

An aerial photograph of a complex highway interchange. The image shows multiple lanes of asphalt road with white and yellow lane markings. A large concrete overpass structure with a grid-like metal railing spans across the lower right portion of the interchange. The surrounding landscape is a mix of dry, brownish soil and patches of green vegetation. The text 'Chapter 4 Plan Development' is overlaid in the top left corner in a large, bold, green font with a white outline.

Chapter 4 Plan Development



Plan Development.

Gwinnett County as we know it today was largely formed by its rapid growth and suburbanization that began in the 1970s. It was during this period that most of the land use, development, transportation, and employment patterns that are seen today were established. We are now entering an era where the results of this rapid growth pattern are beginning to mature. Having arrived at the point where we have sufficient distance from the patterns and ideas that drove the initial wave of development, we must reassess what the County is now, and how it can serve our future needs. Consider the following:

- Many of the buildings built during this initial state of development are now approaching 40 to 50 years old, toward the limits of their physical and functional obsolescence.
- Shifts in technology and information have significantly changed the way we work, shop, build, and move things, creating challenges in how we relate to our jobs, buildings, and transportation infrastructure.
- Global employment trends have shifted away from many of the jobs that Gwinnett was built for and have created entirely new information and service-based industries that have different space needs and demands.
- Consumer and business preferences have changed. The houses, stores, offices, and workspaces that were attractive and in demand in 1985 do not necessarily meet the needs of today's residents, consumers, tenants, and employers
- The population has changed. As Gwinnett County approaches one million residents, it is significantly more diverse, more complex, and more dense. Much of the County is beginning have the characteristics of an urbanized area without the benefits of urban infrastructure.

One of the key characteristics of this moment in Gwinnett County's evolution is that we are beginning to see the second wave of the County's development, as infill development and redevelopment begin to replace some of the original first wave of development with new buildings, new communities, new activity centers, and new ways of living.

As we consider the Gwinnett County of 2040, the Unified Plan is built on the fundamental premise that so many of the County's functions are interrelated and that viewing them independently is too narrow a focus to understand the influence and opportunities that are present.

Therefore, this Plan Development chapter includes sections intended to be discrete explorations of these individual topics that can stand alone while also collectively implying and describing how they are - as the County's tagline states - "Vibrantly Connected." This Plan Development chapter begins with an examination of Economic Development, a topic that is able to broadly tie so many of these individual elements together, before moving onto Housing, Infrastructure and Community Amenities (which includes elements on Transportation, Water & Sewer, Community Services, and Broadband Access), and Land Use.







Economic Development.

WHAT IS ECONOMIC DEVELOPMENT?

Economic development is the set of policies, programs, and activities that seek to enhance the quality of life of a community by encouraging economic activity, expanding and retaining employment, and supporting a sustainable and stable tax base to fund public investment and government activity.

Economic development has evolved a great deal in recent years. Traditional economic development has always been about providing the workforce, space, and incentives to recruit or retain employers of desired, targeted industries. In recent years, the scope of economic development has expanded to take much greater interest in the larger community outside of the workplace.

Economic development professionals recognize that while traditional economic activities are still fundamental, it is becoming increasingly important to develop the larger community in which companies may choose to operate, including quality-of-life, transportation, education, infrastructure, entertainment, housing, recreation, and public space.

Employers are likewise putting more emphasis on community, recognizing that the environment in which employees live, work, and play is nearly as important as salary and benefits when it comes to employee recruitment.

Contemporary economic development practices and ideas tend to fall into three general categories:

Fundamental Economic Development

Attracting & recruiting employers in targeted industry sectors, focusing on talent and workforce development, and interfacing with community development.

Quality of Life Enhancement

Creating an environment that is pleasant, attractive, vibrant, and sustainable, so that companies, employees, customers, and visitors will choose to live, work, and play there.

Enhancing Buildings and Places

Addressing a community's need for an adequate and attractive supply of space and buildings that meet the demands and needs of current and future employers, employees, and residents.

Gwinnett County has a very well-developed economic development infrastructure, embodied by two key agencies:

Partnership Gwinnett

As the County's public-private economic development initiative, Partnership Gwinnett (PG) is charged with attracting and recruiting employers in targeted industry sectors, ensuring that the county has a well-trained and developed workforce, and encouraging the development of community relationships between individuals and organizations that play roles in economic and workforce development. The Partnership Gwinnett 3.0 Strategic Framework was created to help PG focus their resources in the most efficient and effective ways, enhancing quality growth outcomes, and improving conditions for employees and businesses throughout the County.

Gwinnett County's Office of Economic Development

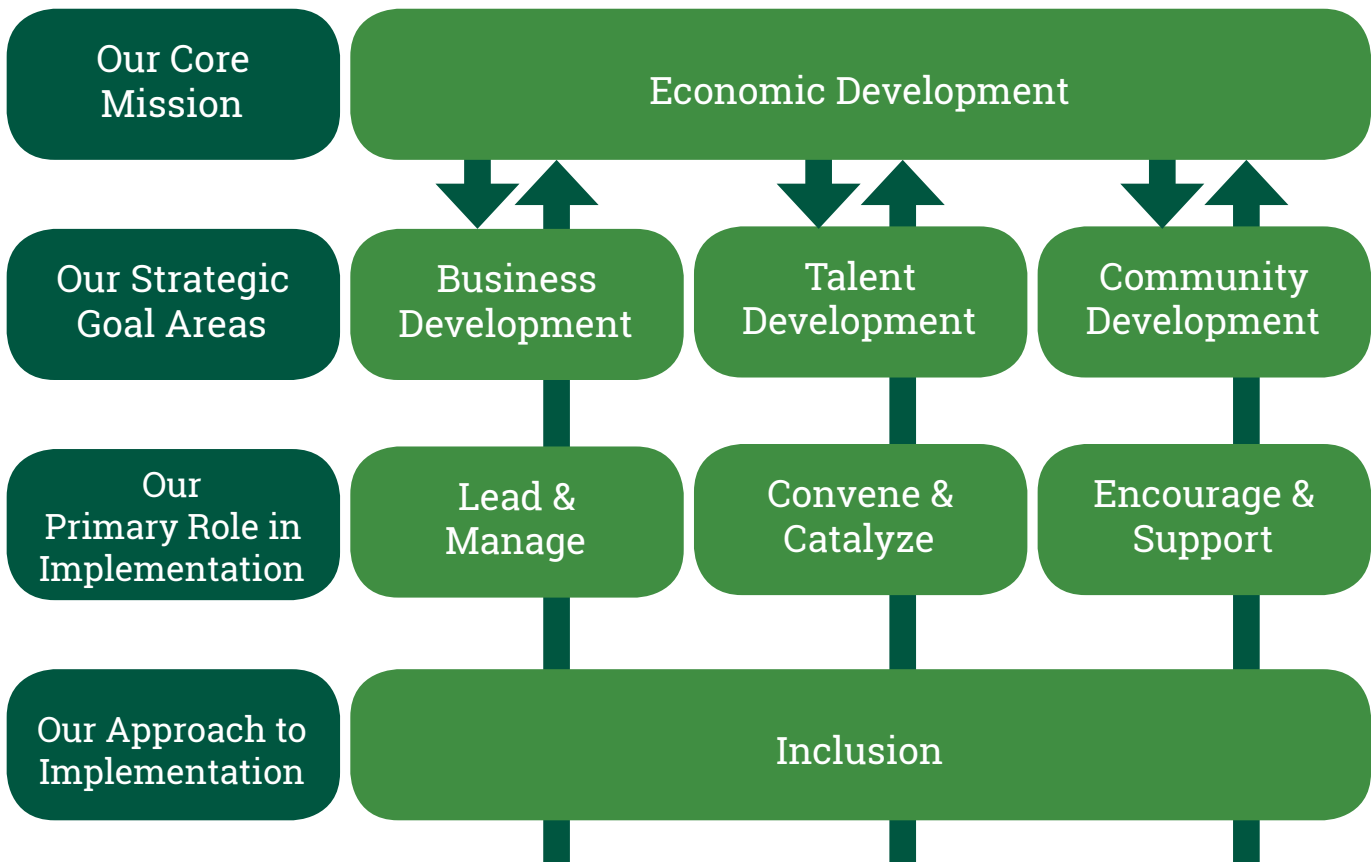
The Office of Economic Development creates economic development opportunities in Gwinnett County through business outreach, promoting entrepreneurship and small business, managing active development projects, and building local, regional, and national partnerships.

Partnership Gwinnett and Gwinnett County use the following tools:

- Marketing and business outreach
- Competitive financial incentives and one-stop-shop permitting process
- Opportunity Zones and Tax Allocation Districts (TADs)
- Business Development programs and events
- Portal to entrepreneur support services
- Local and regional data for businesses exploring relocation or expansion
- Best in class local government services and infrastructure
- Favorable business climate and tax structure

The County regularly partners with our local municipal governments and Community Improvement Districts to add additional economic development services and activities, helping to create a well-coordinated and multi-layered economic development ecosystem.

Partnership Gwinnett 3.0 Strategic Framework



Gwinnett Technical College is producing a local, highly trained workforce





OUR POSITIONAL ADVANTAGES

Gwinnett County today enjoys the benefit of an extremely strong economic foundation on which to build.

Partnership Gwinnett (PG), the County's public-private economic development initiative, is well organized and staffed with experienced Economic Development professionals. PG is strategic, adaptive, and is effective at recognizing how Economic Development permeates all aspects of the County - from business operations, to government operations and policy, and to citizens' quality of life.

Gwinnett's commercial sector is built upon a strong and diversified industrial base, with land, buildings, equipment, supply chains and a trained and experienced workforce. This tradition of manufacturing and logistics will remain the backbone of Gwinnett's economy for years to come.

Gwinnett has a significant situational advantage, within one of the nation's largest and fastest-growing metropolitan clusters, bisected by I-85 (one of the heaviest-traveled interstate freeways in the world), and supported by a strong web of freight rail. This transportation infrastructure, along with Briscoe Field (the Gwinnett County airport) and proximity to Hartsfield Jackson Atlanta International Airport provides the connectivity and business opportunity that will allow the County to remain economically competitive.

Gwinnett County has a strong educational infrastructure, from its first-class public school system to its colleges and universities. In 2010 and again in 2014, Gwinnett County Public Schools won the Broad Prize for Urban Education, an award honoring large urban school districts that demonstrate the strongest overall performance and improvement in student achievement, while reducing achievement gaps among low-income students and students of color. The County has close proximity to some of the nation's best institutions of higher education, including the Georgia Institute of Technology, University of Georgia, and Emory University.

Gwinnett County has a large, diverse, and well-trained workforce.

Gwinnett County has a wide selection of housing suitable for residents across all income levels.

In order to continue to be economically competitive in the coming years, it is crucial that the County continues to maintain its strength and advantages in these areas through well-planned policy and public investment. At the same time, it will be necessary to adapt to changing economic development trends, needs, and opportunities over the decades. The jobs, buildings, technology and overall speed of business in 2040 will be drastically different from what the County was built for in the 1970s, 1980s, and 1990s.

CHANGING TIDES

The rise of service industries in Gwinnett has serious implications for the county regarding land use, traffic, and development patterns. As service sectors continue to expand, the demand for appropriate space—office buildings, hospitals and clinics, smaller commercial spaces, etc.—will increase.

Similarly, the decline in manufacturing and wholesale trade will decrease demand for existing industrial and warehousing space as new facilities are constructed. The existing supply of industrial space and warehouses has potential for refurbishment as a mix of office and commercial uses, while retaining some industrial spaces (which may evolve to be smaller scale, and/or more craft-focused).

Retail Trends

Gwinnett County has a massive amount of retail space- over 60 million square feet (SF), roughly the equivalent of 1,000 standard grocery stores. Nearly half of that retail space is now 25 years old or older.

In the past 25 years, retail space and the way people shop has changed dramatically. Does Gwinnett County's inventory of stores and retail space match what current Gwinnett shoppers will be looking for in the future?

One of the most noteworthy stories in retail over the past 50 years has been the rise and fall of big-box stores and regional shopping malls, both of which have been the dominant retail format in Gwinnett for decades. Consider the following:

- Gwinnett County's population exploded in the mid-Twentieth Century during a period where the dominant development model was car-centric, strip shopping centers and early predecessors to shopping malls.
- In the 1970s and 1980s, big-box stores, many known as "category-killers", began to challenge traditional "main-street" retail districts, leading to the decline of downtowns in communities of all sizes.
- With the advent of the internet and online shopping in the 1990s and 2000s, many of the shopping centers, big-box stores and malls began to fail, leading to an overabundance of aging retail space.
- Online shopping is becoming an increasingly dominant force in global retailing. Amazon alone now represents 5% of all retail transactions, up from none in 1999. Collectively, online retail sales represent 9.3% of total US retail sales, and online sales are expected to triple as a share of total sales by 2040. This has two important ramifications for Gwinnett County:
 - Reduced demand for retail space, especially older retail space
 - Major changes in the wholesale and distribution sector, based on increased demand for state-of-the-art warehouse, distribution, and transportation systems for e-commerce.



An Amazon Prime truck on I-85 Southbound just past Jimmy Carter Boulevard. As the tagline "There's more to Prime" says, the rise of Amazon in retail is emblematic of dramatic shifts in how Americans shop and purchase goods and services.



A rendering of Revel, a proposed mixed-use development anchored by the Infinite Energy Center, which features a large amount of retail and restaurant space mixed with offices and residential buildings.



Image Credit: North American Properties



The relatively recent rise of “experience-based retail” grew out of the urban renaissance in American cities that began in the early- to mid-2000’s, increasing competition for shoppers with denser, smaller, mixed-use shopping experiences. Experiential retail frames shopping as an activity instead of a chore.

- Today’s successful retail centers offer more than shopping and dining. Adding movie theaters, entertainment options, and other activity centers has helped some malls succeed.
- Increasingly, mixed-use experiential retail centers are adding office and residential components, which serve to provide additional customer base for the retail tenants, extend and amplify the hours of activity, and provide economic diversity, increasing the long-term sustainability of the area.
- Many of the nation’s most successful retail operations recognize the importance and value of branding, programming, and publicity, especially through social media.
- Several major mixed-use experiential retail centers have recently been announced in Gwinnett County, the first developments of this type in Gwinnett. Once the first of these developments opens, it is likely that this will become the dominant format of retail in Gwinnett for years to come.

The challenge for Gwinnett County will lie in facilitating the redevelopment of large concentrations of aging retail into new concepts which are consistent with emerging retail tastes. Many of the tools and concepts needed to promote this redevelopment are already in place and successfully being used by the County’s economic development staff.

Office Trends

Generational shifts and technological innovations are driving major change in the office sector.

Historically, most of the Gwinnett office development has occurred in suburban office parks. In recent years, however, multiple new trends in office space development have reshaped Metro Atlanta's office market: relocation to activity centers, the rise of co-working spaces, and the adaptive reuse and renovation of older buildings for new uses.

- Co-working space demand has increased as more workers are earning their incomes (or supplementing them) as independent contractors. A recent NPR/Marist poll found that one in five American workers now identify themselves as independent contractors rather than employees of a company. This new class of office worker has given rise to co-working spaces such as WeWork and Industrious, two companies pioneering new shared-office formats with short-term membership or lease structures, giving individuals and small companies more flexibility.
- Employers are increasingly leaning towards offices in interesting and creative venues in order to provide a stimulating and attractive environment for their workforce and to promote innovation.
- Employers are seeking to find office space that is accessible to a diverse workforce. Access to transit has become an increasingly common prerequisite for companies seeking office space.
- Improving technology is providing increased opportunities for workers to collaborate remotely through video conferencing or communications platforms such as Slack.
- Not long ago, offices typically allocated a significant amount of space, up to 250-300 square feet, per employee. With current office design trends, which often favor open-plan offices, shared work-spaces, and "hot-desking", the typical office space per employee is now as low as 125-150 square feet per employee.
- As Gwinnett's economic development agencies work to recruit new jobs in targeted sectors, it is crucial that the County has an available inventory of buildings and office space to house potential relocation targets. While some companies with specialized space needs may choose to design and build their own buildings, many will seek to find space immediately in existing buildings. To remain competitive, the County must ensure that Gwinnett has enough existing office space to absorb potential new tenants quickly, especially in Class-A office buildings with a significant amount of contiguous space.

While most of Gwinnett's employers are currently happy to be located in the County's existing office buildings and parks, the challenge in this case is capturing what is happening on the edges: How are the small shifts in trends changing demand for office space, and how do those shifts in demand relate to the new office space that will be added and the older office that will be replaced over the next 25 years? How can Gwinnett County ensure that it has an available pool of office space that will be appealing to the employers and decision makers of today and tomorrow?





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Industrial Trends

Industry, wholesaling, and logistics have long been Gwinnett's dominant sectors in terms of commercial real estate. Gwinnett has over 135 million square feet (SF) of industrial and flex-industrial space, representing 43% of all of the county's commercial real estate. Most of this space falls into one of three categories:

- Factories, plants and manufacturing space;
- Warehouses, wholesale, distribution, and logistics space; or
- Smaller flex space buildings targeted at companies which need to combine office, warehouse, and/or manufacturing space.

As a significant amount of this type of development in Gwinnett County took place in the 1970s and 1980s, many of these spaces are aging. Moreover, most of the current industrial and flex-industrial offerings were built prior to many recent, major changes in the way companies use industrial space.

Globalization has brought some of these changes. The decreased cost of manufacturing abroad, combined with shifts in global trade policies, has meant that many manufacturers have taken their factories and operations overseas. At the same time, innovation in air freight and container shipping has significantly reduced shipping costs and time leading to increased ease of imports.

Big-box chains and technology have disrupted many local manufacturers. For instance, small, locally-owned cabinet shops who would have previously located shops and warehouses in one of Gwinnett's many flex-industrial buildings are having a much harder time competing with big-box hardware and home supply retailers with their optimized global supply chains. As supply chains and inventory management have increasingly been digitalized, the efficiency of large-scale operations with access to that technology has increased, in turn leading to higher profits.

Another factor impacting Gwinnett's large manufacturing sector has been the rise of automation, which changes the number of workers needed, the skillset of that workforce, and the physical design requirements of buildings themselves.

The exponential rise of e-commerce in the past 20 years has created demand for large warehouses. In the past, warehouses were typically up to 100,000 SF. Retailers like Amazon now require spaces beyond 1 million SF, with much higher ceilings, optimized for automation. This also impacts freight carriers like UPS and FedEx, which have had to change their business models to keep up with the demand for e-commerce delivery.

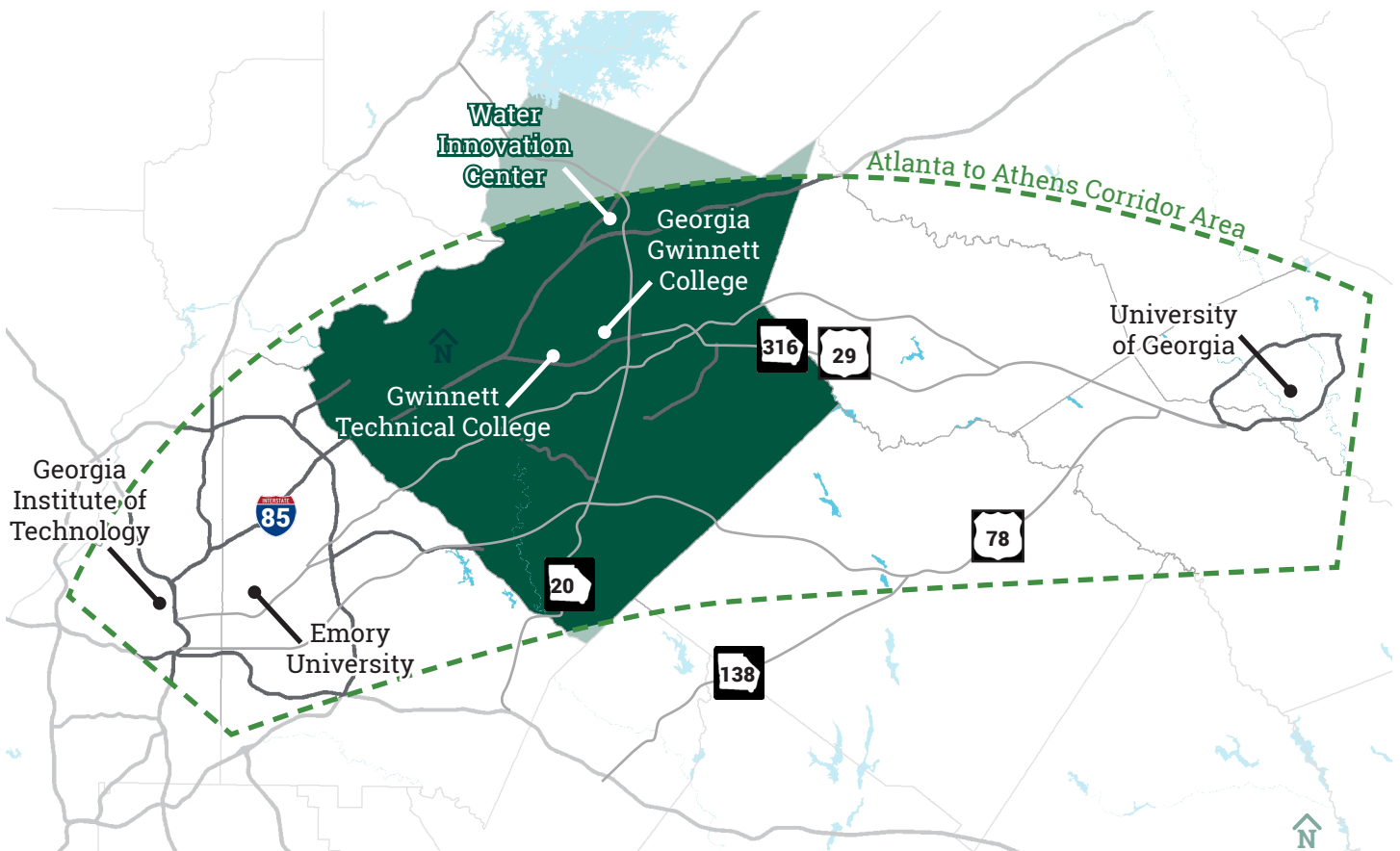
The challenge for Gwinnett County will be to leverage these changes into success for the County. The previous decade has seen some automobile manufacturing returning to the Southeast. This has largely been accomplished through locales actively recruiting businesses with incentives and amenities that will attract the workforce.

CAPTURING INNOVATION

The branding of the SR 316/University Parkway corridor as a ‘Research and Development’ corridor was conceived to capture the momentum of several emerging elements and trends that signaled that the area was ripe for development of large scale biomedical and scientific research and development facilities. Several favorable trends and elements overlap to make this area amenable to biotechnology uses:

- The emergence of local education facilities, including Georgia Gwinnett College and Gwinnett Tech, anchored by regional educational and institutional partners such as the CDC, the University of Georgia, the Georgia Institute of Technology, and Emory University.
- Major transportation enhancements, including the continuing improvements and upgrade to SR 316/University Parkway and the Sugarloaf Parkway Extension.
- The regional “Innovation Crescent” economic development marketing concept, centered around Gwinnett County
- The availability of large, undeveloped land parcels adjacent to SR 316/University Parkway.
- Gwinnett has a strong presence of advanced manufacturing and health IT companies, attracted by Gwinnett’s academic pipeline for bioscience and technology industries, including Georgia Gwinnett College and Gwinnett Technical College, as well as a suburban environment that offers cheaper land and lower costs of business.
- The Water Innovation Center (WIC) which is expected to bring water- and more broadly environment-focused businesses to the north part of the County by providing laboratory, classroom, conference, and demonstration spaces, as well as access to multiple water streams from the F. Wayne Hill Water Resources Center.

This corridor bridges the gap between Atlanta and Athens in Georgia’s “Innovation Crescent”.



This corridor – referred to as an Innovation District in the Implementation chapter of this plan – can take advantage of the economic, physical, and networking asset considerations below as well as supportive entities and a culture that values risk-taking. The types of assets listed below are generally understood to be the foundation of an Innovation District.

- Economic Assets: The companies, institutions, and organizations that support innovation. There are three categories of economic assets:
 - Drivers (research institutions, large firms, start-ups, and entrepreneurs) that push the edge of technology. Gwinnett’s Innovation District is particularly strong in this suit, with Georgia Gwinnett College, Gwinnett Tech, and Gwinnett Medical Center;
 - Cultivators (incubators, accelerators, co-working spaces, high schools, colleges with specific skill sets) that support the growth of ideas and individuals;
 - Amenities (bookstores, coffee shops, medical offices, restaurants, and other local retail) that provide support services to the district.
- Physical Assets: Publicly- and privately-owned spaces that increase connectivity between the various actors in an innovation district. There are three categories of physical assets:
 - Public (parks, plazas, streets) that encourage casual networking;
 - Private (buildings, lobbies, cafes, shared workspaces, labs, micro-housing) for closer, more intimate and intentional networking and collaboration;
 - Connecting assets (sidewalks, paths, streets, public spaces, transit) that connect public and private elements and link the corridor to the broader region.
- Networking Assets: The relationships between actors in the district that promote cross-pollination of ideas and collaboration (workshops, industry-specific conferences, networking breakfasts, hack-a-thon events across industries, etc.)

This is an organic cycle in which success breeds success: The economic assets utilize and create demand for the physical assets, which encourage the networking assets, which makes the area more attractive to the new economic assets.

There are four distinct models for how and where innovation districts form:

- Anchor Plus model: primarily in downtown and midtowns of central cities, where large firms, startups, and incubators congregate around large institutional anchors with similar focus and expertise. (Example: Emory and the CDC)
- Re-Imagined Urban Areas model: primarily occurs in historic industrial or warehouse districts that provide lower cost renovated spaces near or connected to the downtowns of higher-rent cities. (Example: Ponce City Market)
- Research, Development, and Manufacturing Campus model: most typically occurs in suburban/exurban areas with strong connectivity and proximity to urban areas, with open space for development. (Example: Baxter Biologics Facility near Covington, GA)
- Urbanized Science Park model: most commonly found in suburban/exurban areas typified by sprawling development and office parks that can potentially be reconfigured for greater connectivity and density over time.

Gwinnett’s Innovation district is best suited to emerge as a combination of isolated or interconnected campuses (both private and institutional) and master-planned, urbanized science parks.

Gwinnett has already built a strong spine of institutional and educational anchors within the district. The opportunity for Gwinnett’s R&D Corridor lies in two parallel, inter-related approaches:

1. Policies, strategies, and funding to enhance the physical and networking assets that drive development and innovation, and
2. Incentives and land use policies that are specifically targeted to attract or maintain companies, organizations, or institutions that contribute to an innovation-supportive environment within this specific character area.

EMBRACING THE FUTURE

With these shifting trends and community needs, it will be important for the County to take stock of the local, regional, national, and global trends that will influence our economy. Given the many dynamics, broad strategies to pursue include those indicated as follows. In the remaining Elements, many of these considerations will be further addressed as they relate to their particular area or topic.

- Continue to **support Partnership Gwinnett's** economic development activities.
- Identify and support housing, land use, and public investment policies that will catalyze the development of places that **attract young, creative, educated, and talented people** who will be the County's workforce for the future, and who will attract the best companies.
- Be proactive about the acquisition and **development of new public space**, including plazas, parks, and trails. Consider these to be catalytic investments that will shape the future of the County's development. Put these investments in the best locations that will form the centerpieces of emerging activity centers, rather than the locations that are easy, inexpensive, or otherwise unsuitable for development.
- Use public investment and land use policy to promote and facilitate the **redevelopment of large concentrations of underperforming commercial land** and buildings into new vibrant places that are responsive to contemporary demand for commercial, residential, and community space.
- Embrace policies and public investment to support the **assembly, redevelopment, and/or modernization of aging and obsolete industrial and flex-industrial facilities** and buildings.
- Use public investment and land use policy to ensure that Gwinnett County **maintains a sufficient inventory of class-A office and industrial space** so that sufficient high-quality vacant space exists for the County to react quickly to economic development opportunities.
- **Provide adequate resources, flexibility, and responsiveness** in regard to incentives, regulatory issues, and other economic development tools so that **the County's economic development staff and professionals** can respond quickly to economic development opportunities.
- Embrace policies and public investment to **support public transit** to improve access and connectivity between workers and jobs.
- Embrace policies and public investment to **support the continuing development of diverse housing** opportunities that are responsive to a wide range of household sizes, incomes, tenure preferences, densities, and lifestyle preferences. These housing units will support the County's continuing growth of population, jobs, and workforce.

- Recognize the economic costs of congestion in terms of the movement of workers, freight and supply chains, and continue to invest in land use and transportation strategies to **reduce congestion** and make the movement of workers and goods more efficient.
- Continue to **support infrastructure planning and investment** as an economic development incentive. Adequate sewer, water, stormwater, electric, and infrastructure are vital tools of commerce.
- Explore how coordinated public planning and investment can bring **efficiencies in infrastructure delivery** that benefit the County, businesses, and residences. Investments and planning such as shared stormwater facilities can lower the barriers and costs of redevelopment while providing valuable public amenities.
- **Clarify and strengthen the vision and policy behind economic development concepts** such as the Innovation District. Tie strategic vision plans and character areas to specific incentives, investments, or policies conceived to catalyze the desired outcome.
- As the County continues to grow, additional activity centers will continue to emerge. **Promote the development of major commercial and mixed-use activity centers** in areas where existing land use patterns and the transportation network overlap to present the best redevelopment opportunities. Prioritize incentives, supportive land use policies, and public investment to promote the emergence of higher density in key, designated areas. This will allow for the preservation and protection of adjacent areas, while allowing for the most effective and efficient delivery of public services and infrastructure county wide. The implementation of these ideas is discussed further in the “Activity Centers” part of the Implementation chapter.
- Identify and **designate emerging activity centers and concentrate public investment and redevelopment activities** in these areas. As these areas emerge as successful centers of commercial activity, they will become increasingly economically viable, producing economic opportunities that benefit the County as a whole. The implementation of these ideas is discussed further in the “Activity Centers” part of the Implementation chapter.
- Focus on incentives, grants, and public investments to **catalyze early-action private investment** in designated activity centers.
- The County should capitalize on its dynamic, diverse population by **nurturing small business and entrepreneurship**, including the creation of a Small Business Resource Center.
- Address the need to **cultivate arts and entertainment**, critical industries that enhance quality of life and facilitate businesses attraction.

