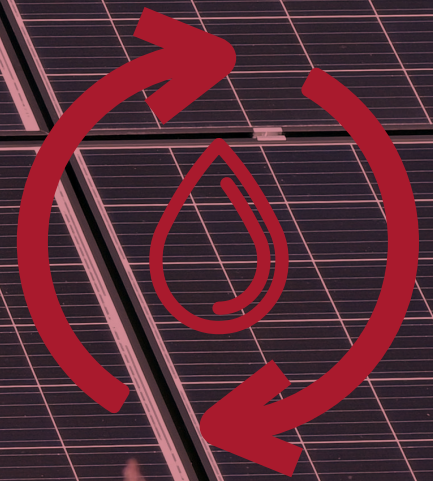


05



SUSTAINABLE INFRASTRUCTURE



Introduction

CONTEXT

The Sustainable Infrastructure Element emphasizes Gwinnett County's water infrastructure and natural resources. The County is a recognized leader in these areas among its peers and was among the first in Georgia to join the state's WaterFirst certification program in 2003. Since then, it has remained a leader in sustainability and water efficiency.

Through this Sustainable Infrastructure Element, the County seeks to build consensus around priorities for a sustainable system of both natural and built infrastructure. Specifically, this chapter addresses smart growth planning through an infrastructure and natural environment perspective, urbanization, stormwater, and resiliency and equity. The impacts of climate change are also a key component, as water resources are particularly susceptible to anticipated natural changes. The objective of the element is to identify policies and actions to put in place today to ensure that current and future generations of Gwinnett residents can enjoy its natural resources and continue to benefit from the County's award winning water services.

SUSTAINABLE INFRASTRUCTURE FOCUS AREAS

1 EXPANSION OF INFRASTRUCTURE BASED ON SMART GROWTH

Expanding the wastewater system can unlock development or redevelopment potential of different parts of Gwinnett County; however, some areas of Gwinnett are more primed for sewer development than others. The County needs to be strategic in where it invests so that infrastructure is cost effective and natural resources are protected. Much of Gwinnett is developed, so large swaths of untouched green space are rare. To protect these areas that provide an abundance of ecosystem services, the County is encouraging infill and redevelopment in areas that are already well served by infrastructure. Future infrastructure investments that involve expansion into greenfield areas warrant a critical review to ensure a balance between smart growth and protection of ecosystem services.

2 CHALLENGES OF RAPID URBANIZATION

As the County pursues a more sustainable growth pattern, it must closely examine development choices that alter natural hydrology to mitigate any negative impacts on the community's quality of life. Urbanization tends to bring more impervious surfaces, which in turn, leads to challenges with runoff quantity and quality as well as heat islands. Many streams in Gwinnett do not meet water quality criteria for their designated use. This is not a unique issue, as jurisdictions across the state find themselves in a similar predicament. The County can lead the way to more stewardship minded development practices to mitigate the harms caused by traditional development.

3 RESILIENCY AND EQUITY CONCERNS

Concerns about a changing climate have spurred plans to look more closely at environmental justice issues. This element examines how segments of Gwinnett's diverse population might be differently exposed to environmental burdens or barriers to accessing environmental resources. Climate change issues are likely to hit these vulnerable populations the hardest. To ensure that the whole community can adapt and be resilient to nature's changes, it is vital that these issues are explored and woven throughout the Unified Plan.

Existing Conditions

OVERVIEW

This section is divided into an inventory and analysis of existing water resources and infrastructure, followed by a review of upcoming initiatives related to sustainability. It also discusses the interplay between infrastructure and the natural environment, focusing on how that relationship impacts the people of Gwinnett County. In light of a changing climate, it is crucial to evaluate the County's existing plans and protocols for environmental protection and a hazard resilient infrastructure system.

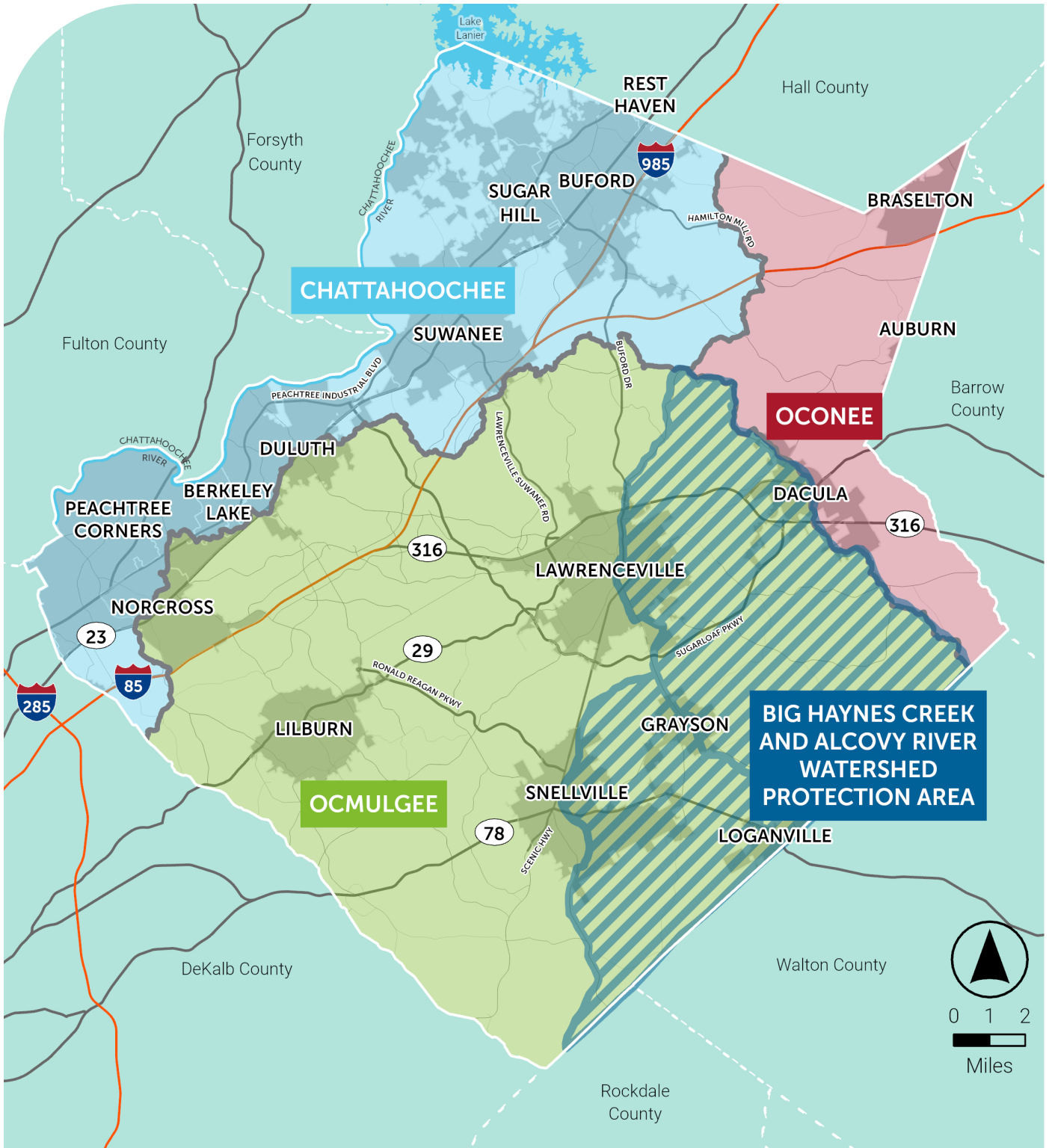
Through the 2045 Unified Plan and other processes, Gwinnett County leaders and residents have expressed desires for where to promote growth and preserve nature. The Gwinnett County Department of Water Resources plays a critical role in implementing this vision. Both development and redevelopment depend on water and sewer infrastructure, and stormwater management safeguards new investments and existing structures.

NATURAL RESOURCES ENVIRONMENTAL CONTEXT

Gwinnett County is located on a continental divide. Water naturally drains from the area west of the divide to the Gulf of Mexico, whereas water to the east of the divide drains to the Atlantic Ocean. Some of Gwinnett's cities, particularly Duluth and Norcross, have installed signage and art sculptures to highlight the significance of the continental divide.

Gwinnett County contains portions of three major river basins: the Chattahoochee Basin, the Ocmulgee Basin, and the Oconee Basin (Figure 5-1). The Chattahoochee Basin drains into the Gulf of Mexico, while the Ocmulgee and Oconee Basins drain to the Atlantic Ocean.

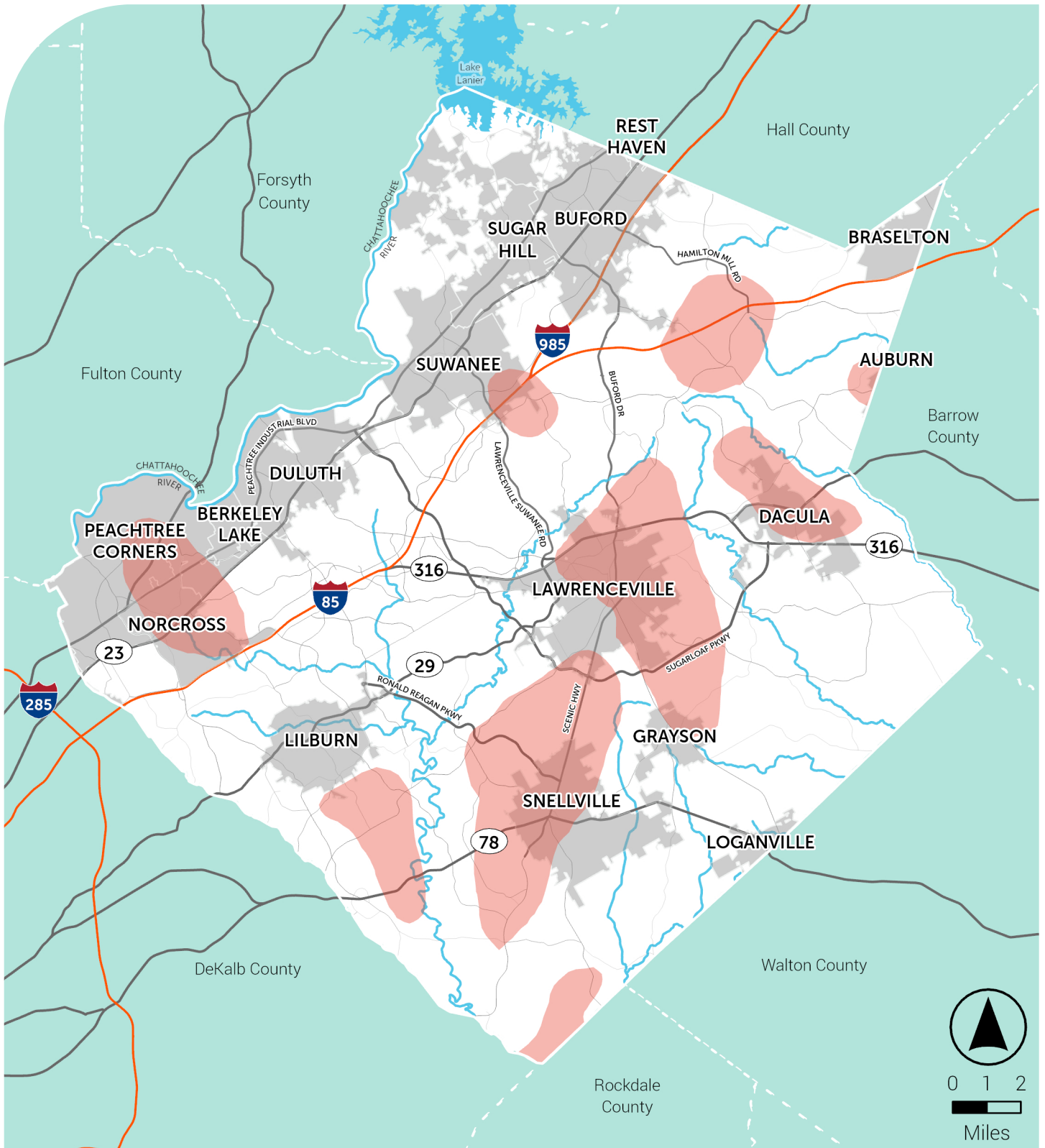
Two of the most significant water bodies in the metropolitan Atlanta area are partially located in Gwinnett. Figure 5-1 also portrays the Chattahoochee River Corridor and Lake Lanier, which are vital components of the region's economy. The following sections provide context for the local, regional, state, and federal entities that play a role in protecting these resources.



