State of the System

ATL Regional Transit Plan

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Contents

Figures

Tables

Introduction

This State of the System (SOS) report provides an assessment of existing and future transit conditions in the region for the Atlanta-Region Transit Link Authority (ATL) Regional Transit Plan (ARTP). The SOS report compiles a variety of data and information about existing conditions for transit, providing a foundation for the development of the ARTP. The report is organized into the following sections.

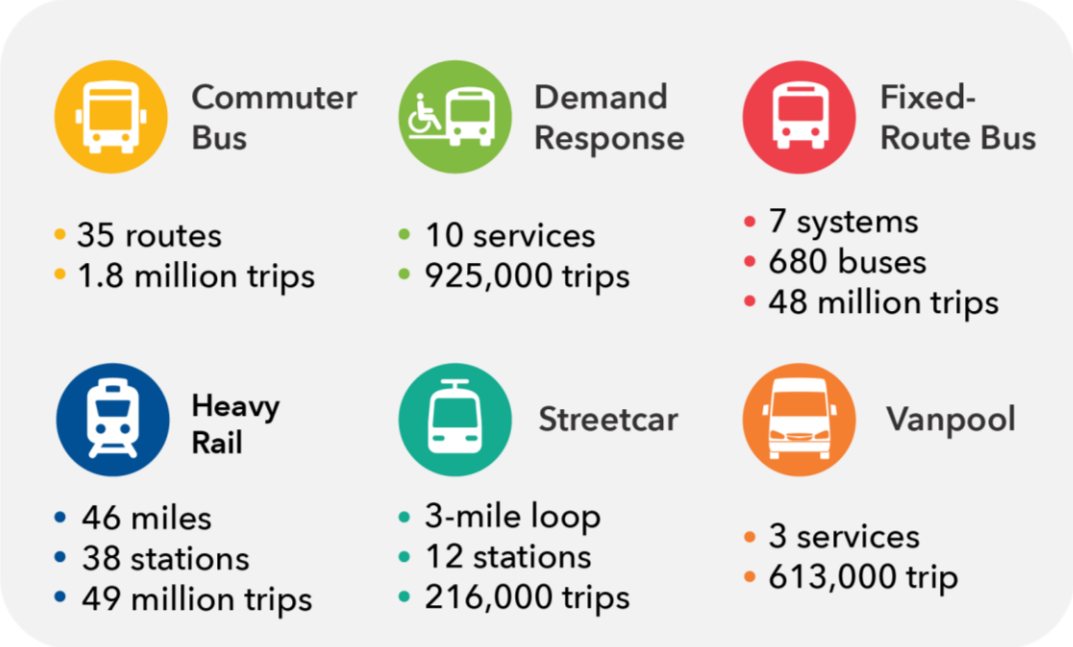
- *Transit Services* introduces the transit operators, describes the existing transit network, and presents information about key performance indicators and recent conditions.
- *Transit Environment* analyzes demographic, socioeconomic, commuting, and land use data to characterize the opportunities and challenges for transit usage in the region today and in the future.
- *Travel Flows* identifies key destinations and trip patterns throughout the region, both today and in the future.
- *Access Overview* evaluates access to transit in the region from a variety of perspectives—considering walking accessibility, transit factors such as span and frequency of transit service, and accessibility to jobs—ultimately building a foundation for an analysis of gaps and needs.

Transit Services

Transit in the Atlanta Region Today

The Atlanta region has a diverse set of transit modes and services that make up its regional network and provided over 100 million trips in 2020, despite the onset of the COVID-19 pandemic.[1] This section provides an overview of the key features of the current regional transit system, highlights the impact of transit, and explores the impact of COVID-19 on transit use in the region. FIGURE 1 shows the region's key transit modes and stats.

FIGURE 1
The Atlanta Region's Regional System Key Facts[2]



[1] ATL's 2020 Fiscal Year (July 1, 2019 to June 30, 2020). Annual Report and Audit, https://atltransit.ga.gov/planning/.

[2] Trip numbers represent ATL's FY 2020 ridership across partner transit agencies.

