

8. *Water and Aquifer Protection*

Purpose

Protect Alachua County’s aquifer, springs, and surface water resources by implementing integrated water quality and conservation strategies and making infrastructure improvements to mitigate the adverse effects of climate change.

Introduction

Water and Climate Change

Climate change is significantly impacting water supply by influencing and disrupting the water cycle. Rising global temperatures are leading to increased evaporation, resulting in more water vapor in the air and subsequent increased intensity and frequency of rain events. Sea level rise puts aquifers – the main source of Florida’s drinking water – at risk through saltwater intrusion. Climate migration and increased duration of extreme heat events also increase demands on our aquifer for both urban and agricultural uses.

Considering climate change’s breadth and extent of impacts to various water systems and sectors of the economy that depend upon limited water resources, the County is diversifying management strategies to build community-wide economic and ecological resiliency. This chapter outlines water supply resilience strategies for local governments, utilities, and state agencies including reducing urban and residential landscape irrigation, enforcing irrigation restrictions, implementing tiered water rates, enhancing aquifer recharge, and promoting water quality improvement projects and monitoring.

As climate change impacts water supply availability and distribution, continuous tracking of water withdrawals and usage patterns will be vital for adapting to new conditions. Given Florida’s significant reliance on groundwater resources, monitoring rainfall and groundwater levels and pumping is crucial.

Changes associated with climate change also pose a threat to the water quality of our surface waters and groundwater. For example, fertilizer use on agricultural and urban lands can also degrade water quality. Strategies to protect our water quality and utility infrastructure are also presented in this chapter.

Water in Alachua County

In Alachua County, like most of northern peninsular Florida, the primary source of water is the Floridan Aquifer. The Floridan Aquifer is also the source for most springs on the Santa Fe River. To protect the springs, surface waters, and the drinking water in Alachua County, there must be a reduction in pollution that degrades water quality as well as a decrease in groundwater pumping.

According to the 2023 North Florida Regional Water Supply Plan (NFRWSP), the population of North Florida is projected to increase by 49% by 2045. This results in a 32% increase in water demand, or 135 million gallons a day (MGD). Even without this projected growth, the adopted Minimum Flows and Levels (MFLs) for the Lower Santa Fe and Ichetucknee Rivers are not being met due to current groundwater pumping. MFLs set minimum water levels necessary to protect water resources and maintain ecosystem services such as habitat and recreation. The NFRWSP outlines billions of dollars in proposed projects to meet projected water demand along with water conservation efforts. As our changing climate affects demand and water availability, measurable and meaningful water conservation policies, which are more cost-effective than projects, would reduce demand and the need for expensive water supply projects.

Residential and commercial water use (referred to as Public Supply) is the largest water use in Alachua County, followed by agricultural use. Agriculture is the focus of a different chapter and is beyond the jurisdiction of local government. Public Supply water use is largely driven by landscape irrigation (Figure 8.1). The UF IFAS Program for Resource Efficient Communities analyzed single family residential water use in Gainesville and found that water use greatly increased when permanent irrigation systems became prevalent in the nineties (Figure 8.2). According to 1000 Friends of Florida's Water 2070 Report, "The single most effective strategy to reduce water demand in Florida is to significantly reduce the amount of water used for landscape irrigation."¹

¹ 1000 Friends of Florida, *Water 2070 Summary Report*, 2016.