Legend

- Chattahoochee Basin
- Ocmulgee Basin
- Oconee Basin
- Chattahoochee River Corridor
- Big Haynes Creek and Alcovy River Watershed Protection Area

FIGURE 5-1: RIVER BASINS AND PROTECTED WATER RESOURCES



Legend

Groundwater Recharge Areas

FIGURE 5-2. GROUNDWATER RECHARGE AREAS

PROTECTING OUR WATER RESOURCES

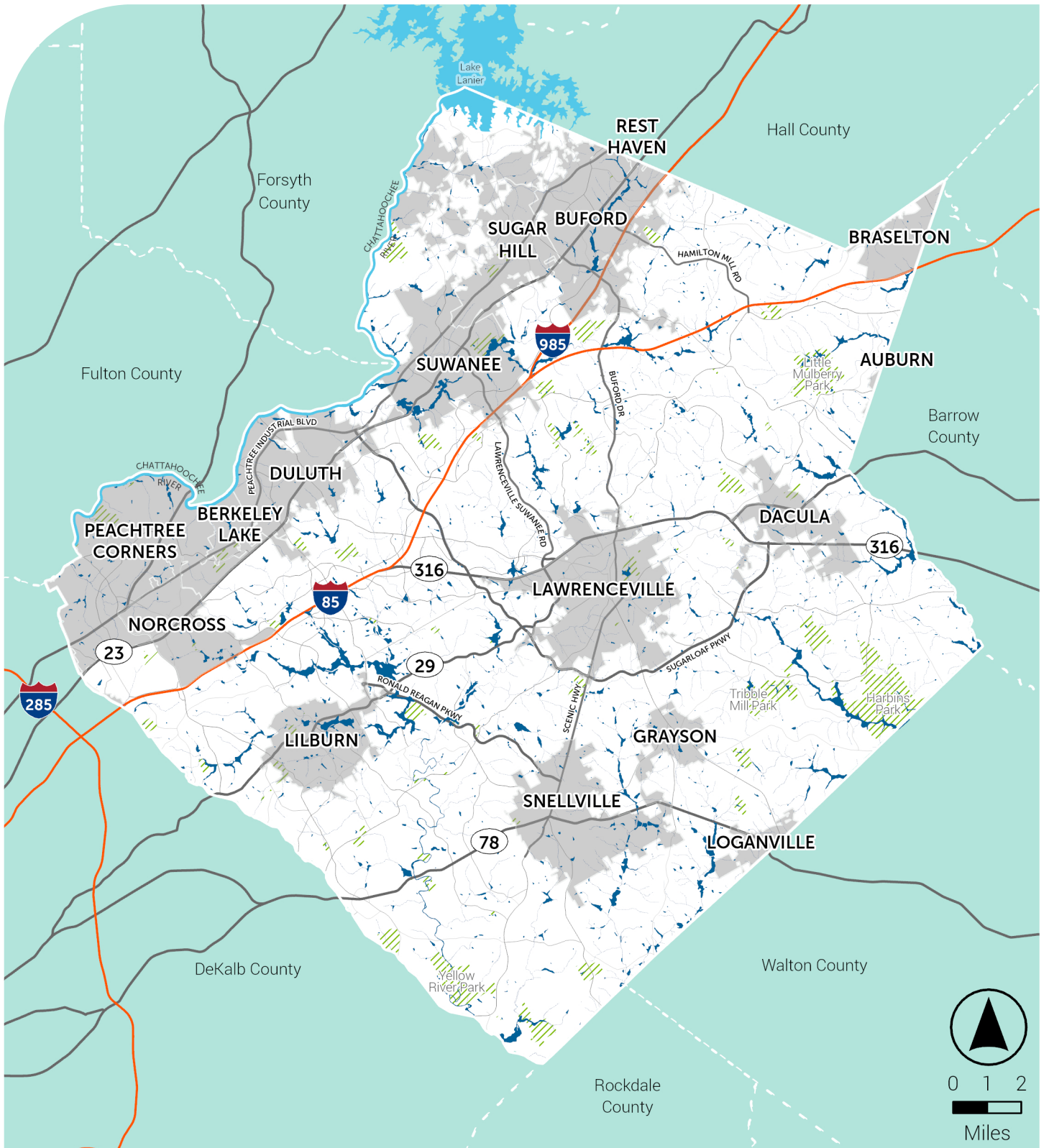
Gwinnett County's most vital water resources are Lake Lanier and the Chattahoochee River. Lake Lanier is the sole drinking water source for the entire county. Though the Chattahoochee River is not a source of drinking water for Gwinnett, it is the drinking water source for downstream communities. The County's Unified Development Ordinance (Section 500-10) includes provisions that enforce the State's requirements for the Chattahoochee Metropolitan River Protection Area. Federal protections, enforced by the Chattahoochee River National Recreation Area, are also in place.

Georgia mandates that local governments review the Part V Environmental Planning Criteria, which include water supply watersheds, groundwater recharge areas, the Metropolitan River Corridor, and wetlands; and adopt the necessary protections. Chapter 500 of the UDO includes development regulations that meet or exceed the state's rules. The area identified as the Big Haynes Creek and Alcovy River Watershed Protection Area (Figure 5-1) is a water supply watershed for Rockdale County where enhanced stream buffers and other protections are enforced. Gwinnett County's Department of Planning and Development verifies whether a property is within the Watershed Protection Area during the development review process.

GROUNDWATER RECHARGE AREAS

Groundwater recharge areas (Figure 5-2) are delineated by the Georgia 1992 Hydrologic Atlas. The nine groundwater recharge areas in Gwinnett cover about 20 percent of Gwinnett's total land area. All groundwater recharge areas within Gwinnett are considered to have low pollution susceptibility and are protected by various restrictions enforced by the Georgia Environmental Protection Division.





Legend

- Wetlands
- Parks

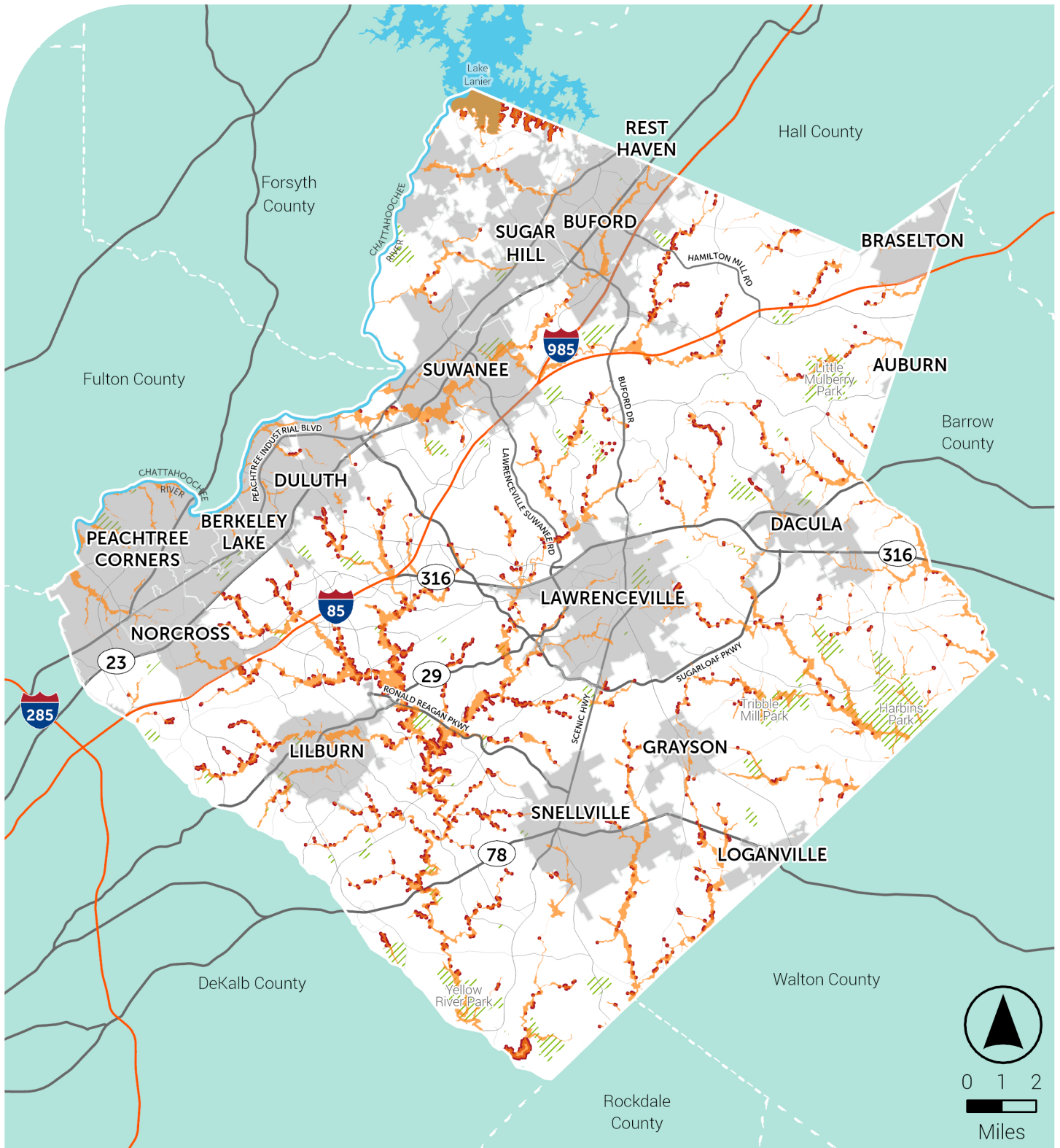
FIGURE 5-3. WETLANDS

WETLANDS

Wetlands are found throughout Gwinnett County, particularly near streams and river systems. Wetlands provide erosion control and protect against floods, making them a critical environmental asset. However, wetlands are at risk of degradation due to national policy changes. In May 2023, the U.S. Supreme Court ruled in *Sackett v. Environmental Protection Agency* that federal protections only apply to wetlands that adjoin a water body, which is a much narrower definition than how the Clean Water Act had previously been interpreted. Now, wetlands separated by dunes, berms, or other barriers are no longer subject to federal protections and will require state or local protective policy. As Gwinnett grows, wetlands may face development pressures, and areas that have traditionally been considered wetlands may be challenged in court. The County should consider adopting a wetlands protection overlay district that defines wetlands in the context of Gwinnett rather than referring to the National Wetlands Inventory.