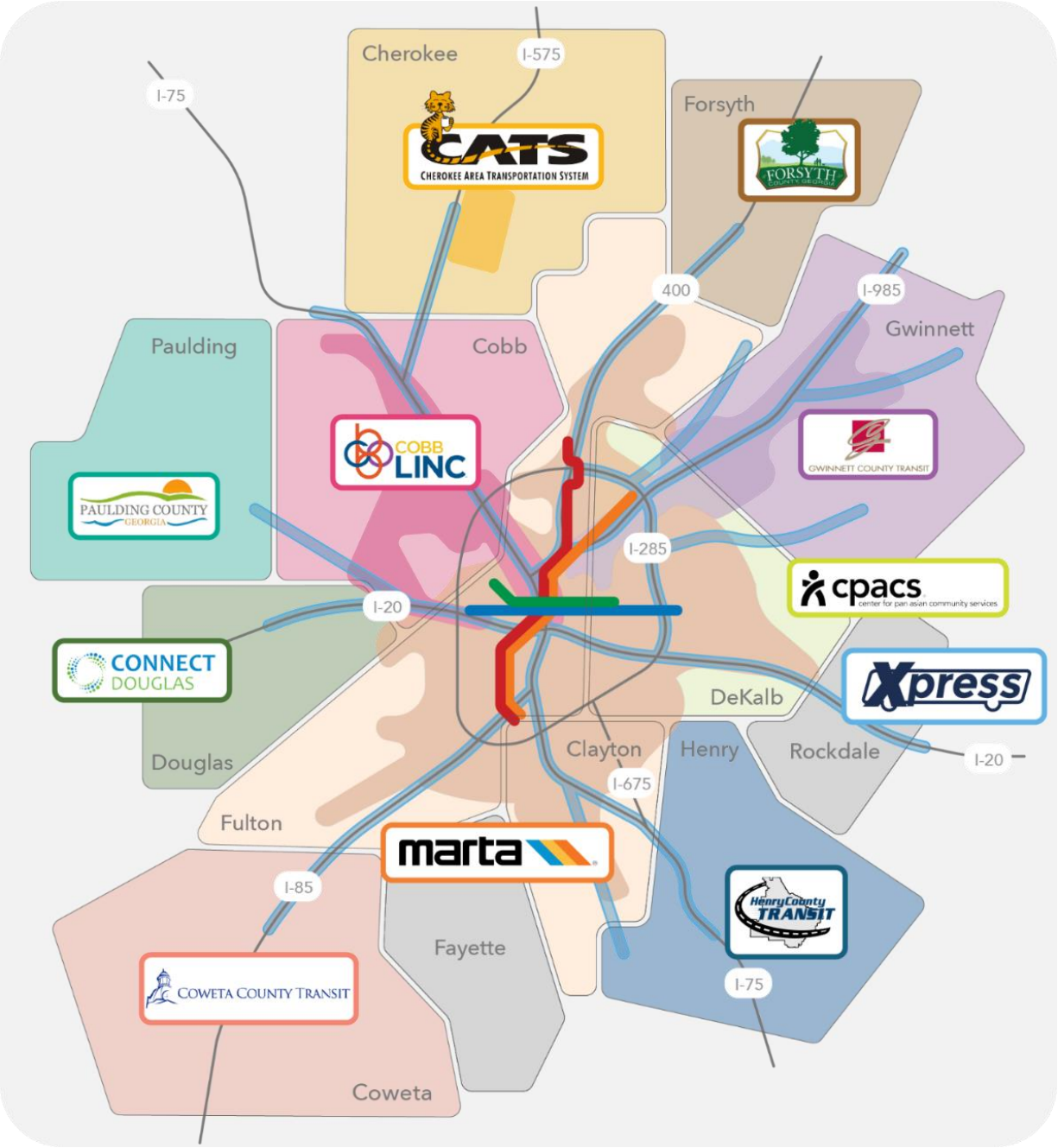
Primary Partner Agencies

The ATL's transit partner agencies include the Center for Pan Asian Community Services (CPACS); Cherokee Area Transportation System (CATS); CobbLinc, Connect Douglas; Coweta County Transit (Coweta or Coweta Transit); Forsyth County (Forsyth County Dial-a-Ride); Gwinnett County Transit (GCT); Henry County Transit (Henry or Henry Transit); the Metropolitan Atlanta Rapid Transit Authority (MARTA); Paulding Transit; and Xpress.[3] FIGURE 2 shows the region's operators and their service areas. The following profiles provide basic information about each operator and its services.