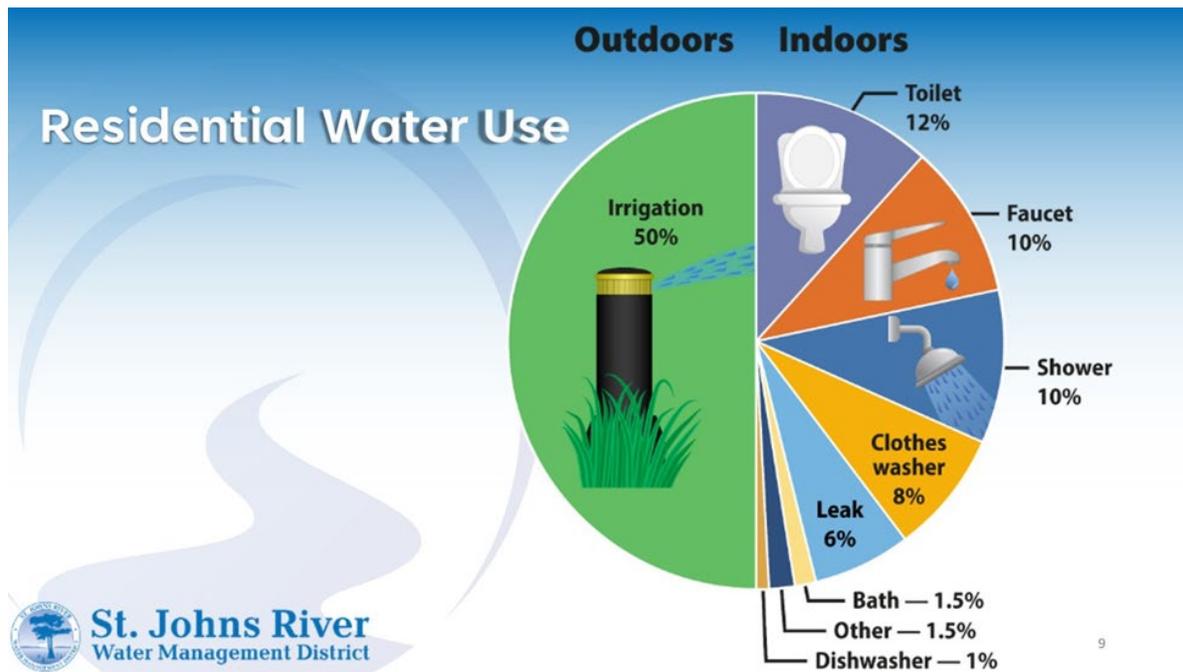


Figure 8.1: Typical Residential Water Use²

² St Johns River Water Management District, “Residential Water Use.”

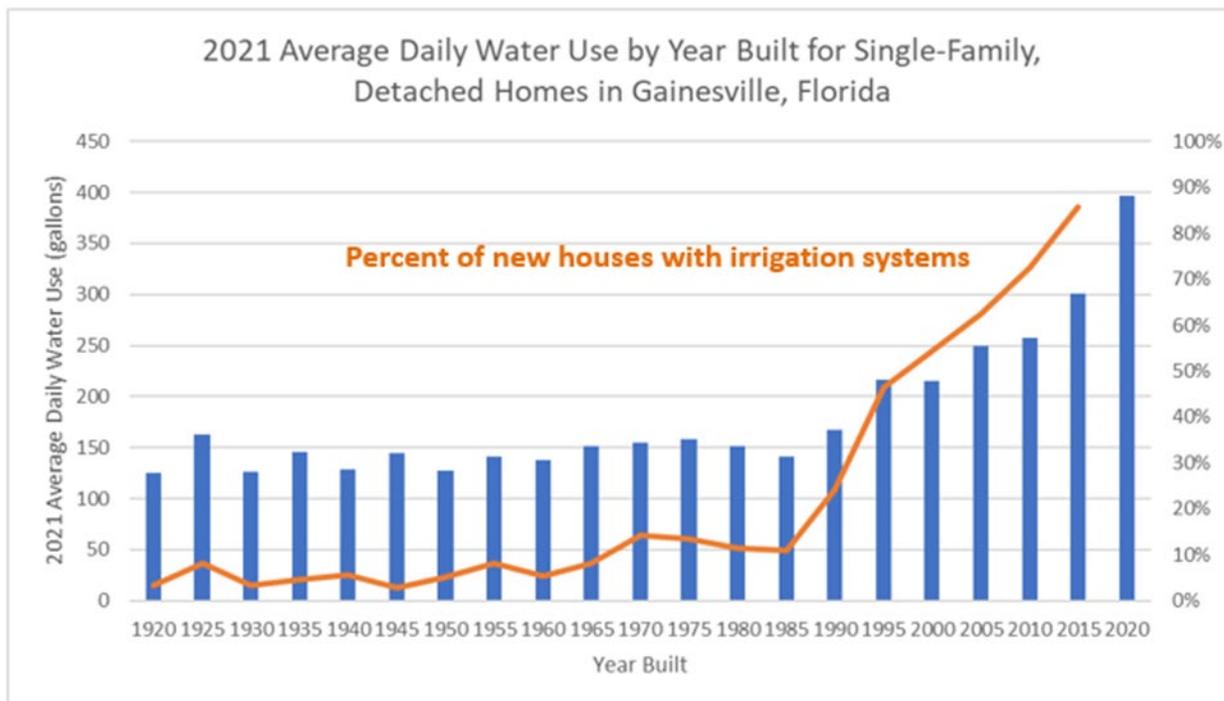


Figure 8.2: 2021 Average Daily Water Use by Year Built for Single-Family Detached Homes in Gainesville, Florida³

The County’s Vulnerability Assessment reveals projections for changes in precipitation due to climate change. A small increase in average total annual precipitation is expected, accompanied by more heavy and extreme rainfall events and longer dry periods between storms. This can cause more variation in groundwater levels, long-term surface water levels and flow reductions, increased risk of flooding, and increased fertilizer use and irrigation/water demand. Increased runoff can lead to more pollutants entering our lakes, streams and rivers, negatively impacting water quality.