Photo: Suwanee Greenway Trail
(Atlanta Trails)



- Legend**
- Flood Risk Areas
 - Buildings
 - Parks

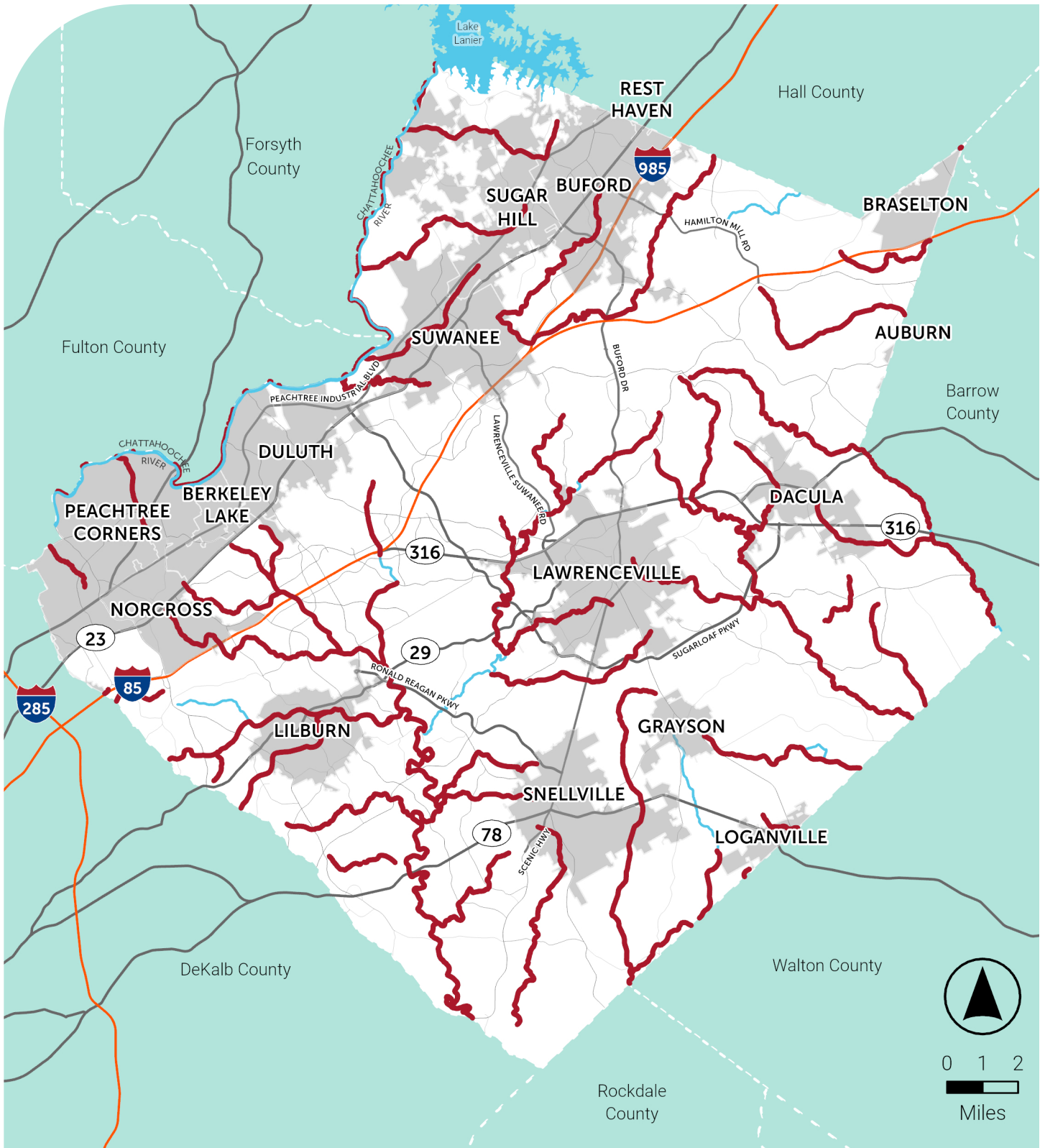
FIGURE 5-4. EXISTING BUILDINGS WITHIN FLOOD RISK AREAS

FLOOD RISK AREAS

Flood risk areas are also included on the map (Figure 5-4). Gwinnett County's UDO standards are consistent with those of the Metropolitan North Georgia Water Planning District (the Metro Water District's) Model Ordinance for Floodplain Management/Flood Damage Prevention. The UDO prohibits new developments on 100-year floodplains and wetlands. However, many properties were developed before the County adopted this policy. Currently, 3,326 buildings overlap with the floodplain, and 2,835 are located within wetlands. The County may consider an initiative to acquire these properties, especially if they are subject to repetitive losses from flooding. The Federal Emergency Management Agency has a grant program to support property buyouts. Gwinnett County has implemented buyouts on a limited basis.

DWR and P&D each play a role in future flood risk planning. The County maintains records of repetitive loss properties and phone complaints received from property owners. An online Flood Information Portal is available through the County's website to provide information on flood sources and risks. The County may consider updating its future flood risk model to account for changing storm patterns in addition to land use changes. This data will inform the County's future resiliency policies and investments.





Legend

- Impaired Streams
- Streams
- Parks

FIGURE 5-5. IMPAIRED STREAMS

WATERSHED HEALTH

Gwinnett County conducts watershed improvement planning and programs as a requirement of the County's wastewater permits from Georgia EPD. These programs are funded by the Water and Sewer Fund, and DWR has developed Watershed Improvement Plans for each watershed across Gwinnett. Through a partnership with the U.S. Geological Survey, DWR has a Long Term Trend Monitoring program to analyze and evaluate water quality of streams and ponds. The County is committed to stewardship of the area's watersheds through both structural solutions to water quality concerns as well as volunteer programs managed by the Parks and Recreation Department and partner organizations, such as Gwinnett Clean and Beautiful.

About 50 stream segments, constituting 187 miles of streams, are impaired (Figure 5-5). An impaired stream is one that is not meeting at least one of its designated uses. This data is derived from the 2022 publication of Georgia EPD's 305(b) and 303(d) Integrated Report. This problem is not unique to Gwinnett; impaired streams are found across the state. The County may consider continuing and expanding its current program in anticipation of potential impacts as a result of redevelopment to further improve the watershed conditions. This can be accomplished through enforcement of policies, such as erosion and sedimentation control measures and nature-based solutions, such as stream restorations.



*Photo: The Water Tower
(Source: Gwinnett County Communications)*

SUSTAINABILITY AND RESILIENCY

Water resources are particularly susceptible to the impacts of climate change. Drought and inland flooding are both significant water management issues that Gwinnett County will have to grapple with over the coming decades. Total precipitation is on the rise, and storm events are becoming more severe. Gwinnett County's Office of Emergency Management coordinates updates to the County's Hazard Mitigation Plan, which identifies risks and community assets that are vulnerable to different types of natural hazards. The County should continue to track climate trends and collaborate on safeguarding efforts to protect the people and property throughout the community.

ENVIRONMENTAL SUSTAINABILITY PROGRAMS & POLICIES

Gwinnett County has been a regional sustainability leader for many years. In 2009, Gwinnett attained the Atlanta Regional Commission's Green Communities Bronze Certification. Over the ensuing decade, Gwinnett revalidated and enhanced its status to Silver in 2012, Gold in 2014, and ultimately achieved Platinum in 2018. Gwinnett was the first county in Georgia to achieve Platinum. A few of the County's notable policies that relate to watersheds and green infrastructure are summarized below:

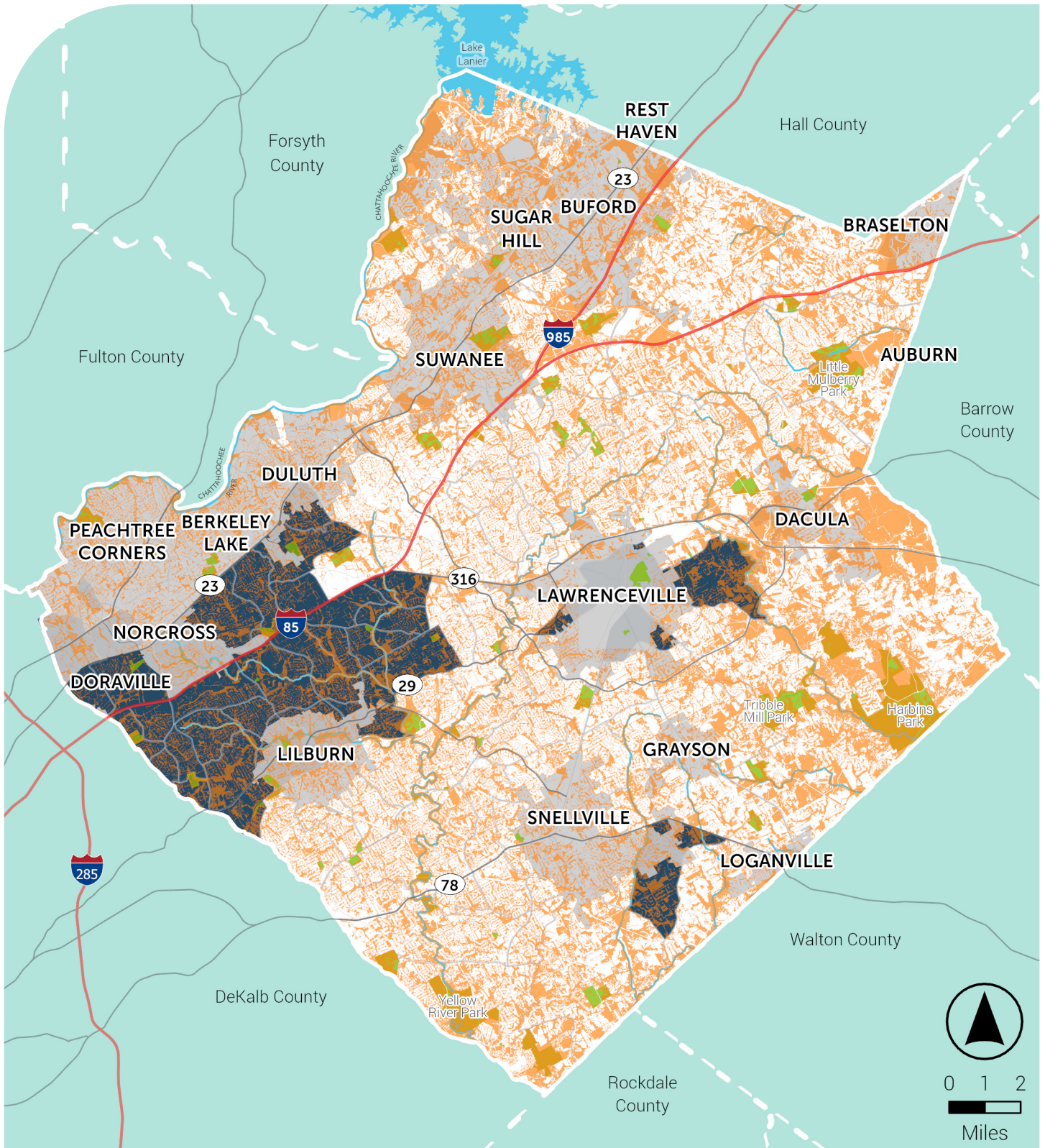
- **Green Building Credit for New Commercial and Residential Construction:**
 - » A 5 percent reduction of the building permit fee shall be applied to new commercial building projects that indicate application and are LEED certification compliant.
 - » A 5 percent reduction of the building permit fee shall be applied to new multifamily residential building projects that indicate application and are EarthCraft Multifamily certification compliant.
 - » A 5 percent reduction of the building permit fee shall be applied to new single family residential building projects that indicate application and are EarthCraft House certification compliant.
- **Community Shade Coverage Policies:**
 - » The UDO includes design standards to ensure that developments provide for shade coverage through parking lot canopies, tree density units, tree canopy measurements, buffers, specimen trees, and landscape strips.

While achieving Platinum status marks the pinnacle on ARC's Green Communities scale, Gwinnett County has the potential to further push the boundaries of sustainability. The ARC Green Communities Program website shares how Gwinnett compares to other Green Communities awardees for each of the credit categories. Some of the areas where Gwinnett has achieved fewer credits compared to its peers are: Trees and Greenspace, Transportation and Air Quality, and Education. The Green Communities Program Manual is a resource for Gwinnett to strengthen its sustainability programs.

SUSTAINABILITY COMMISSION

In 2021, the Gwinnett County Board of Commissioners approved the creation of a Sustainability Commission. This Commission is responsible for providing recommendations to the Board of Commissioners that accomplish the following:

- 1** Consider the needs of Gwinnett County now and in the future, based upon existing and projected growth patterns.
- 2** Review and assess environmental sustainability options for Gwinnett County, including those suggested by members of the community.
- 3** Review and assess the feasibility of differing environmental sustainability options in Gwinnett County.
- 4** Review and assess options for reducing Gwinnett County's environmental impact through its buildings, fleets, and practices.
- 5** Provide public education and outreach on sustainability issues and encourage the community to reduce its environmental impact.



Legend

- Disadvantaged Communities (Justice40)
- Tree Canopy Cover
- Rivers
- Parks

FIGURE 5-6. TREE CANOPY COVER AND DISADVANTAGED COMMUNITIES

ENVIRONMENTAL JUSTICE

The Justice40 Initiative, announced by the Biden-Harris Administration in January 2021, is a major federal strategy to center equity in the fight against climate change. Through this initiative, the federal government has committed that 40 percent of certain funding streams will be spent to improve the conditions in communities identified as “marginalized, underserved, and overburdened by pollution” (WhiteHouse.gov).