[3] Atlanta-Region Transit Link Authority, https://atltransit.ga.gov/about/.

FIGURE 2

The Atlanta Region's Public Transit Network and Operators



The Center for Pan Asian Community Services is a nonprofit organization whose transportation program provides clients with rides to work, immigrant services, youth and senior programs, and health centers. CPACS also trains clients on how to use the region's other transit services.

Service Area: DeKalb County, Gwinnett County
ATL District: 1

2019 Operating Expenditures
$834,000

2020 Service Data	Demand Response	Fixed-Route Bus
Ridership	22,658	4,682
Revenue Miles	172,566	24,948
Fleet Size	5	7

The Cherokee Area Transportation System provides critical transportation services including fixed-route bus, demand response, and vanpool for Cherokee County's residents, including elderly populations.

Service Area: Cherokee County
ATL District: 1

2019 Operating Expenditures
$1.3 million

2020 Service Data	Demand Response	Fixed-Route Bus	Vanpool
Ridership	26,271	13,079	17,844
Revenue Miles	169,173	58,195	98,230
Fleet Size	20	3	8

CobbLinc is the region's second-largest transit agency by ridership and service, offering fixed-route and demand-response service within the county and commuter bus service to key destinations in Atlanta.

Service Area: Cobb County, commuter service to Atlanta
ATL District: 3, 4, 5, 8

2019 Operating Expenditures
$22.9 million

2020 Service Data	Commuter Bus	Demand Response	Fixed-Route Bus
Ridership	99,575	66,057	1,899,076
Revenue Miles	219,409	552,361	2,984,033
Fleet Size	21	29	70

ConnectDouglas provides fixed route and demand-response service throughout Douglas County, as well as commuter vanpool service from Douglas County to various destinations in Cobb County, Fulton County, DeKalb County, and Talladega, Alabama.

Service Area: Douglas County
ATL District: 4, 8

2019 Operating Expenditures
$2.7 million

2020 Service Data	Demand Response	Fixed-Route Bus	Vanpool
Ridership	12,334	32,972	50,220
Revenue Miles	27,745	466,947	351,777
Fleet Size	7	10	41

Coweta County Transit provides demand-response service that enhances residents' quality of life by assisting residents in obtaining and retaining employment, receiving medical services, and accessing job training and other key destinations.

Service Area: Coweta County
ATL District: 10

2019 Operating Expenditures
$355,000

2020 Service Data	Demand Response
Ridership	26,231
Revenue Miles	180,403
Fleet Size	6

Forsyth County operates Dial-a-Ride, a demand-response transportation service open to all Forsyth County residents. The service offers rides for medical appointments, personal errands, as well as employment- and education-based trips.

Service Area: Forsyth County
ATL District: 1, 2

2019 Operating Expenditures
$384,000

2019 Service Data	Demand Response
Ridership	16,333
Revenue Miles	175,885
Fleet Size	8

Gwinnett County Transit provides local fixed-route bus, demand-response, and commuter bus service to key regional destinations.

Service Area: Gwinnett County, commuter service to Atlanta
ATL District: 2, 3, 5, 6, 7

2019 Operating Expenditures
$18.3 million

2020 Service Data

	Commuter Bus	Demand Response	Fixed-Route Bus
Ridership	317,058	20,861	952,168
Revenue Miles	613,494	212,501	1,397,233
Fleet Size	43	7	33

Henry County Transit provides demand-response service throughout the county and one fixed-route bus service.