Fertilizers containing nitrogen and/or phosphorus can degrade the quality of our waters, especially during heavy rains that push nutrients past the rootzone of plants and into groundwater. Fertilizer can also contribute to algae blooms (such as cyanobacteria) when it washes off our landscapes into ponds, lakes, creeks, and other surface waters. Because cyanobacteria thrive in warm, slow-moving water, Florida and Alachua County are susceptible to their impacts.

Water Use, Efficiency, and Affordability

When looking at residential water use trends, most high-water users live in more affluent areas as most older homes do not have permanent irrigation. In this regard, strategies to reduce water use

³ UF/IFAS Program for Resource Efficient Communities.

(such as tiered water rates) typically do not harm those residing in older residences. However, some strategies, such as rebates and monetary incentives to encourage high-water users to reduce their use, are typically distributed to wealthier individuals, as these users are most likely to live in high-water use areas.

As part of the Alachua County Energy Efficiency Program (ACEEP), Alachua County can provide households making 50% area median income or lower with water-saving technology including:

- Updated efficient clothes washers
- Updated efficient water heaters
- Efficient WaterSense toilets
- Water-efficient faucet aerators and showerheads, as part of the Community Weatherization Coalition (CWC) tune-up program.

Alachua County Comprehensive Plan

The Alachua County Comprehensive Plan addresses water supply and conservation through policies that relate to development patterns, residential density, expansion of and connection to potable water systems, aquifer protection and recharge, water conservation, water quality standards, and irrigation practices. See Appendix B for more information on the Comprehensive Plan.

Past and Current Efforts

Alachua County EPD staff have learned that voluntary programs alone are not effective at creating needed changes, so have implemented a combination of regulatory, educational, and incentive programs to create lasting behavior change.

Water Quality Code

The Alachua County Water Quality Code was adopted by the Board of County Commissioners in August of 2002. The code applies countywide and is enforced by the Alachua County Environmental Protection Department. The code originally included the following components:

- Only stormwater (with a few exceptions) can be discharged to surface waters, stormwater collection systems, and groundwater
- Best Management Practices must be used on construction sites to reduce [erosion and sedimentation](#)
- Cleanup or monitoring of pollutant discharges may be required

- Civil Citations (fines) may be issued for violating the code

The Code was later expanded to address fertilizer pollution. Current provisions state that:

- Fertilizers containing nitrogen must have a minimum of 50% of the nitrogen in a slow-release format and may not be applied:
 - o during the seasonal ban of July through February
 - o when soils are saturated or before a heavy rain
 - o for the first 30 days after seeding or sodding (except when hydro-seeding for erosion control)
- Fertilizers containing phosphorus are prohibited unless a deficiency is verified by a soil or tissue test.
- The above standards do not apply to fruit trees and/or vegetable gardens.
- Fertilizers spilled on impervious surfaces must be removed immediately, and may not be blown or washed into storm water systems or water bodies.
- Fertilizers shall not be applied within a minimum of 10 feet from any waterbody unless a deflector shield is used (then a minimum of 3 feet is required).
- Grass clippings must be removed from impervious surfaces immediately.
- Fertilizer must be stored in areas protected from rainfall and stormwater runoff.

The Water Quality Code was further amended in 2009 to address landscape irrigation. While the County would like to implement even more protective irrigation restrictions, pre-emptions by the water management districts limit restrictions to those adopted by the state and illustrated in Table 8.1.

Irrigate only on specific day(s), and not between 10 am and 4 pm		
Location	Summer (2nd Sun. In March – 1st Sun. In Nov)	Winter (1st Sun. In Nov – 2nd Sun. In Mar)
Odd house #	Wednesday and/or Saturday	Saturday
Even house #	Thursday and/or Sunday	Sunday
Non-residential/Commercial	Tuesday and/or Friday	Tuesday

Table 8.1: Irrigation Rules for Alachua County

In 2015 the County adopted Landscape Irrigation Design Standards that were further strengthened in 2023. The goal of this article is to reduce water use by reducing the footprint of permanent

irrigation and promoting temporary irrigation for establishment of new landscapes. Current provisions of this element:

- Limit irrigation to 50% of the permeable area of lots and commercial sites
- Limit irrigation to 0.25 acres for residential lots
- Require soil moisture sensors or smart controllers
- Require approval and fees prior to installation
- Require inspections to ensure code compliance
- Require registration and annual maintenance documentation for commercial systems

Incentive and Outreach Programs

Alachua County commits significant resources (staff and budget) to public education programming. A program largely funded through the Gainesville Clean Water Partnership (Florida Department of Transportation, City of Gainesville Public Works, and Alachua County Public Works) brings educational programs to schools, camps, and public events. The Partnership also funds an illicit discharge detection and elimination program designed to identify and eliminate sources of water pollution.