The White House Council on Environmental Quality developed the Climate and Economic Justice Screening Tool to identify disadvantaged communities where Justice40 funding should be directed. Several categories of environmental and socioeconomic burdens are captured in this screening tool. In Gwinnett County, the most prevalent types of burdens include:

- Proximity to Risk Management Plan facilities (facilities that handle substances with significant environmental and public health risks)
- Linguistic isolation
- Diesel particulate matter exposure
- A high relative cost and time spent on transportation

Tree canopy cover is one example of a disparity that exists between Gwinnett’s disadvantaged and nondisadvantaged Census tracts. The County’s tree canopy is not evenly distributed; the Justice40 disadvantaged communities only have 24 percent tree canopy cover, compared to the nondisadvantaged communities where the tree canopy cover is 28 percent (Figure 5-6).

Trees contribute immensely to community health, particularly as it relates to providing refuge from higher temperatures during the warm weather months and helping mitigate the urban heat island effect. Urban heat islands refer to locations with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat (EPA).

To learn new ways to promote tree canopy protection and expansion, Gwinnett County’s Sustainability Commission should keep tabs on resources that become available to support implementation of new federal funding programs. For instance, a Colorado research collaborative called the Center for Regenerative Solutions established an Urban Nature-based Climate Solutions Accelerator in 2023. This Accelerator will focus on identifying effective uses for the urban forestry funding coming down to the local level through the Inflation Reduction Act.

INFRASTRUCTURE CONTEXT

STATE AND REGIONAL PLANNING

Gwinnett County's significant recent achievement was securing long term rights to water supply storage from Lake Lanier through a successful agreement with the State of Georgia. This arrangement followed the State's negotiation of a Master Storage Agreement with the U.S. Army Corps of Engineers, marking a significant victory in the longstanding tristate Apalachicola-Chattahoochee-Flint water wars.

Gwinnett County and the Metro Water District collaborate on water policy and implementation, following the guidance of the Metro Water District's 2022 Water Resources Management Plan. The Water Resources Management Plan sets overarching water policies and action items for all Metro Water District jurisdictions. Gwinnett is a technical assistance partner with the Metro Water District and is actively involved in studies to help the region with its water management issues.



*Photo: Lake Lanier
(Gwinnett County Communications)*

HIGHLIGHTS FROM THE METRO WATER DISTRICT'S 2022 WATER RESOURCES MANAGEMENT PLAN

The 2022 Water Resources Management Plan focuses on five categories of action items:

- 1 Integrated Water Resources Management
- 2 Water Supply and Conservation (WSWC)
- 3 Wastewater Management
- 4 Watershed Management
- 5 Public Education

Action items that are particularly germane to Gwinnett County are provided below:

INTEGRATED ACTION ITEM 1:

Conduct an annual meeting with local watershed management staff and land use planning and zoning staff on issues related to watershed management, as they are linked to land use planning and decisions.

Consider holding this meeting more frequently, particularly during updates to the local Comprehensive Land Use Plan (CLUP).

INTEGRATED ACTION ITEM 5:

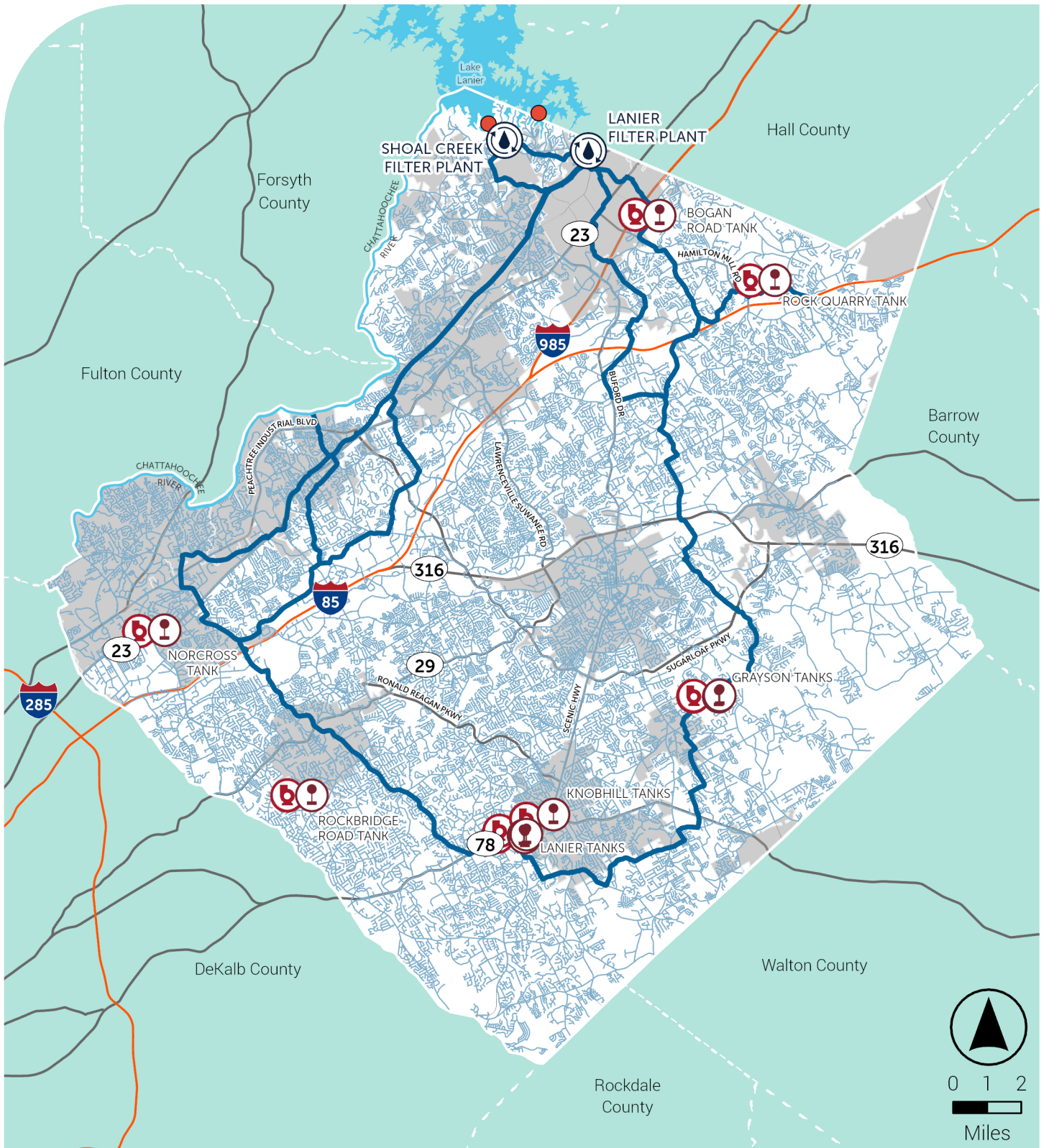
Each local government shall coordinate with the local wastewater provider and develop and maintain sewer connection policies, including policies addressing redevelopment and conversion of septic systems to sewer service.

INTEGRATED ACTION ITEM 13:

Coordinate integrated water supply uses and the return of highly treated wastewater to Lake Lanier and Allatoona Lake to support the long term, sustainable use of water from these reservoirs and their watersheds. Successful implementation of large scale indirect potable reuse at Lake Lanier requires close coordination among local water providers, wastewater providers, District staff, and relevant regulatory agencies.

WSWC ACTION ITEM 8:

Each local government shall adopt by January 1, 2024 and thereafter maintain the Metro Water District – Water Efficiency Code Requirements as a local amendment to the Georgia State Minimum Standard Plumbing Code. The new amendment will require the use of more efficient fixtures, appliances, and landscape irrigation system technologies in all new installations. This Action Item expands and adds to the landscape irrigation system design requirements from the 2017 Plan by applying many of the requirements to all systems and not just large landscapes.



Legend

- Intake
- ⓑ Booster Pump
- Ⓢ Filter Plant
- Ⓣ Tank
- Water Mains
- 30" diameter or more
- Under 30" diameter

FIGURE 5-7. WATER INFRASTRUCTURE FACILITIES

DRINKING WATER INFRASTRUCTURE AND PLANS

As noted in the prior section, Lake Lanier is Gwinnett County's sole water supply source, and the County treats all water it retrieves from the lake at its two water filter plants: the Lanier Filter Plant and the Shoal Creek Filter Plant. Protection of the water supply is a top priority of the Gwinnett community.

The Water Tower, a research and innovation hub in Gwinnett, has committed to supporting the health of Lake Lanier. The Water Tower's 5-Year Research Plan focuses on studying the impacts of community growth and climate change on the lake, such as nutrient pollution and harmful algal blooms. This research will benefit Gwinnett greatly.

Gwinnett County DWR owns and maintains over 4,000 miles of water distribution pipes. Figure 5-7 shows the major components of the water supply and distribution system. DWR's 2050 Distribution System Master Plan guides its priority investments for the next few decades. This living document is monitored for trends that indicate the need for more timely or specific improvements. Many of the projects in this plan are geared toward managing pressure in the system, improving system performance, increasing operational efficiency, and improving water quality.