Housing.

Beyond simply putting a roof over a person's head, what is the role of housing in our community?

In the spirit of showing how our many different functions interface, let's look at this from an Economic Development perspective.

Assume a new company with 100 new high-paying jobs in a coveted industrial sector is established in Gwinnett County, and let's assume those 100 new employees form 100 new households.

The business and personal activities of this company and these employees will drive a second-wave of perhaps 150 to 200 new jobs that provide the original 100 employees and households goods and services, both professional and personal.

- Construction workers who build their houses and apartments.
- Supermarket employees who sell them groceries.
- Baristas who sell them coffee.
- Plumbers who fix their sinks.
- Office supply employees to sell paper and toner.
- Health insurance administrators, to manage their health plans.
- Doctors, nurses, and physicians' assistants to provide medical services.
- Mechanics who change their oil.
- Hotel managers, desk clerks and cleaning staff for when clients visit.
- Line cooks and servers to prepare and sell them food.
- Personal trainers to help them stay fit.
- Fire and police officers to provide public safety
- Educators and daycare providers to educate and care for children.

These service jobs are fundamentally linked to job and housing growth at all wage and income levels. While the wages of the initial new jobs may be high, giving the employees access to a wide range of housing options, the wages of the service-providers who support them tend to be significantly lower. Gwinnett's service-sector employees earn average salaries of \$25,000 to \$40,000. Will the county add enough housing units each year that are affordable to households at this income range?

Without local affordable and workforce housing choices, this sizable share of Gwinnett County's expanding workforce would be forced to find housing elsewhere in the region. Our ability to attract these jobs in the first place is built on having the right mix of housing options in our community for different phases of life, personal taste, and income.





With the expectation that Gwinnett will continue to grow, fundamental questions arise with how and where we will house our future residents. With single family homes, many built in the 1980s, 1990s, and 2000s dominating Gwinnett's landscape (nearly 3/4 of our housing units), the coming years will likely include a convergence of several factors:

- While we have a broadly younger population, by 2040 many of the people who fueled Gwinnett's initial waves of growth when they were young people will be in a dramatically different phase of life. Providing senior housing options will be critical to ensuring these people are able to remain a part of our community.
- Similar to many of the shifts in our economy, younger people are broadly driving changes in how housing has historically been viewed. While owning a traditional suburban detached single family home will continue to be very desirable, younger generations are looking for more types of housing product options and for flexibility that ownership is not able to provide.
- While Gwinnett is not yet built out, our greenfield development opportunities become more and more limited with each passing year. As redevelopment becomes more likely in the County, developers will likely be seeking to build denser housing products to maximize their returns on investment.

This Housing element is fundamentally about addressing these and other issues related directly to affordability and their collective interaction with land use, economic development, and even transportation. There are also several references to the Gwinnett County Consolidated Plan 2015-2019 which catalogs housing needs and proposes an Action Plan to meet those needs. This plan is required by the U.S. Department of Housing and Urban Development and as such focuses on high-need populations. Many of its recommendations are relevant to the Unified Plan, but the Unified Plan also goes beyond these recommendations to address broader housing needs and other concerns in addition to those of high-need populations.

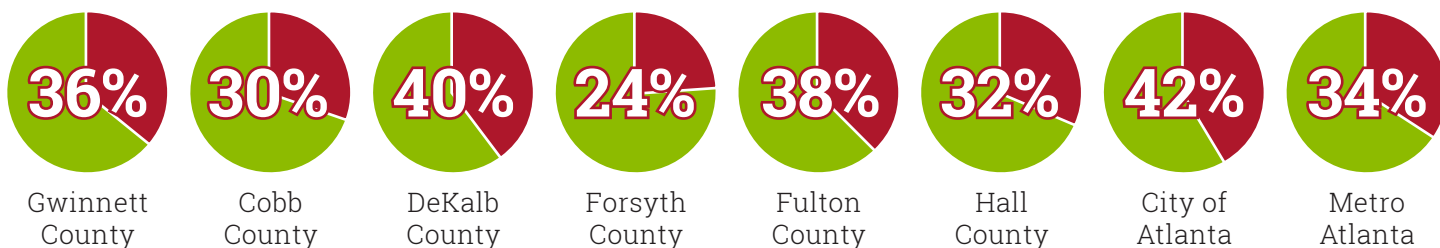
AFFORDABILITY

Per the US Census, Gwinnett County outperforms the statewide average of the percent of households that spend more than 30% of their income on housing (36% of Gwinnett households verses 49% statewide). This indicates that the incomes of many Gwinnett residents allow them to afford housing in the County and have money left over for other living expenses.

There are still, however, a number of challenges related to affordable housing in Gwinnett. Per Gwinnett County's Consolidated Housing Plan, in 2011, 39% of households were identified as having at least one housing problem, and 95% of those problems were related to housing cost. Hispanic households have the highest frequency of housing problems of any group.

Those at the lowest end of the income scale struggle most to find affordable housing. According to the County's Consolidated Housing Plan, 1,800 Gwinnett households receive Housing Choice Vouchers, which is a rental assistance program created as part of Section 8 of the U.S. Housing Act. It pays a significant portion of rent and utilities for renters who have the flexibility to choose where they use their vouchers and have the ability to move between apartments managed by private, rather than public, landlords. The County's Consolidated Housing Plan also estimates that there are 390 homeless individuals in the County.

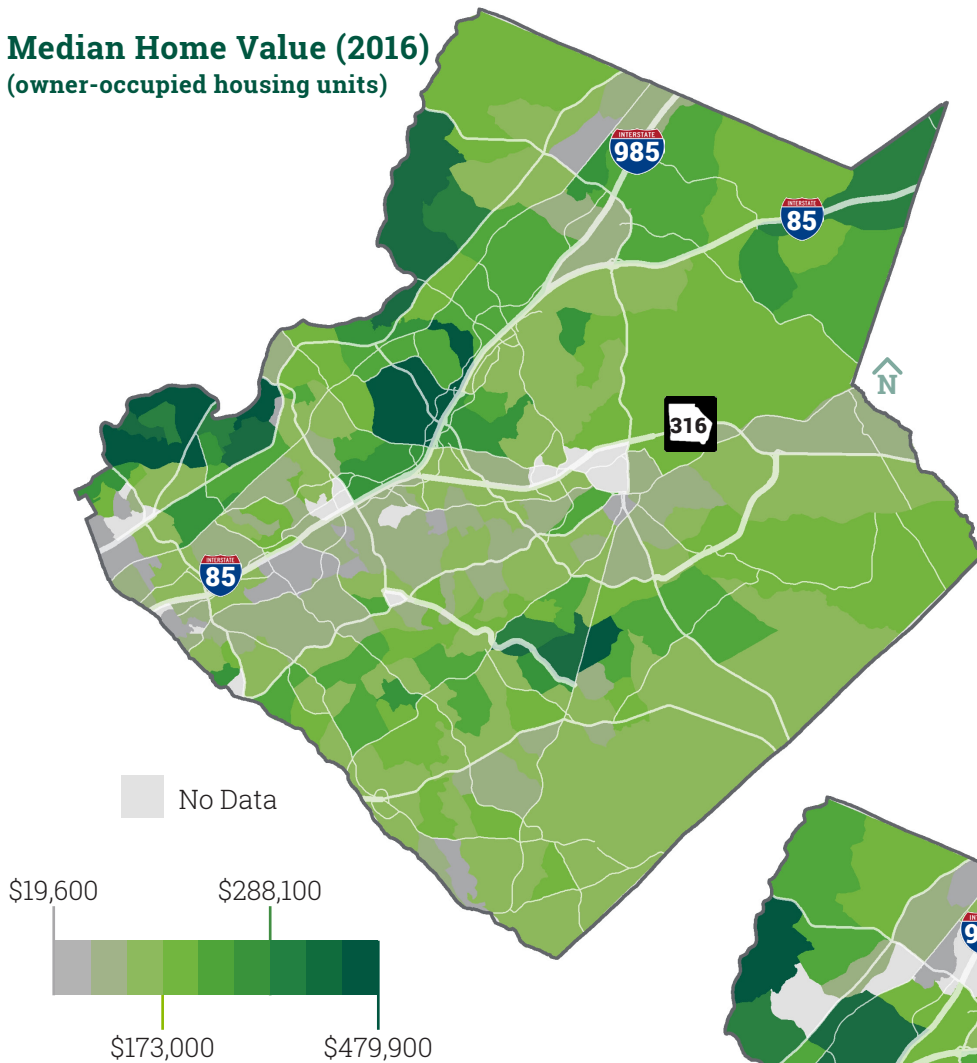
Percentage of Households Paying Over 30% of their Income for Housing (2016)



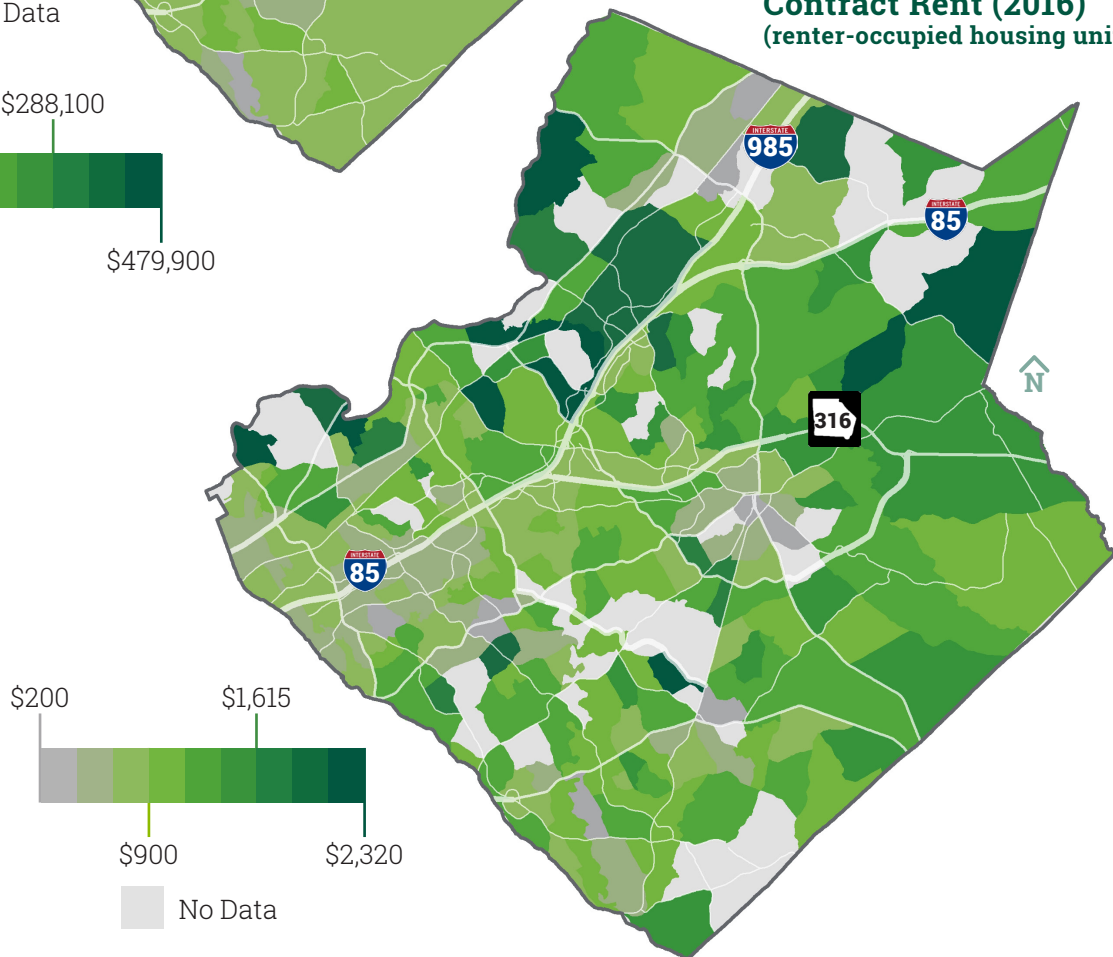
Source US Census Bureau, ACS 5-Year Estimates 2012-2016

According to 2016 data from the American Community Survey, the median home value in Gwinnett was \$173,000, and the median gross rent was \$1,085 per month.

Median Home Value (2016)
(owner-occupied housing units)



Median Monthly Contract Rent (2016)
(renter-occupied housing units)

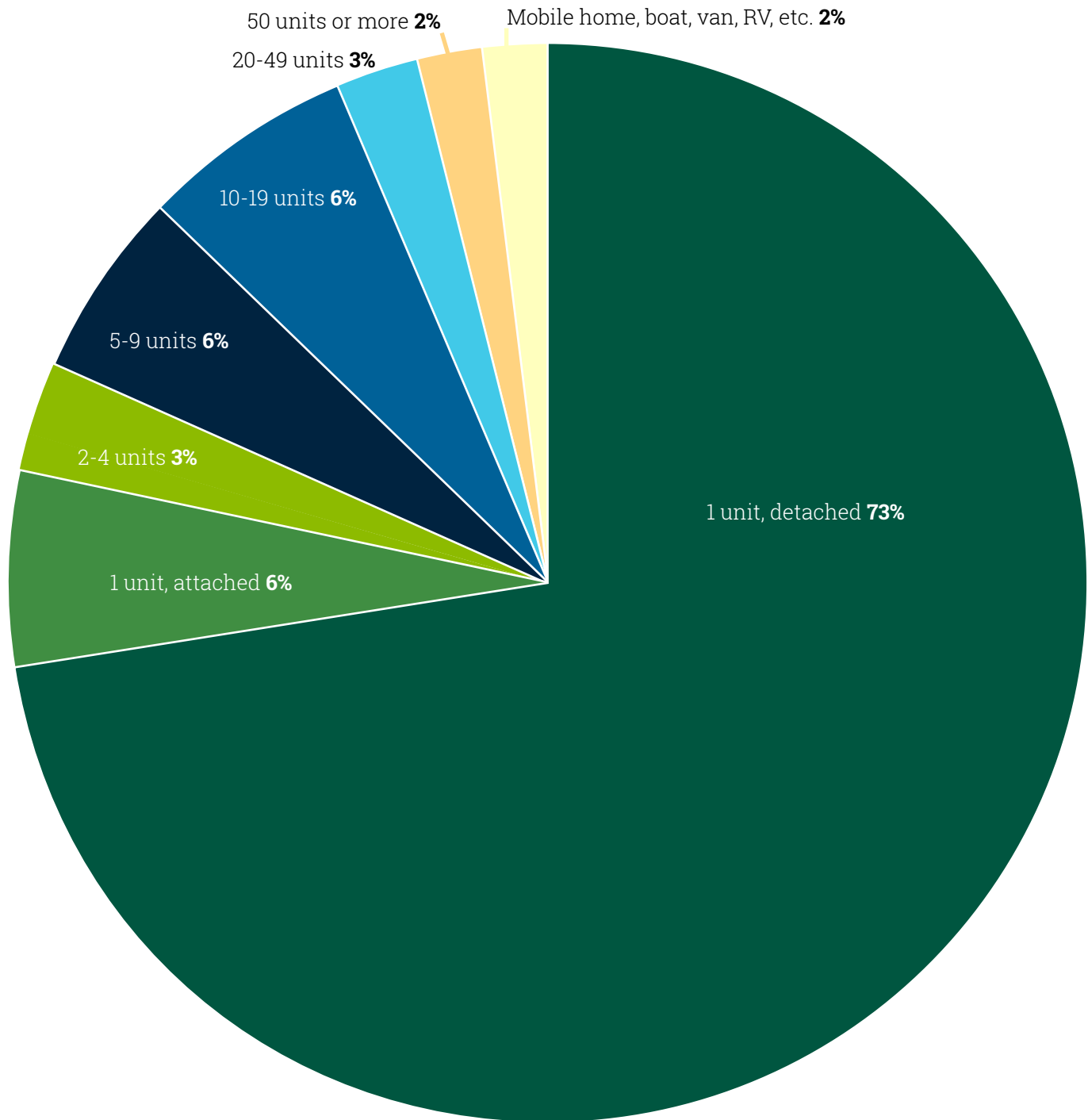


Source US Census Bureau, ACS 5-Year Estimates 2012-2016

CHANGES IN HOUSING

Gwinnett County's development was constructed at a fast pace and has many areas with buildings of a similar type and a similar age. As the County developed, much of the development at any given time was dominated by widespread construction of a single type of structure, built in a consistent configuration within a single geographic area, over a short period of time. Within housing, this has emerged as a major threat to our future success with a potential over-reliance on detached single family homes.

Housing Units by Number of Units in Structure (2016)

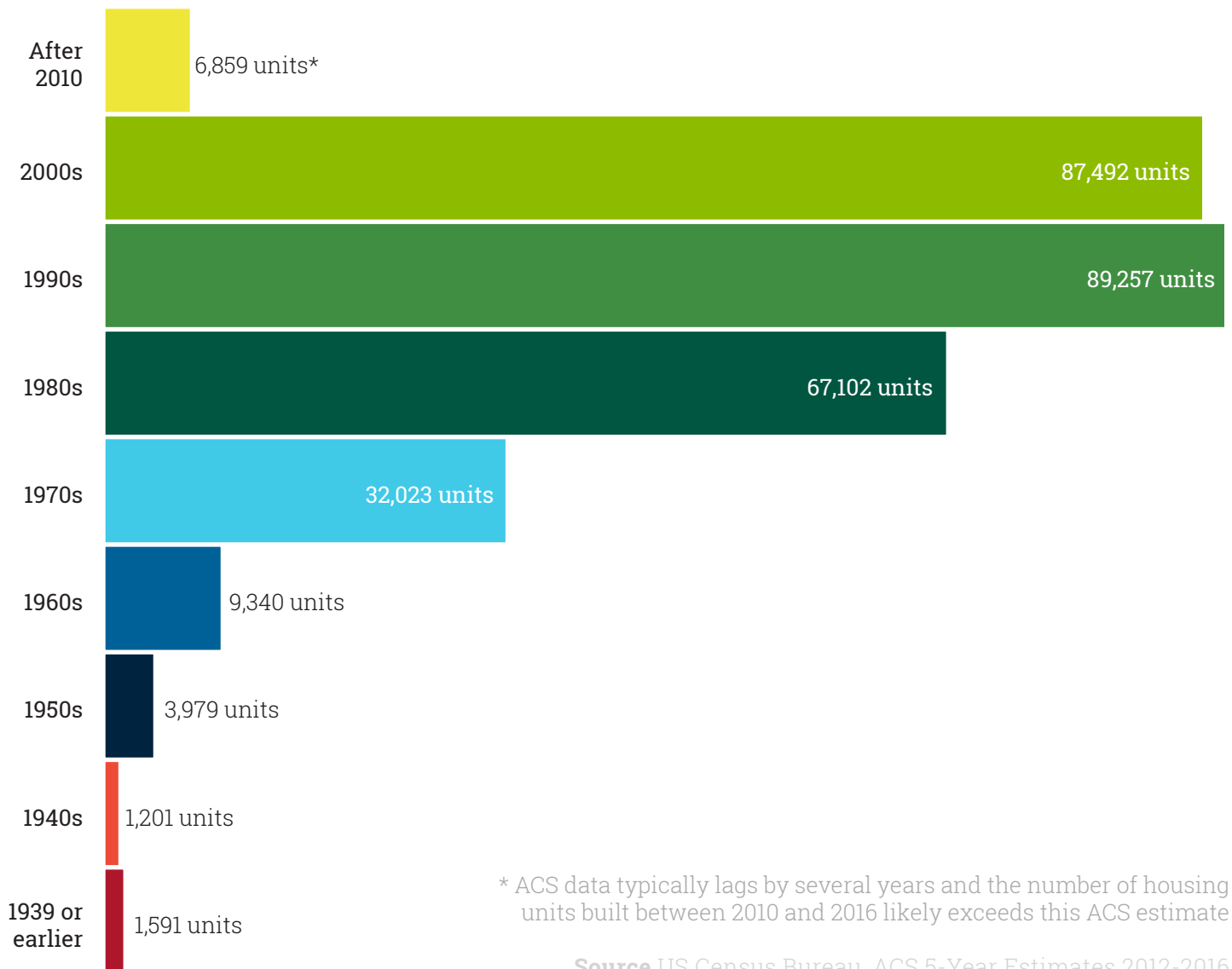


Source US Census Bureau, ACS 5-Year Estimates 2012-2016

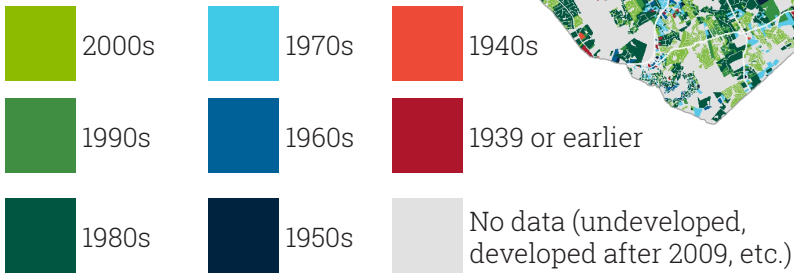
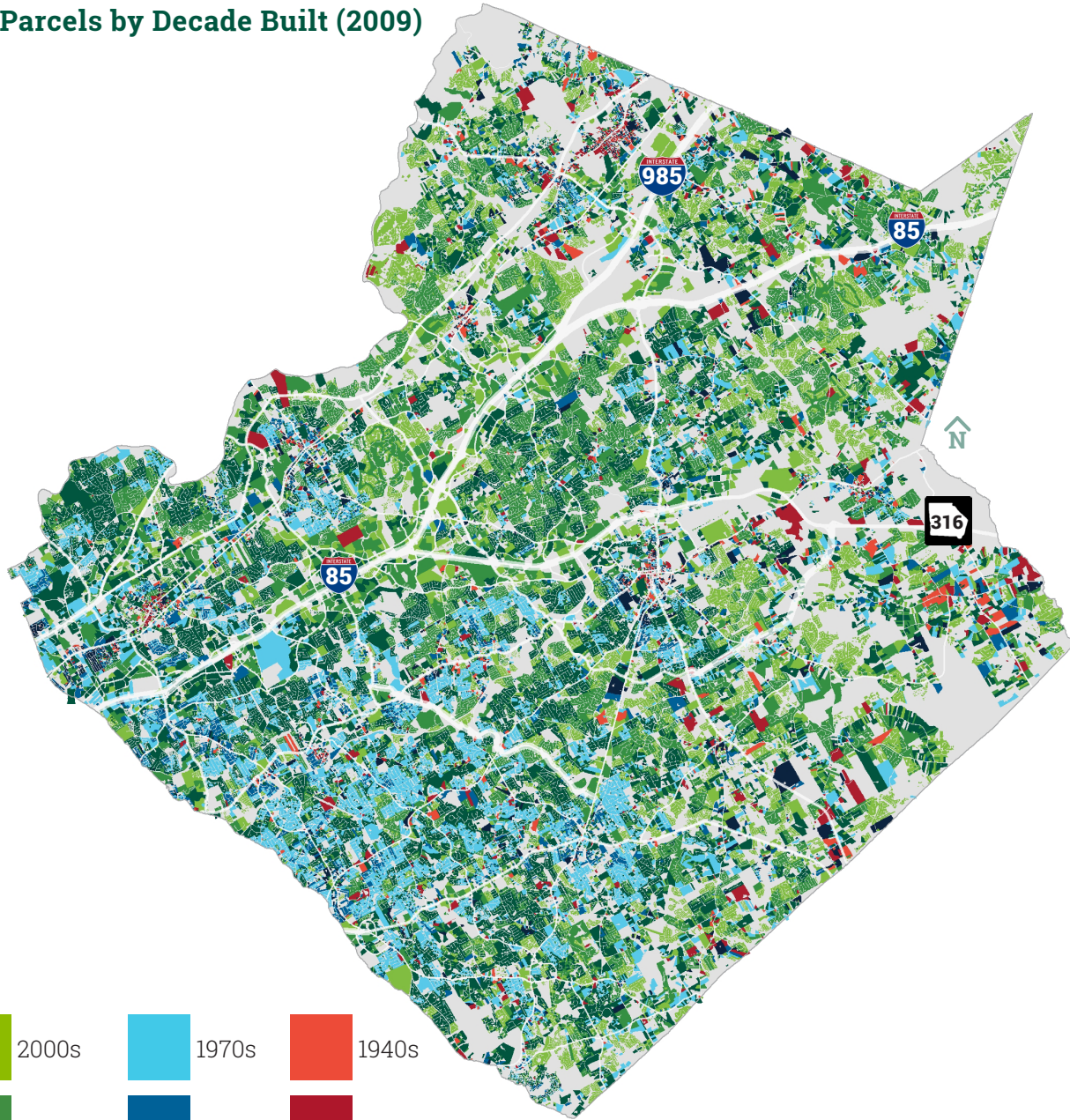
Similarly, our development pattern has resulted in a substantial amount of our housing being built in the 1980s, 1990s, and 2000s. Our strong response to the predominant housing needs during those first waves of growth and development - building primarily single family homes - leaves us vulnerable to emerging shifts in housing preferences. These emerging shifts are being driven by three overall factors:

- The Age of Our People
- Changes in Ownership Preferences
- Changes in Household Sizes

Housing Units by Decade Built



Parcels by Decade Built (2009)

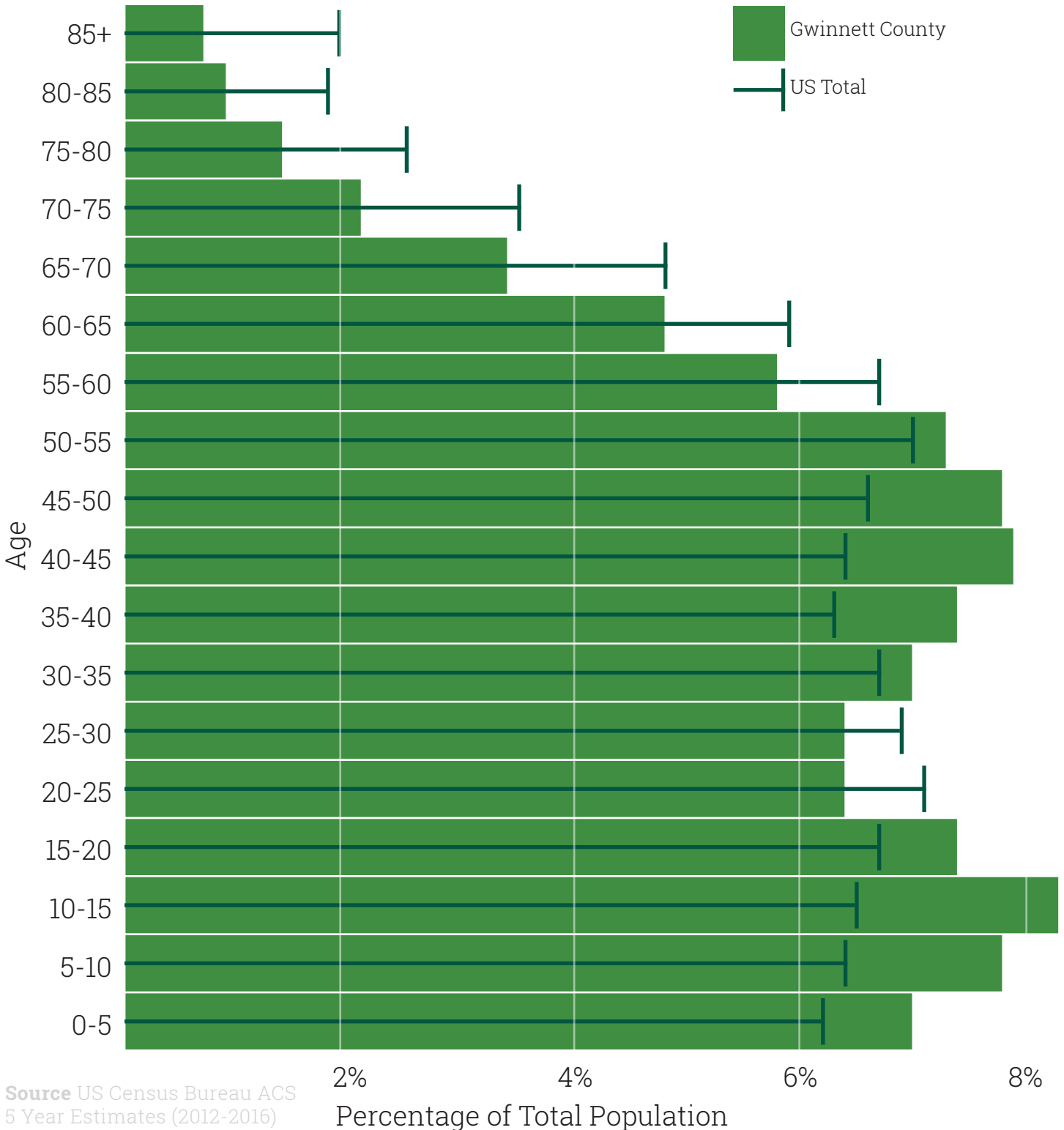


Source Gwinnett County, 2009

The Age of Our People

While Gwinnett County is a relatively young community, the age of its citizens is characterized by two very clear phenomena. For one, the community contains a lot of middle aged people. In the coming years, as these populations grow older, their children grow up and leave the home, and they eventually retire, their desire and need to maintain a detached single-family home is likely to decrease. Similarly, their children form a noticeable bulge in our population. As they form households of their own in the coming years, their needs and desires for detached single-family homes are anticipated to be less dramatic than previous generations of young people.