The County has various campaigns designed to change behaviors that increase water use and degrade water quality. Campaigns include various components depending on budget and need and include a combination of paid social media runs, billboards, newsletter articles, paid print media ads, radio, videos, bus wraps, car wraps, exhibits at events, and more. Examples of some of our current campaigns include:

- Keeping Grass Off the Streets (decreasing pollution from grass clippings)
- Scoop it, Bag it, Trash it (decreasing pollution from pet waste)
- Only Rain Down the Drain (keeping pollution out of stormwater systems)
- FOGS Cause Clogs (keeping cooking grease out of wastewater systems)
- Fertilizer Free (reducing fertilizer pollution)
- Weeds Feed Bees (promoting more natural landscapes with multi-species)
- Watch the Weather Wait to Water (reducing irrigation in rainy season)
- Irrigation Systems Need Maintenance (reducing wasteful landscape irrigation)
- Winter Irrigation (reducing landscape irrigation while landscapes are dormant)

The County also has grant funded incentive programs to assist with more costly behavior changes. With financial assistance from the St. Johns River Water Management District (SJRWMD), in 2017-2019 the County offered builders \$700 rebates for each new home that received Florida Water Star Certification. This program was only utilized by one builder. The irrigation standards in the Florida Water Star program were later largely codified into the Water Quality Code as described above.

The Turf Save Water Add Plants (SWAP) program was originally funded by the SJRWMD and then by the Suwannee River Water Management District (SRWMD) to provide 50% rebates to property owners that replaced water-intensive landscapes with Florida-Friendly Landscaping (FFL), reduced irrigation, and replaced high-volume irrigation with low-volume. This program was successful in helping promote the FFL program and normalizing shifts in landscaping away from traditional, turf-dominated yards. Water savings were realized when the program targeted high-water users.

With the conclusion of and lessons learned from the Turf SWAP program, the County recently launched an Irrigation Tune-Up program with financial support from the SRWMD. Through the Irrigation Level-Up program, staff provides free irrigation tune-ups to residents coupled with 50% rebates for eligible property owners to address issues identified by staff. The program also offers larger rebates for commercial property owners to upgrade their system and reduce the irrigated footprint. This program also offers 50% rebates for soil amendments in new constructions, as improving soil health reduces the need for irrigation, fertilizers, and pesticides.

Water Quality Monitoring Program

Protecting water quality requires a robust monitoring program. ACEPD has been monitoring water quality throughout Alachua County since the 1970s, providing a crucial baseline for environmental conditions. Currently, ACEPD monitors 20 surface water sites quarterly and 21 groundwater wells semi-annually. Large lakes such as Lake Santa Fe and Newnans Lake are sampled semi-annually by the Water Management Districts. Two of Alachua County's notable springs, Poe and Hornsby, are also sampled by the Water Management District, while ACEPD conducts quarterly monitoring of Boulware and Glen Springs, two 3rd magnitude springs within the City of Gainesville. Sampling efforts are constrained by budget and staff time. Grants are utilized to conduct special studies to further our understanding of pollution trends and sources.

The City of Gainesville maintains a rain gage network, and precipitation is also tracked by the water management districts and United States Geological Services. As climate change causes variations in precipitation patterns, supporting and analyzing these monitoring efforts is vital to understanding the impacts of extreme weather events.

Partners

Alachua County collaborates with various partners to achieve our water protection goals. As mentioned above, the Gainesville Clean Water Partnership is comprised of FDOT, the City of Gainesville, and Alachua County. The Partnership works to reduce stormwater pollution in the greater urban Gainesville area. More information can be found at their website: <https://www.gainesvillecreeks.org/>.

GRU, the largest utility in Alachua County, has been an essential partner in delivering water protection messages to its customers. GRU's water conservation program includes customer notifications through high water use letters, outreach efforts such as social media posts, and participation in community events. GRU also utilizes a water use data and visualization tool (H2OSAV) that helps partners identify water use trends and assess program effectiveness.

GRU has water quality protection programs and was a partner in creating the "FOGS Cause Clogs" outreach program designed to keep fats, oil, and grease out of our plumbing systems to reduce sanitary sewer overflows. GRU also created the "Unflushables" program, which turns commonly flushed items into characters to educate customers about what not to flush and why.

GRU operates a significant amount of infrastructure which includes water and wastewater treatment facilities, pumping systems, and over 2,000 miles of piping to provide potable water and wastewater service to its customers. GRU continues to invest in maintaining and replacing infrastructure to maintain and improve reliability and resiliency. GRU currently invests approximately \$50 to \$70 million per year in replacing aging water and wastewater infrastructure. The increase in extreme weather events with climate change makes this on-going investment even more critical.