Service Area: Henry County
ATL District: 9, 10

2019 Operating Expenditures
$2.1 million

2020 Service Data

	Demand Response	Fixed-Route Bus
Ridership	50,436	615
Revenue Miles	446,047	20,125
Fleet Size	32	1

The nation's 12th-largest transit agency in terms of ridership, the Metropolitan Atlanta Rapid Transit Authority provides heavy rail, fixed-route bus, and demand-response services in Fulton, Clayton, and DeKalb counties and operates the Atlanta Streetcar.

Service Area: Fulton, Clayton, DeKalb Counties
ATL District: 1, 3, 5, 7, 8, 9, 10

2019 Operating Expenditures
$488.6 million

2020 Service Data

	Demand Response	Fixed-Route Bus	Heavy Rail	Streetcar
Ridership	669,966	44,638,499	49,031,050	216,653
Revenue Miles	6,965,088	28,320,609	20,430,752	56,402
Fleet Size	242	556	316	4

Paulding County Transit is the demand-response public transportation service for Paulding County provided by the Paulding County Board of Commissioners. The service is open to the general public and requires an application.

Service Area: Paulding County
ATL District: 4

2019 Operating Expenditures
$250,000

2019 Service Data	Demand Response
Ridership	14,685
Revenue Miles	147,929
Fleet Size	5

Xpress, operated by the ATL, covers 12 counties and is the region's largest commuter bus network. Xpress also operates a vanpool service.

Service Area: Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties
ATL District: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

2019 Operating Expenditures
$26.2 million

2020 Service Data	Commuter Bus	Vanpool
Ridership	1,407,812	545,300
Revenue Miles	1,686,262	4,120,736
Fleet Size	166	259

Shuttle Services

Circulator shuttles are an important component of the regional transit network. They provide access to communities and activity centers that may otherwise be distant from public transit services. Most of the region's circulator shuttles are privately owned, often affiliated with real estate developers or higher education organizations, and offer services at no cost to the rider. Circulator shuttles in the region include:

- *Atlantic Station Free Shuttle*, a daily shuttle operating in a loop linking Arts Center MARTA station to Atlantic Station office buildings, retail, and residential districts.
- *Atlanta University Center (AUC) Woodruff Library Shuttle*, a daily shuttle connecting AUC's Woodruff Library and campuses to Vine City and West End MARTA stations. The service is limited to students, faculty, and staff.
- *Big Owl Bus*, a shuttle service on and between Kennesaw State University's Kennesaw and Marietta Campuses. The service also provides student shopping routes on Fridays and Saturdays.
- *The Buc*, *a* free shuttle service that connects the Buckhead MARTA station with key Buckhead destinations, including local office buildings and shopping destinations.
- *Georgia Tech Shuttles (The Stinger)*, Georgia Tech's transit system, open to students, employees, and the public. Stinger routes serve Georgia Tech's midtown campus and provide connections to Emory University's Clifton Campus and MARTA's Midtown station.
- *Georgia State University's Panther Express*, a shuttle system with routes serving campus destinations seven days a week. The Panther Express is not open to the public.
- *Emory University Shuttles*, several shuttle routes connecting destinations within the main campus, as well as routes connecting to other campuses, transit hubs, park and ride lots, downtown Decatur, and several other destinations. Service is open to students, university and healthcare staff, and visitors.

Some individual businesses also offer shuttles to meet the transportation needs of employees. The Coca-Cola Company, for example, offers shuttle service to its offices and other facilities in both Midtown and Downtown Atlanta via the RedBus system. This shuttle service connects with MARTA heavy rail at the Peachtree Center and Civic Center stations. Commuters can also transfer from Xpress commuter buses at the Civic Center station.

Shared-ride airport shuttles also offer service to and from Hartsfield-Jackson Atlanta International Airport; service characteristics among the numerous

operators vary.[4] Many pick up from a central location and operate on a fixed timetable, while others offer door-to-door service.