*Photo: Lanier Filter Plant
(Gwinnett County Communications)*

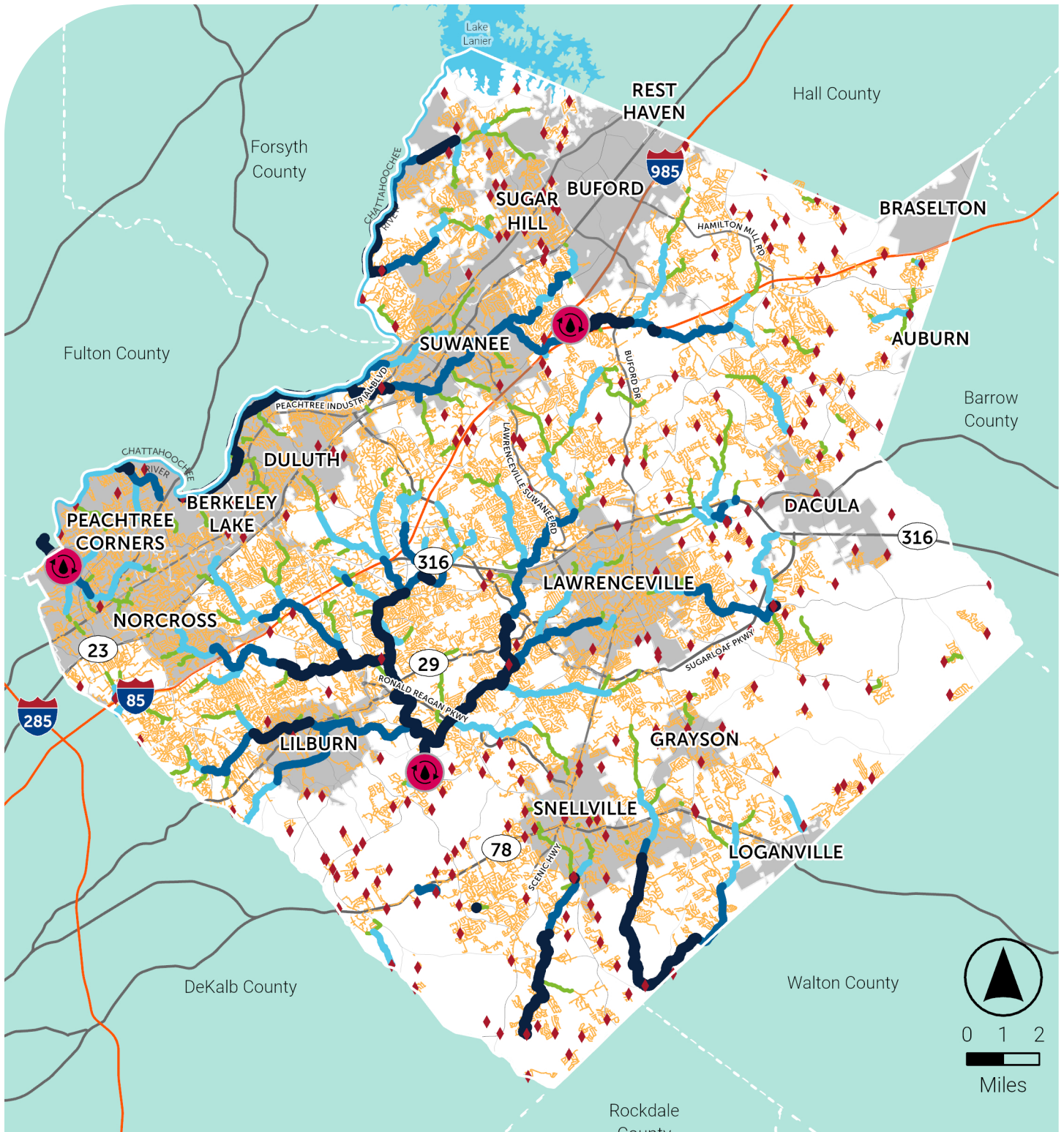


FIGURE 5-8. WASTEWATER INFRASTRUCTURE FACILITIES

Legend

- ◆ Pump Station
- ⊕ Wastewater Treatment Plant

Sewer Gravity Mains

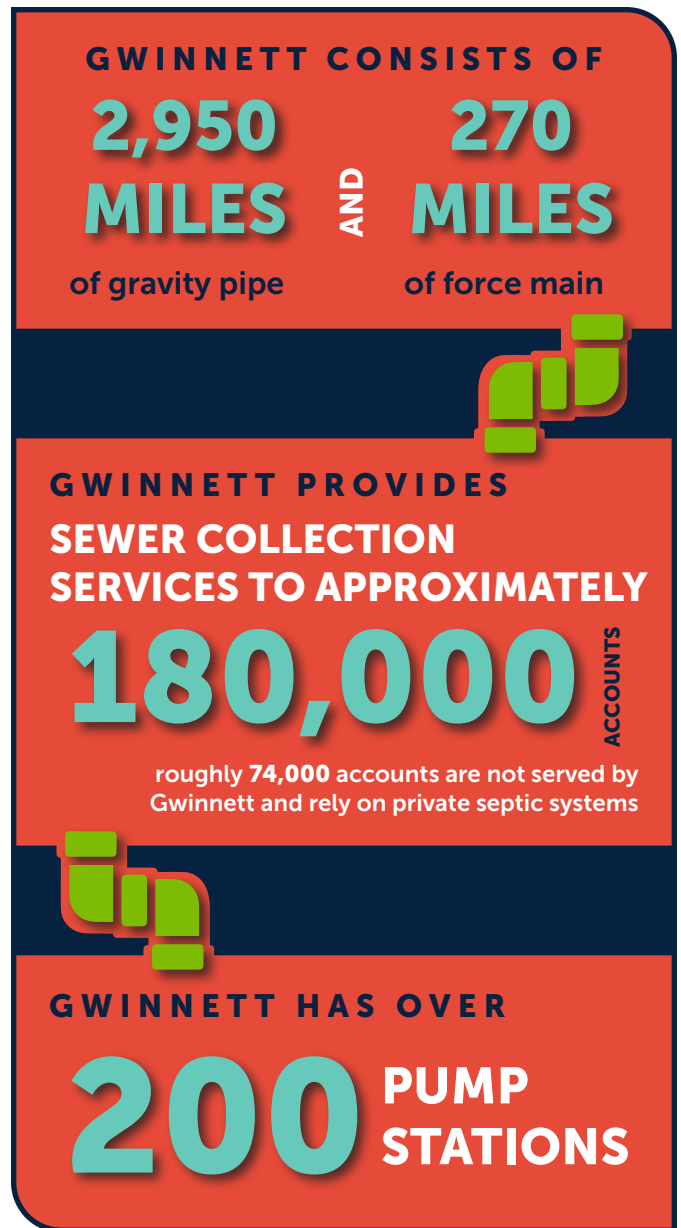
- 6-10 inches
- 12-16 inches
- 18-24 inches
- 27-36 inches
- 42-72 inches

WASTEWATER INFRASTRUCTURE AND PLANS

The Gwinnett County Wastewater Collection System (Figure 5-8) consists of about 2,950 miles of sewer gravity mains and 270 miles of force mains. The County provides sewer collection services to approximately 180,000 customer accounts. Roughly 74,000 water customer accounts in Gwinnett are not served by public sewer and rely on private septic systems. The highest concentrations of septic tanks are found in the Yellow River sewer basin, located in south Gwinnett.

Gwinnett County's sewer collection system is complex due to the large topographic variation throughout Gwinnett. With an elevation difference of about 560 feet between the lowest point and the highest point in the county, it is difficult to design wastewater facilities that will flow naturally by gravity. As such, the County has over 200 pump stations, which require energy and chemical costs to operate. New development often relies on the developer to install new sewage pump stations, which has implications for the cost of development as well as increased operational costs for the County. DWR consistently seeks opportunities to eliminate pump stations whenever feasible to reduce operational costs.

The County currently operates three water reclamation facilities for treating wastewater and returning high quality effluent to lakes and rivers. The Collection and Treatment Master Plan (2020) analyzes the needs for additional treatment capacity, sewer line expansions, collection system rehabilitation, and more. Gwinnett County will likely need to build a fourth wastewater treatment facility as its population continues to grow. Sewer planning efforts have



two primary objectives: 1) maintain efficient operations of existing infrastructure, and 2) respond to community needs for infrastructure expansions where it is feasible from a technical and cost effectiveness standpoint. Master planning helps DWR to meet its mission of providing superior water services at an excellent value.

STORMWATER INFRASTRUCTURE AND PLANS

Stormwater infrastructure, planning, and policies in Gwinnett, as in many jurisdictions, are complex. With approximately 1,500 miles of stormwater pipes conveying stormwater to the nearest waterbody, the County's framework is multifaceted. Alongside the traditional gray infrastructure, Gwinnett's stormwater system includes over 3,000 stormwater management best practices such as detention ponds and bioretention areas. Owners of these BMPs are required to enter maintenance agreements with the County that outline inspection and maintain activities the owner must perform to ensure these assets function as designed.

Gwinnett County's Municipal Separate Storm Sewer System permit mandates the inspection and upkeep of stormwater Best Management Practices, regardless of public or private ownership. Ownership and access, as well as the significant number of BMPs across the County, make inspection and maintenance a challenge.

The County operates a stormwater utility to assess a fair fee for property owners, relative to the impact their property has on the stormwater system, determined by impervious surfaces. This provides a dedicated stream of funding for the County to address drainage system maintenance, achieve compliance with federal, state, and local regulations, and fund drainage related construction projects.

The stormwater utility includes several types of water stewardship credits, which apply as discounts on property owners' stormwater utility fees. Below are examples of several available stormwater credit activities, with varied discount percentages:

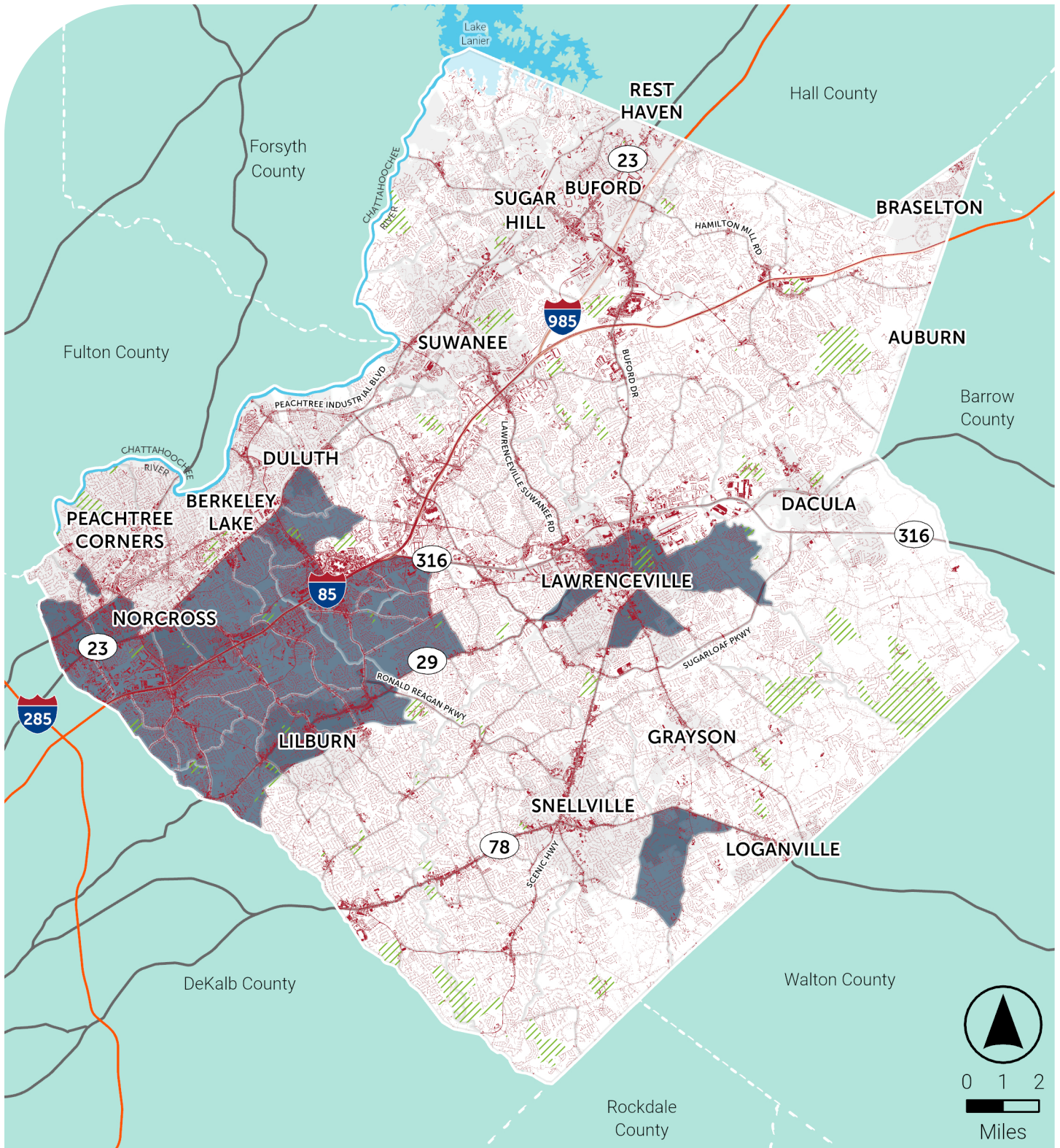
- Engagement in an approved Water Stewardship activity for a minimum of 4 hours, such as stenciling storm drains, engaging in a stream cleanup project, or attending and successfully completing an Adopt-a-Stream training course
- Participation in a training or workshop to learn about water quality and stormwater runoff
- Involvement in a streambank restoration cleanup
- Placement of a property into a conservation easement
- Installation of automatic sensor sprinklers
- Installation of a rain barrel

New developments and redevelopments must meet both water quality and volume management requirements of the UDO, which are further explained through the Gwinnett County Stormwater Management Manual. This manual has strong policy provisions, many of which exceed the Georgia Stormwater Management Manual's policies.



*Photo: Green infrastructure at Collins Hill Library
(Southeast Stormwater Association, c/o W K Dickson)*

DWR recently conducted two audits of the County’s policies to identify barriers to green infrastructure implementation. As tools for benchmarking Gwinnett’s policies, DWR used the EPA Water Quality Scorecard and the Center for Watershed Protection’s Code and Ordinance Worksheet Scoring Spreadsheet. On the EPA Scorecard, Gwinnett received relatively low scores (60 percent or less of the best practices were achieved) in two specific areas: “Design Complete, Smart Streets that Reduce Overall Imperviousness” and “Encourage Efficient Provision of Parking.” The audits indicated a few policy areas where the County could strengthen its provisions, including street design, open space design, and land conservation incentives. Particularly, the County currently does not promote green infrastructure in the public right of way, due to maintenance concerns. An interdepartmental policy charette (with DWR, P&D, CS, and GcDOT) would be a useful exercise for identifying cost effective and low maintenance solutions.



Legend

- Disadvantaged Communities (Justice40)
- Impervious Surface
- Parks

FIGURE 5-9. IMPERVIOUS SURFACES

CLIMATE HAZARDS AND IMPERVIOUS SURFACE

The county's disadvantaged Census tracts (as earlier introduced under the Environmental Justice section) have a disproportionate share of the County's impervious land cover. Approximately 19 percent of the land in the disadvantaged communities is impervious, compared to approximately 14 percent impervious land area in the nondisadvantaged communities. Consequently, some residents are more vulnerable to the impacts of climate change, including increasing rainfall, nuisance flooding, and the intensifying urban heat island effect due to rising average daily temperatures, especially during warmer months. Many of the Justice40 areas in Gwinnett overlap with areas known for large shopping centers, industrial warehouses, and older neighborhoods. These developments were likely implemented before the County introduced its more stringent stormwater management protocols. This underscores the need for redevelopment or retrofits to improve these communities through the incorporation of green stormwater infrastructure. Green infrastructure can bring many benefits, such as cleaner water and air, cooler temperatures, beautification that leads to economic investment, and more.