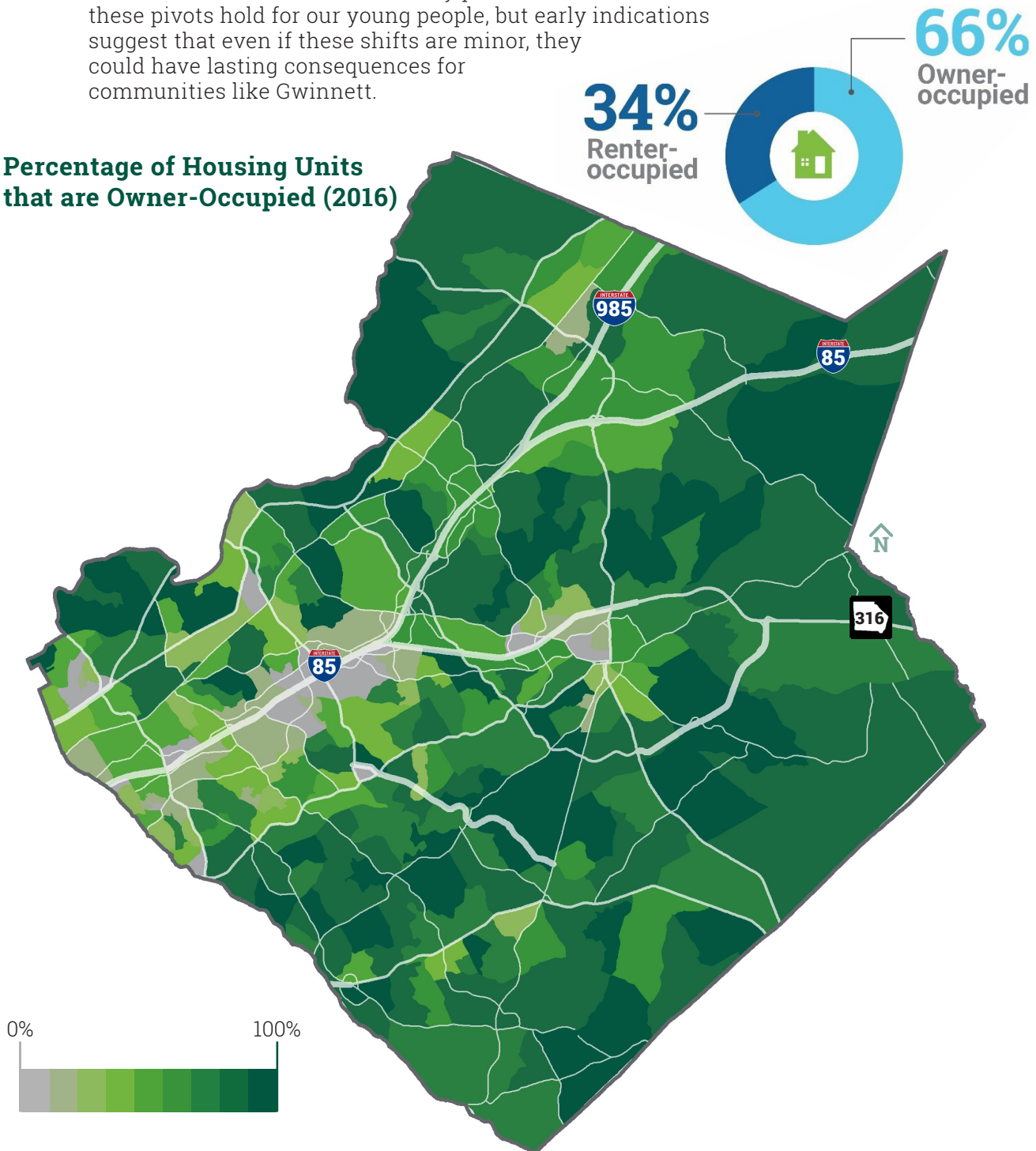
Age Cohort of Gwinnett County and USA (2016)



Changes in Ownership Preferences

Demographers are starting to see shifts in attitudes related to owning homes. As suggested by participants of the focus groups held as part of the research component of this Unified Plan, home ownership is still viewed as a broad goal but not the relative necessity it once was. Younger people are increasingly proving to be economically mobile – changing jobs (and locations) at more aggressive rates than previous generations, which in turn makes the stability of home ownership less compelling and the flexibility of renting much more attractive. Coupled with broad financial challenges such as rising education costs, today's young people are putting less focus into the savings needed and often recommended to comfortably purchase a home. Time will tell if these pivots hold for our young people, but early indications suggest that even if these shifts are minor, they could have lasting consequences for communities like Gwinnett.

Percentage of Housing Units that are Owner-Occupied (2016)



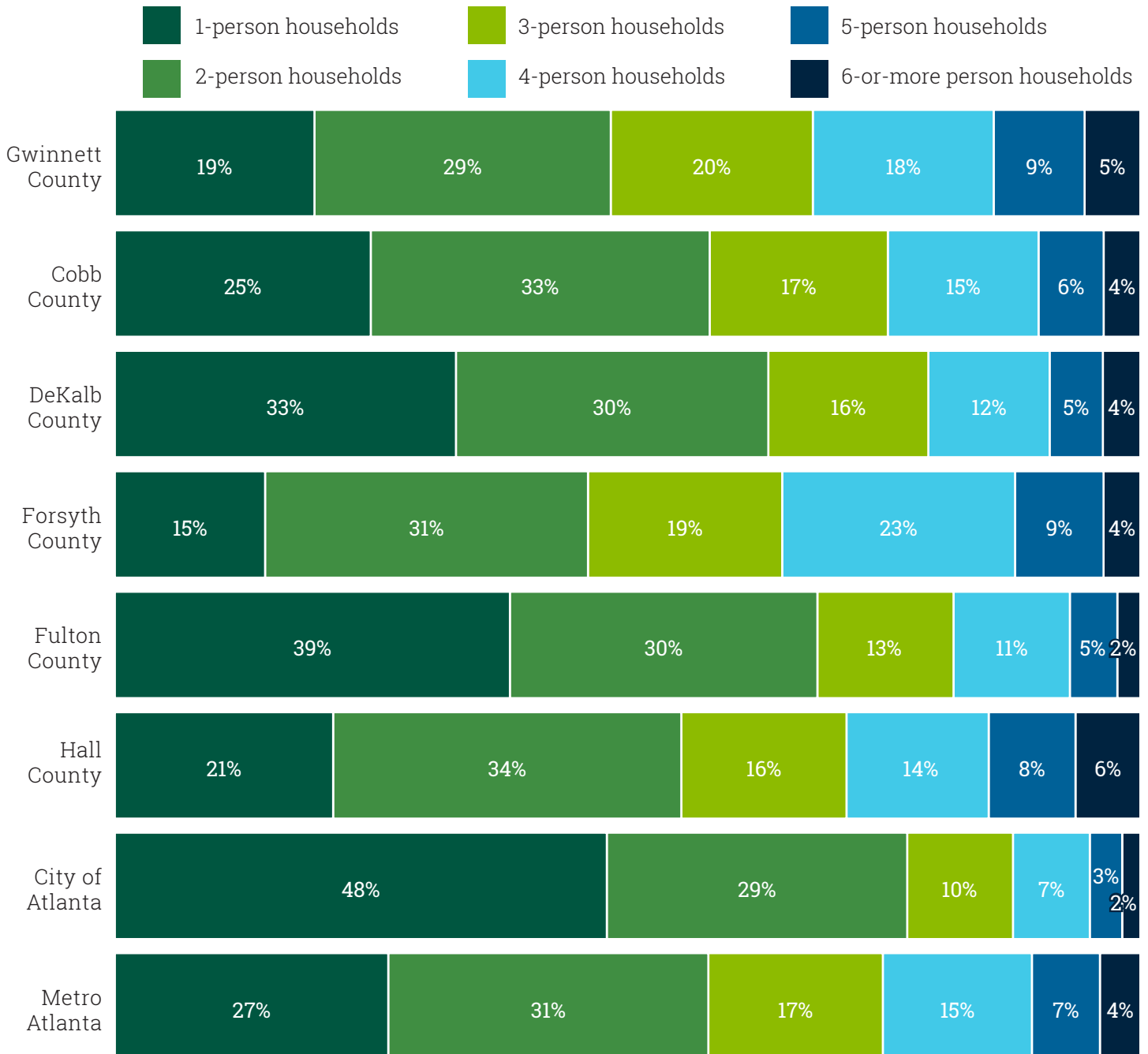
Source US Census Bureau, ACS 5-Year Estimates 2012-2016

Changes in Household Sizes

Household sizes are also dramatically changing with broad national increases in single person households, driven largely by young people. While not as dramatic as in the City of Atlanta, where 44 percent of households consist of a single person, 19 percent of Gwinnett's households are comprised of a single person.

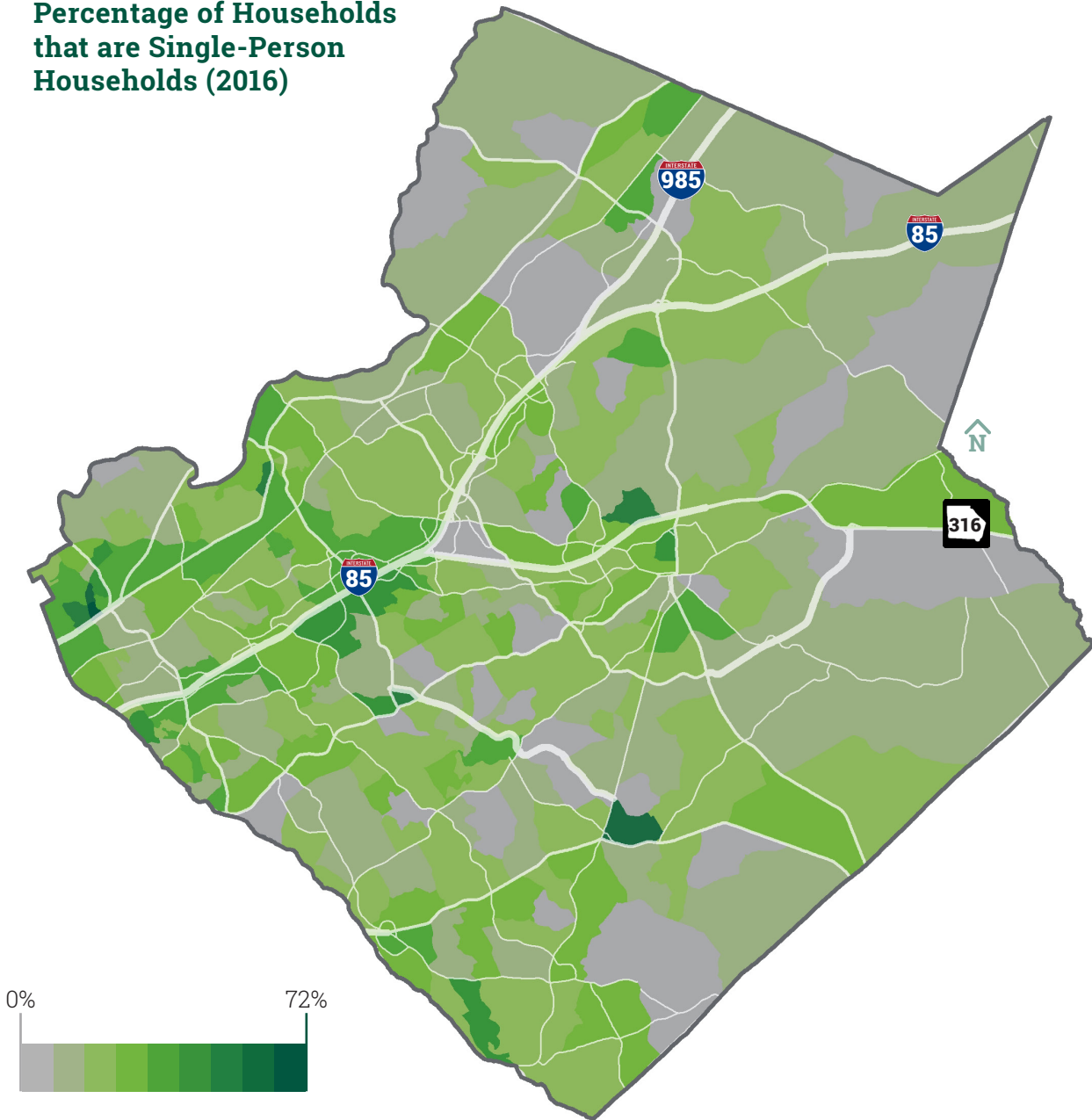
The fact that one- or two-person households make up nearly half of Gwinnett's households shows that Gwinnett needs more variety in housing types than currently exists.

Households by Size (2016)



Source US Census Bureau ACS
5 Year Estimates (2012-2016)

Percentage of Households that are Single-Person Households (2016)



Source US Census Bureau, ACS 5-Year Estimates 2012-2016

CONSIDERATIONS FOR THE FUTURE

There are a variety of broad considerations that the County can use to address issues related to housing choice and affordability as described below. Many of these topics interrelate with other Elements in the plan and are addressed in those Elements as well.

- Provide More High Quality Affordable Housing Options: While Gwinnett County has a significant amount of affordable housing units and is more affordable than the state average, many of the affordable units are aging or not high quality. There is a significant need for newer affordable housing units, and for affordable housing built with quality construction and amenities.
- Additional Multifamily Housing Units With 3 or More Bedrooms: Nearly three-fourths of all housing units within Gwinnett County are single-family homes, but the demographics of the County indicate a significant presence of single person households, and other family types that prefer multifamily units. The presence of large or multi-generational families also suggests the need for housing units with more bedrooms.
- Continued Population Growth Means that New Housing Will Continue to be Constructed: One of Gwinnett County's biggest assets is its continued population growth, which will mean that its housing stock will continue to expand and is likely to redevelop. This provides an immense opportunity to meet the needs identified in this plan.
- Existing Housing Units Could Be Preserved And Rehabilitated: A significant number of affordable housing units in Gwinnett County today could be preserved and upgraded to maintain their affordability, rather than being redeveloped into higher density, newer, less affordable housing types.
- Aging Housing And Underdeveloped Sites Could Be Redeveloped With New Housing: In certain areas, the location or low density of existing housing or commercial development may mean that it is better to redevelop these sites. This will provide an opportunity for additional new housing units at higher density.
- Additional Housing Types Could be Created to Address Population Growth: The creation of new housing types, both by private sector developers and by new zoning requirements, could provide for more compact development types that will accommodate projected population growth and meet the needs of Gwinnett's diverse residents.
- New Zoning Tools or Districts Could Allow More Diverse or Dense Housing Types: The palette of housing types that is allowed or encouraged under Gwinnett County's existing zoning code is limited. More urban housing types and densities should be allowed, especially in key centers and nodes, to create more diverse, urban areas.
- Promote the Preservation and Rehabilitation of Existing Naturally-Occurring Affordable Housing: Naturally-Occurring Affordable Housing is rental housing that maintains low rents without public subsidies and is the most common form of affordable housing. Naturally occurring affordable housing units are typically Class B or C rental buildings, complexes, or detached houses that are 25 years or older. Rents are below newer housing, but vary depending on location and quality. These housing units are affordable to most low- and moderate income households (those that earn between 50-80% of the median household income). Naturally occurring affordable housing units are at risk of being lost due to market speculation and upgrades that result in higher rents. While upgrading low quality units is often desirable, it is important to maintain a healthy inventory of affordable units. A significant number of existing apartment communities, especially in the southern portion of the County, provide a large number of affordable housing units. While this rental housing may need upgrading, it should be done in a way that preserves the affordability of these communities.

- Continue to Construct New Housing at a Variety Of Prices: The diversity of rents and purchase prices should continue in Gwinnett County, in order to ensure that residents from a variety of financial backgrounds can find a home within their budget. This includes a variety of housing sizes, types, and amenities to create a full spectrum of housing prices.
- Encourage Dense Housing Redevelopment at Key Nodes Near Existing and Proposed Infrastructure: At certain key nodes with road capacity, existing or proposed transit, sewer and water, housing should be built at higher densities than currently present in Gwinnett County in order to create vibrant urban environments and attract young people. In contrast, sprawling housing development may increase infrastructure costs for the County and transportation expenses for residents.
- Foster a Diverse Mix of Housing Types and Sizes that Matches the Diversity and Sizes of Gwinnett Households: Many Gwinnett families, especially single-person households, large families, and immigrant families, struggle to find housing types that match their lifestyles. The County should work with the development community to ensure that new housing matches the broad range of preferences in the County today.
- Expand Housing Maintenance and Rehabilitation Assistance: These programs, whether funded by the County, federal funds, or non-profit organizations, could allow low-income persons to renovate and remain in their homes.
- Provide Educational Programs to Ensure Successful Home Ownership: Homeowners, and especially first-time homebuyers, can benefit from being more informed about the costs, challenges, and available resources available to them. The County should continue to support educational opportunities for homebuyers and homeowners alike to empower residents to make the best choices for themselves and their communities.
- Support the Policies of the Consolidated Housing Plan: This plan provides a detailed road map for meeting the needs of the lowest income population. It should be implemented to ensure that all residents have access to the quality housing they need. The following list shows the Strategic Priorities of the Consolidated Plan, which are provided here for reference, but are not intended to replace the policies of this Unified Plan, although many of them overlap.
 - Increase access to affordable housing
 - Increase housing options for homeless and those at risk of homelessness
 - Reduce substandard housing
 - Increase housing and supportive services for targeted populations
 - Increase the capacity of public facilities and public services to improve the social, economic, and physical environment by acquiring, constructing, or rehabilitating public facilities, revitalizing older areas of the county, providing equipment and operating support through public service activities, and providing overall program administration and management
 - Affirmatively further fair housing choice

The Environmental and Heritage Center is used as a multi-use history, culture, heritage, and environment facility. Located on a 700-acre environmental campus near the Mall of Georgia, the center features interactive exhibits, walking trails and greenways, unique rental spaces, gift shop, and is a model of innovative green building techniques.





Infrastructure & Community Amenities.

A major element of ensuring that the County can prosper and remain sustainable requires building and maintaining high-quality infrastructure and community amenities: clean water, sewers, stormwater and drainage, power distribution, roads, sidewalks, parks, libraries, and other civic mechanisms.

Gwinnett County staff and elected officials are increasingly aware of the role that quality infrastructure and community amenities play in economic development and business recruitment. As regulations to protect water quality lead to stormwater retention and detention infrastructure becoming an increasingly significant share of development costs, the County can help spread shared stormwater solutions. These can enhance the marketability and redevelopment potential of large areas while also creating stormwater ponds as greenspace amenities.

Communications infrastructure is also becoming a major tool of economic development, as public sector investment in high speed communications networks becomes more prevalent. Patching vulnerabilities in networks and updating older software is crucial to protect companies—and the County—from vulnerabilities.

Much of the nation's infrastructure (roads, bridges, power grids) needs continuous maintenance and updating. Often, these "invisible" projects are given low priority in favor of more tangible projects the public can easily see and understand. It is crucial that Gwinnett County continue to maintain its existing infrastructure to remain competitive, while also increasing capacity and modernizing to adapt to an increasing population, to absorb industrial and commercial growth, and to remain positioned among the best in class when it comes to economic development and recruitment.

TRANSPORTATION

One of Gwinnett County's major positional advantages is its transportation system. The access to I-85 and broader transportation network is what physically connects us to the world and has been one of the major drivers of our growth. Because our community and transportation system is so attractive, it is also heavily used. Transportation congestion is regularly cited in public opinion polls as one of the most pressing issues in Gwinnett County. As Gwinnett continues to grow and evolve, this Plan takes the perspective that an increasingly urban place like Gwinnett can never actually eradicate transportation congestion, particularly the kind experienced during rush hours, an unfortunate byproduct of economic success. There is a saying that goes, "The only thing worse than too much traffic is none at all."

Instead, what is reasonable and achievable is to provide transportation options, both in multiple types of transportation modes and by designing a transportation grid that allows travelers to take multiple routes. It is reasonable to make sure the infrastructure is planned and timed to proactively address future growth. Finally, it is reasonable to ensure that our system is safe and efficient with an ability to predict and manage congestion, and to deal with emergencies.

The Gwinnett County Department of Transportation (GCDOT) is constantly implementing transportation solutions in our community. From the 2012 opening of the Sugarloaf Parkway extension, to targeting road widenings on major corridors, to the installation of new traffic signals, to constructing safe pedestrian crossings, there is a constant program of improvements designed to better manage our system. These improvements are sourced from several planning efforts and studies prepared by our planning partners and compiled in three recent major GCDOT initiatives.

- The **Gwinnett County Comprehensive Transportation Plan (CTP)** - Destination2040 - provides a framework to improve quality of life for everyone in the County by facilitating the mobility of people and goods safely and efficiently across all modes of transportation. The CTP was unanimously adopted in December of 2017 and included a programmatic list of transportation initiatives and policies for the County to consider in the coming years. The CTP also provided the framework for subsequent efforts focused on trails and transit expansion in the County.
- The **Gwinnett Countywide Trails Master Plan**, adopted in 2018, was a collaboration between the Gwinnett County Department of Transportation and the Gwinnett County Department of Community Services to examine trail initiatives from both recreational and traditional transportation purposes.
- The **Connect Gwinnett: Transit Plan**, or Connect Gwinnett, is the County's first comprehensive look at transit since Gwinnett County Transit's inception in 2001. This Comprehensive Transit Development Plan (CTDP) is a road map for how the County would like to develop its transit networks to serve current and future needs. The plan also includes several considerations for future transit expansion including implementation of High Capacity Transit and Enhanced Bus Service in addition to improvements to local bus service.

The following section summarizes and excerpts key pieces of these studies to act as an overview of major thematic conclusions. We encourage interested readers to view these studies in more detail, which can be best viewed on the County's website at <https://www.gwinnettcounty.com/web/gwinnett/departments/transportation>.



A Gwinnett County DOT construction crew installs new sidewalks at the intersection of Sugarloaf Parkway and Satellite Boulevard



Destination2040

There were more than 1,300 projects identified across the County that made up the initial transportation wish list that formed the CTP, Destination2040. As with any “wish list,” not everything can be afforded or implemented through the plan’s horizon year of 2040, so the planning team worked with County staff, the technical and stakeholder committees, and the public to narrow this list of projects. This process is referred to as project prioritization, and for Destination2040, it was completed in conjunction with the County’s 2017 Special Purpose Local Option Sales Tax (SPLOST) project selection process. This SPLOST is projected to raise a total of \$950 million over six years to be used for transportation, public safety, parks and recreation, and library improvements, amongst other projects.

This framework is established through the following short- and long-range goals:

Improve Connectivity

- Improve overall connectivity within Gwinnett County by tying activity centers to each other and by enhancing cross-County movements
- Improve connectivity between Gwinnett County and the rest of the region
- Improve connectivity and reliability regardless of mode or purpose

Leverage the County’s Transportation System to Improve Economic Vitality and Quality of Life

- Connect people to jobs and educational opportunities through coordinated transportation and land use investment decisions
- Use transportation investments to encourage development/redevelopment in strategic locations throughout the County
- Facilitate the efficient movement of goods
- Preserve community livability and attractiveness; respect and value existing community open spaces and prioritize transportation projects that positively impact the human and natural environment

Improve Safety and Mobility for All People Across All Modes of Travel

- Prioritize projects and programs that improve safety, acknowledging all users in project design
- Continue to evaluate innovative design as well as improved technologies and products for use in the County’s transportation network
- Consider mobility needs of all population groups when investing in the transportation system

Proactively Embrace Future Transportation Opportunities

- Anticipate and plan for technological advances in transportation
- Educate the community about transportation options, funding, and processes
- Work with local, regional, state, and federal partners to plan future improvements
- Integrate long range comprehensive transportation plan with other County planning efforts
- Build additional capacity into transportation corridors, when feasible, to anticipate future needs

Continue to Serve as Responsible Stewards of Transportation Resources

- Invest in rehabilitation and maintenance of existing transportation infrastructure
- Prioritize projects that maximize the benefit of taxpayer dollars and alternate funding sources

In addition to the short- and long-range goals, Destination2040 also identified priorities for the planning process, which were then used to evaluate proposed projects as well as to guide overall plan development. In priority order, determined by a robust public outreach effort, Gwinnett County's CTP priorities are:

- Vehicular Travel: Improving vehicle travel throughout Gwinnett County, such as retiming traffic signals along a corridor or widening roadways
- Connectivity: Creating new roadway and trail connections to provide more routes to get between places in Gwinnett County and Metro Atlanta
- Transit Services: Improving or adding public transit services (routes, bus stops, high capacity transit with dedicated space, on-demand transit for people with mobility challenges, etc.) within Gwinnett County
- Transportation Safety: Improving safety for travelers in the County, such as reconfiguring key intersections and enhancing signage and visibility
- Maintenance/Roadway Repair: Improving and maintaining roads and bridges, such as repaving roads or replacing bridges
- Walking/Biking: Making improvements for people who walk or bike, such as adding sidewalks, crosswalks, bicycle facilities, and/or trails within Gwinnett County
- Economic Vitality: Making transportation investments that improve the County's economic vitality, such as improving transportation access to major employment centers so people can get to jobs
- Access to Transportation: Improving transportation access for people with disabilities or other mobility challenges

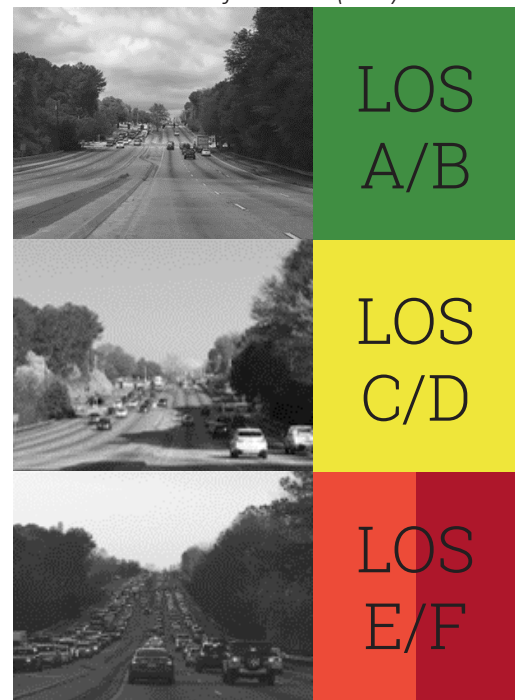
Although crafted prior to the 2040 Unified Plan effort, the goals and priorities of Destination2040 align with the Unified Plan's five themes. Integrating land uses and land use policies with transportation infrastructure and policies enables the system to efficiently and effectively connect the greatest number of people to the greatest number of destinations.

The correlation between the 2040 Unified Plan themes and the CTP goals and priorities of Destination2040 will help lay the foundation to strengthen land use decisions and development patterns to better support future transportation investments in Gwinnett County.

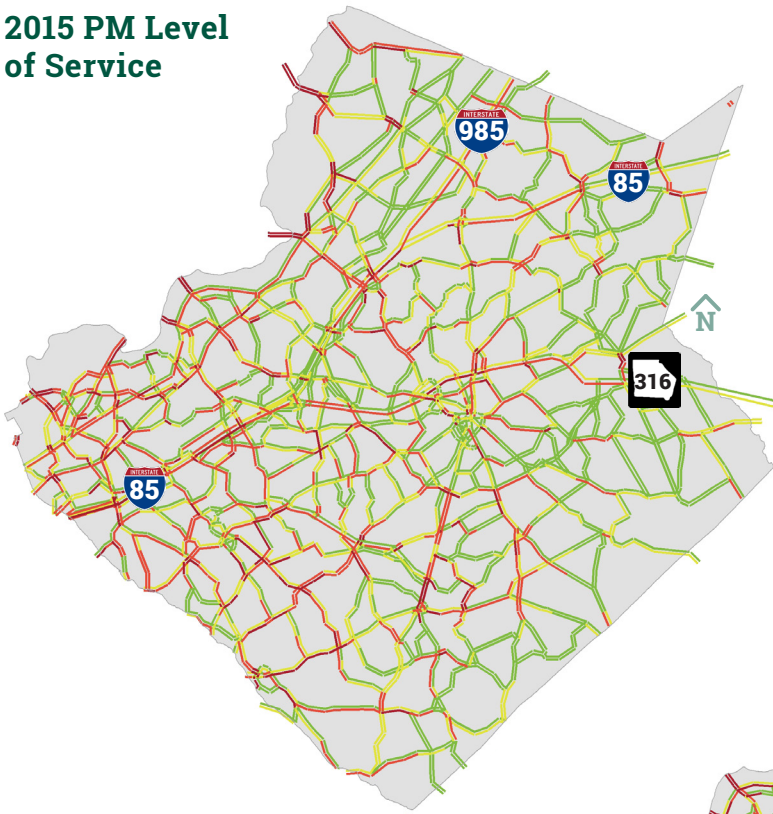
Vehicular Transportation

To assist in driving the assessment of our transportation system, the Destination2040 process included the use of a tool called a travel demand model that helps forecast traffic demand (and by extension, possible congestion) given assumptions about where and how people live and work. This process was conducted initially for the year 2015 to act as a baseline to actual conditions and eventually conducted for a theoretical year 2040 scenario. Only those transportation improvements already identified for funding were implemented for this scenario (called the "Existing and Committed Scenario" in the graphic to the right). At the conclusion of the plan, a third year 2040 scenario was conducted in which the plan was assumed to have been implemented (called "Full CTP Scenario" in the graphic to the right). The results are articulated through a traffic engineering measurement known as Level of Service (LOS) which includes a letter grade (A-F) assessment to describe the level of congestion experienced. Please note that there is large variability in the most congested (LOS F) measurement, with any corridor experiencing a certain threshold of demand being identified as LOS F despite the possibility of that congestion becoming exponentially greater. This is why the 2040 CTP scenario does not appear to offer significant congestion relief on some roadways over the 2040 No Build scenario. The CTP projects in fact make the system dramatically more efficient but not necessarily to the point where corridors are able to improve to better LOS. This speaks to the futility of trying to eradicate congestion entirely in an urbanized environment with significantly high travel demands. What is possible and reasonable is to manage the system in a way that decreases the intensity of that congestion.

