures. The Department's water demand and population projections from 2020 through 2030 are shown in Table 5.

Table 5
Oconee County Water Demand Projections: 2020-2030*

Year	2020	2022	2024	2025	2026	2028	2030
Oconee County Population	38,483	39,912	41,341	42,056	42,826	44,365	45,904
Population Served	27,054	28,058	29,063	29,565	30,106	31,188	32,271
Average Day Water Demand, MGD**	2.90	3.00	3.11	3.16	3.21	3.31	3.41
Average Day Water Supply, MGD	3.26	3.26	3.26	3.26	3.26	3.26	3.26
Additional Average Day Water Supply Capacity Required, MGD	0.00	0.00	0.00	0.00	0.00	0.05	0.15
Peak Day Water Demand, MGD***	4.93	5.11	5.28	5.37	5.46	5.63	5.80
Peak Day Water Supply, MGD	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Additional Peak Day Water Supply Capacity Required, MGD	0.93	1.11	1.28	1.37	1.46	1.63	1.80

* Based on projection developed as part of 2018 surface water withdrawal permit renewal for Hard Labor Creek Reservoir project.

The additional average day and peak water supplies needed to meet Oconee's future water demands will be supplied by water withdrawn from the Hard Labor Creek Reservoir. The combined needs of Oconee and its project partner Walton County are shown in Table 6.

Table 6
Hard Labor Creek Partners' Water Supply Need Projections: 2020-2030

Year		2020	2022	2024	2025	2026	2028	2030
Average Day Supply Needs, MGD	Oconee County	0.00	0.00	0.00	0.00	0.00	0.05	0.15
	Walton County*	2.80	2.98	3.16	3.25	4.34	4.52	4.70
	Total	2.80	2.98	3.16	3.25	4.34	4.57	4.85
Peak Day Supply Needs, MGD	Oconee County	0.93	1.11	1.28	1.37	1.46	1.63	1.80
	Walton County*	5.94	6.27	6.60	6.77	8.73	9.05	9.37
	Total	6.87	7.38	7.88	8.14	10.18	10.68	11.17

* Walton County projections based on projection developed as part of 2018 surface water withdrawal permit renewal for Hard Labor Creek Reservoir project.

The projections indicate that, for the short-term, additional volumes needed to meet both average and peak day demands can be acquired through purchasing water from the County's Bear Creek Reservoir partners. However, by 2025, the additional 1.37 MGD needed to meet the County's peak day demands will trigger the need to start drawing water from Hard Labor Creek Reservoir in conjunction with water supplies needed to meet Walton County's water needs. Withdrawals from the Apalachee River are not projected to be needed before 2030.

The proposed schedule of activities for the new Hard Labor Creek water treatment plant, completion (i.e., Phase II) of the reservoir intake station and ancillary potable water transmission mains are presented in Table 7:

Table 7
Projected Hard Labor Creek Water Facilities Activity Schedule

Description	Start	Finish	2022			2023			2024		
Water Treatment Plant											
Design and Permitting	01/22	09/22									
Bid Phase*	10/22	12/22									
Construction	01/23	12/24									
Intake Tower (Phase II)											
Design and Permitting	01/22	09/22									
Bid Phase*	10/22	12/22									
Construction	01/23	12/24									
Transmission Mains											
Design and Permitting	01/22	12/22									
Bid Phase	01/23	03/23									
Construction	04/23	12/24									

* Water treatment plant and Phase II intake construction to be bid and constructed under one contract.

12. Additional Water Conservation Activities

Oconee County will continue to stress to the public regarding the importance of water conservation activities via bill inserts, mailings from the Water Resources Department, email, and announcements via the local newspapers.

As described in Section 3.B, the County is in the process of developing its Water Loss Control Plan which will assist in identifying and reducing distribution system water loss.

13. Approvals

The Oconee County Water Resources Department has read the above document and approves the requirements and recommendations set forth for the customers of the Water System.

Oconee County Water Resources Department Representative

Date

APPENDIX A

WATER PURCHASE AGREEMENTS

Athens-Clarke County

Barrow County Water & Sewerage Authority

Walton County Water & Sewerage Authority