Partnerships with TNCs

Partnerships with transportation network companies (TNCs) such as Lyft and Uber expand mobility options to certain population groups or riders in the Atlanta region. For example:

- Fulton County's Uber/Lyft program provides eligible Fulton County seniors ages 60 and above with discounted, pre-scheduled rides. Seniors pay a one-time registration fee and a $1 per ride charge. Participants can take up to 16 monthly rides with varying mileage limits based on the trip purpose.[5]
- MARTAConnect is a one-year pilot program with Uber to provide customers greater flexibility and more options for their transportation needs when normal service is disrupted. The service offers on-demand app-based rides for customers during specific planned and unplanned rail service disruptions that require supplemental bus transportation.[6]
- Forsyth County has partnered with Common Courtesy to pilot a ride-sharing service operated by Uber and Lyft for seniors and residents with disabilities. This service complements the County's Dial-a-Ride service.

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[4] Regional Shared-Ride Shuttles, http://apps.atl.com/Passenger/GroundTransportation/RegionalShuttles.aspx

[5] Fulton County, Senior Transportation, https://www.fultoncountyga.gov/services/senior-services/transportation

[6] MARTA, MARTAConnect, https://www.itsmarta.com/marta-connect2.aspx

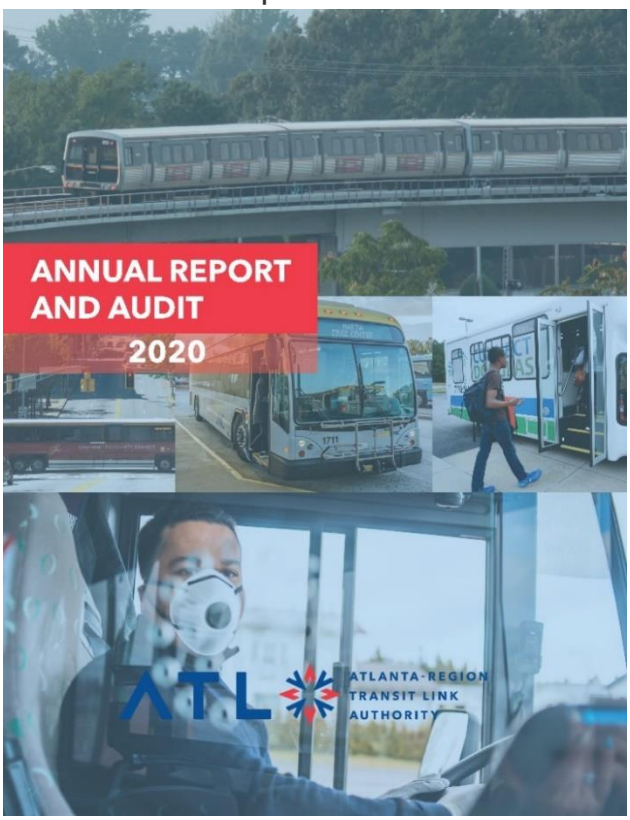
Regional Key Performance Indicators

Per its enabling legislation, the ATL must develop an Annual Report and Audit (ARA) of transit planning, funding, and operations within the region to be submitted to the State Senate and House of Representatives Transportation Committees and the local governments within the region. The ARA provides a comprehensive view of the region's transit services and their performance, showing key performance indicators (KPI) results for all modes of transit.[7]

The most recent ARA, covering the ATL's FY 2020 (July 1, 2019, through June 30, 2020), includes KPIs that address the following topics:

- *Ridership*
- *Level of Transit Investment*
- *Level of Transit Service*
- *Operational Productivity*
- *Financial Productivity*
- *On-Time Performance*
- *Equity*
- *Customer Satisfaction*
- *State of Good Repair*
- *Safety*
- *Air Quality and Sustainability*

FIGURE 3
2020 Annual Report and Audit Cover



The 2020 ARA also includes preliminary findings and impacts on transit and transportation due to the COVID-19 pandemic.

[7] Annual Report and Audit, https://atltransit.ga.gov/planning/

The Impact of Transit

Transit supports the 13-county ATL region by: advancing equity; providing affordable mobility options to individuals; promoting environmental sustainability, health, and safety; and stimulating economic development. Since transit impacts the people and businesses of the Atlanta region in many ways, this section presents information and findings from several perspectives.