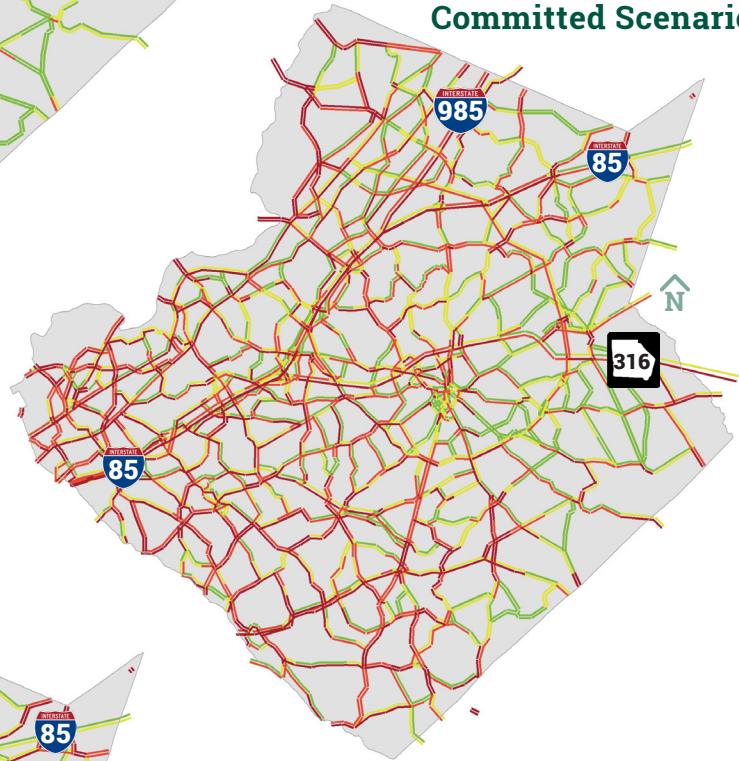
Congestion at different Levels of Service (LOS)



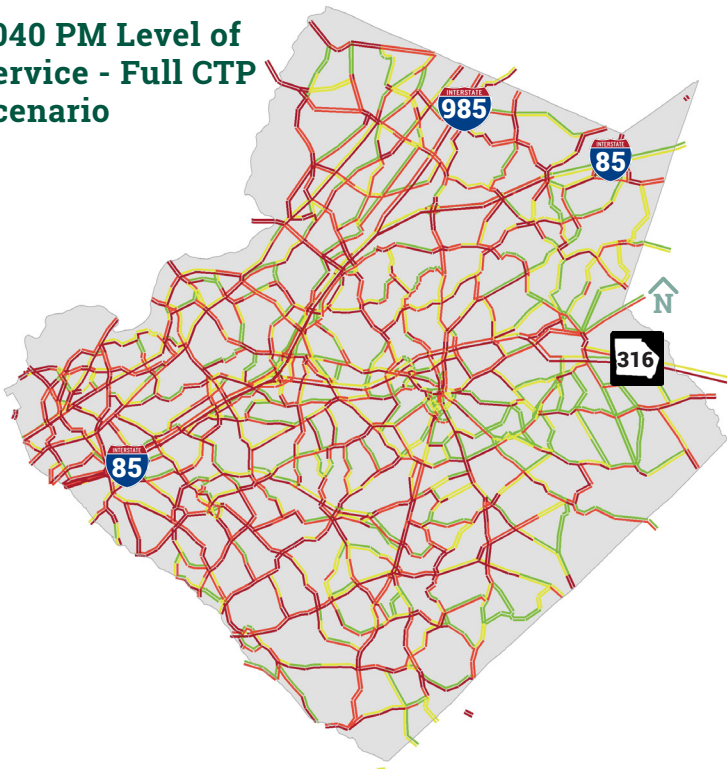
2015 PM Level of Service



2040 PM Level of Service - Existing and Committed Scenario



2040 PM Level of Service - Full CTP Scenario



Freight Transportation

Destination 2040 also examined freight travel in the County. Gwinnett County is already an important activity center for freight travel and industrial production as it is home to major manufacturing facilities and has the 3rd and 6th largest distribution centers in the Atlanta region. With other considerations such as the deepening of the Savannah Port and increases in industrial production/warehouse space not only in Gwinnett but throughout the Atlanta region, the need to accommodate freight travel will remain an important part of the County's transportation system.

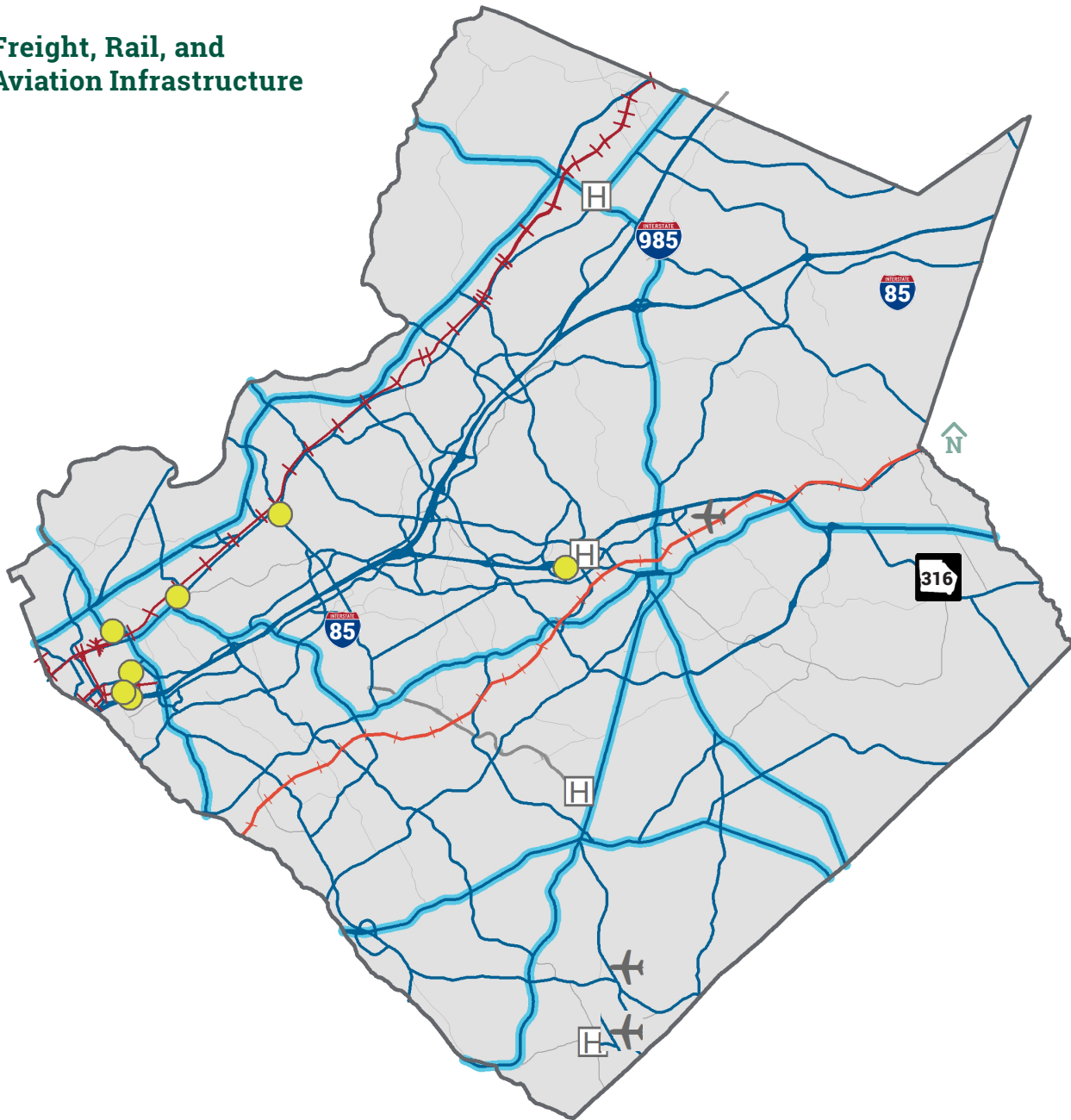
Gwinnett County is served by both CSX (22 rail miles in the County) and Norfolk Southern rail lines (33 rail miles). Amtrak has track rights to approximately 28 miles along the Norfolk Southern line that runs parallel to Buford Highway/US 23. There are 6 intermodal transfer facilities according to the 2015 National Transportation Atlas Database, predominantly in the western corner of the County along the Norfolk Southern rail corridor and spur. Outside of intermodal facilities, a Georgia Center of Innovation for Logistics spotlight identified 83 warehousing and distribution facilities that were operational in Gwinnett in 2013, noting the largest of these facilities were the following:

- Publix Super Market Warehouse (1,200,000 SF)
- Bluelinx Corp (700,000 SF)
- Global Equipment Co., Inc. (647,228 SF)
- United Stationers Supply (600,674 SF)

Alternative Modes of Transportation

In addition to vehicular and freight transportation, Destination2040 also considered alternative modes of transportation when planning for the County's transportation future. While the CTP completed analysis for bicycle and pedestrian facilities as well as the County's transit system, Gwinnett County Transit (GCT), Destination2040 also recommended in-depth analysis of each of these modes. The County subsequently undertook the Gwinnett Countywide Trails Master Plan effort for bicycle and pedestrian modes and the Connect Gwinnett: Transit Plan effort for the transit system. The analysis completed via the Destination2040 process is included with each of these respective planning efforts to keep information with each mode type together with the plan for which it had the greatest influence.

Freight, Rail, and Aviation Infrastructure



- Gwinnett County Truck Routes
- +— CSX Railroad
- +— Norfolk Southern Railroad
- Atlanta Strategic Truck Routes (defined by the Atlanta Regional Commission)
- Rail and Truck Intermodal Facilities
- Airport
- Heliport

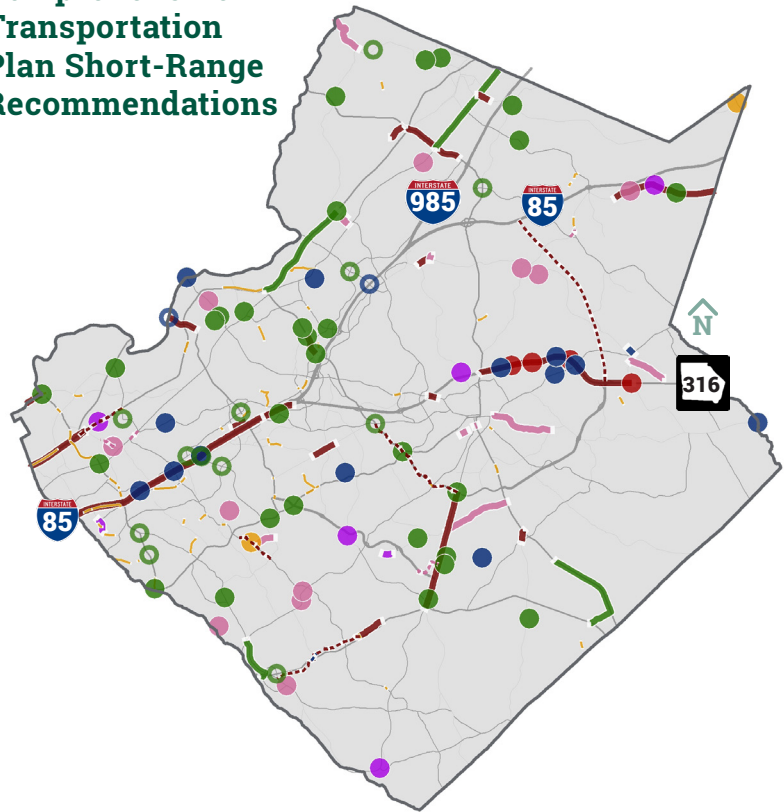
Conclusions and Recommendations

The final CTP recommendations are 'financially constrained', meaning that anticipation of future transportation funding (local, state, and federal) amounts 'constrained' the wish list to those projects that can realistically and reasonably be implemented. In doing so, a total of three project tiers were created for the purposes of this financial constraining and project prioritization. The funding amounts in these project tiers are estimates of possible revenues.

Comprehensive Transportation Plan Short-Range Recommendations

Short-Range (6 year): \$486,343,270

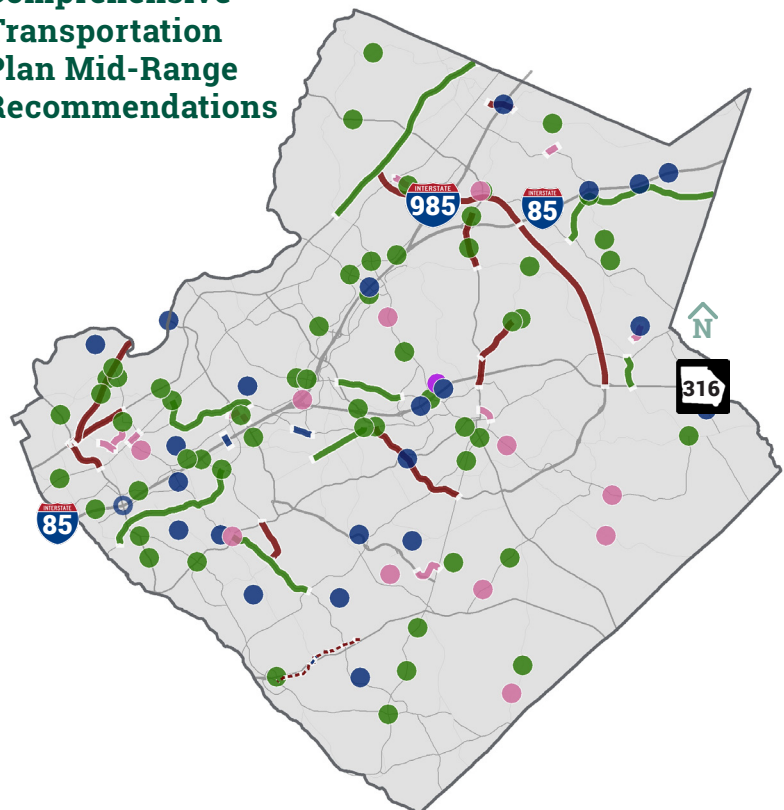
This tier includes all projects that are expected to be funded in the first six years of the plan, which is consistent with the timing of the current SPLOST program (2017-2023). All projects that have been selected for SPLOST funding as well as projects that are being advanced through other funding sources like GDOT statewide funds or existing federal funding commitments are included in this tier.



Comprehensive Transportation Plan Mid-Range Recommendations

Mid-Range (9 year): \$812,000,000

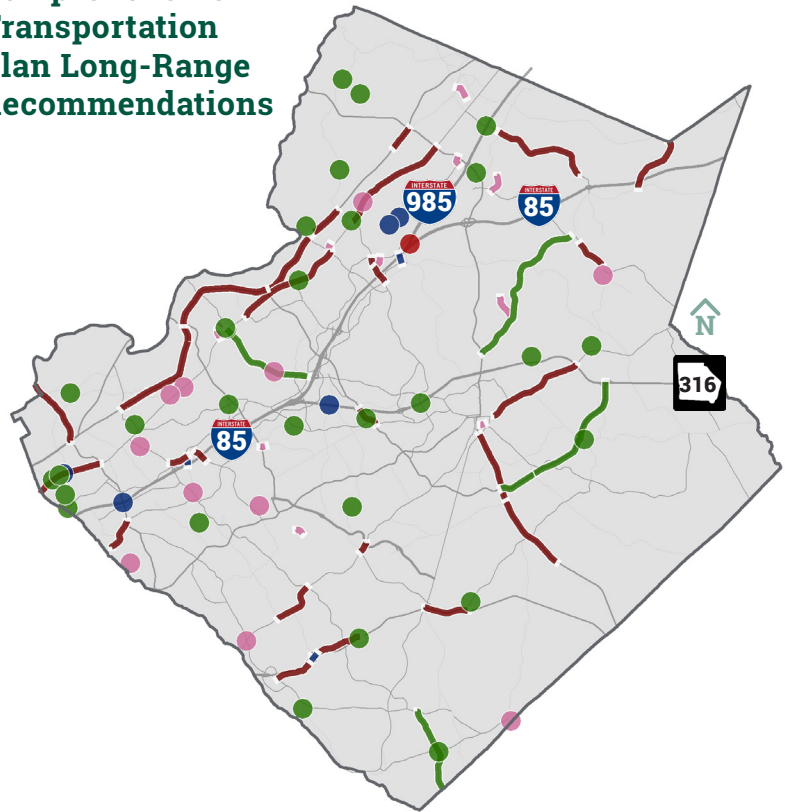
The Mid-Range plan covers projects that could be funded in the nine years following the completion of the current SPLOST program, assuming the sales tax were to continue as projected. Projects in this tier are the highest priority projects following those in the Short-Range Plan. This list of projects provides a good foundation of potential investments for elected officials, staff, and project selection committees to consider in the future as funding becomes available.



Comprehensive Transportation Plan Long-Range Recommendations

Long-Range (9 year): \$928,000,000

Similar to the Mid-Range Plan, the Long-Range Plan assumes a nine year timeframe of funding. Projects in this tier are priority projects for the County but are lower than the Mid-Range projects in terms of funding allocation, state/federal processes, and/or overall implementation schedule.



Partially Funded	Fully Funded	
		Bridges, Culverts and Transportation Drainage
		Intersections
		Major Roads
		Road Safety and Alignment
		School Safety
		Sidewalks and Pedestrian Safety
		Bridges, Culverts and Transportation Drainage
		Intelligent Transportation Systems (ITS/ATMS)
		Major Roads
		Road Safety and Alignment
		School Safety
		Sidewalks and Pedestrian Safety

A rendering of possible future development along "The Loop Trail," one of the Signature Trails recommended in the Gwinnett Countywide Trails Master Plan





Gwinnett Countywide Trails Master Plan

During the CTP planning effort, the County recognized an opportunity to develop a high-quality network of trails that could give the citizens of Gwinnett County both an innovative way to travel across the county and a place to exercise and socialize with family, friends, and neighbors. This realization led to the creation of the Countywide Trails Master Plan, developed in conjunction with the Gwinnett County Department of Transportation and the Gwinnett County Department of Community Services, as well as the cities and community improvement districts across the County.

To fully develop the plan, the planning team went through a multi-step process that was designed to help identify priorities and create a plan that presents a trails network based on those priorities. The Countywide Trails Master Plan examined previous planning efforts, including the 2014 Open Space and Greenway Master Plan Update, the 2017 Comprehensive Transportation Plan, and other trail planning efforts, as well as input from a Project Management Team (PMT) to build an initial catalog of possible trail projects.

When planning a bicycle and pedestrian network, trade-offs and priorities must be considered, particularly between making large semi-regional connections that may serve large portions of the community versus connecting existing gaps in the system that may be critical to only small parts of the community. Nonetheless, in these instances, a small investment to connect the existing facilities can return huge benefits by quickly, simply, and inexpensively creating significant network connectivity.

In Gwinnett County, gaps such as these occur in many places due to varying project limits and ages of developments. However, freeways are particularly challenging obstacles for bike and pedestrian facilities. Many interchanges are missing these kinds of infrastructure. Interchanges, along with all other roadways that cross the freeways, are key points in the bike and pedestrian network. Gwinnett's freeways in general present a significant obstacle for cyclists and pedestrians, so every opportunity to cross them is key. Additionally there are limited opportunities to cross the Chattahoochee River.

To help understand where both regional and localized improvements should be considered, a suitability analysis was prepared to evaluate different areas for bike and pedestrian improvements. This analysis used a variety of conditions in Gwinnett County to analyze four broad categories:

- Attractions: proximity to destinations people want to access;
- Demand: proximity to places where likely users live;
- Character: general character of the facility; and
- Future Needs: how areas are anticipated to change in the future.

Attractions Analysis

Roadway and greenway segments that are within walking and biking distance of notable places to which people might want to walk or bike are recognized in this analysis and are inclusive of the considerations below.

- Transit
- Civic
- Employment
- Parks
- Retail
- Schools

Demand Analysis

This analysis considers where populations live that are more likely to walk or bike. Some of these include areas with higher percentages of residents who do not have a car available to them, where children live, or where short-distance trips are more common. These factors were analyzed at either the Census Block, Census Block Group, or ARC Traffic Analysis Zone (TAZ) level.

- Walk Commute
- Transit Commute
- Bike/Other Commute
- Overall Density
- Density of Children
- Density of Aging Individuals

Character Analysis

A consideration of corridors with less vehicular volume, easier slopes, and proximity to other bike and pedestrian facilities like greenways and sidewalks. This was done to give preference to network segments that would be safer, and more comfortable for users.

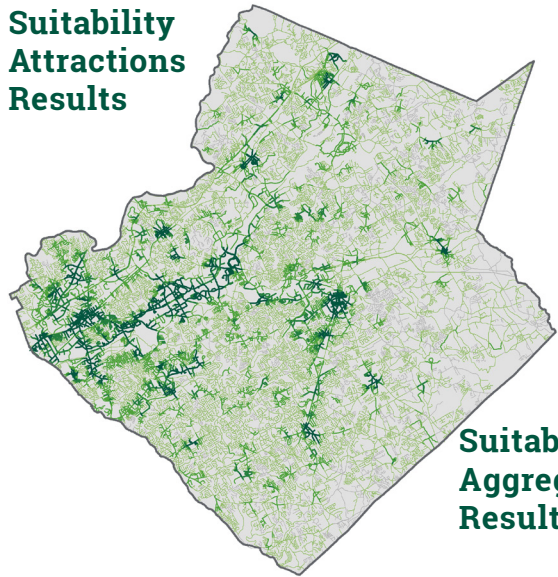
- Proximity to Existing Bike Facilities
- Proximity to Existing Sidewalks
- Adjacent Roadway Vehicle Speeds
- Short, Local Trips
- Slope
- Adjacent Roadway Traffic Volumes
- Block Size

Future Needs Analysis

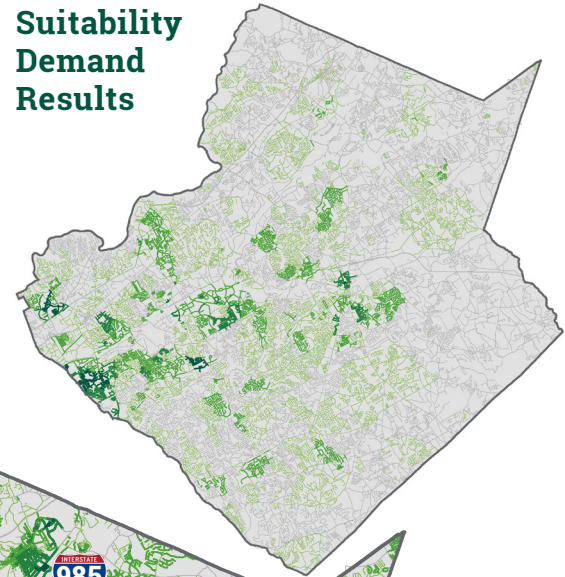
The final section of the analysis considers where growth is projected within the County, based on the County's Future Development Map and projections of employment and population density for the next several decades. These projections were provided by ARC at the TAZ level.

- Increase in Population Density
- Increase in Employment Density
- Increase in Short Local Trips

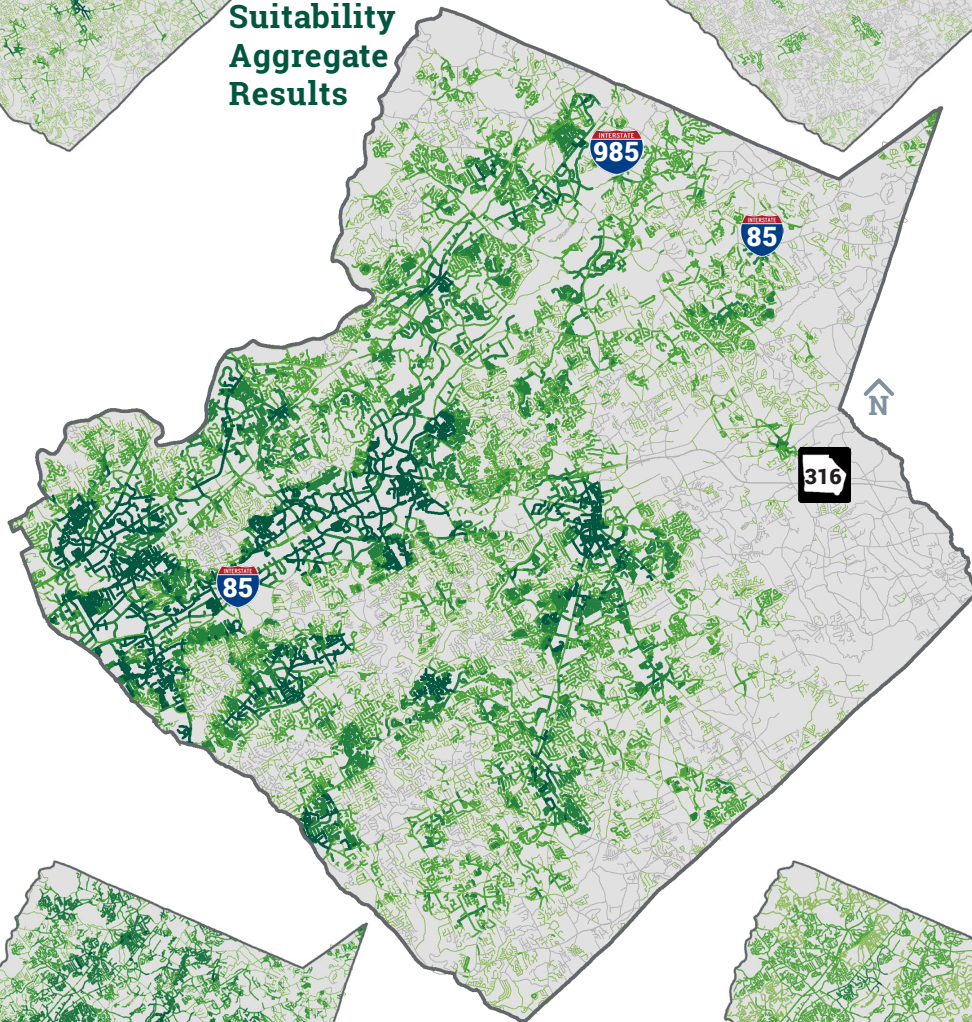
Suitability Attractions Results



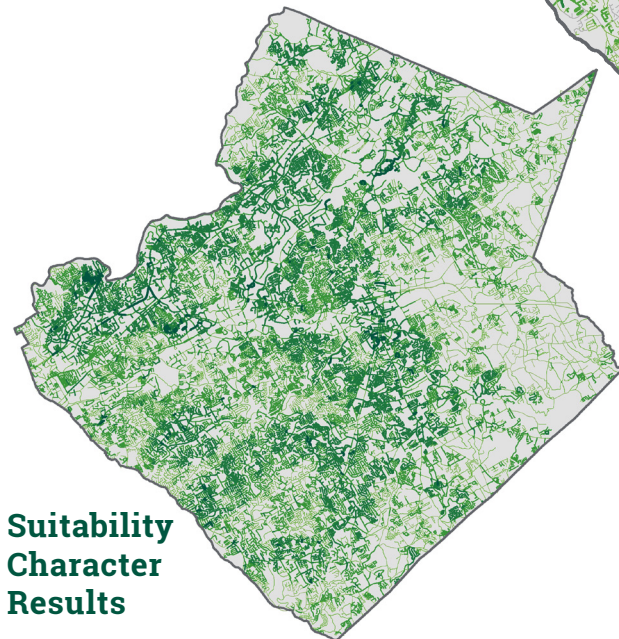
Suitability Demand Results



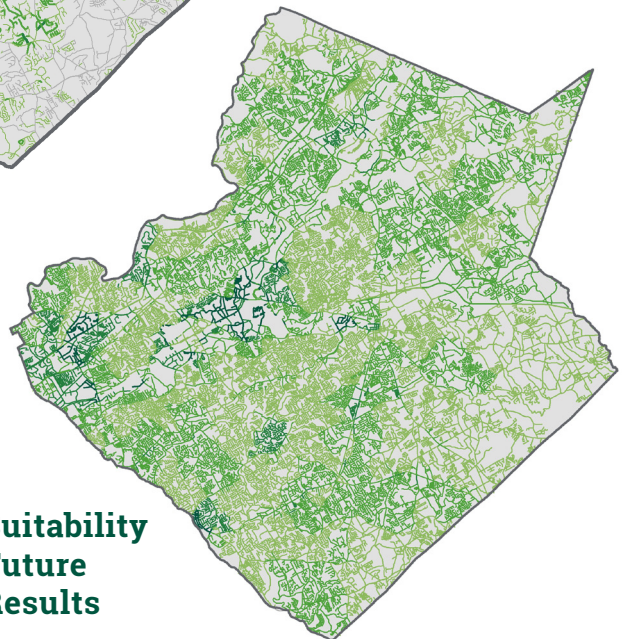
Suitability Aggregate Results



Suitability Character Results



Suitability Future Results



Conclusions and Recommendations

The full realization of the Countywide Trails Master Plan—beyond funding for implementation—will require the County to maintain some current policies and create new policies related to bicycle/pedestrian amenities.

One of the most important policy-related documents relevant to the Countywide Trails Master Plan is the County’s Unified Development Ordinance (UDO). Currently within the UDO, developers are required to provide “access, dedication of easement and/or construction of greenway trails” that exist within the trail network laid out in the Gwinnett County Open Space and Greenway Master Plan. As the Countywide Trails Master Plan was published, the 2040 Unified Plan was not yet in a position to determine what UDO updates needed to be made to support the Countywide Trails Master Plan. Instead, the Trails Plan made a general recommendation for the Trails Plan to be incorporated into the UDO. In addition, the Countywide Trails Master Plan recommended that the County seek to preserve or even expand the development requirement to capture the trails identified in the Master Plan. The expansion of the requirement could assist the County with building out the trails network faster and using less public funding.

Outside of the policy objectives within the Unified Plan and UDO, there are other policy elements that will help with the success of this plan and the network it lays out. Another one of those policies that should be considered is to prioritize the bike and pedestrian connections to the trails network as it is constructed. Bike and pedestrian access is critical for the network to be fully utilized and therefore it will be important for GCDOT to prioritize projects that help connect users to the network.