Most of the water GRU pumps from the Floridan Aquifer and sends to its customers comes back to GRU as wastewater. In order to minimize our community's water footprint, it is important that this water be treated or "reclaimed" and beneficially reused. Reclaimed water is used for aquifer recharge, environmental restoration, and landscape irrigation. Sweetwater Wetlands Park receives flow from Sweetwater Branch which includes treated wastewater and stormwater. The wetland park further reduces nutrients in that water prior to discharging to Paynes Prairie. The park also removes sediment and trash and provides wildlife habitats and recreation. Use of reclaimed water for aquifer recharge is critical in reducing the impacts of groundwater pumping in the region. Reclaimed water is recharged to the Floridan aquifer via recharge wells and groundwater recharge wetlands. GRU is constructing the Southwest Nature Park which will include a groundwater recharge wetland with nature trails and public use facilities. The project will achieve aquifer recharge with high quality, low nutrient water and provide wildlife habitat and public recreation.

UF Institute of Food and Agricultural Sciences (IFAS) Extension is an additional resource for providing educational materials and training to the public and to our landscaping industry. ACEPD frequently partners with UF IFAS/Extension.

Program Highlight

Alachua County has one of the strongest programs for reducing the water waste from landscape irrigation. The Landscape Irrigation Design Code was initially adopted as part of the Water Quality Code in 2015 and for the first time regulated this previously unregulated industry and influenced how lots are landscaped. The Code has since been updated twice and the program has grown into a leading program across the state. Roughly three staff members review applications, inspect systems, implement compliance and enforcement actions, and conduct trainings. The program has increased the use of temporary irrigation for the establishment of new landscaping and a guidance document for such has been created by staff with input from the industry. The impacts of this program will be evaluated in 2026.

Future Strategies and Action Items

Goal 8.1 – Reduce Water Use

STRATEGY 8.1.1 – Reduce Landscape Irrigation

The State has adopted Minimum Flows and Levels (MFLs) for the Lower Santa Fe and Ichetucknee Rivers and Springs, and Lake Brooklyn and Geneva. MFLs establish the limit beyond which further withdrawals would be significantly harmful to the water resources or the ecology of the area as provided in Section 373.042(1), F.S. These MFLs have associated prevention and recovery strategies that outline how and when the MFLs will be achieved. The state is developing revised MFLs for the Lower Santa Fe and Ichetucknee Rivers which are expected to be ratified by the legislature in 2026. The projects and regulatory strategies should be tracked to help monitor success, with the long-term goal of meeting the MFLs within the prescribed timeframe. The following strategies and action items address ways to reach this goal and to reduce water use.

Landscape irrigation is currently one of the largest water uses in Alachua County and accounts for over 50% of residential water use. While Alachua County has made significant strides in shifting landscaping practices, the following action items would further reduce water use if pursued and/or continued.

Table 8.2: Action Items for Reducing Landscape Irrigation (Strategy 8.1.1)

Action Items	Jurisdiction	Pros	Cons	Status
Limit use of irrigated turfgrass	Local government	Great water savings	Builder and homeowner resistance, potentially staff intensive	Current (limit irrigation to 50% of area)

Prohibit new permanent irrigation	WMD	Great water savings	Political resistance	Not Started (preempted)
Rebates to improve irrigation efficiency	Funding from WMD/FDEP, implemented by local government or utilities	Decent water savings	Staff intensive, voluntary participation	Current
Remove exemptions for micro-irrigation	WMD	Marginal water savings	Requires a rule change or addition as element of MFL	Not Started (preempted)
Prohibit new landscape installations during water shortages	WMD/Local Government?	Marginal water savings	Requires a rule change or addition as element of MFL	Not Started
Extend the daytime prohibition on irrigation from 9 am to 6 pm	WMD	Marginal water savings	Requires a rule change or addition as element of MFL	Not Started (preempted)
Update Florida Friendly Landscaping program to discourage irrigation and fertilizer	FDEP, UF, IFAS extension	Marginal water savings and water quality improvements	Voluntary participation	Emergent
Rebates to builders/developers to install alternative groundcovers and no irrigation on landscapes	Funding from WMD/FDEP, implemented by local government or utilities	Great water savings	Builder resistance, voluntary participation	Not Started
Require soil amendments in new construction	Local government	Great water savings if change watering behaviors	Builder resistance, staff intensive	Not Started (anticipated for 2026)
Require Florida Water Star Gold in new construction	Local government or utilities	Modest water savings	Builder resistance, lack of certifiers	Not Started

STRATEGY 8.1.2 – Reduce Water Use from Landscape Irrigation Wells

Tiered water pricing has been an effective tool implemented by utilities to decrease discretionary water use, as prices increase with increased use. Unfortunately, a simple way for high water users to avoid this pricing tool is to install an irrigation well. Irrigation wells contribute to over pumping of the aquifer and lead to uncertainties in water use projections and monitoring. Because well metering has not been historically required, it is presently impossible to accurately report the

current baseline for groundwater pumping from the region. Alachua County continues to advocate for changes to the well permitting rules to prohibit new landscape irrigation wells and to require metering for any new wells. To document progress, a map of all suspected irrigation wells in Alachua County should be created.