Equity and Access

Transit in the Atlanta region supports equity and provides access to opportunities by providing an affordable mobility option. An estimated 8.6 million trips were enabled by the Atlanta region's transit system in 2020 that otherwise would not have been possible.[8] When fixed-route or high-capacity transit is not a viable option outside of certain high-density neighborhoods, the necessity of car ownership coupled with increased transportation costs creates a compounding struggle for the region's residents. Expanding transit's reach to meet residents where they are, especially those residents historically disenfranchised by transit planning decisions, expands their access to transit and thus their access to employment opportunities, educational opportunities, social opportunities, healthy food outlets, parks, cultural sites – myriad places that raise one's quality of life.

Affordability

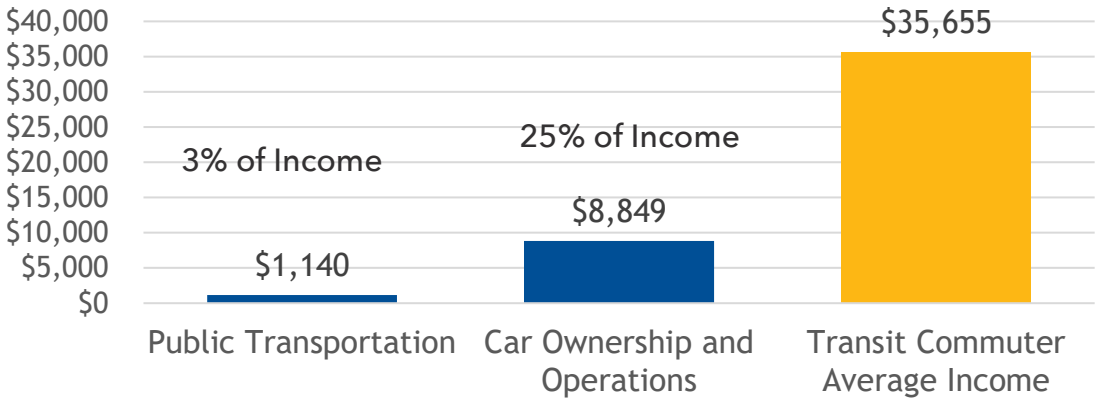
Transit provides value to residents of the Atlanta region by offering them a cost-effective mode to meet their travel needs. Transit's affordability relative to other travel options is critical for lower-income residents who may not be able to afford car ownership. Figure 4 compares the annual cost of transit use,

[8] In FY 2020, transit in the Atlanta region facilitated 98 million unlinked bus, commuter bus, heavy rail, and streetcar trips. Because some trips require transfers, this corresponds to approximately 69 million door-to-door (linked) trips involving transit. Applying the 12.5 percent of respondents to Atlanta Regional Commission's (ARC) 2019 on-board survey who indicated they would not make their trip if transit service were not available to this total yields an estimate of 8.6 million trips enabled by transit that otherwise would not be possible. Estimated using the distribution of number of transfers per trip from ARC's 2019 On-Board Survey, https://etcinstitute.com/transit/transit-dashboards/ga_arc/.

estimated using 12 months of MARTA monthly passes, and car ownership to the average income earned by people in the region who use transit to get to and from work. The chart below shows that transit commands just 3 percent of a transit commuter's average income, while car ownership and operations costs claim 25 percent. Research suggests that 15 percent of income is an attainable goal for transportation affordability.[9] In the absence of transit, lower-income residents of the region face taking on unaffordable car ownership costs.

FIGURE 4

Comparison of Annual Transit Pass Costs and Car Ownerships Costs to Average Transit Commuter Income[10]



Environmental Sustainability

In addition to providing an affordable mobility option, transit use promotes environmental sustainability. Between June 2019 and July 2020, transit helped the region avoid 272 million additional vehicle miles traveled (VMT)

[9] CNT, https://htaindex.cnt.org/about/HTMethods_2016.pdf, 2017.