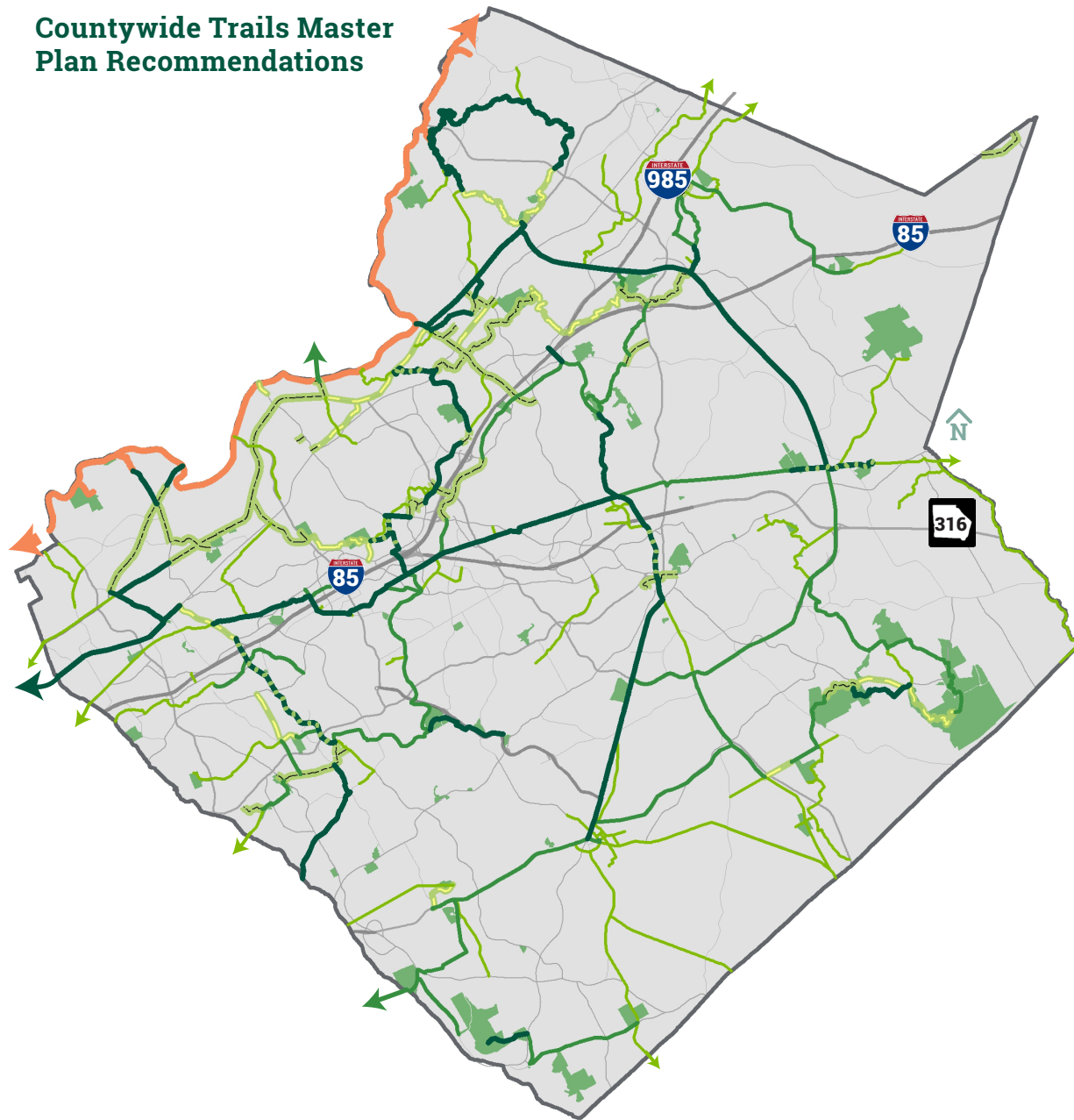
Another important policy that the County should consider is to upgrade the existing trails network to the standards of the network outlined within this plan. Having a congruent and seamless network will be important to the network reaching its highest potential and being fully utilized by the people of Gwinnett County.

The County also needs to ensure that proper maintenance and upkeep is conducted on the trails, both existing and those constructed in the future. Coordination between GCDOT and Parks and Recreation will be very important in terms of maintenance because the network will run both within parks and within the right-of-way of many County-owned roads. The funding assumptions made in this plan are focused on the capital costs required to complete the initial construction but do not cover the maintenance costs. Therefore, the development of congruent maintenance plans and policies that are financially feasible is something that the County will need to make a priority as the network is constructed.

On the implementation side, the plan identified four overall networks that could be developed.

- The Core Trail Network (comprised of existing and underway trails as well as the recommended Signature Trails) is composed of trail segments identified as part of the larger Countywide system anticipated for initial plan implementation. Although full implementation of the Core Trail Network may take multiple decades if considering current and likely funding sources, additional financial support may mean earlier implementation.
- Priority Trails are anticipated to be implemented after the Core Trail Network is realized.
- Trails with Partners may be built through County development/ redevelopment requirements or other partnerships.
- The Chattahoochee Trail Network is a regionally significant trail (from Coweta County north to Buford Dam) that is expected to be implemented through a partnership among multiple agencies.

Countywide Trails Master Plan Recommendations



- Core Trail Network
- Chattahoochee Trail Network
- Priority Trails
- Trails with Partners
- Existing Trail
- Funded Trail
- Partially Funded Trail

Two basic types of trails are proposed for the Gwinnett County network – off-road trails and side paths that run adjacent to the roadways. While specific characteristics have been identified for the two different trail types, each corridor will be designed with consideration given to its unique topology, right-of-way, and context. The ideal width for trails is 12 feet but in areas of anticipated higher use, trails may be designed to 14 feet wide. In locations of constrained right-of-way, trails may be constructed as narrow as 8 feet in width.

Off Road Trails

Off-road trails are greenways and pathways that are not located along a roadway but instead follow their own alignment or possibly a stream or utility easement. The trails are ideally 12 to 14 feet in width and typically will be constructed with concrete as well as timber bridges and boardwalks around wetlands and other environmentally-sensitive areas. When signalized

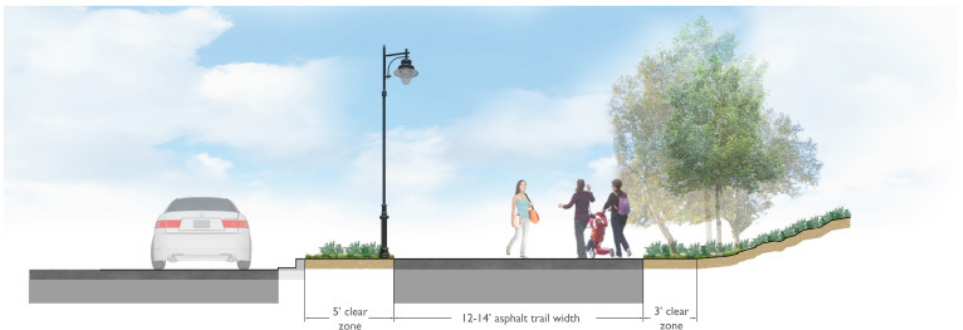
crossings of roadways are not preferred or possible, elevated or tunneled trail crossings may be considered. Restrooms and parking locations may be located at trailheads and other key points along the path.



- Typically concrete paving
- Timber bridge and boardwalks
- Concrete wall with handrails where needed
- Signalized roadway crossings or grade separation where needed
- Minimal locations with lighting
- Trailhead signage, wayfinding signage, mile markers
- Restrooms and/or parking in key locations
- Construction cost per mile: \$3.2-3.5M

Side Path

Side paths are multi-use trails that run adjacent to the roadway with a buffer separation in between. The trails are ideally 12 to 14 feet in width and typically will be constructed with asphalt. When signalized crossings of roadways are not preferred or possible, elevated or tunneled trail crossings may be considered.

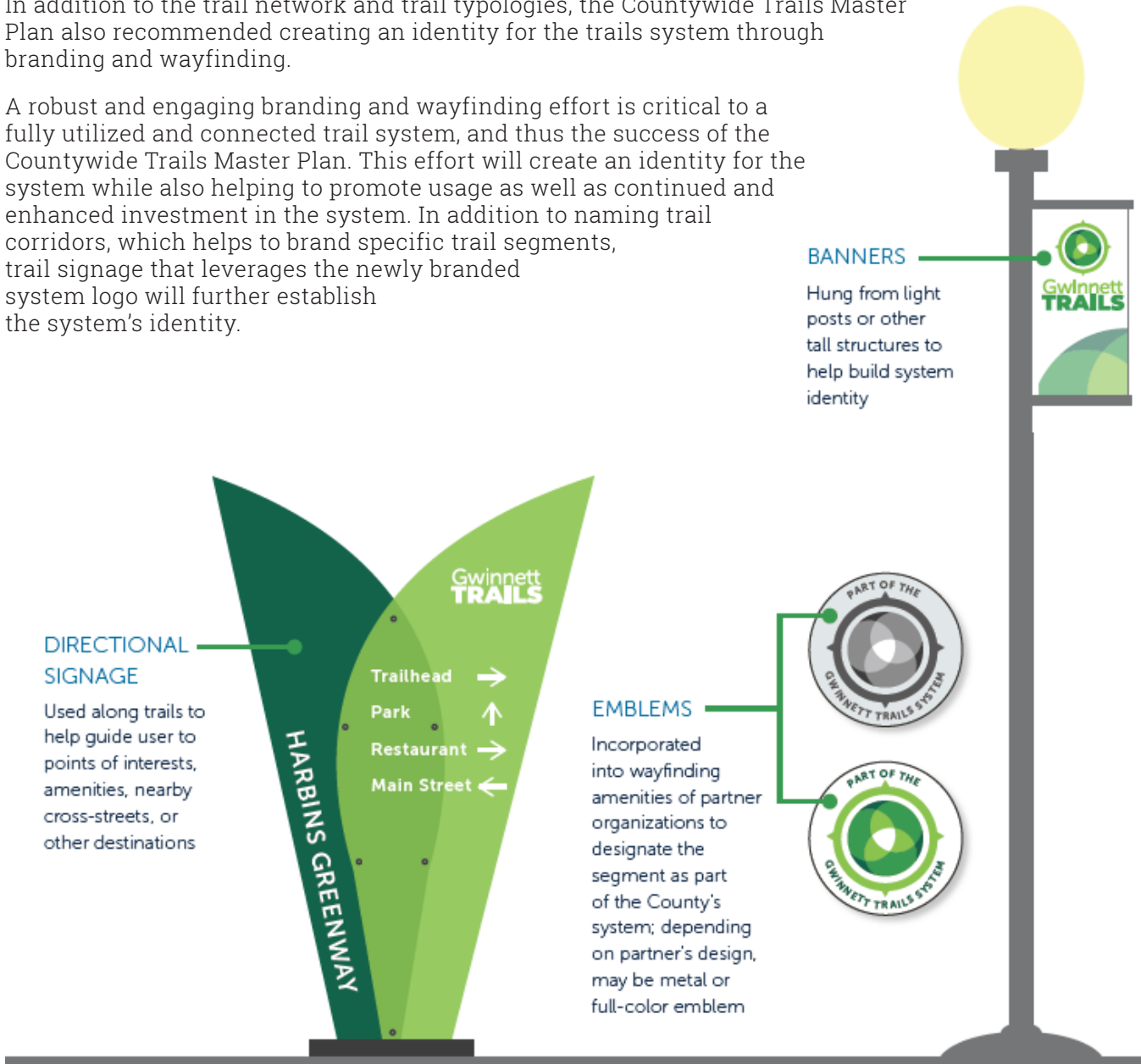


- Typically asphalt paving
- Timber bridge and boardwalks
- Concrete wall with handrails where needed
- Signalized roadway crossings or grade separation where needed
- Minimal locations with lighting
- Trailhead signage, wayfinding signage, mile markers
- Restrooms and/or parking in key locations
- Construction cost per mile: \$3.2-3.5M

Branding/Wayfinding

In addition to the trail network and trail typologies, the Countywide Trails Master Plan also recommended creating an identity for the trails system through branding and wayfinding.

A robust and engaging branding and wayfinding effort is critical to a fully utilized and connected trail system, and thus the success of the Countywide Trails Master Plan. This effort will create an identity for the system while also helping to promote usage as well as continued and enhanced investment in the system. In addition to naming trail corridors, which helps to brand specific trail segments, trail signage that leverages the newly branded system logo will further establish the system's identity.



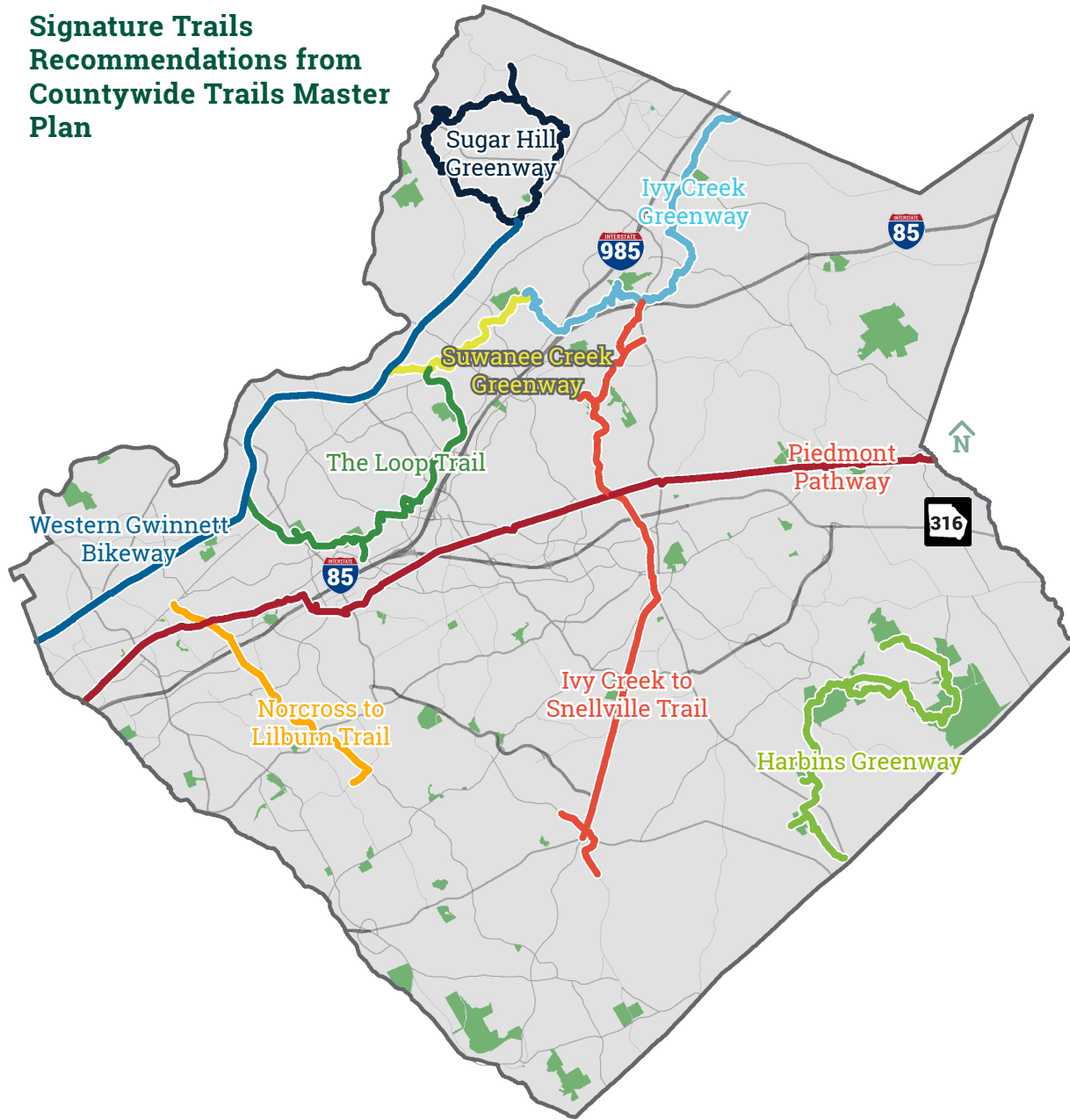
Signature Trails

While the Countywide Trails Master Plan sought to expand the County's trails system in general, a handful of signature trails will help to create an identity for the trails system and will serve as examples of how to design and build bicycle and pedestrian facilities in Gwinnett. These signature trails, termed such to signify that these facilities will be the hallmarks of the network, were identified because of the importance that they have in the overall system, in regards to scale of facility, amenities, connectivity, location, and other defining features. Some Gwinnett cities are leading the implementation of signature trails in their communities, such as the Sugar Hill Greenway and Suwanee Creek Greenway.

Gwinnett County's signature trails are:

- Harbins Greenway
- Ivy Creek Greenway
- Ivy Creek to Snellville Trail
- The Loop Trail
- Norcross to Lilburn Trail
- Piedmont Pathway
- Sugar Hill Greenway
- Suwanee Creek Greenway
- Western Gwinnett Bikeway

**Signature Trails
Recommendations from
Countywide Trails Master
Plan**



Connect Gwinnett: Transit Plan

Connect Gwinnett: Transit Plan, or Connect Gwinnett, is the County's first comprehensive look at transit since the inception of the system in 2001. Connect Gwinnett is a Comprehensive Transit Development Plan (CTDP), a road map for how the County would like to develop its transit networks to serve current and future needs.

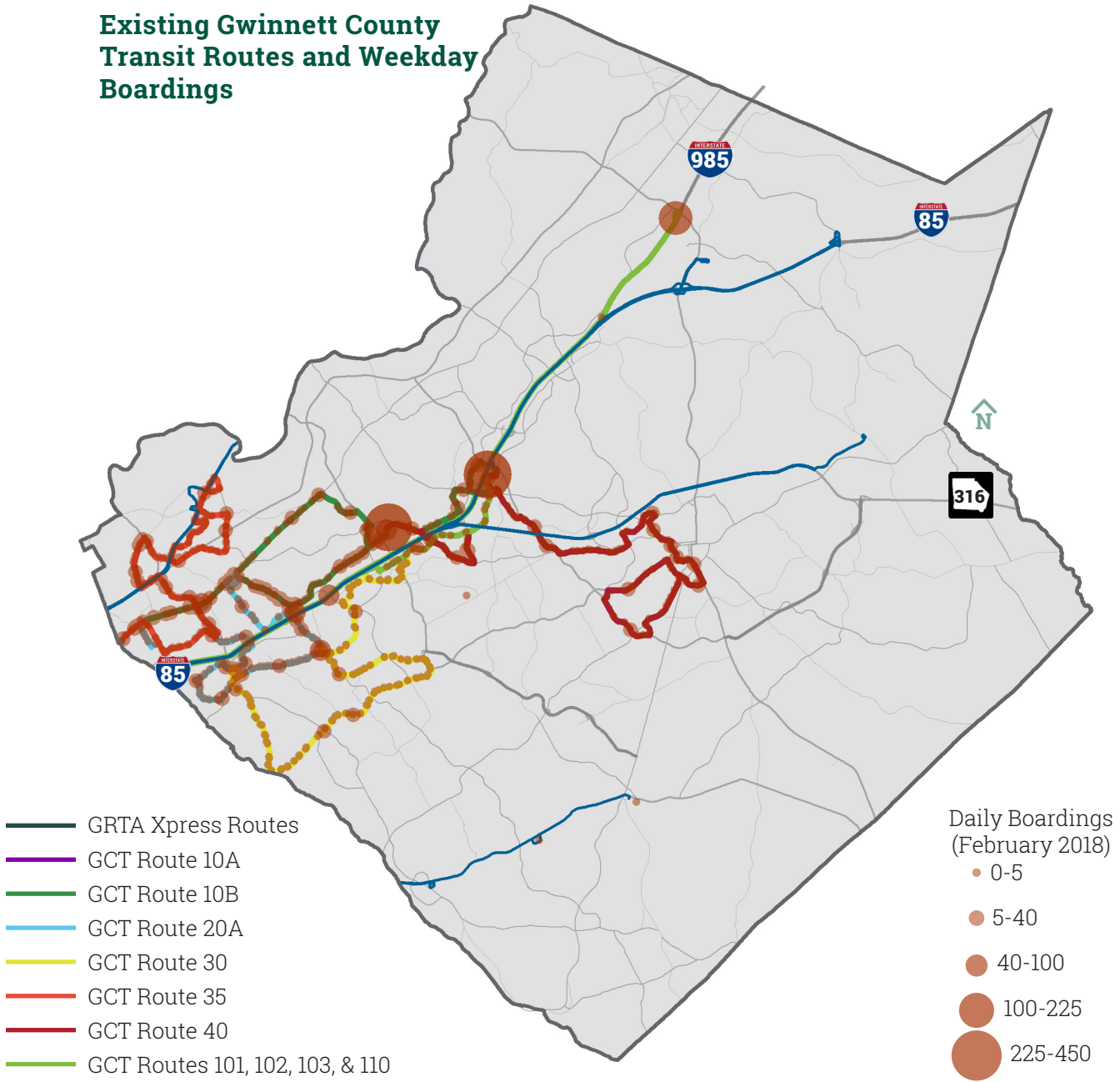
The plan aims to achieve the following outcomes:

- Short-term improvements that improve service, ridership, and reach key untapped markets of latent demand
- Mid-term service enhancements that expand transit accessibility and desirability with efficient service and infrastructure enhancements
- Long-term plan that will allow the County to meet economic growth objectives and enhance the lives of its residents through the provision of high-quality and sustainable transit
- A countywide vision with broad-based support for future dedicated transit funding and implementation
- Make transit a mode of choice for work and leisure trips

Public transportation services within Gwinnett County are provided by two transit operators: the Georgia Regional Transportation Authority (GRTA) and Gwinnett County Transit (GCT). GRTA operates strictly an express service system which has routes both originating within the County and routes passing through the County.

Gwinnett County Transit (GCT) began express route service in November 2001 and local bus service in November 2002. GCT operates six local bus service routes and five express service routes. The six GCT local bus service routes are primarily focused in southwestern and central Gwinnett County and the express routes (both GRTA and GCT) are concentrated along major highways.

Existing Gwinnett County Transit Routes and Weekday Boardings



Understanding the System

Determining service needs starts with defining the word “need.” Travel is a necessity for everyone and serves as the means for people to access activities, whether that is commuting to work or school, going to the grocery store or hospital for appointments, or seeing friends or family. Depending on the trip purpose, service needs shift and transit service needs often require enough flexibility to meet these ever-shifting demands.








The service needs identified in Connect Gwinnett reflect a collection of inputs that stem from analysis of existing demographics, current and future projected travel patterns, current GCT service performance, as well as input from stakeholders and the public. This mix of inputs is critical, as it provides a balanced consideration of both regional commute trips and local mobility needs.

GCT Service Strengths	GCT Service Weaknesses
Consistent route patterns exist with no branches, no trip exceptions.	Many route alignments are circuitous – particularly on east side of I-85.
Routes operate at clock headways.	Midday frequencies are only 60 minutes on all routes.
Four of the six local routes connect to MARTA. There is a strong desire for Gwinnett County Transit riders to connect to MARTA.	Routes 30 and 40 do not connect to MARTA and are the system's lowest-performing routes.
Routes 10A/10B are strong performing routes with good on-time performance.	Afternoon on-time performance deteriorates on all routes. There is insufficient recovery time at route ends-of-line.
Route coverage is in areas where there is the greatest density	There is limited evening service coverage and no Sunday service.
Routes cover a reasonably good percentage of countywide employment locations (40% within 1/3 mile of local service).	Only 17% of county residents live within 1/3 mile of local service.
Express Route 103 is a strong-performing route, with several trips averaging more than 35 riders per trip.	Saturday route performance drops significantly from weekday performance.
	Timed transfers between routes are inconsistent.

Gwinnett County Transit presently services the highest density areas of the County. However, there are areas of opportunity, such as activity centers with transit-conducive characteristics, that remain unserved by transit. These areas include:

- The Satellite Boulevard corridor north of Sugarloaf Parkway
- The Mall of Georgia area
- The Snellville area

A variety of transit solutions were available for consideration in the CGTP. Each transit mode is most applicable to serve a different type of travel pattern or density of demand. Connect Gwinnett assessed the viability of the full spectrum of transit solutions to fit the travel characteristics and demands of Gwinnett County. The table defines the different modes considered and their key characteristics, including speed, cost, right-of-way needs, and station spacing.

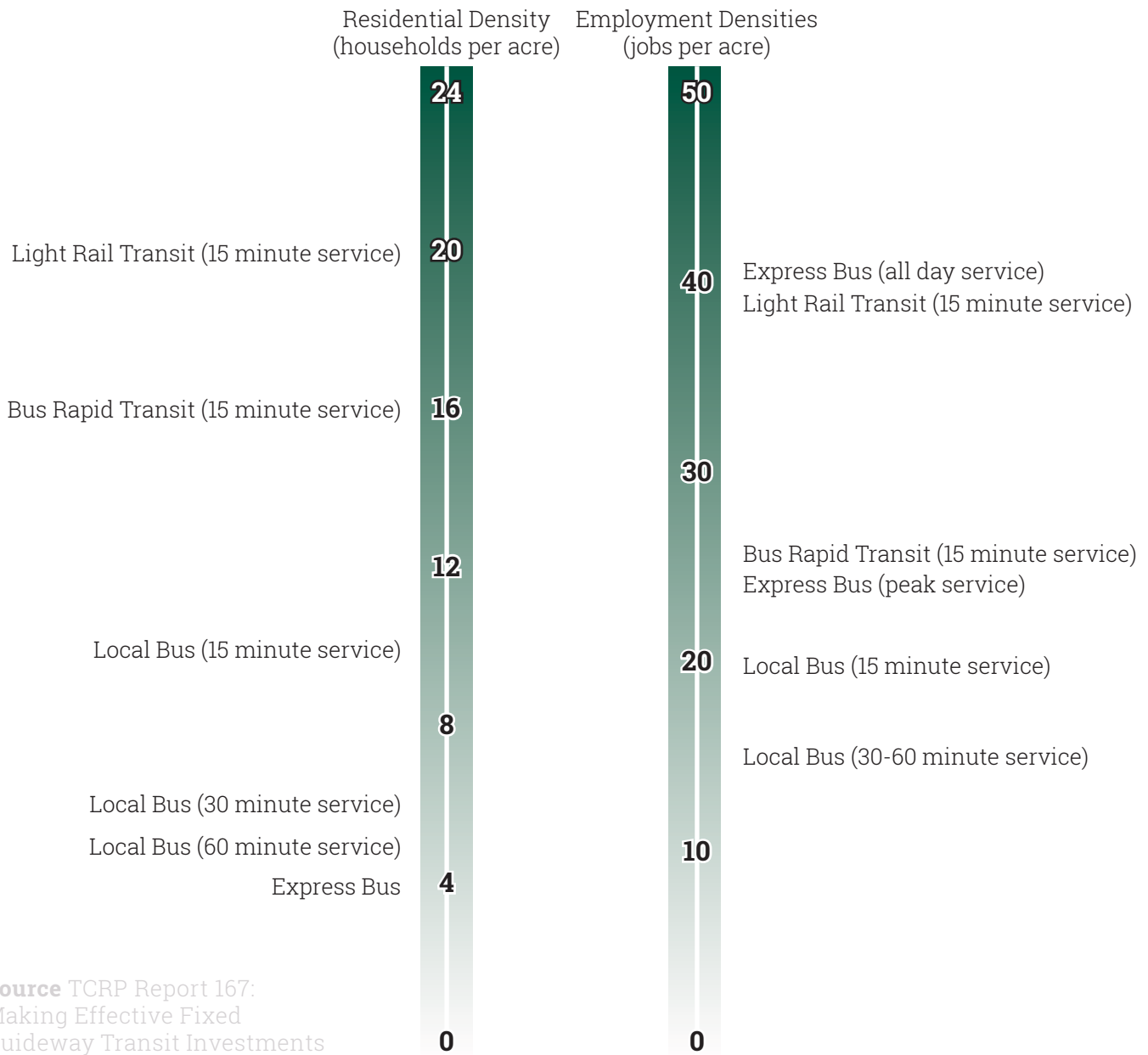
Mode	Description	Cost
<p>Heavy Rail Transit (HRT)</p> 	<p>High speed/rapid acceleration rail cars</p> <p>Electrified and fully grade-separated</p> <p>Substantial stations with faregates</p> <p>Stations spaced every 1 to 5 miles</p>	<p>Capital: \$250M/mile</p> <p>Operating: \$1,150/rev. hour</p>
<p>Light Rail Transit (LRT)</p> 	<p>Operates most commonly in dedicated right-of-way</p> <p>Electrified, can be grade-separated or street level</p> <p>Lower capacity and speed than heavy rail</p> <p>Stations spaced every ½ to 1 mile</p>	<p>Capital: \$95-125M/mile</p> <p>Operating: \$400/rev. hour</p>
<p>Commuter Rail</p> 	<p>Electric or diesel propelled</p> <p>Carries moderate to long distance commuters</p> <p>Often runs in corridor shared with freight services</p> <p>Stations spaced at least every 2 to 5 miles</p>	<p>Capital: \$20-25M/mile*</p> <p>Operating: \$1,000/rev. hour</p> <p>*Assumes operation in existing rail right of way</p>
<p>Bus Rapid Transit (BRT)</p> 	<p>Rubber tired vehicles in primarily dedicated ROW</p> <p>Priority treatments to increase speed and reliability</p> <p>Enhanced stations spaced like LRT with distinctive branding and off-board fare collection</p>	<p>Capital: \$20-30M/mile</p> <p>Operating: \$83/rev. hour</p>
<p>Rapid Bus</p> 	<p>Rubber tired vehicles</p> <p>Runs some dedicated lanes</p> <p>Mostly queue jumper lanes and transit signal priority to minimize buses getting stuck in congestion</p> <p>Station spacing 1/4 to 1/3 mile</p>	<p>Capital: \$3-13M/mile</p> <p>Operating: \$73/rev. hour</p>
<p>Express Commuter Bus</p> 	<p>Rubber tired coach vehicles</p> <p>Serves long-distance, commute flow</p> <p>Mostly mixed flow, benefit from managed lanes</p> <p>Limited stops, primarily route termini</p>	<p>Capital: \$10-150M/new Park-and-Ride</p> <p>Operating: \$105/rev. hour</p>
<p>Vanpool</p> 	<p>Uses vans for targeted small groups</p> <p>Serves commuters who have similar home and work locations</p> <p>Limited stops focused on route termini</p>	<p>Operating: \$750k/year</p>

Integrating Transit and Development

With the focus on infrastructure, the goal of a Unified Plan is to integrate land uses with transportation investments. Each transit mode is most cost effective and sustainable within a certain range of trip densities; these are determined by underlying demographic household and employment densities. Higher capacity transit modes require higher levels of investment and are more efficient with higher population and employment densities that can generate higher levels of demand for travel activity.

The two graphics below show density guidelines based on industry research for effective transit service for population and employment, respectively. These density guidelines served to provide high-level guidance but were not the only factor in the decisions surrounding mode choice. Other factors include cost, constructibility, and public preference.