Table 8.3: Action Items for Reducing Water Use from Landscape Irrigation Wells (Strategy 8.1.2)

Action Items	Jurisdiction	Pros	Cons	Status
Prohibit new irrigation wells when public supply is available	WMD or utilities (for new developments)	Improves effectiveness of aggressive tiered rates to discourage high users	Political resistance, greater demand on utilities	Not Started (preempted)
Limit new irrigation wells for common areas	WMD	Improved water use data, price signal decreases water use	Political and builder resistance	Not Started (preempted)
Require metering and reporting of water use data and leak detection	WMD	Improved water use data and transparency	Political resistance, staffing	Not Started (preempted)
Enforce prohibition of well water use in reclaimed water areas	WMD	Marginal water savings and aquifer protection from contamination	Staffing	Current (not enforced)
Rebates to plug existing wells	Funding from WMD/FDEP, implemented by local government or utilities	Marginal water savings and aquifer protection from contamination	Staff intensive, voluntary program	Not Started

STRATEGY 8.1.3 – Improve Consumptive Use Permitting.

Per capita water use is a common metric for measuring a community’s collective water use. However, per capita water use is influenced by development patterns and residential types (for example, multi-family residential water use is typically much lower compared to single family residential) and ignores other uses included in public supply. To accommodate future growth and maintain healthy flows for rivers, springs and lakes, the per capita water use will need to decrease

with the goal of maintaining or decreasing current municipal Consumptive Use Permit (CUP) allocations as population increases. Table 8.4 summarizes current CUPs issued for each municipality within Alachua County. As a measure of success in decreasing water use, changes in CUPs should be tracked with a goal of not increasing allocations as the population increases.

Municipality/PW Suppliers	Consumptive Use Permit-CUP (mgd)	Issue Date	Expiration Date
City of Gainesville (GRU)	30	9/10/2014	9/10/2034
City of Alachua	1.7843	8/13/2024	8/14/2029
City of High Springs	1.1178	7/11/2023	7/11/2028
City of Newberry	0.89	3/22/2023	3/22/2028
GRU South Energy Center (backup)	0.341	3/25/2008	3/25/2028
City of Hawthorne	0.298	1/4/2006	12/12/2025
City of Archer	0.2567	4/28/2023	4/28/2043
City of Waldo	0.1723	7/21/2022	7/21/2042
Town of Micanopy	0.103	1/13/2021	1/13/2041

Table 8.4. Consumptive Use Permits issued to Municipalities/Public Water Supply Providers in Alachua County.

Table 8.5: Action Items for Improving Consumptive Use Permitting (Strategy 8.1.3)

Action Items	Jurisdiction	Pros	Cons	Status
Redefine the public interest and reasonable beneficial use for CUPs and scrutinize all permits	WMD	Great water savings	Political resistance	Not Started (preempted)
Require and enforce measurable and aggressive water conservation plans	WMD	Great water savings and Improved water use data	Political and utility resistance	Not Started (preempted)
Require offsets for existing and new permits immediately	WMD	Great water savings or increased recharge	Political resistance and costs	Emerging (MFL may require)

Goal 8.2 – Increase Water Quality and Quantity

STRATEGY 8.2.1 – Improve Utility Water Supply and Wastewater Infrastructure Protection

Maintaining drinking water and wastewater infrastructure is important and will become increasingly challenging as we experience the impacts of climate change. Increases in storm intensities will increase the likelihood of wastewater releases. Gainesville Regional Utilities (GRU) is the largest utility in Alachua County and provides water and wastewater to much of the unincorporated area of Alachua County. Alachua County does not operate a utility, so it has a minor role in protecting infrastructure through the action items below.

Table 8.6: Action Items for Improving Utility Water Supply and Wastewater Infrastructure (Strategy 8.2.1)

Action Items	Jurisdiction	Pros	Cons	Status
Continue or expand tiered water rates	Utilities	Effective in promoting conservation	If tiers become too aggressive customers install irrigation wells in the absence of prohibition	Not Started
Ongoing replacement and upgrade of aging water infrastructure	Utilities	Reduces leaks, improves safety and reliability, ensures long-term sustainability	Utility rate pressure/cost	Current
Direct Potable Reuse	Utilities	Reduces groundwater pumping	Costs and public perception	Not Started
Automate Metering Infrastructure (AMI)	Utilities	Informs water conservation efforts	Costs and staff intensive	Emerging
Continue Water Quality Improvement Projects & Programs	Utilities, Local Government	Maintain & Improve Water Quality	Costs and staff intensive	Current
Ongoing investment in replacement and upgrade of aging wastewater infrastructure	Utilities	Minimize Sanitary Sewer Overflows (protects water quality) and ensure long-term system viability	Utility rate pressure/cost	Current
Septic to sewer conversions	Utilities, Local Government, State Funding	Reduce nutrient pollution from septic tanks	Funding limitations; sewer not available, homeowner unwillingness	Not Started

STRATEGY 8.2.2 – Improve Water Quality Monitoring

Currently, ACEPD monitors 21 groundwater wells semi-annually. A recent groundwater report conducted by AquiferWatch on behalf of Alachua County recommended expanding the groundwater monitoring network to 45 groundwater monitoring wells. This expansion would more than double the size of the current network and would provide a more comprehensive baseline groundwater quality monitoring network.