WHAT WE LEARNED FROM STAKEHOLDERS

Engagement with residents on infrastructural issues focused on protection of natural resources, especially tree canopy. County staff also highlighted the importance of aligning future development with wastewater capacity. Survey questions asked residents about what sustainability actions Gwinnett County should prioritize. Through the community education Speaker Series, national experts connected community design with sustainability and responded to audience questions and feedback for Gwinnett's unique context. For a full summary of engagement, see Appendix C.

COMMUNITY PREFERENCES: SUSTAINABLE INFRASTRUCTURE

Protect natural resources, including trees, waterways, and open space

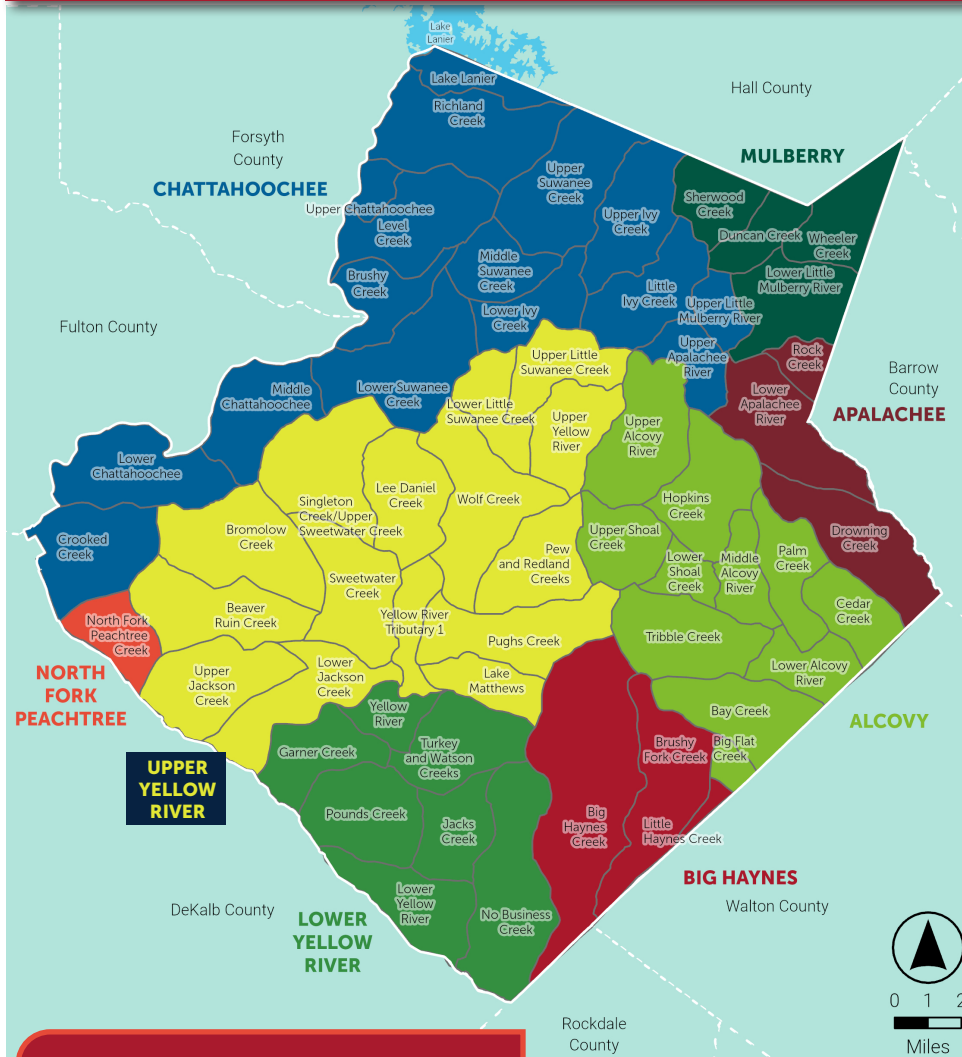
Protect drinking water quality

Align future land use planning with sewer capacity and expansion plans

Integrate green infrastructure into public space

UPCOMING INITIATIVES AND PROJECTS

SEWER BASIN STUDIES



DWR is using a systematic approach to study the entire county's sewer assets by sewer basin areas. The objective of these studies is to evaluate the impact of land use and development, particularly more intense development, on the sewer system's capacity, as well as new infrastructure to support growth and development. The full county's assessment is slated to be complete in 2024.

FIGURE 5-10. GWINNETT COUNTY SEWER BASINS

COUNTYWIDE TRAILS PLAN



**Gwinnett
TRAILS**

COUNTYWIDE TRAILS MASTER PLAN

APRIL 2018

Photo: Gwinnett County Trails Plan

As further discussed in the Community Resources Element, the Gwinnett Countywide Trails Plan is an ambitious plan to provide more mobility connections throughout the county via different types of trails and greenways. While the County already boasts several trails, these facilities tend to be within parks and are not connected to a broader system of trails. The proposed trail system will expand access to nature, offer pedestrian and cycling routes, and contribute to climate change mitigation through benefits like enhanced stormwater management and improved air quality.

The plan represents a great opportunity for the County to drive more sustainable development. Though the plan relies heavily on funding and partnerships, policy tools also play an important role in trail implementation. An innovative approach the County is currently employing to achieve cost savings involves utilizing water and sewer easements on private property as trail access easements. The County already has a policy to pursue public access easements (to provide for trail use) on any new water or sewer easements, as evidenced by the Eastern Regional Infrastructure Project.

EASTERN REGIONAL INFRASTRUCTURE PROJECT



(Source: Gwinnett County Communications)

The Eastern Regional Infrastructure Project is a significant undertaking to upgrade and expand water and sewer services in eastern Gwinnett, near the Barrow County border. It includes upsizing five miles of water mains and installing six miles of new gravity sewer, seven miles of parallel sewer force mains, and a 14 million-gallons-per-day regional pump station. In addition to water and sewer infrastructure, the project also includes five miles of new trails, with a trailhead at Harbins Road. The Board of Commissioners awarded a \$125 million design build contract in 2021, and the project is anticipated to be completed in 2024.

This regional infrastructure project will facilitate new development in the area, particularly the master planned Rowen Knowledge Community. Both the County and the Rowen Foundation have been very intentional about sustainable site development and construction practices to mitigate harm to natural systems like the Apalachee River. The County is pursuing certification through the Institute for Sustainable Infrastructure's Envision Rating System for the infrastructure components of the project. This rating system encourages high performing, sustainable infrastructure that reduces negative impacts on the community and the environment.

THE WATER TOWER



Photo: The Water Tower
(Source: Gwinnett County Communications)

Gwinnett County helped establish The Water Tower to lead the way on regional water related issues and innovation. One of The Water Tower's major research projects is the Five Year Research Plan for Lake Lanier. This research will build on many of the County's previous efforts and studies related to the Lake's management.

Going forward, The Water Tower's goal is to become an international destination for water innovation. One of their key strategies is encouraging R&D companies or other water startups to locate their operations at The Water Tower campus. The Water Tower requires all businesses that locate on their campus to meet the following criteria:

- Conducting industry leading research on water science, including technologies to monitor and treat water;
- Creating and sustaining partnerships with universities, foundations, utilities, and private industry in order to facilitate the research and application of water science;
- Providing economic opportunities for County residents in the form of workforce development programs; and
- Educating the general public on the importance and impact of water and the work performed at The Water Tower.

Needs & Opportunities

The following water infrastructure and natural resources needs and opportunities emerged as priorities based on the analysis of existing systems, engagement with key stakeholders, and other decision makers within Gwinnett County. They are listed in no particular order.

NEEDS

1 ALIGNMENT BETWEEN LAND USE POLICY AND SEWER PLANS

DWR has a robust planning effort underway to identify infrastructure and natural environment concerns across the county through subbasin studies. Because these subbasins are at a small geographic level of analysis, the County will be able to glean area specific insights to inform future planning. The Department of Planning and Development should coordinate closely with DWR to identify policy changes that may be needed based on the findings of the subbasin studies. P&D and DWR should also align their planning efforts to prioritize infrastructure improvements need based on smart growth priorities and land use policy changes identified in the 2045 Unified Plan.

2 INCLUSION OF CLIMATE CHANGE EFFECTS IN INFRASTRUCTURE PLANNING

The federal government is funding scientific research that provides reliable climate change data, trends, and impacts. Gwinnett County should monitor this research and incorporate findings and best practices into its planning practices to help ensure that capital improvements are designed to be resilient to or help mitigate anticipated changes to weather patterns. The County should also coordinate closely with The Water Tower to develop a Gwinnett specific approach to adaptation and resiliency. As new developments are built and changes to the natural environment and weather patterns occur, The Water Tower can support the County's analysis of infrastructure systems and the natural environment. For instance, the Water Tower and DWR could work together to update the County's future flood risk model to account for storm pattern changes in addition to land use changes.

3 PROTECTION OF SENSITIVE ENVIRONMENTAL AREAS

Gwinnett County's most critical natural assets, Lake Lanier and the Chattahoochee River, should continue to be protected. The County should also scale up protection and restoration for wetlands and impaired streams. Gwinnett County and partner organizations such as Gwinnett Clean and Beautiful have always strived to be good stewards of the environment. As future development intensifies, it is necessary to study hydrologic impacts to natural water systems. The County should continue monitoring land cover changes and the impact on water quality in the county's lakes, rivers, wetlands, and streams.

4 ALIGNMENT OF STORM-WATER REGULATIONS WITH MIXED USE DEVELOPMENT REALITIES

Managing stormwater within an urbanizing county like Gwinnett presents a major regulatory challenge, especially as land for development grows scarce. Redevelopment projects are rarely as straightforward as new builds on greenfields. The County should consider alternative approaches to stormwater requirements that promote environmental health while also helping the County and its development partners create great places.

5 CONSISTENT DISTRIBUTION OF TREE CANOPY

Trees are a vital type of sustainable infrastructure. As discussed previously, tree canopy cover is not evenly distributed throughout the county, so future tree planting initiatives should seek to address this inequity.

6 EXPANSION OF GREEN INFRASTRUCTURE

Sediment and erosion control is important to mitigate impacts of land disturbance during construction. Large development sites can be difficult to manage and at times overwhelms well intended controls, particularly stream buffers. Stormwater management is needed to alleviate impacts of increased impervious area. Increased stream buffers for large development sites and the continued use of green infrastructure best management practices are recommended to help address these issues, particularly in redevelopment sites that may lack stormwater controls due to the age of the development.

7 IMPROVED BMP MANAGEMENT ON PRIVATE PROPERTY

Property owners often neglect proper maintenance activities to ensure the functionality of their BMPs. DWR has already established a comprehensive education program, encouraging landowner engagement through credits on their stormwater utility fees. The County should continue in offering these workshops and promoting wider participation.

OPPORTUNITIES

1 IMPROVING INFRASTRUCTURE TO ACCOMMODATE INFILL AND REDEVELOPMENT

The 2045 Unified Plan communicates the priority of redevelopment and infill areas through the Future Development Map. It is essential that DWR continues to invest in its existing systems to expand the useful life and capacity of the infrastructure so that the County is well positioned to accommodate redevelopment and infill projects.

2 COORDINATING BETWEEN DEPARTMENTS TO STRENGTHEN DEVELOPMENT REVIEW PROCESS

The plan review process already necessitates that both DWR and P&D review developments to ensure that development plans adequately plan for water and sewer connections, as well as stormwater quantity and quality control measures. Staff from both departments should collaborate to identify common issues and potential policy solutions. More performance standards could help bring more quality development. Both departments should coordinate in advance to develop design and permitting guidance specific to infill and redevelopments related to water metering, sewer connection, and stormwater management.