Transit-Supportive Densities



Integrating Transit with Other Transportation Modes

Gwinnett County has an opportunity to leverage its existing transit and multimodal strengths to increase alternative transportation mode share, as well as transit system ridership, by providing better transportation connections between multiple modes. The County's CTP–Destination2040–identified projects that were specifically designed to respond to this need. However, policies also can support and further these connections. Policy and code modifications have the ability to shape urban form, encourage new behavior, and strategically position the County to create vibrant multimodal communities with realistic financial requirements.

Multimodal Connectivity policies identified in the Destination2040 plan include:

- Establish a transit-oriented development policy along major transit corridors and near activity centers, with a particular focus on the inclusion of multiple modes of transportation within these corridors. In addition, support transit corridors by providing adequate bicycle and pedestrian facilities, integrating the Gwinnett Countywide Trails Master Plan's vision, to enable transit users to access transit stations without needing a vehicle.
- Evaluate a bike share and other shared-use technologies to improve first- and last-mile connectivity from key transit stations and activity centers to residential, commercial, and office buildings. This integration of transit and bicycle/pedestrian infrastructure has the ability to reduce automobile dependency and to increase the reach of transit in specific parts of the County. Cross-jurisdictional coordination between Gwinnett County, its cities, and the CIDs should occur to make this service successful.
- Promote non-single occupancy (SOV) travel and coordinate Transportation Demand Management (TDM)—which considers both commute-based and non-commute based travel as well as mode, time of day, route, and location choices available to individual travelers—strategies to ensure that future transportation funding can keep up with the travel needs of a growing population.
- Leverage the new TDM coordinator's position during regional coordination meetings and continue to look for ways to coordinate countywide TDM strategies with Gwinnett County Transit routes and services.
- Implement zoning requirements for new developments to provide alternative transportation programs and amenities to improve the user experience of taking transit, walking, or biking and increase alternative mode share.
- Consider future opportunities to increase or enhance connectivity (including new complete streets and other multimodal facilities) as redevelopment occurs along major transit corridors.

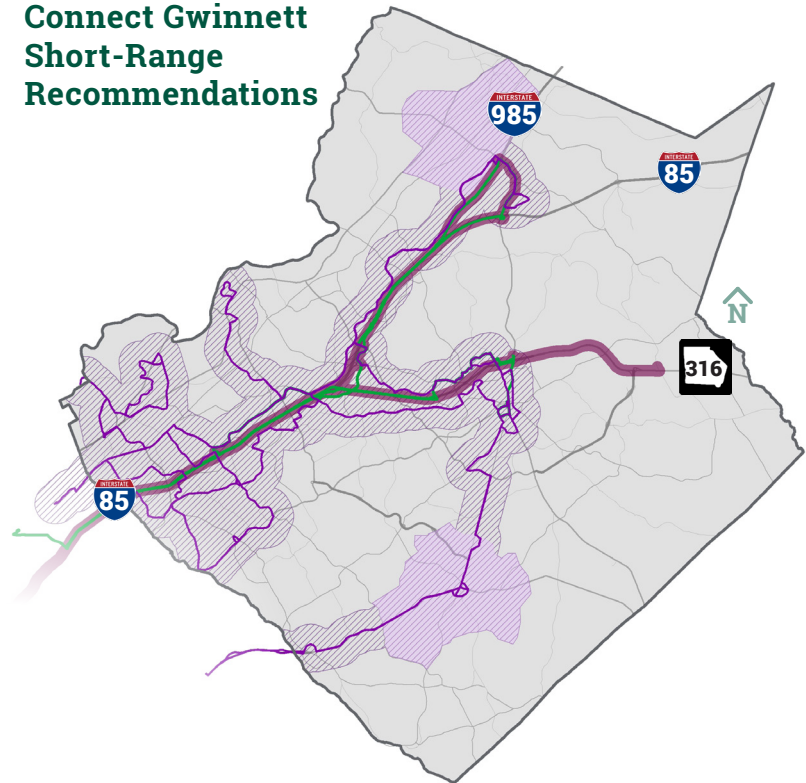
Conclusions and Recommendations

In July 2018, the Gwinnett County Board of Commissioners adopted the Connect Gwinnett: Transit Plan Recommendations. These recommendations are segmented into 3 major time frames—Short-, Mid-, and Long-Range—with the Long-Range plan offering two options (1A and 1B) as well as a second phase (Long-Range Phase 2). Below are high-level descriptions of each of the Connect Gwinnett plan’s time frames:

Short-Range (0 to 5 years):

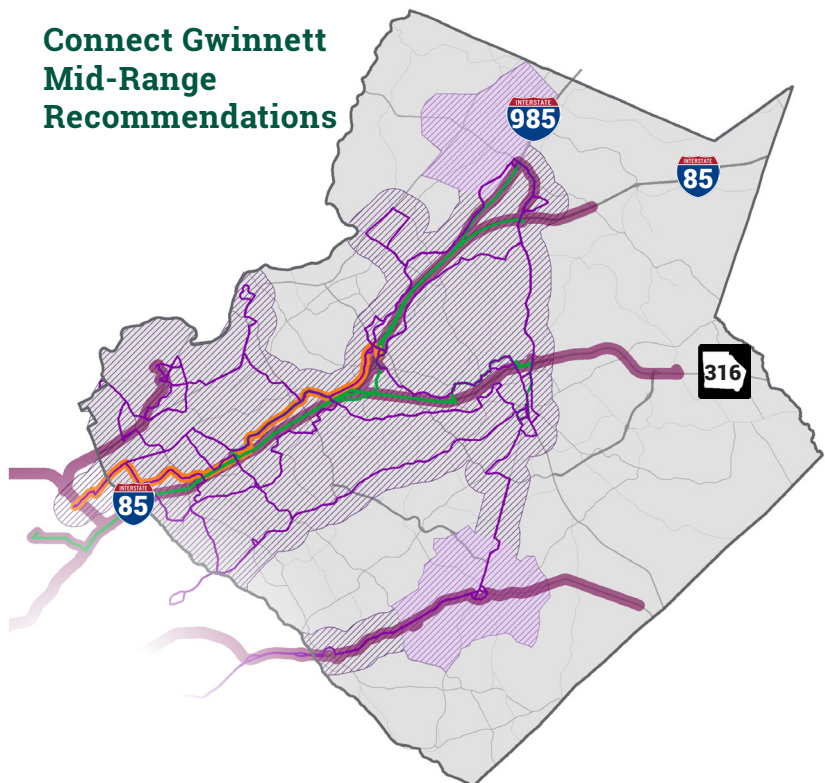
Modifications that improve service, ridership, and reach key untapped markets of latent demand constrained by fleet and infrastructure that is reasonably expected to be available within the next five years.

Connect Gwinnett Short-Range Recommendations



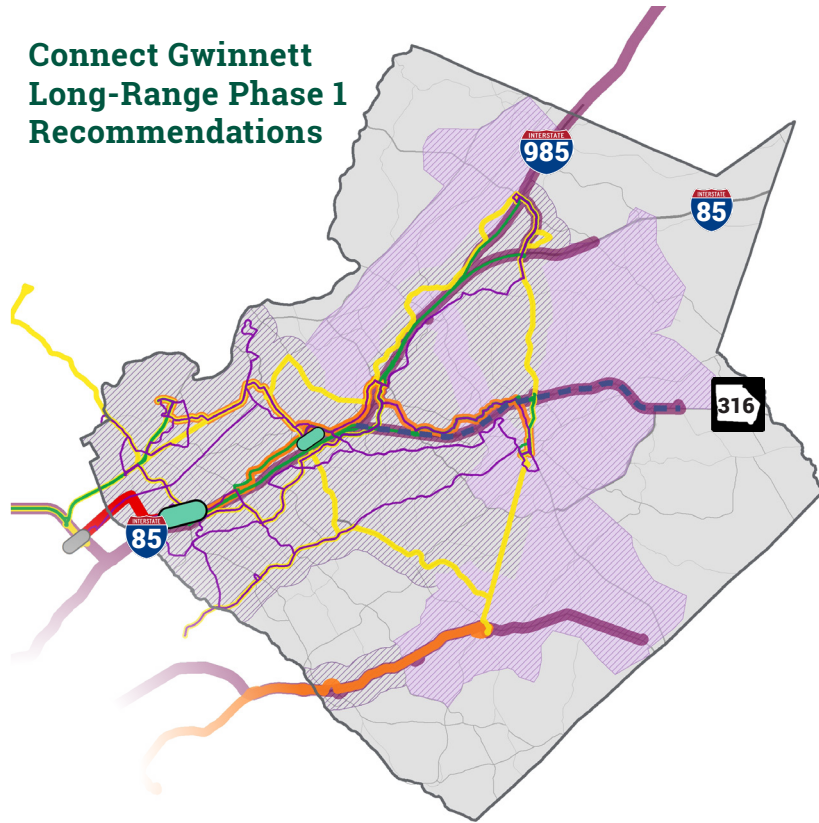
Connect Gwinnett Mid-Range Recommendations

Mid-Range (6 to 10 years): Service enhancements that expand transit accessibility and desirability with efficient service by leveraging infrastructure that is reasonably expected to be available within the next ten years and fleet expansion.



Long-Range Phase 1 Plan (Years 11-30): investments that will allow the County to enhance the lives of its residents through the provision of high-quality and sustainable transit while meeting the needs of the County’s projected economic and population growth.

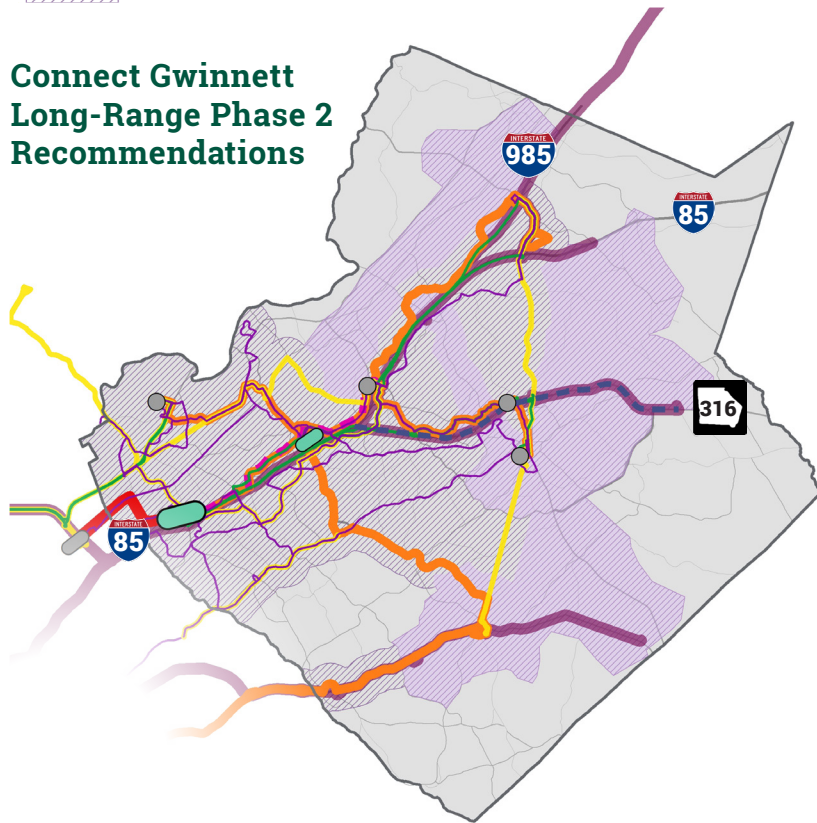
Connect Gwinnett Long-Range Phase 1 Recommendations



- Heavy Rail Transit
- Heavy Rail Transit Option
- Express Commuter Bus
- Bus Rapid Transit
- Light Rail Transit Option
- SR 316 Managed Lanes
- Rapid Bus
- Direct Connect
- Local Bus
- Paratransit Area
- Flex Service Areas
- Transit Centers
- Multimodal Centers

Long-Range Phase 2 Plan (30+ years): market-driven service extensions and upgrades that build on the Long-Range Phase 1, including additional high-capacity transit service not constrained to the 30-year financial projections.

Connect Gwinnett Long-Range Phase 2 Recommendations



The Water Innovation Center is currently being planned for Applied Research, Education, Innovation, and Workforce Development





WATER & SEWER

A major component of our infrastructure that highly influences our community's ability to be successful includes the various initiatives addressed by the Gwinnett County Department of Water Resources (DWR). DWR's efforts, particularly those contemplated in the Sewer Master Plan 2050 (SMP 2050) on sewer service and expansion, is important when it comes to looking at where future land uses, new/greenfield development, and redevelopment will likely take place.

THE SMP 2050 included:

- Establishing overall influencing factors, including system expansion for growth and development; future capacity needs; collection and conveyance system optimization and risk mitigation; and lake and stream water quality improvements;
- Reviewing Gwinnett County growth and development trends in order to develop SMP 2050 focus areas;
- Defining service delivery areas and economic planning corridors;
- Developing population projections and wastewater flow forecasts through the year 2050. The SMP 2050 wastewater flow forecasts were compared to the Metropolitan North Georgia Water Planning District (MNGWPD) 2017 Water Resource Management Plan. Overall, the SMP 2050 wastewater flow forecasts align very well with the MNGWPD forecasts and are in agreement with the MNGWPD plan.
- Evaluating existing wastewater collection and conveyance systems against baseline conditions and forecasted wastewater flows; and,
- Assessing capacities of the three Water Reclamation Facilities (WRF) against forecasted wastewater flows.

Assessing the System

Wastewater Collection and Conveyance System

DWR owns, operates, and maintains a comprehensive wastewater management system, with assets consisting of almost 2,800 miles of gravity sewer pipe, 220 wastewater pump stations, 270 miles of wastewater force mains, and three Water Reclamation Facilities (WRF) with a combined permitted capacity of 98 million gallons per day (mgd).

This includes DWR's gravity collection system. There are eight river drainage basins across the County. Of the 220 raw wastewater pump stations, 14 are considered large regional pump stations that, in general, serve multiple drainage sub-basins.

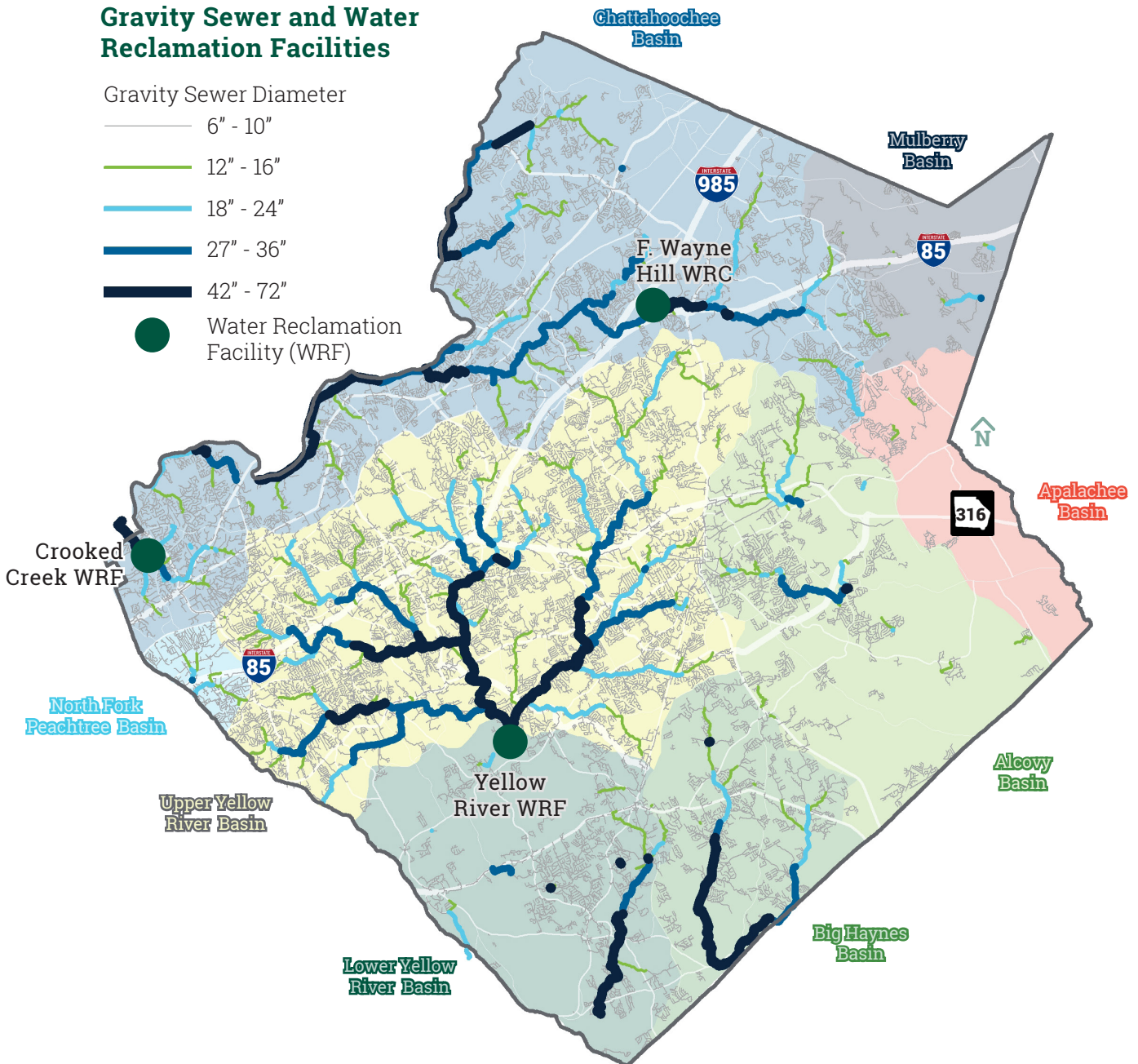
This also includes the location of the three WRFs and the 14 regional pump stations and their associated force mains. A fourth WRF is under consideration to be created within the southern portion of the County. Its exact location has not yet been determined.

Gravity Sewer and Water Reclamation Facilities

Gravity Sewer Diameter

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

● Water Reclamation Facility (WRF)

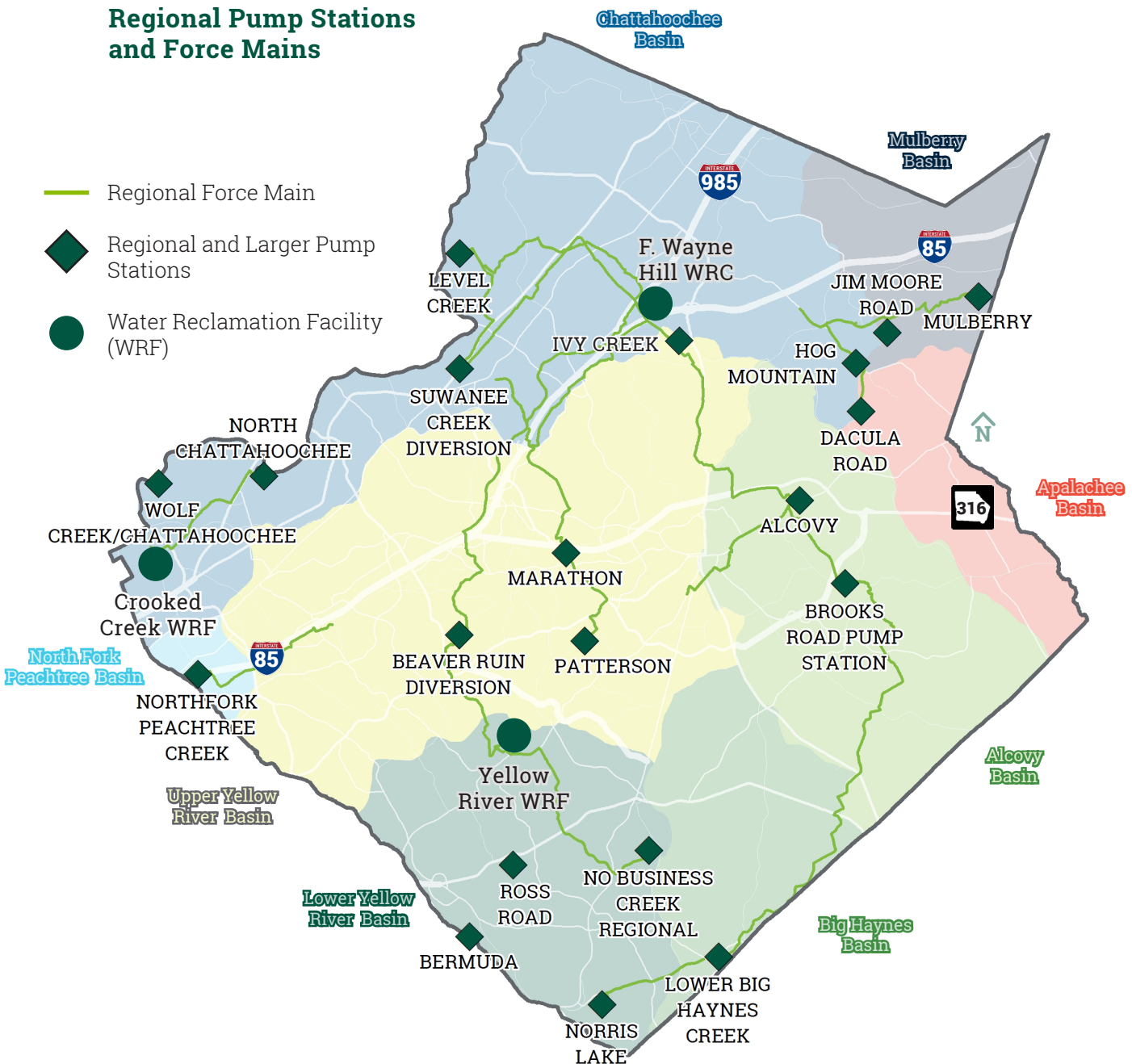


Regional Pump Stations

Seven of the 14 regional pump stations have infrastructure in place to divert wastewater flows to alternate destinations, thus providing DWR with the operating flexibility to manage the influent flows to the three respective WRFs as well as the ability to bypass certain force mains as may be needed for maintenance. This includes flow diversion capabilities among the three WRFs and associated primary and secondary flow paths for both force mains and gravity sewer interceptors.

Additionally, three of the regional pump stations (Hog Mountain, Level Creek, and Lower Big Haynes) have off-line storage tanks, and two of the regional pump stations (No Business Creek and North Fork Peachtree Creek) have in-line storage tunnels for wastewater.

Regional Pump Stations and Force Mains






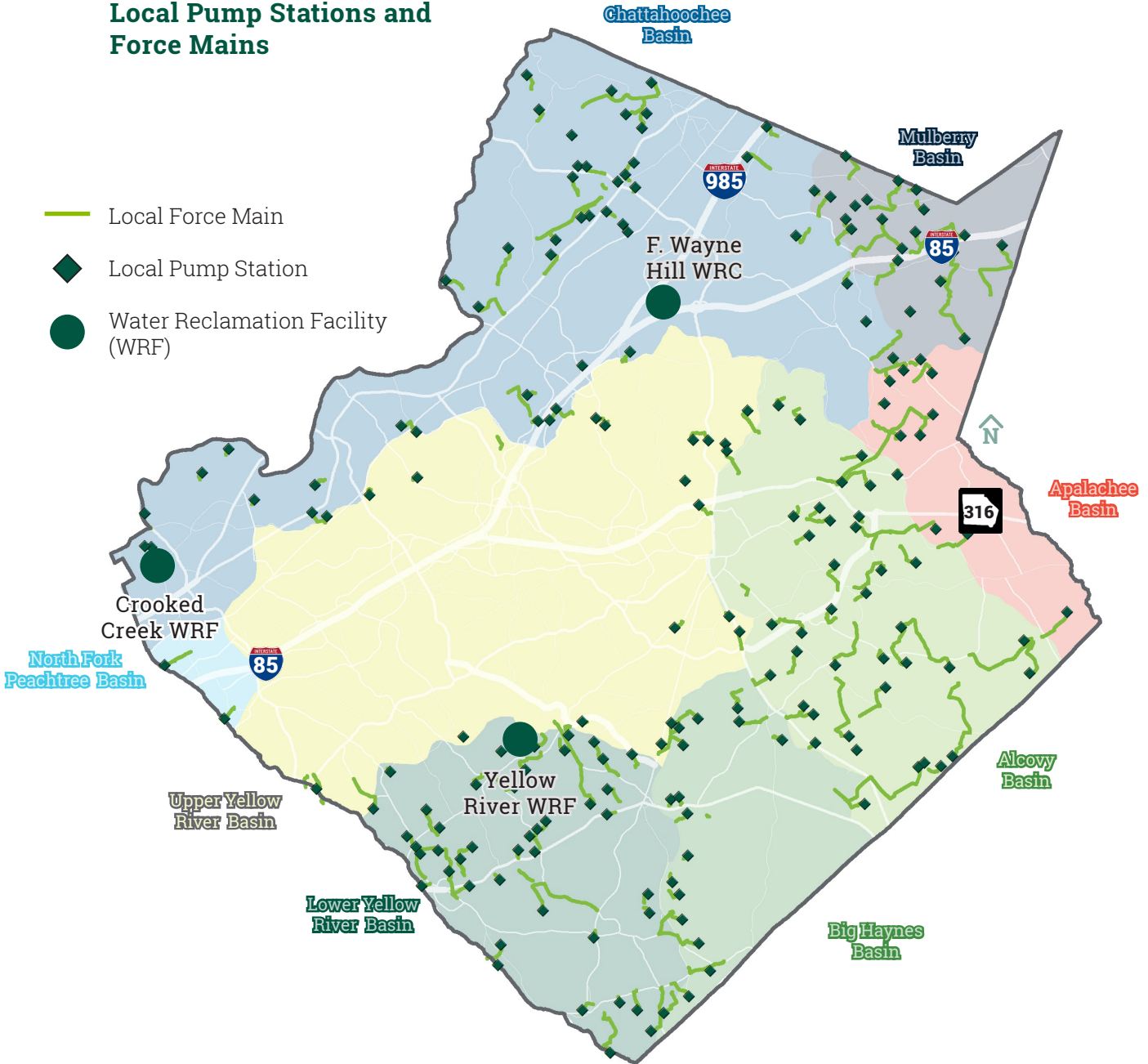
Local Pump Stations

The remaining 206 pump stations are smaller and are commonly referred to as local (or developer) pump stations. These pump stations were installed by Gwinnett County, acquired from cities, or installed by private developers when needed to accommodate development. The local pump stations typically only serve a single drainage sub-basin or portion of a sub-basin (e.g., subdivisions), and convey wastewater through approximately 167 miles of force mains of varying age, with pipe diameters ranging from 2 inches to 20 inches.

The on-going decommissioning of local pump stations is a goal of DWR. The SMP 2050 identifies a number of local pump station decommissioning projects. The projects mostly consist of the installation of sewer lines to convey flows by gravity from local pump stations to downstream sewer mains or interceptors. In addition, some decommissioning projects consist of new gravity sewer lines to consolidate flows from several local pump stations to a new area pump station.

Local Pump Stations and Force Mains

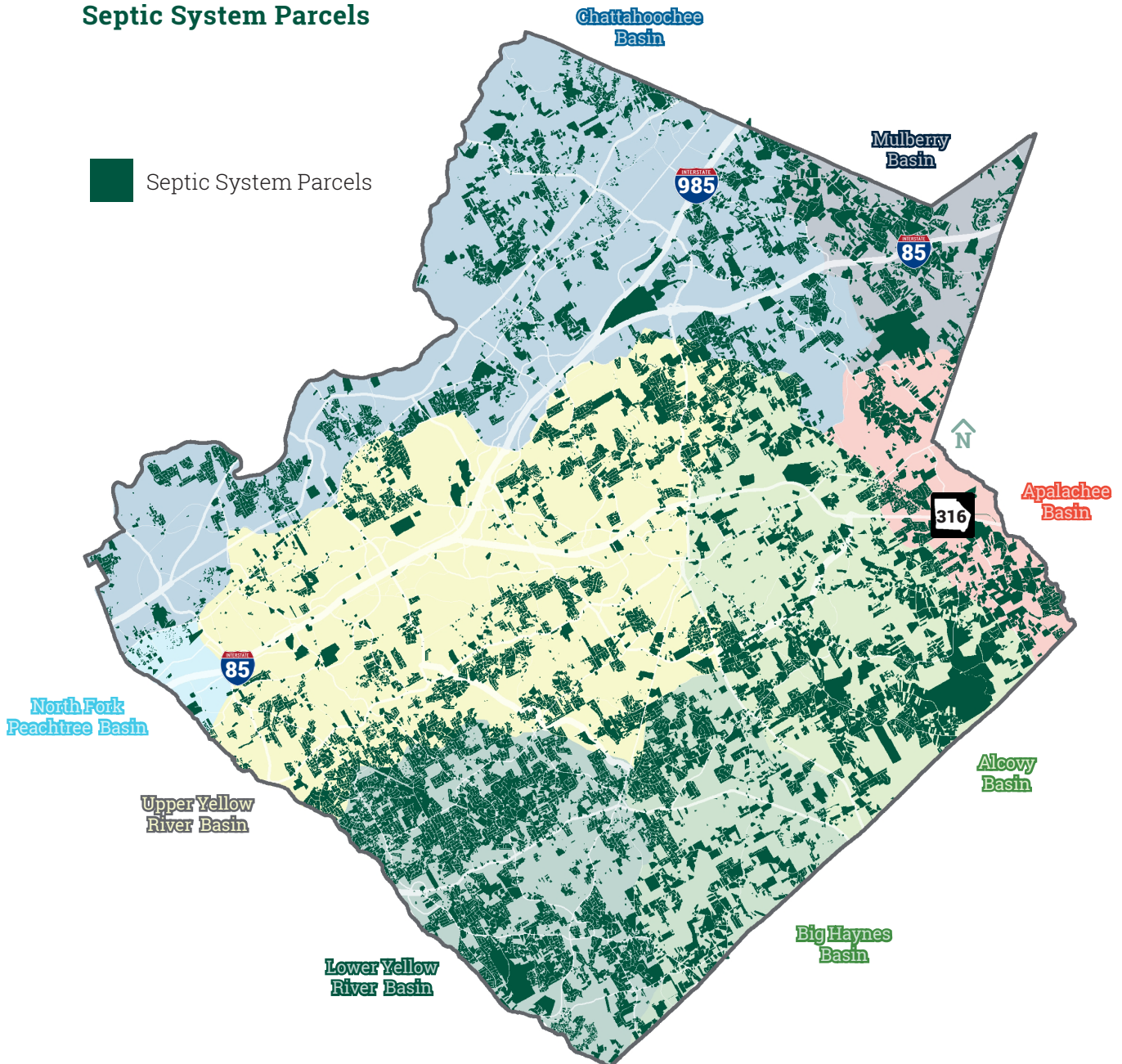
-  Local Force Main
-  Local Pump Station
-  Water Reclamation Facility (WRF)



On-Site Wastewater Management Systems

Over 74,000 water customers in Gwinnett County are on septic tanks, which equates to about 30% of residential properties. Most of these tanks are in the eastern and southern portions of the County and many - those on properties developed in the 1970s and 1980s - are nearing the end of their useful life. Without proper maintenance, these tanks will eventually fail and could have negative effects on water quality in streams and rivers in our community. The County has been actively working to find a solution to convert these properties to sewer service, and DWR has initiated a long-term septic to sewer program as part of the County's Safe and Healthy Communities objectives. In support of this effort, DWR is contemplating construction of a fourth water reclamation facility located in the southern portion of the County. This would help to accommodate the addition of over 41,000 properties – located primarily in the Lower and Upper Yellow River drainage basins – to the County's sewer system as they convert their properties from septic tanks over time.