Water quality data are shared with the State and surface water data is used to determine impaired water bodies in need of water quality improvements through the Total Maximum Daily Loads (TMDL) program. The State then works with stakeholders to adopt a Basin Management Action Plan (BMAP) to outline how and when water quality improvements will be achieved. Alachua County is within the Silver, Santa Fe, and Orange Creek BMAPs and is responsible for a portion of the nutrient load reductions in each basin. Progress is reported annually, and Alachua County must outline how the allocations will be met by January 2026.

Table 8.7: Action Items for Water Quality Monitoring (Strategy 8.2.2)				
Action Items	Jurisdiction	Pros	Cons	Status
Expand monitoring and analysis of water quality stations for surface water and groundwater	Local Government FDEP, WMD	Understanding of water quality status and trends	Costs	Emergent
Create hurricane response sampling team	Local Government, Utilities	Immediate assessment of storm impacts	Costs, safety	Not Started
Identify projects and policies to meet Alachua County’s BMAP allocations	Local Government	Will improve water quality	Costs, staff intensive, limited options	Emergent

STRATEGY 8.2.3 – Increase Aquifer Recharge

While decreasing water use is important for protecting the aquifer, projects that increase recharge of the aquifer are also beneficial. These projects typically utilize highly treated wastewater as source of recharge water. Since Alachua County does not operate a wastewater treatment facility, those projects are led by utilities like Gainesville Regional Utilities. Recharge with treated stormwater is another recharge option to be explored.

Table 8.8: Action Items for Increasing Aquifer Recharge (Strategy 8.2.3)

Action Items	Jurisdiction	Pros	Cons	Status
Implement projects to Increase aquifer re-charge using reclaimed water or stormwater	Utilities	Return of high quality low nutrient water to aquifer reduces impact of pumping	Costs, Must have suitable sites	Emergent
Increase reclaimed water pricing to promote water conservation	Utilities	Reduced reclaimed water use, Improved water quality, more water available for recharge	Need policies in place to prevent irrigation wells	Not Started

Goal 8.3 – Increase Water Efficiency in New Developments

STRATEGY 8.3.1 – Establish New Development Requirements

As documented in the North Regional Water Supply Plan, this region will continue to grow. Climate change and increasingly challenging conditions in coastal areas may exasperate growth. It is crucial to minimize the impact of new growth. Land development regulations are typically limited to the jurisdiction in which the property is located.

Table 8.9: Action Items for Establishing New Development Requirements (Strategy 8.3.1)

Action Items	Jurisdiction	Pros	Cons	Status
Minimize site clearing	Local government	Reduce water use, protect soils and habitat	Builder/developer resistance	Current (needs improvement)
Require Low Impact Development techniques	Local government	Improved water quality and increased recharge	Builder/developer resistance, costs, maintenance	Current (needs improvement)
Require new septic systems be Enhanced Nitrogen Reducing (ENR) systems	Local government	Improved water quality	Costs, maintenance requirements, political resistance	Emergent
Improved lift station requirements	Local government and/or utilities	Reduces sewer overflows	Costs	Not started
Require soil amendments in new construction	Local government	Great water savings if change watering behaviors	Builder resistance, staff intensive	Not Started (anticipated for 2026)
Require Florida Water Star Gold in new construction	Local government or utilities	Modest water savings	Builder resistance, lack of certifiers	Not Started
Continue water/sewer connection requirements in Urban Cluster	Alachua County	Serves greater population with high quality water & greater efficiency	Limited to unincorporated Alachua county	Current
Retain/lower density in rural area outside Urban Cluster	Alachua County	encourage density in municipalities		Current

Triple Bottom Line

People

Through the strategies above, Alachua County can improve water quality and prevent water contamination, which can increase the health of citizens by avoiding certain waterborne diseases (e.g., *E. coli*). Additionally, by minimizing nutrient loading and excessive water use, Alachua County can protect its springs. Springs protections allow citizens to keep enjoying them for recreation and socialization. Implementing these strategies now protects springs and aquifers for generations, especially considering the expected population and water demand increase in the next 50 years.

Profit

Irrigating a yard can cost around \$5 to \$25 each time.⁴ By decreasing water use, property owners and businesses reduce water bills, saving money. If successful in reducing community wide water use, Alachua County can meet the demand created by future growth with existing resources rather than implementing expensive water supply projects. Additionally, if the County minimizes nutrient loading, there is an avoided cost of cleaning up these waters.