3 STRENGTHENING WETLANDS AND WATERSHED PROTECTION

Gwinnett County's UDO and corresponding plan review checklists could be strengthened by more clearly defining certain definitions related to watersheds and wetlands. For instance, the Big Haynes-Alcovy River Water Protection Overlay District and the Rockdale Reservoir 7-Mile Buffer are both terms used to describe the same area of Gwinnett where certain development standards are in place. A consistent term and boundary need to be considered during plan reviews conducted by P&D and DWR. Additionally, the UDO Section 210-50.6 mentions that primary conservation space shall include wetlands as determined by the National Wetlands Inventory, and Section 500-20.1 states that the standards are in addition to State/Federal regulations. These provisions could be strengthened if the County removes the reference to the National Wetlands Inventory and instead delineates its own wetland protection area overlay.

4 EXPANDING TREE CANOPY ON PRIVATE LANDS

Many local governments around the Metro Atlanta region have partnered with Trees Atlanta on successful front yard canopy tree planting programs. Gwinnett County should explore this opportunity with Trees Atlanta or other Gwinnett specific organizations to enhance its tree canopy, mitigate rising temperatures, improve air quality, promote a culture of stewardship, and provide opportunities for workforce development.

5

INVESTING IN LEGACY ENVIRONMENTAL JUSTICE COMMUNITIES

The Justice40 measure for disadvantaged communities considers various types of environmental burdens, such as legacy pollution and flooding risk. As reviewed in the prior section, Gwinnett County’s Justice40 communities have disparate access to environmental assets, such as trees. Green amenities may include green stormwater infrastructure, trees, parks, etc. The federal government is making historic commitments to advance equity through federal funding programs on the Justice40 Initiative Covered Programs List. The County should look for every opportunity to drive investment that addresses its environmental inequities and expands access to green amenities. State agencies such as DCA and the Georgia Environmental Finance Authority often release new notices of funding availability, so Gwinnett staff should monitor these opportunities as they arise.

6

PURSUING SUSTAINABLE DESIGN FOR PROJECTS ACROSS SECTORS

Multiple County departments are experienced with pursuing sustainable design certifications through third party rating systems. More communication among departments may help identify opportunities for additional project types to achieve certifications.



Goals & Best Practices

Infrastructure is foundational for the development of Daily Communities in Gwinnett County. Each of Gwinnett’s diverse communities must be supported by adequate water and sewer capacity in order to sustain a mix of land uses. Additionally, stormwater infrastructure is fundamental for protecting property; particularly, green stormwater infrastructure is a key tool for climate resiliency. In Gwinnett’s endeavor to promote sustainable Daily Communities, understanding how water moves within a site is pivotal—spanning from drinking water to wastewater, stormwater, and potentially reuse water. New developments need to be planned with early input from the County’s staff that are intimately familiar with the ridges, creeks, and other elements of the natural water system.

ALIGN WATER AND WASTEWATER PLANNING/INVESTMENTS WITH THE DAILY COMMUNITY FRAMEWORK

DWR should refer to the Future Development Map as it conducts master plan updates for water and sewer infrastructure. In addition, the County should consider new policies or fees to help incentivize growth in well served areas. When developments are built on the fringe of the existing wastewater system’s extents, the community takes on a greater burden of the ongoing operational and maintenance costs to serve that new development. DWR and P&D need to promote smart growth so that services can be provided at an affordable rate. This overarching best practice should be pursued in the following initiatives:

1 USE POLICY AND RATE SETTING TOOLS TO INCENTIVIZE GROWTH IN AREAS WELL SERVED BY EXISTING WATER AND WASTEWATER INFRASTRUCTURE

Growth management strategies, such as service delivery boundaries and system development charges, are essential tools for smart growth. The EPA and Smart Growth America often publish research on the fiscal impacts of smart growth strategies. Based on the land use framework established in the 2045 Unified Plan, Gwinnett County should consider fee structure adjustments that incorporate location dependent tap fees.

2 ADJUST STORMWATER REGULATIONS TO PROMOTE CREATIVE SOLUTIONS FOR REDEVELOPMENT PROJECTS

Redevelopment of disturbed land is often less straightforward than greenfield development, and thus requires more creativity when addressing stormwater impacts. Opportunities to adjust stormwater regulations in exchange for creative solutions—such as green infrastructure BMPs or improving upon natural features already on site—can reduce pain points for developers and County staff interested in cultivating redevelopment within Daily Communities.

3

PROMOTE COMMUNITY DESIGN CHOICES THAT RESULT IN EFFICIENT WATER USE

Design strategies, such as compact developments, are often more cost effective for both the developer and the County, as they make efficient use of space. If the development aligns with new infrastructure, opting for a compact design over a dispersed one is likely to yield cost savings during installation and across its lifespan, owing to the reduced length of pipe required by the compact layout. Additionally, the end user—the property owner—will benefit from a smaller lawn, resulting in watering cost savings. Consequently, compact developments impose fewer demands on both the water distribution and wastewater collection systems.

CASE STUDY:

LOCATION DEPENDENT CONNECTION FEES—SACRAMENTO, CALIFORNIA

For new developments to connect to the sewer system, the Sacramento Regional County Sanitation District charges different fees based on location. For both new residential and commercial development, the connection fee for developments outside of the current collection system's limits is about double the fee charged for new developments located in the existing service area. After Regional San implemented this fee structure adjustment, it was better able to manage the pace of the community's growth.

Photo: Regional San Logo (Source: RegionalSan)



REGIONALSAN

CASE STUDY:
ENVISION UTAH

Envision Utah is a nonprofit organization whose mission is to create and sustain communities that are beautiful, prosperous, healthy, and neighborly for current and future residents. Since 1997, Envision Utah has worked with communities across the state to understand the implications of their policies and to promote growth management strategies. Model ordinances, a growth management guide, and other tools for integrating water and land use are available on the organization’s website.

Envision Utah conducts research to inform its planning toolkits. One of their early studies in 1997 has been validated by how the pattern of development has played out in the Greater Wasatch Front (10 county region). This study analyzed various development scenarios, ranging from low density, auto oriented to very compact, transit oriented development. The researchers found that the compact, transit oriented development had substantial savings with regard to water demand and cost of infrastructure. The following chart summarizes the findings.

| | APPROACHES | BASELINE | QUALITY GROWTH | QUALITY GROWTH SAVINGS |
|-------------------------------|--|-----------------------------------|-----------------------------------|------------------------|
| Water Demand | <ul style="list-style-type: none"> • Changes in lot size • Different allocation of population and employment across area • Use of conservation pricing (although overall price of water did not change) | 298 gallons per day per capita | 267 gallons per day per capita | 10.4% |
| Cost of Infrastructure | <ul style="list-style-type: none"> • Reduced length of new pipes required • Expanded length of new pipes required • Comprehensive use of existing infrastructure through infill development | \$2.629 billion (in 1999 dollars) | \$2.087 billion (in 1999 dollars) | 20.6% |

Figure: Envision Utah Quality Growth Impacts (Source: Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies, EPA)



PLAN FOR SUSTAINABLE AND RESILIENT INFRASTRUCTURE SYSTEMS THAT PROTECT ENVIRONMENTAL ASSETS

Sustainable growth is very closely tied to infrastructure planning and management. As Gwinnett County plans for new infrastructure, it is important to pursue sustainable design choices that minimize impact on the area's natural features. It is also critical to design for resiliency considering the extreme weather resulting from climate change. The County should continue to partner with the Metro Water District and neighboring jurisdictions to share data and inform best practices for the region's benefit. Regional coordination is paramount for protecting shared resources, such as Lake Lanier.



UTILIZE FORWARD LOOKING CLIMATE DATA TO INFORM INFRASTRUCTURE FACILITY PLANNING

Resiliency to future climate impacts is essential for maintaining high quality water services. Currently, the County uses ATLAS 14, a precipitation frequency dataset from the National Oceanic and Atmospheric Administration, to support its decisionmaking for infrastructure, such as design storm calculations. NOAA ATLAS 15 is a new national precipitation frequency standard, developed with funding from the 2022 Bipartisan Infrastructure Law. The adjustments from ATLAS 14 to ATLAS 15 account for climate change. Gwinnett County DWR should explore the implications of adjusting its ATLAS 14-informed planning calculations to use the ATLAS 15 estimates. New climate realities could impact when infrastructure exhausts its useful life. Thus, it is important to use climate data not only to inform future investments, but also to understand if existing infrastructure facilities need improvements to extend the useful life.



IMPLEMENT BEST PRACTICES OUTLINED IN THE METRO WATER DISTRICT'S 2022 WATER RESOURCES MANAGEMENT PLAN, AND SHARE DATA TO INFORM FUTURE REGIONAL WATER PLANNING ACTIVITIES

Local governments within the Metro Water District's service area are required to implement certain management actions as a matter of compliance, while Georgia EPD enforces compliance through permits and audits. Gwinnett County should also continue serving as a technical assistance partner with the Metro Water District to inform future planning methods and recommendations. The 2022 Water Resources Management Plan was the first edition of the Metro Water District's regional water plan to include a stormwater forecast. The Metro Water District recognizes that this unique stormwater forecast will require periodic adjustments as more local data becomes available to validate its assumptions.

ATLANTA CASE STUDY:

STORMWATER MASTER PLAN STAKEHOLDER AND PUBLIC ENGAGEMENT—DECATUR, GEORGIA

The City of Decatur also serves as a Technical Assistance Partner with the Metro Water District. The City has been a leader in stormwater management and planning. From 2018 to 2020, the City conducted a stormwater master planning process that extensively engaged with stakeholders and the general public. Several materials from the master plan engagement activities are still accessible via the DecaturNext webpage. Some unique engagement strategies that were implemented during this planning process include: 1) a walking tour of the stormwater facilities in the Oakhurst neighborhood, 2) a public input map survey, and 3) tradeoff discussions focused on scenarios with different levels of development intensity. DWR and P&D may be able to enhance their stormwater management programming and planning by emulating the City of Decatur's strategies.

Stormwater Academy: Oakhurst Walking Tour



Oakhurst Park

- Sign in
- Pick up handouts

2

East Lake Drive

- HUD Drainage Improvements
- Detention Pond/Dog Park



3

Sugar Creek Channel/Basin

- Concrete lined stream channel

4

3rd Avenue

- Local Drainage Problem
- Flume discharge to road



5

Maxwell Street

- Residential land use changes and impervious surface increases

6

Oakview Rd at Underwood St

- Public/Private infrastructure



7

Oakhurst Streetscape

- Green Infrastructure project



8

City SW Project

- Park facilities project and SW mitigation



Image: Oakhurst Walking Tour for Stormwater Master Planning Process (Source: DecaturNext)



REDUCE IMPERVIOUS SURFACES

Impervious surfaces modify the functioning of the natural hydrologic system. Places with more impervious land cover tend to have greater runoff management volumes to control, as well as issues with stormwater pollution that ends up in local water bodies. While the natural system has already been modified by development in much of the county, it is possible to reintroduce green infrastructure elements that mimic the predeveloped conditions so that stormwater can be better managed. As more stringent regulations are issued from the State for protecting the quality of the county's streams, the County needs to ensure that nature-based solutions are a part of its watershed improvement approach.

1

PROMOTE GREEN INFRASTRUCTURE RETROFIT OPPORTUNITIES, PARTICULARLY OF SURFACE PARKING IN DISADVANTAGED COMMUNITIES

Impervious land cover is an issue that disproportionately impacts disadvantaged communities. This is not unique to Gwinnett County; development patterns across the country often result in concentrations of industrial land uses in lower income areas. Communities are now confronting the wrongs of the past to bring forth more equitable development. One way to do so is by introducing more greenery into these communities. Green infrastructure retrofits, either funded by the County or in partnership with private entities, can be restorative for environmental justice communities.

Community involvement in the planning for green infrastructure can be very impactful. Retrofit projects should be developed with the community to ensure that they are designed to meet the community's needs. The Equity Guide for Green Stormwater Infrastructure Practitioners, coauthored by the Green Infrastructure Leadership Exchange and Greenprint Partners, is a great resource for engaging communities in the green infrastructure design process.

2

ENCOURAGE TREE PLANTING AS A GREEN INFRASTRUCTURE PRACTICE

Gwinnett County has Tree Preservation and Replacement Regulations within its UDO, which is a great tool for preserving the existing tree canopy to the extent possible during new development; however, the County does not currently have a voluntary program for increasing tree canopy through plantings on existing properties. Trees are an invaluable asset, as they provide carbon sequestration, stormwater filtering and runoff control, cooling effects to the environment, and more. Gwinnett County should look to both ARC Green Communities and Tree City USA for reference on ways that it can boost its tree canopy enhancement efforts.