Septic System Parcels



Conclusions and Recommendations

Estimated to cost nearly \$682 million, over 100 wastewater collection and conveyance system projects were identified and evaluated. These initiatives include:

- Wastewater collection and conveyance system optimization, capacity expansion, and system expansion projects;
- Decommissioning of local pump station projects;
- Regional pump stations storage and diversion projects;
- Programmatic element projects;
- Near-term and long-term project implementation; and
- Build-out options for WRF plant capacity expansions.

Project Type	Total Projects	Types of Projects
Pump Stations	47	<ul style="list-style-type: none"> • Decommissioning of Local Pump Stations • New Pump Stations with Force Mains
Collection System	38	<ul style="list-style-type: none"> • New Sewers/Interceptors • New Force Mains • New Storage
Programmatic Elements	9	<ul style="list-style-type: none"> • Condition Assessment; Refurbishment & Replacement of Sewers, Pump Stations, and Force Mains • Septic to Sewer • Regional Pump Station Optimization
On-Going Efforts	11	<ul style="list-style-type: none"> • Decommissioning of Local Pump Stations • New Pump Stations/Force Mains • Sewer Extensions; New Sewers/Interceptors • Septic to Sewer

COMMUNITY SERVICES

While the Department of Community Services oversees several aspects of the County, for the purposes of the 2040 Unified Plan, the focus is on the amenities offered through parks and recreation opportunities, public libraries, and senior services. These amenities are important for overall quality of life including providing recreational opportunities to promote a healthy community and the civic opportunities provided by our libraries.

Parks and Recreation

Most recently, the Department of Community Services completed a 2017 Capital Improvement Plan Update of the Parks and Recreation system. This assessment was conducted with consideration of the following goals:

- Complete Planned Park Development and Renovate Existing Parks based on the researched desires of residents.
- Work with the DOT to encourage the construction of sidewalks and/or paving of wide shoulders in order to achieve Pedestrian and Bicycle Connectivity between parks and other points of interest such as schools, libraries, institutional land uses, and commercial nodes.
- Balanced Acquisition and Development of Parks to the greatest extent possible based on the researched desires of residents.
- Provide Parks for All Ages including aging population, teenagers, and children to include both structured and unstructured recreational opportunities.
- Proceed with Park Land Acquisition in underserved areas.

Using these goals, the assessment included the following components:

- A demographic assessment
- Community input process
- Inventory of facilities
- Land acquisition analysis
- Facilities gap analysis
- Recommendations

The final recommendations include greenway projects (many, such as the Harbins and Ivy Creek Greenways interfacing with the GCDOT/Community Services collaboration in the Countywide Trails Master Plan), several renovations, park expansions (including new facilities), and new Park constructions (Beaver Ruin Special Purpose Neighborhood Park, Discovery Cluster Park Development, and Centerville Park Phase 1), and acquisition of additional park land.



Child playing at Lenora Park



Hamilton Mill Branch of the Gwinnett County Library System





Libraries

In 2017, the Gwinnett County Public Library system checked out nearly 4.7 million materials as part of nearly 2.8 million customer visits. More than just a place to check out books, the library system provides invaluable services to our community. For instance, 2017 also saw 1.9 million computer sessions and 850,000 wireless sessions. As stated in the 2017 Annual Report: “Instead of just checking out books, we let you check out the WORLD with FREE access to movies, online magazines – and even subscription websites. You can learn new languages, discover your family history, and add job-specific software skills to your resume”.

Recent library milestones include:

- The establishment of a Wi-Fi Hotspot Lending Program called Connect Gwinnett that allows customers to check out hotspots from the library helping to increase access to technology and information throughout Gwinnett County.
- Surpassing 500,000 registered accounts in September 2017.
- Being named a top workplace by the Atlanta-Journal Constitution.
- Participation in a US Department of Agriculture Summer Food Service Program known as the Summer Meals Program, which helps provide free nutritious meals to children in low income areas so they are better fueled with healthy food to learn and grow.
- Executive Director Charles Pace was awarded the 2017 John Iliff Award, a national recognition for technology and innovation.
- Partnering with San Jose State University School of Information to co-sponsor the Innovative Librarians Award to recognize library science graduate students who put forward new ideas that improve libraries and their services.

BROADBAND ACCESS

As some of the library system’s recent initiatives imply, broadband access is increasingly a prerequisite to operating in today’s society. Provided by private organizations, broadband access in Gwinnett County exceeds the access and speeds of our peer communities and outperforms national and state standards.

The Federal Communications Commission (FCC) sets the definition of broadband as download speeds of at least 25 Megabytes Per Second (Mbps) and upload speeds of at least 3 Mbps. Nearly 99 percent of our population has access to at least one broadband provider that is able to provide this level of service, compared to a rate of 95 percent nationwide and 96 percent in the state of Georgia. Providers in Gwinnett County include:

- AT&T
- Charter Communications (Spectrum)
- Comcast (Xfinity)
- Google Fiber
- Mediacom Communications*
- Windstream

Furthermore, when compared statewide and nationwide, Gwinnett County also exhibits more providers at even faster speeds than 25/3 Mbps Downstream/Upstream. Gwinnett County is anticipated to continue to be a leader in residential broadband access.

* While present, Mediacom Communications was only found to provide broadband speeds in one Census Block in Gwinnett County.

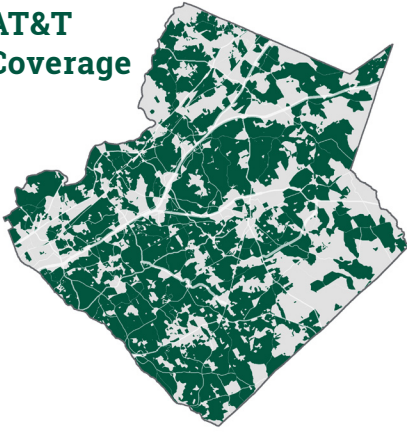
Number of Residential Broadband Providers (by Speed)

Speed (Mbps Downstream/Upstream)	No Providers	1 Provider	2 Providers	At least 3 Providers
Gwinnett County				
0.2/0.2				100.00%
4/1			0.99%	99.01%
10/1			1.12%	98.88%
25/3	1.22%	24.88%	64.34%	9.57%
100/10	23.64%	65.41%	10.95%	
250/25	36.98%	54.36%	8.66%	
1000/100	85.50%	14.50%		
State of Georgia				
0.2/0.2				100.00%
4/1			4.66%	95.34%
10/1			6.46%	93.54%
25/3	4.39%	29.14%	54.79%	11.68%
100/10	28.01%	63.63%	8.14%	
250/25	49.06%	48.41%	2.54%	
1000/100	93.26%	6.73%		
Nationwide				
0.2/0.2			0.28%	99.72%
4/1		0.18%	3.54%	96.20%
10/1		0.60%	5.97%	93.33%
25/3	4.54%	19.36%	32.57%	43.53%
100/10	24.40%	49.83%	22.57%	43.53%
250/25	58.26%	35.07%	6.22%	
1000/100	92.37%	7.35%		

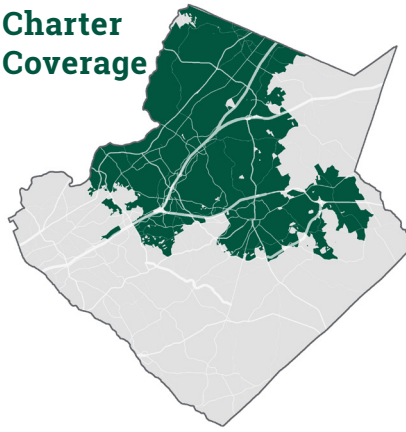
Source US FCC (December 2016) Technology: ADSL, Cable, Fixed Wireless, Satellite, Other

Note Providers only tracked in areas with residential population; some areas that show zero providers may actually be lacking residential population

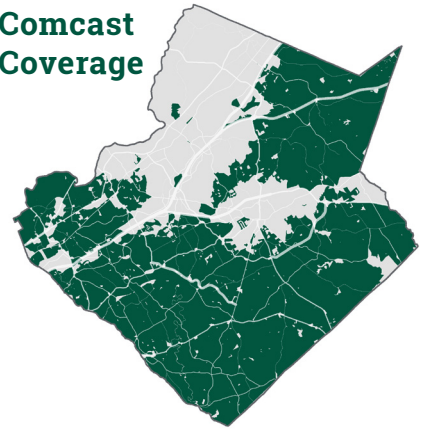
AT&T Coverage



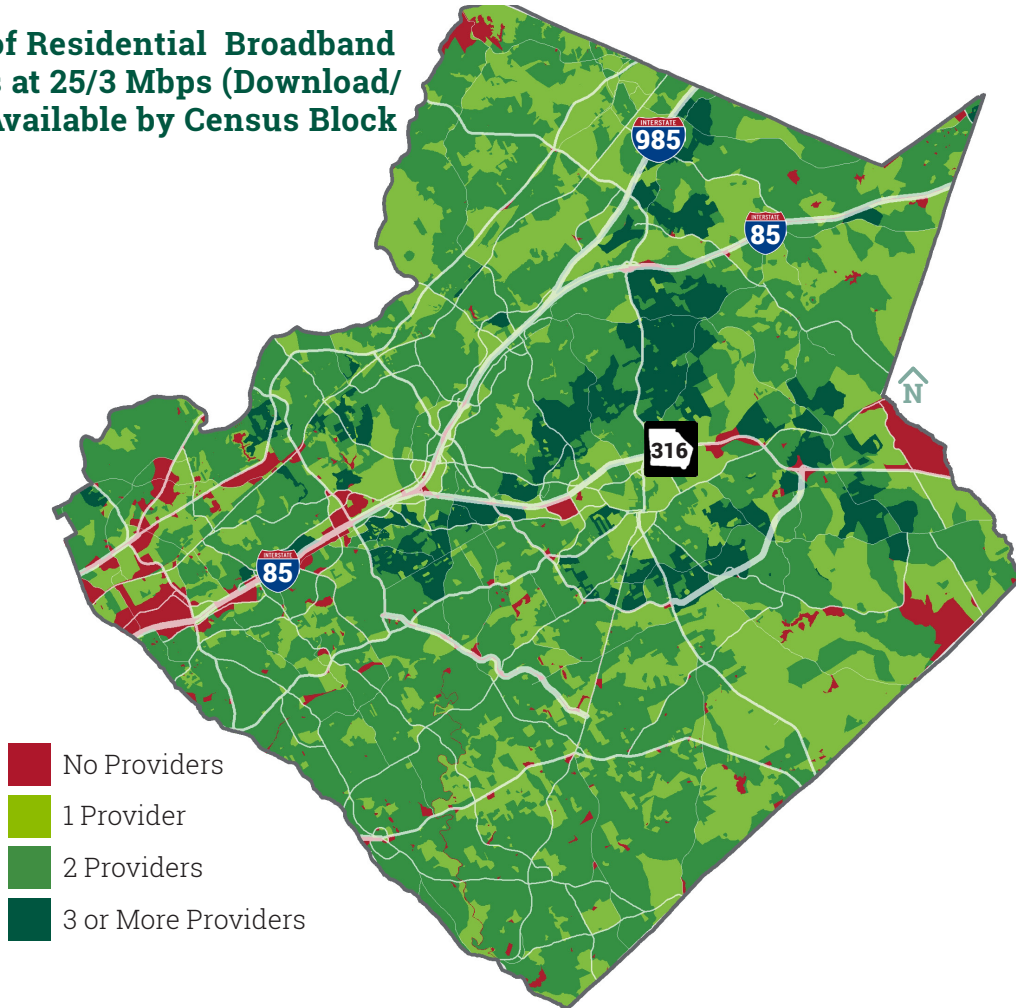
Charter Coverage



Comcast Coverage

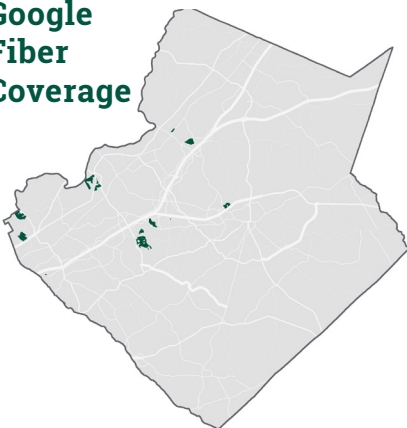


Number of Residential Broadband Providers at 25/3 Mbps (Download/Upload) Available by Census Block

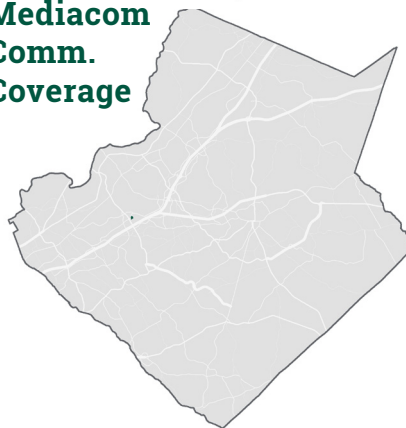


- No Providers
- 1 Provider
- 2 Providers
- 3 or More Providers

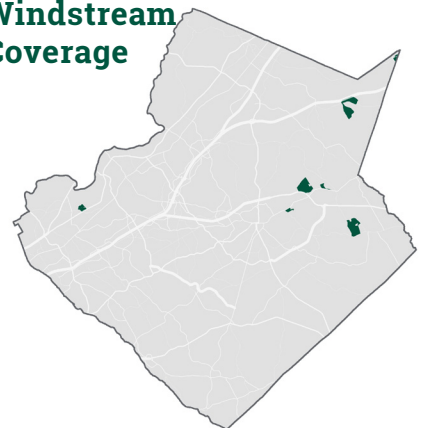
Google Fiber Coverage



Mediacom Comm. Coverage



Windstream Coverage



Land Use.

As Gwinnett County continues to evolve, it is crucial that the County maintains an inventory of buildings and spaces that enable the county to be accessible and attractive to a new generation of businesses, employees, and residents. The past 20 years have seen many major shifts in the way people shop, work, and live. Much of this is driven by generational changes, demographic shifts, and technological innovations.

It is important to note that these trends are not shifting overnight. In a county of nearly one million people, change happens slowly. Even a small shift in the County's preferences represents a significant share of the new growth, development, or buildings that are added each year.

As explored further in this Land Use element, the County is in the early stages of its second wave of development, beginning to fill-in and build over the initial wave of buildings, stores, office parks, shopping centers, and housing first built in the 1970s, 1980s, and 1990s. It is important to recognize what has changed.

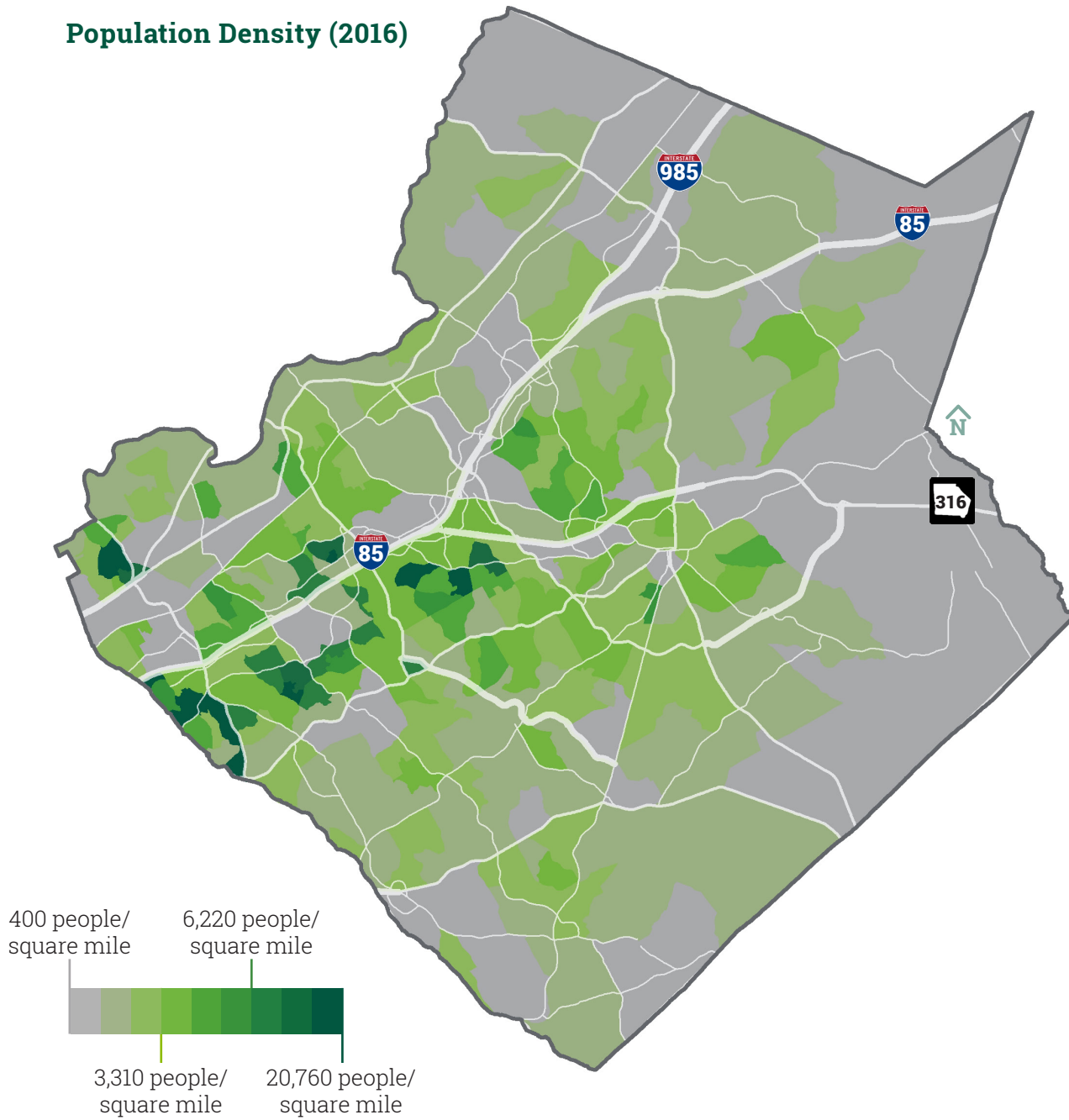
THE COST OF OUR DEVELOPMENT PATTERN

Gwinnett County is characterized by generally uniform densities (employment, population, and housing unit) and land values (tax value per acre) that are more-or-less consistent across the County. As the County continues to grow in population, jobs, and density, it is very likely that heavier economic activity will begin to coalesce in certain key areas, based on a combination of the availability of developable land, compatible land uses, and supportive transportation infrastructure. As densities, and by extension, land values increase in these activity centers, the County will begin to see the linked benefit of higher revenue from business activity and taxes (property and sales) along with reduced service costs (infrastructure, transit, public safety, etc.). A recent Cost of Services study conducted by the University of Georgia (UGA) for Gwinnett County provided in Appendix D speaks further to this, indicating that it costs more to provide for lower density land uses than what is received unless the land value of those areas is relatively high.

By promoting focused growth in specific designated activity centers, the County can promote economically efficient land uses and development. This can be accomplished through:

- Investment in infrastructure (streets, sidewalks, transit) and amenities (public space, parks & trails, libraries) and public services (public offices, civic space) in designated activity centers.
- Zoning and land use regulations which promote higher density mixed-use development in designated activity centers.
- Zoning and land use regulations which promote higher density housing, workforce housing, and affordable housing in designated activity centers.

Population Density (2016)



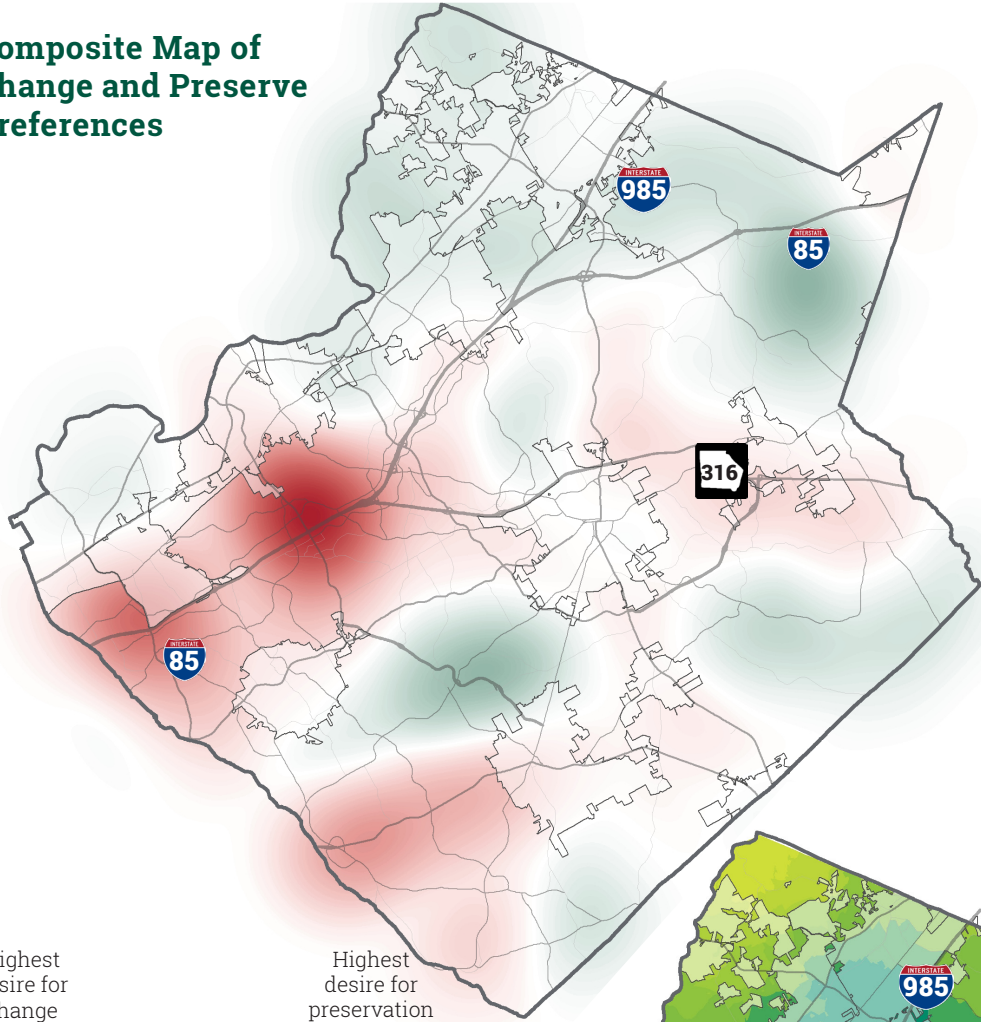
Source US Census Bureau, ACS 5-Year Estimates 2012-2016

OPPORTUNITY FOR CHANGE

Recognizing that the natural progression of Gwinnett County's future growth will likely coalesce in focused activity areas, this Unified Plan is a very specific opportunity to guide this development and growth in a way that is consistent with our community's vision.

As discussed in the "Engaging the Community" parts of the "Our Vision" chapter of this Plan, a centerpiece of the community outreach was a two part interactive exercise known as "Plan the Future." In the first part of this exercise – Change and Preserve Preferences - participants were asked to place red and green dots on maps of the County which were compiled into an overall map showing areas where change is desired (in the darkest hues of red) and where preservation of existing character is desired (in the darkest hues of green) and everything in between. In the second part of this exercise – "Urban Scale Preferences" – participants placed dots on maps of the County to indicate what types of development and intensity they felt appropriate.

Composite Map of Change and Preserve Preferences

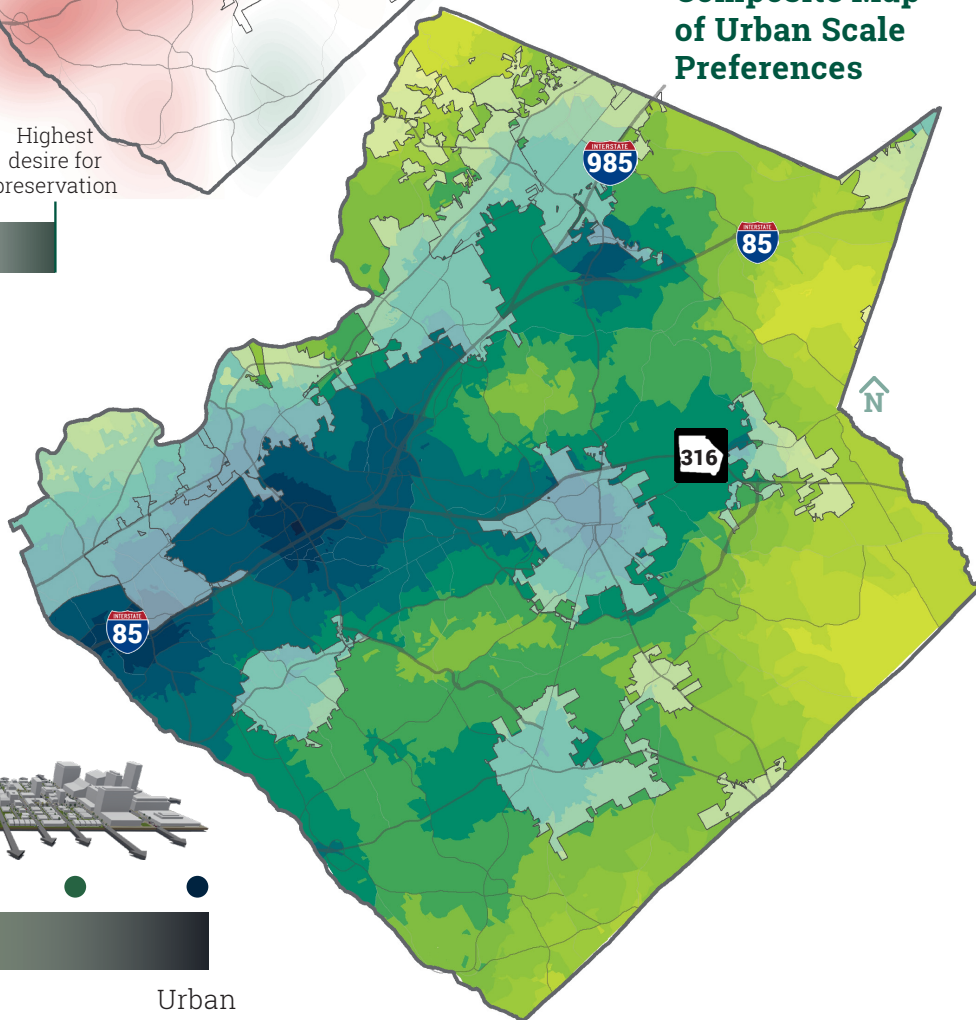


Highest desire for change

Highest desire for preservation



Composite Map of Urban Scale Preferences



Open Space

Urban Center

These two exercises were compiled with a third analysis called “change and preserve likelihood” to form an overall analysis our planning team refers to as the “Opportunity for Change.” For this third series, analyses were performed and compiled to understand what parts of the County are actually likely to change and what parts are more likely to retain their current character. Grouped into three major categories, this analysis included:

Infrastructure Assessment Factors

- Planned Sewer Access (from Sewer Master Plan)
- Bicycle/Pedestrian Suitability Score (from Comprehensive Transportation Plan)
- Trail Access and Investments (from Trails Master Plan)
- Planned Transportation Investments (from Comprehensive Transportation Plan)