Protecting Alachua County springs can also bring in revenue via tourism. Between 2016-2017, around 3 million people visited Florida state park springs, generating between \$60-130 million.⁵ In 2019, around 3.9 people visited these springs, generating over \$350 million, showing an increase in interest and tourism.⁶ The many springs in Alachua County serve as an important employment and revenue source.

Planet

The importance of springs and aquifers to local fauna and flora cannot be understated. Keeping water levels stable and maintaining high water quality is necessary for local ecosystems, and humans, to thrive. Without healthy water, ecosystems can collapse, disrupting the natural balance.

Community Engagement

⁴ Borisova et al., “Estimating Benefits of Residential Outdoor Water Conservation: A Step-by-Step Guide,” *UF/IFAS*.

⁵ Buck, “UF/IFAS Study Illustrates Value Floridians, Others Place on Springs,” 2018.

⁶ UF/IFAS, “How Springs Invigorate Florida’s Economy.”

Volunteering Opportunities

Every member of the community plays an important role in protecting water, especially amid a changing climate. Each person can take action to reduce their water use and personal pollution, but collectively, they can make great strides in protecting their water resources on a larger scale. For more ways to get involved, volunteer with us at www.Volunteer.AlachuaCounty.us

Minimizing Landscape Irrigation

One of the most direct ways to alleviate pressure on our groundwater supply is by reducing the amount of landscape irrigation on your property and limiting its use. To eliminate the need for irrigation, replace turfgrass lawn with drought-tolerant native plants. Hardy native plants can typically thrive on rainfall alone, reducing the need for landscape irrigation. Furthermore, native plants provide habitats for pollinators and other wildlife. Learn more about native plants and landscaping for water conservation on the Florida Friendly Landscaping website and the Florida Springs Institute Website.

The greatest long-term water conservation impact is achieved by capping or removing irrigation on established landscapes. Irrigation restrictions (days of the week) mandated by the Water Management Districts are the maximum amount of irrigation allowed on a property and allow watering that often exceeds plants' needs. The County therefore recommends turning irrigation systems off and operating them manually only as needed. Slowly adjusting run times and turning off zones that no longer need irrigation is also an option.

Property owners with a permanent irrigation system and an average monthly water use exceeding 10,000 gal/month can request a free irrigation tune-up from the County's Water Conservation Team. Eligible customers can also take advantage of rebate funds, when available, to help cover some of the costs incurred to remove irrigation or upgrade to more efficient components.

Reducing Personal Pollution

Fertilizer reduces water quality when it is carried into surface water by stormwater runoff or into our groundwater through leaching. When nitrogen from fertilizer is washed into surface water, it harms local wildlife and contributes to algae outbreaks, which harm wildlife and make our water unsuitable for swimming, boating, and fishing.

Since 2018, the share of Alachua County residents who say they do not use fertilizer increased from 55% to 68%. To join these residents in their efforts to minimize fertilizer use, sign this pledge to eliminate the personal use of fertilizer and receive a Fertilizer Free bumper sticker. The pledge can be found at MyYardOurWater.org

In most home landscapes, many species of beneficial plants and native wildflowers are intermixed with turf. However, these plants are often framed as “weeds” by landscaping companies. Homeowners may thus be persuaded to have them treated with herbicides. Residents can prevent water pollution by skipping herbicides and fertilizers and embracing wildflowers and weeds. In addition to adding interest and beauty to our landscapes, wildflowers and native “weeds” thrive without irrigation. They also serve as a critical food source for birds, bees, and other pollinators. To help residents discover the hidden beauty of “weeds” in their yards, Alachua County launched a new initiative on iNaturalist (an app), a global database where anyone can document their observations of the natural world using their phones.

Alachua County has a “Pooper Scooper” ordinance (Alachua County Code 72-13) that requires pet owners to clean up pet waste. When not picked up and left on the grass or in the street, pet waste washes into storm drains and pollutes our surface waters. Pet waste also contains nutrients that contribute to algae outbreaks. Furthermore, pet waste carries diseases such as *E. coli* that make water unsafe and disproportionately impact children and immuno-compromised individuals.

In Alachua County, many storm drains lead to our waterways with no filter. This means that pollution on land travels into these storm drains when it rains and eventually flows into creeks, lakes, and other natural areas. Residents can help the Environmental Protection Department ensure that there is “only rain down the drain” by reporting illegal discharges to the Clean Creeks Hotline: (352) 264-6800. Illegal discharges include:

- Cleaners and solvents
- Wash water from cars, mops, and carpet cleaning
- Landscaping debris and chemicals
- Oil and grease
- Paints
- Swimming pool discharge
- Construction dirt and debris
- Litter
- Wastewater (sewage)

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