3

BUILD CAPACITY FOR MAINTENANCE OF PRIVATE GREEN STORMWATER INFRASTRUCTURE FACILITIES THROUGH COMMUNITY WORKSHOPS AND TRAININGS, WORKFORCE DEVELOPMENT PROGRAMS, AND PUBLIC PRIVATE PARTNERSHIPS

Because stormwater facilities are distributed across private properties around the county, it can be challenging to monitor and ensure that the facilities are in good working order. Sometimes, property owners are not aware that they are responsible for maintaining the stormwater BMPs on their property. Gwinnett County already offers a number of workshops to teach the public about stormwater management, but it will continually be necessary to find creative ways to build capacity for stormwater maintenance. Some communities have worked with private entities – both for profit companies and nonprofit organizations – to further build capacity for stormwater maintenance. The case study on the opposite page provides details about Atlanta CREW, a workforce development program that provides training on proper green infrastructure maintenance.

CASE STUDY:

FRONT YARD TREE PLANTING PROGRAM—DEKALB COUNTY, GEORGIA

Trees Atlanta, a nonprofit organization, currently partners with the following municipalities to administer front yard tree planting programs: City of Atlanta, City of Sandy Springs, City of Brookhaven, City of Decatur, City of Dunwoody, and DeKalb County. These local governments each have an agreement with Trees Atlanta, whereby Trees Atlanta provides a certain number of trees to residents who apply for a front yard tree planting. Depending on how the program is set up, the local government can subsidize the cost, even making the trees available at no cost to the resident.

DeKalb County’s partnership with Trees Atlanta is branded as Releaf DeKalb. DeKalb County has taken their program to the next level—Releaf DeKalb I was focused on front yard tree planting at residences, but Releaf DeKalb II expanded the program to include public properties. DeKalb

County sets up service days for the public property plantings and coordinates with Trees Atlanta to encourage volunteerism. In the first two months of 2023, DeKalb Releaf II had already planted 214 trees in the public rights of way. Gwinnett Department of Community Services, in conjunction with other County partners, should look into the feasibility of implementing a similar program in Gwinnett.



*Photo Source:
Releaf DeKalb (Source: DeKalb County)*

CASE STUDY:

ATLANTA CREW GREEN INFRASTRUCTURE WORKFORCE DEVELOPMENT PROGRAM

Atlanta CREW, which stands for Culture-Resilience-Environment-Workforce, is a free workforce development program that operates in the City of Atlanta, particularly in the Utoy Creek watershed. It is a partnership of Southface Institute and West Atlanta Watershed Alliance. This program provides hands on training to community members to be able to install and maintain a green infrastructure facility. In addition, the program partners with landscaping employers to help their newly trained participants land job opportunities.

The City of Atlanta's Water Equity Roadmap includes Atlanta CREW as a promising practice. This callout helps to elevate the good work that these nonprofits are doing to expand community-based green infrastructure. Atlanta CREW's green infrastructure installations are unique because they are designed with cultural and artistic visions.



Photo: Atlanta CREW (Source: Southface Institute)

CASE STUDY:

STORMWATER QUALITY PROJECTS INCENTIVE GRANT PROGRAM— LEXINGTON, KENTUCKY

Through the Stormwater Quality Projects Incentive Grant program, Lexington-Fayette Urban County Government provides a mechanism for sharing costs for green infrastructure installations with the private sector. Eligible applicants include businesses, nonprofit organizations, schools, churches, homeowners associations, and other incorporated community groups. By participating, these entities can earn a credit on their Water Quality Management Fee (similar to Gwinnett County's Stormwater utility fee). The Incentive Grant Program provides three different types of grants depending on the purpose and type of applicant. Businesses, schools, churches, and nonprofits can apply for infrastructure retrofit projects, including but not limited to pervious pavement or bioretention features such as rain gardens. Design and construction projects can apply for a maximum of \$360,000 with a 20 percent cost share, which can be met through an in kind donation. Feasibility studies can be funded as well, with a maximum grant award of \$55,000 including a 20 percent cost share.

The second type of Incentive Grants support educational programming either in school curriculums or through community outreach. These grants are also available for businesses, churches, schools, and nonprofits. If the application meets the program criteria, the applicant can be awarded \$3,000 with no cost share, and up to \$40,000 with a 20 percent cost share. The third type of Incentive Grants are available to neighborhood groups such as homeowners' associations. These grants can support both physical improvements (such as rain gardens) as well as educational or volunteer programming such as stream cleanups. Applications that meet the program criteria can be awarded a maximum of \$120,000 with a cost share of 20 percent.

The webpage for the Incentive Grant Program shares a number of resources, such as templates for neighborhood associations interested in rain gardens or stream cleanups. LFUCG also shares information about funded projects through an interactive map.

Photo: LFUCG Incentive Grant Case Study (Source: Gresham Smith)

Frontier Highway, a 900-unit multifamily property, implemented green infrastructure retrofits with funding from the Stormwater Quality Projects Incentive Grant Program. It created a water walk consisting of rain gardens, pervious pavers, and educational signage to highlight the site's green infrastructure features. Source: Gresham Smith





FOSTER THE DEVELOPMENT OF GREEN INFRASTRUCTURE AMENITIES THAT PROVIDE MULTIPLE BENEFITS

As daily communities seek to become more vibrant places, green infrastructure is an important component to require of development—particularly, green infrastructure that is designed to function as a community amenity. There is not a one size fits all approach for green infrastructure, but there is a wealth of resources and examples for the development community to reference. For projects both large and small, the County should promote collaboration with the private sector to introduce innovative solutions that yield numerous public benefits.

1

DEVELOP A MENU OF BEST PRACTICES FOR GREEN INFRASTRUCTURE THAT ACHIEVE MULTIPLE BENEFITS

Stakeholders in the 2045 Unified Plan process have expressed that stormwater management BMPs are often selected merely to check the box for water quality and quantity control, per the County's development regulations and Stormwater Management Manual. It is not typical for developers to include green infrastructure elements that can be considered community amenities.

Through this plan, and subsequent policy documents and programs, Gwinnett County can foster more desirable types of green infrastructure. The County should bring together a set of stakeholders to develop a menu of desirable green infrastructure practices. This menu can serve as guidance for developers in the short term. Longer term, the County may consider codifying the menu of options, potentially requiring the fulfillment of a certain number of criteria. Alternatively, the County could incentivize these green infrastructure practices through a County led grant program.

2

PROVIDE TRANSPARENCY ABOUT HOW GREEN INFRASTRUCTURE IS PERFORMING

Public education is a key component of the County's watershed stewardship practices. To inform the public of steps the County has taken to mitigate climate change, a central website hub for education about green infrastructure metrics could significantly contribute to teaching community members about the value of ecosystem services. Interactive maps, dashboards, and other online tools can be utilized to share information in an engaging way.

CASE STUDY:

PUBLIC UTILITIES COMMISSION GREEN INFRASTRUCTURE GRANT PROGRAM—SAN FRANCISCO, CALIFORNIA

The San Francisco Public Utilities Commission developed a Green Infrastructure Grant Program in 2019. All projects must meet minimum performance metrics for stormwater management, but beyond that, the competitiveness of the applications is determined by how well the applicant demonstrates that the green infrastructure will provide multiple benefits. Applicants must meet at least two of the cobenefit categories identified in the Grant Guidebook. The categories are: 1) Environmental Justice, 2) Public Access, Open Space, and Recreation, 3) Community Engagement, Collaboration, and Placemaking, 4) Education and Water Stewardship, 5) Green Infrastructure Job Training, 6) Water Supply, 7) Climate Resilience, and 8) Biodiversity.

The Green Infrastructure Grant is capped at a maximum of \$930,000 per impervious acre managed, or a total of \$2,000,000 per grant. The Green Infrastructure Grant Agreement requires that the property owner maintains the project for 20 years. The maintenance agreement is incorporated as a Declaration of Deed Restriction that is recorded against the property.



Photo: San Francisco Public Utilities Commission Green Infrastructure Grant (Source: SFPUC)

CASE STUDY:

RIVER AUTHORITY GREEN INFRASTRUCTURE DASHBOARD—SAN ANTONIO, TEXAS

Since 2014, the San Antonio River Authority has provided incentives, such as rebates, for the creation of green infrastructure features. The Authority collects information from the projects that it funds, not only for recordkeeping purposes, but also to highlight the data through a public education hub. The San Antonio River Authority's website displays a Green Stormwater Infrastructure Dashboard, with key metrics such as total projects, funding type, volume treated, sediment removed, and bacteria removed. As a part of the dashboard, viewers can zoom in on an interactive map to see where the green infrastructure projects have occurred. By clicking on individual project points on the map, more information about the specific project can be found.

Gwinnett County DWR is experienced with using dashboards to convey information and glean insights. A green infrastructure dashboard would be a great next step for the County to engage the public in its watershed stewardship efforts.

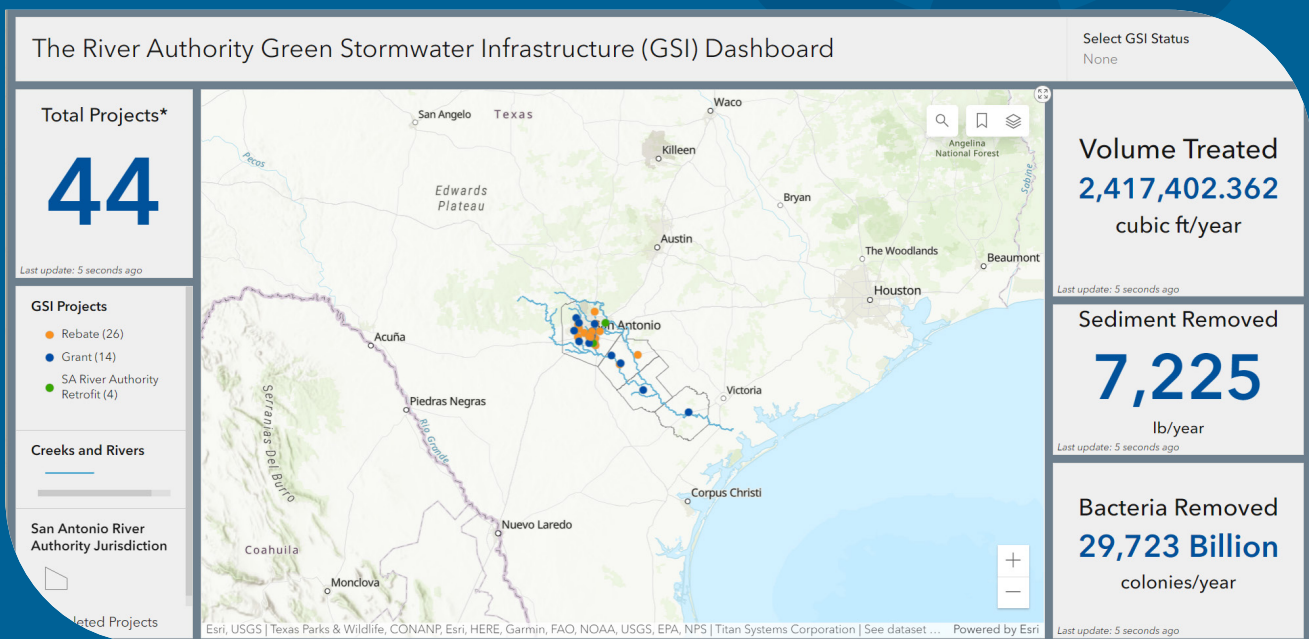


Photo: Green Stormwater Infrastructure (GSI) Dashboard
(Source: San Antonio River Authority)

Implementation

SUSTAINABLE INFRASTRUCTURE IMPLEMENTATION

In this Community Work Program, starting on page 435, each of the goals is broken down into a series of strategies and action steps. Most of these action steps will involve coordination between Gwinnett County Departments, including Planning and Development, Water Resources, and others depending on the location of infrastructure projects.

While these Departments should have ownership over many of these actions, others will require partnerships with other organizations, agencies, and governmental bodies. Gwinnett County's new Sustainability Commission, for example, should be involved in projects that overlap with their strategic pillars. The County should also continue its involvement with the Metro Water District for strong, regional water planning efforts.