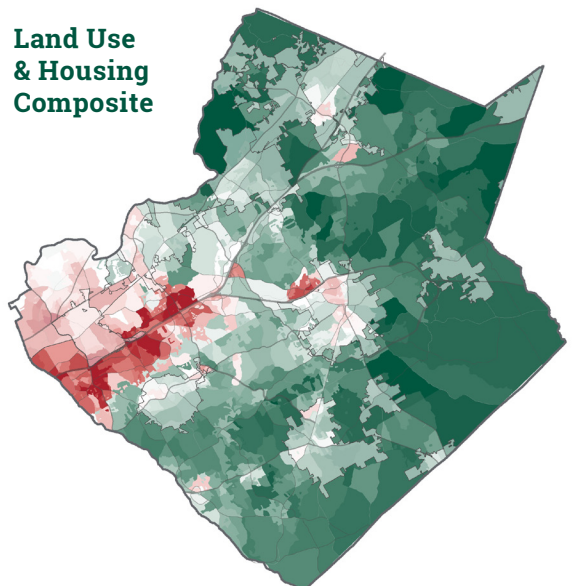
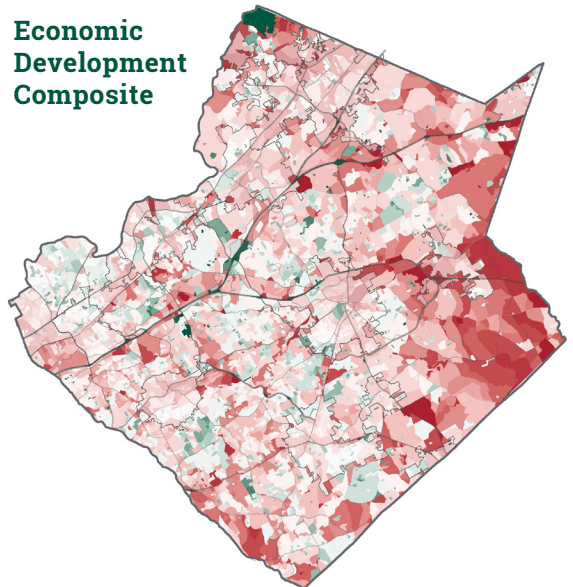
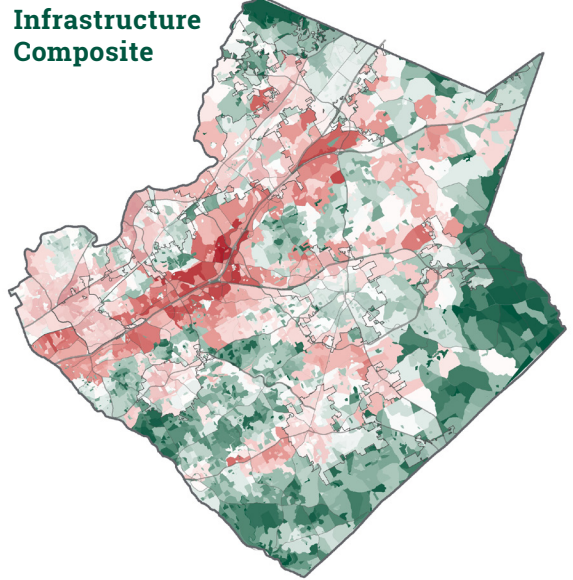
Economic Development Factors

- Land Value (source: Tax Assessor data)
- Improvement to Land Value Ratio (source: Tax Assessor data)
- Development Interest (source: land use and rezoning data)

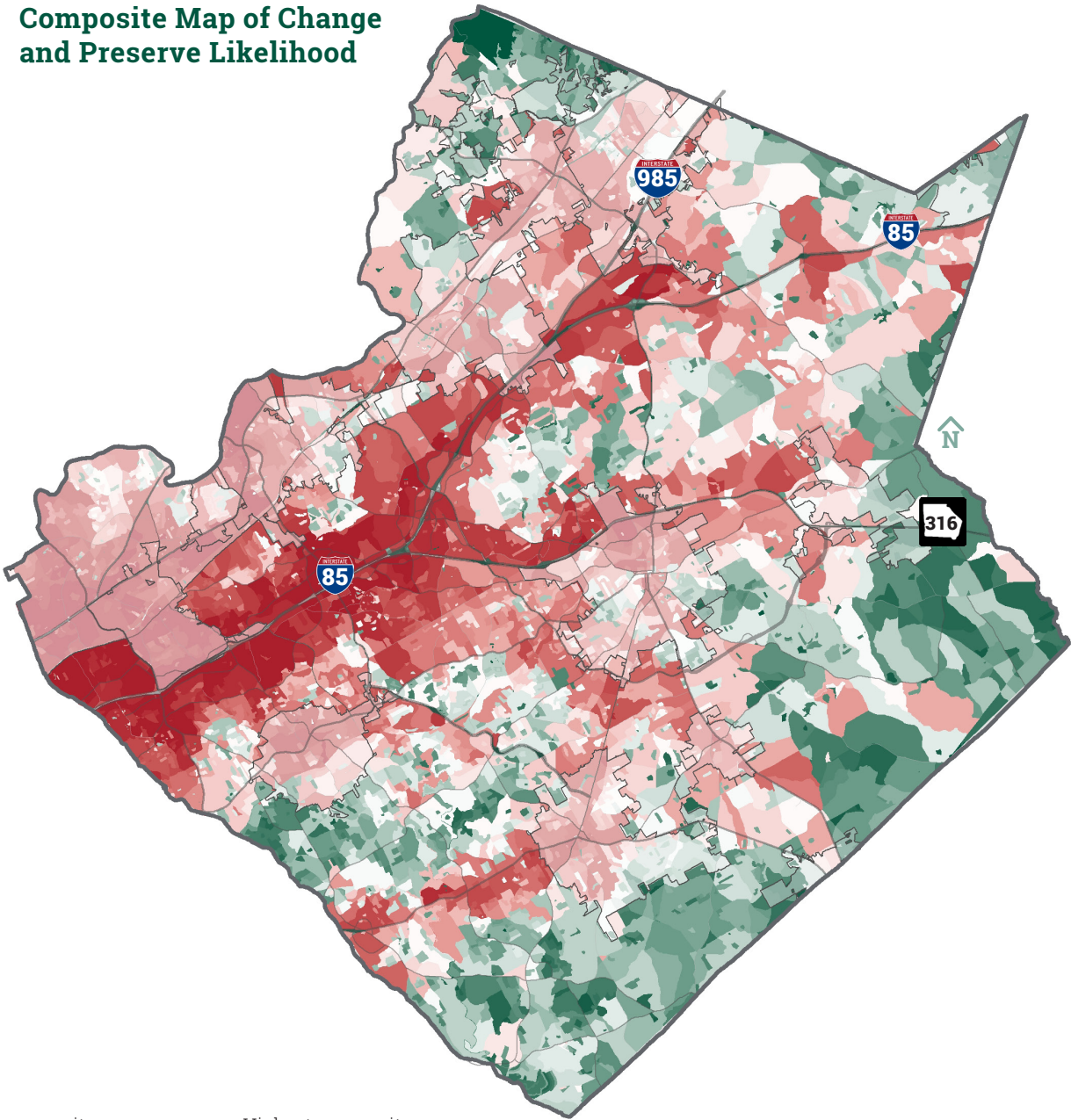
Land Use & Housing Factors

- Concentrations of Retail (source: land use data)
- Owner Occupancy of Housing Units (source: US Census)
- Urbanity Scores (source: ESRI Tapestry Data which reflects inherent consumer values which were correlated to understand where changes to a more urban environment would be more likely to be welcomed)

The overall thematic conclusions of this analysis suggest broad agreement and interest in likely future outcomes of Gwinnett County, with the most intense interest for urban environments along the I-85 corridor with the US 78 and SR 316 corridor reflecting interest as well. A corresponding arc shows desire for less intense development along the eastern and southern edges of the County.



Composite Map of Change and Preserve Likelihood



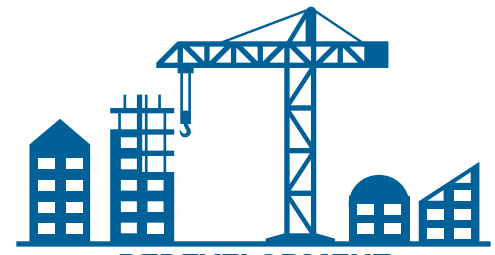
EMBRACING THE FUTURE

These conclusions led to the development of six Guiding Philosophies, which have been discussed previously in this Plan. These Guiding Philosophies were developed and used by the planning team to assist in how this vision could be implemented in the Plan through a Future Development Map, which is discussed further in the Implementation chapter of this Plan.

Encourage Redevelopment in Key Areas While Still Allowing for Greenfield Development Opportunities

While greenfield development of the undeveloped parts of eastern and southern Gwinnett County are still likely, there must also be a correspondingly strong effort to revitalize and redevelop the older parts of Gwinnett County, with particular emphasis on the I-85 corridor and its surrounding areas.

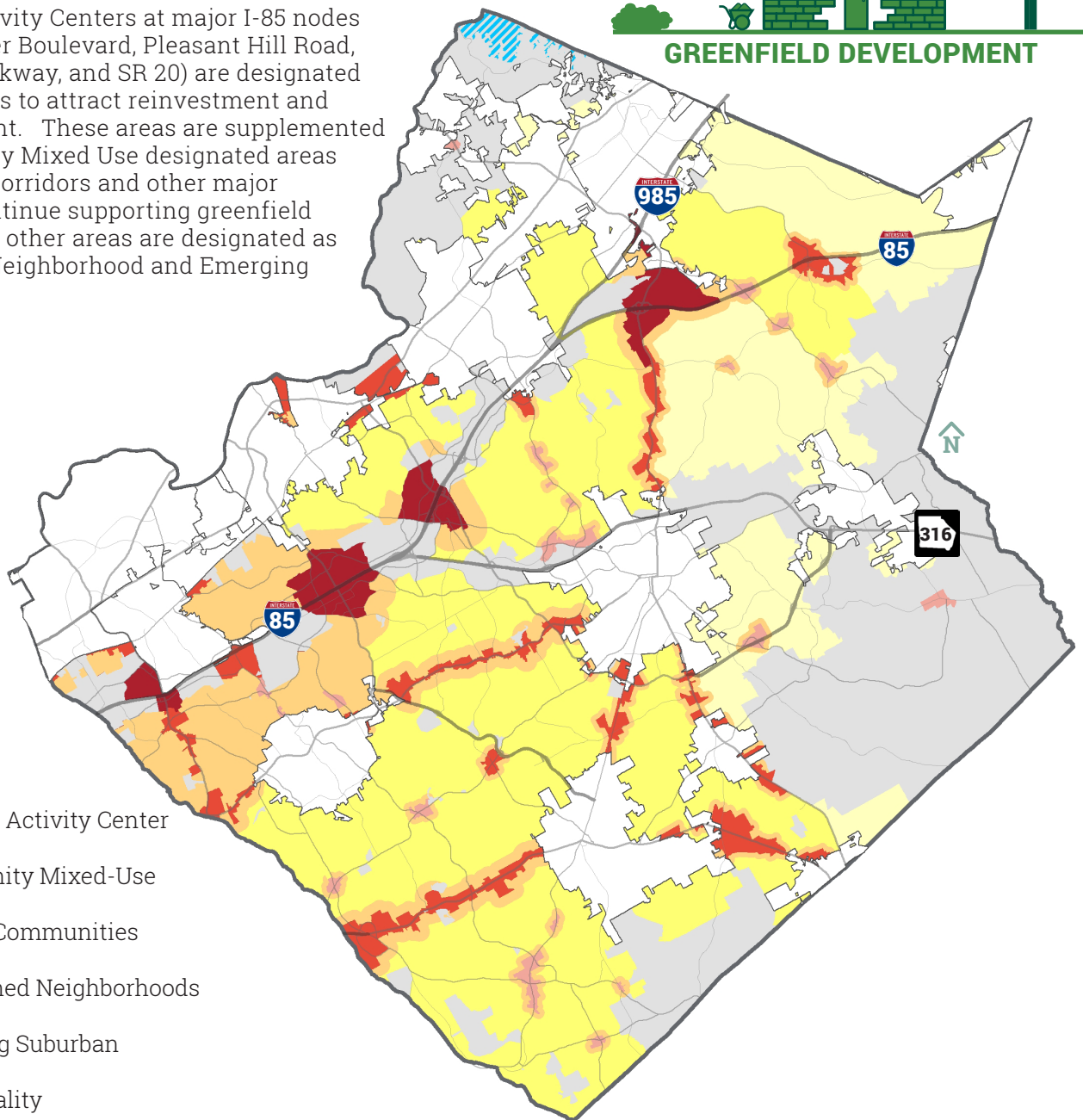
Regional Activity Centers at major I-85 nodes (Jimmy Carter Boulevard, Pleasant Hill Road, Sugarloaf Parkway, and SR 20) are designated as major areas to attract reinvestment and redevelopment. These areas are supplemented by Community Mixed Use designated areas along major corridors and other major nodes. To continue supporting greenfield development, other areas are designated as Established Neighborhood and Emerging Suburban.



REDEVELOPMENT



GREENFIELD DEVELOPMENT



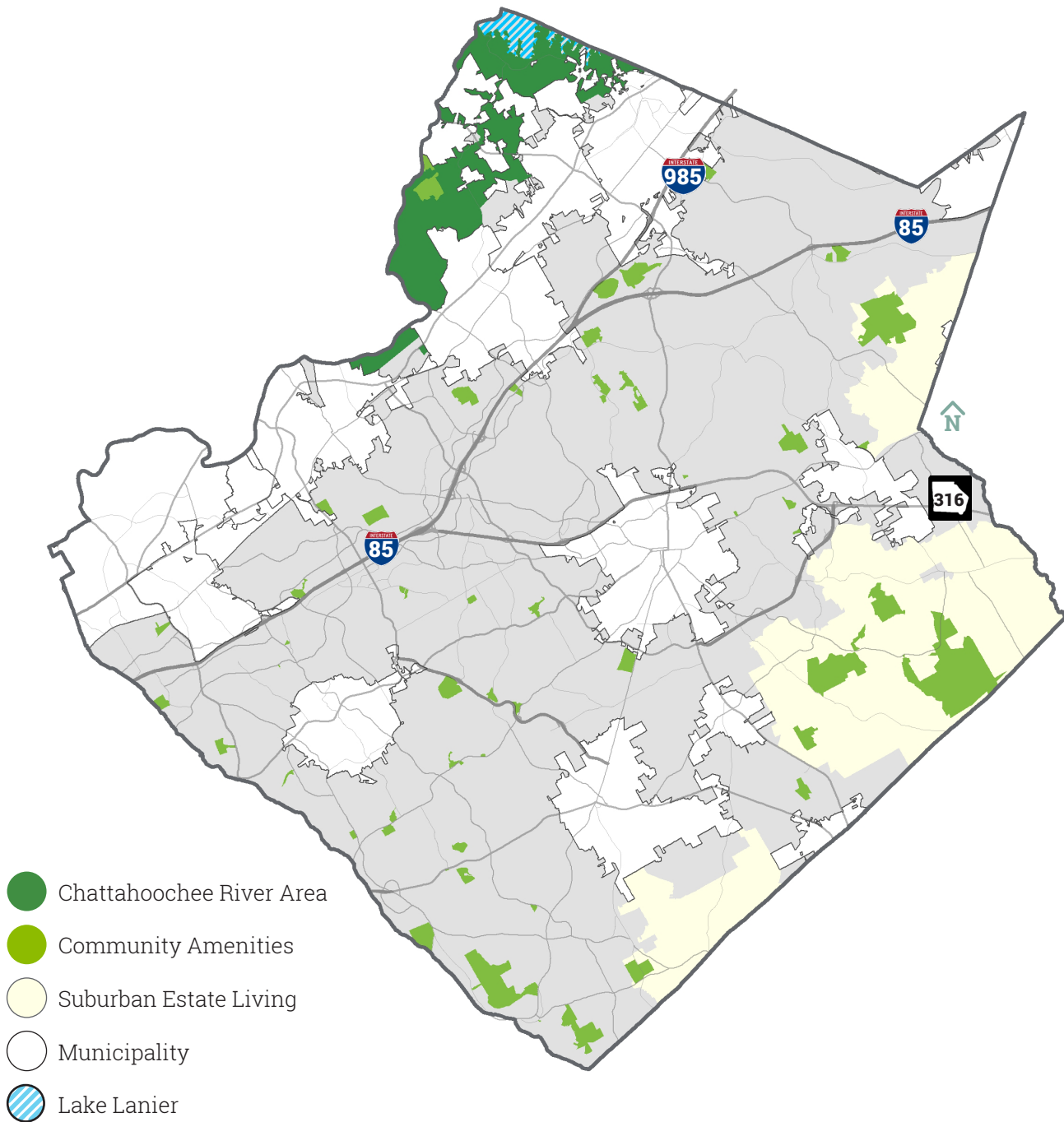
- Regional Activity Center
- Community Mixed-Use
- Vibrant Communities
- Established Neighborhoods
- Emerging Suburban
- Municipality
- Lake Lanier

Preserve the Character of Areas That Are Still Relatively Undeveloped

With a focus on regionalism, further outlying communities are beginning to develop more intensely on or near the Gwinnett County border. As a result, demand for development in eastern and southern Gwinnett County is not likely to subside. However, this plan can also cast a vision so that development in these areas is responsible and appropriate relative to the existing character of the area.



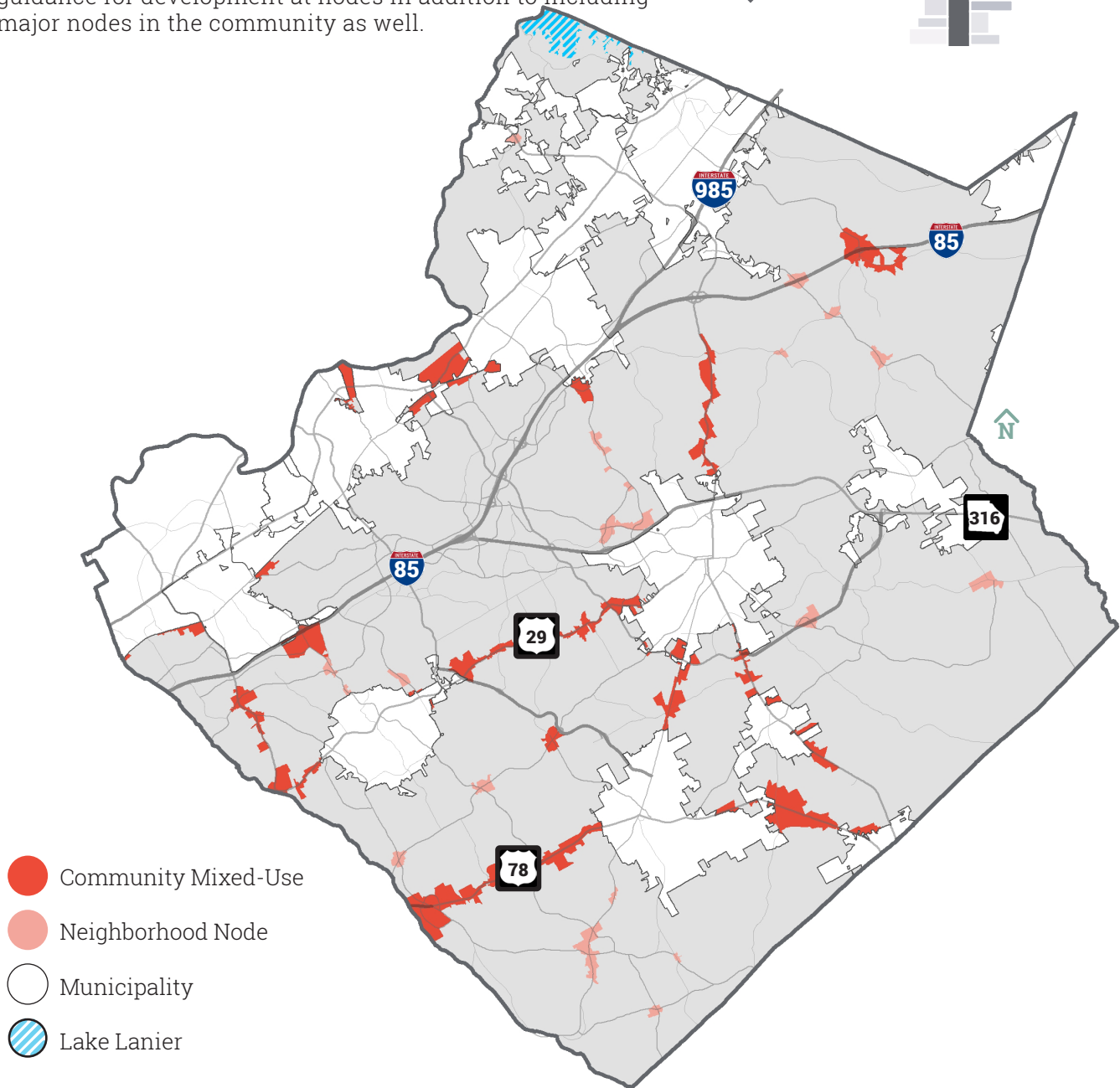
The Future Development Map includes areas designated as Suburban Estate Living and Chattahoochee River Area that are identified for lower intensity development in addition to areas designated as Community Amenities.



Encourage Development to Be More Nodal Than Linear

Instead of continuing our historic pattern of linear strip commercial development, future areas of activity and intensity should be focused in more central and nodal environments.

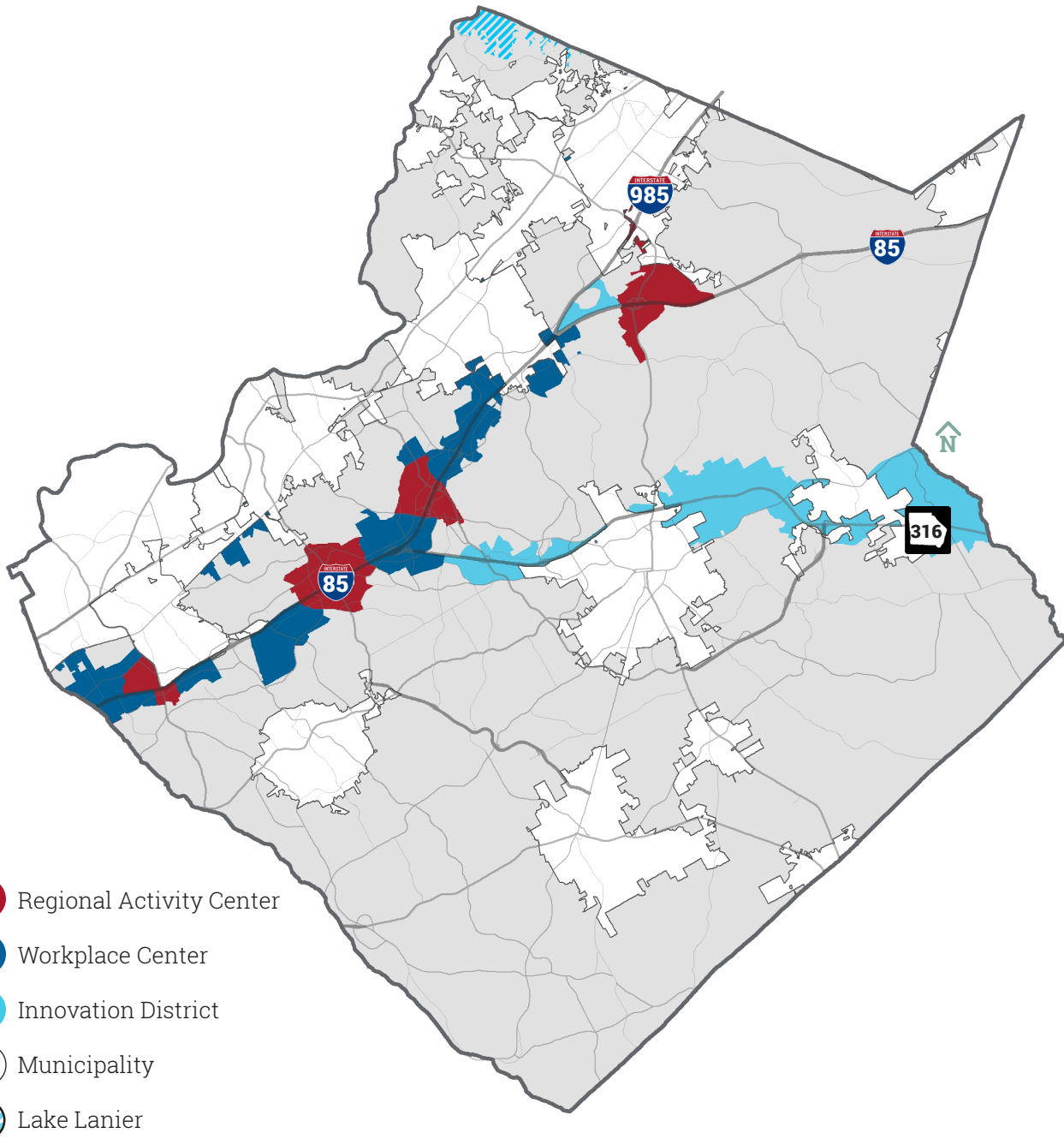
The Future Development Map introduces the idea of Neighborhood Nodes, areas that are mostly commercial in orientation today and typically at the intersection of two major transportation routes. Neighborhood Nodes typically provide convenience shopping to local areas. These areas are the commercial anchors for the community today and many have the potential to evolve and mature into broader centers that may include a mix of uses. The Community Mixed-Use designation, while including our major corridors, also includes further guidance for development at nodes in addition to including major nodes in the community as well.



Incorporate and Integrate Office Areas Into Mixed Used Districts

While the future Gwinnett County should continue to retain areas that are primarily employment oriented, future development should also promote the integration of these areas with other uses.

The Regional Activity Centers are intended to be the epicenter of a variety of forms of activity in the community including the integration of office areas. Areas designated specifically to be employment focused – our Workplace Centers and Innovation Districts – also include opportunities for supporting commercial and residential development.

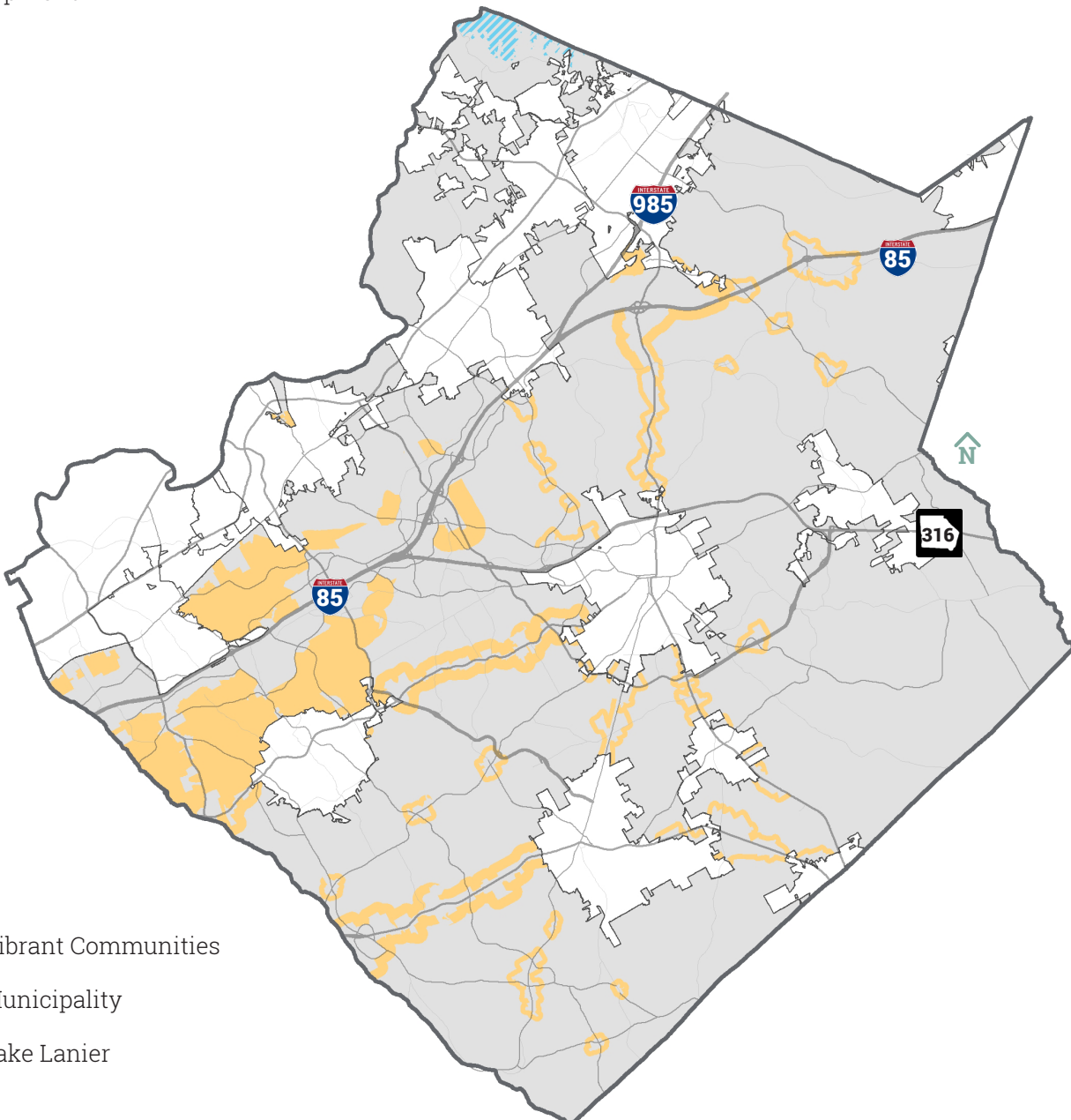





- Regional Activity Center
- Workplace Center
- Innovation District
- Municipality
- Lake Lanier

Use Character Areas to Establish Transitional Areas

The Plan should include measures so that areas targeted for more intense urban development relate appropriately to lower intensity areas of the community. Recognizing a broad need for more flexible and creative housing products, the establishment of transitional areas can serve both needs.

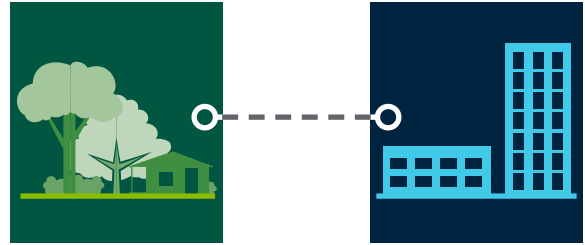
The Vibrant Communities designation is intended to act as a transitional area between areas of the most intense activity (Regional Activity Centers, Community Mixed-Use, and Neighborhood Nodes) and more traditional suburban environments (mostly Established Neighborhoods and Emerging Suburban designated areas). This policy is intended to be market-based development or redevelopment.



-  Vibrant Communities
-  Municipality
-  Lake Lanier

Use Urban Scale to Communicate and Articulate Implied Densities and Character

The implementation of this Plan would result in a Gwinnett County that would have much more variety in its urban geography than our existing, mostly suburban character. While much of that suburban character would be retained, there would also be areas of much more intense development and conversely areas of much less intense development. Beyond just focusing on the compatibility of land uses and zoning, using the concept of urban scale - which is replicated throughout this plan - will provide the County with a broader mechanism to talk about how different parts of our community can relate to one another.



The idea of urban scale is used to address the range of urban environments and possibilities within each of the areas designated throughout the community. This idea is explored in more detail – and with supporting scales related to building types, street environments, and parks/urban spaces – in the following Implementation Chapter.

Interface of Urban Scale and Character Areas