[10] Public transportation costs equal twelve 30-day MARTA passes ($95 each); car ownership and operations from American Automobile Association (AAA) at 15,000 miles per year. (See: AAA, Your Driving Costs: How Much Are You Really Paying to Drive? 2018 Edition, https://exchange.aaa.com/wp-content/uploads/2018/09/18-0090_2018-Your-Driving-Costs-Brochure_FNL-Lo-5-2.pdf.) Transit commuter average income from 2013-2017 American Community Survey (ACS) 5-year estimates, and Public Use Microdata Sample (PUMS).

on the road.[11] Table 1 compares the emissions profile of avoided passenger vehicular travel (272 million in VMT) to the greenhouse gas (GHG) emissions profile of fixed-route transit in 2020. In addition to the benefit of improved air quality, transit is estimated to **save the region over $10 million in social costs of emissions**, based on avoided GHG emissions and other hazardous and smog-producing pollutants.[12,13]

TABLE 1
Emissions Avoided Because of Transit (U.S. Tons in 2020)

	Avoided Emissions	
Criteria Pollutant	**Emissions Reduction**	**Social Benefit (Cost Savings)**
CO	2,870	-
PM2.5	4.0	$1,541,100
PM10	4.5	-
NOx	302	$2,604,400
VOC	195	$406,000
CO2e	77,500	$6,042,400
Total		$10,594,000

Health and Safety

Transit also contributes to human health and safety beyond greenhouse gas reductions. The average time spent commuting in the Atlanta region is 39

[11] Analysis based on a median trip distance of 4.04 miles as reported by the ARC On-Board survey, with 0.25 miles added on each end of a trip to account for boarding and alighting. For more information about the methodology, see: https://atltransit.ga.gov/2020ARA.

[12] Analysis using U.S. EPA's MOVES model and valuation factors from USDOT and the World Bank. Rail emissions not included as emissions from the electrical generation process vary based on fuel mix and geography.

[13] Numbers do not sum exactly due to rounding.

minutes one way and most people commute to work by driving alone. These long, auto-centered commutes contribute to physical inactivity, a significant risk factor for cardiovascular diseases, obesity, and diabetes. Transit use, on the other hand, is linked with increased physical activity and improved health outcomes due to the need to walk or bike at the beginning and end of each trip. In the Atlanta region, despite a low public transportation mode share, 84 percent of transit riders walk to access transit stops or stations.[14]

Research also shows that transit is one of the safest ways to travel and public transportation investment is among the most cost-effective ways to enhance traffic safety for a community.[15] Many factors that increase public transportation use, such as good walking and cycling conditions, and compact development, also tend to increase traffic safety. A 2018 APTA study found that metro areas with higher public transportation use have lower traffic fatality rates.[16] In 2018, the Atlanta Metropolitan Statistical Area (MSA) had the tenth highest pedestrian fatality rate among the 25 urbanized areas with the highest annual pedestrian fatalities.[17] In comparison, the New York metropolitan area, where transit use per capita is 7 times greater than in Atlanta, ranked 24th in fatality rate despite having the country's highest total annual pedestrian fatalities in an MSA.

Economic Development

Transit also promotes economic development, both indirectly by getting people to and from jobs and activities, and directly, as transit agency expenditures create jobs and generate sales throughout the region. The economic impacts include direct impacts, the initial transactions supported by transit agencies; indirect supplier impacts, the additional economic activity that a business generates as a result of their transaction with the transit agency; and induced impacts, the impacts associated with the spending of

[14] ARC 2019 Regional Commuter Survey.

[15] APTA, "The Hidden Traffic Safety Solution: Public Transportation." (2016).

[16] APTA, "Public Transit Is Key Strategy in Advancing Vision Zero, Eliminating Traffic Fatalities." (2018).

[17] USDOT National Highway Traffic Safety Administration, "Geographic Summary of Pedestrian Fatalities." (2019).

transit worker income. In 2019, with multiplier impacts, transit agency expenditures supported nearly 15,000 jobs, contributed more than $1.25 billion to the Atlanta region's Gross Regional Product, and contributed over $2 billion in economic output.[18]

Numerous studies from other regions across the U.S. have also indicated that investments in high-capacity transit can stimulate private development around transit stations, although the precise impact always depends on the unique local context in which transit and land development occur.

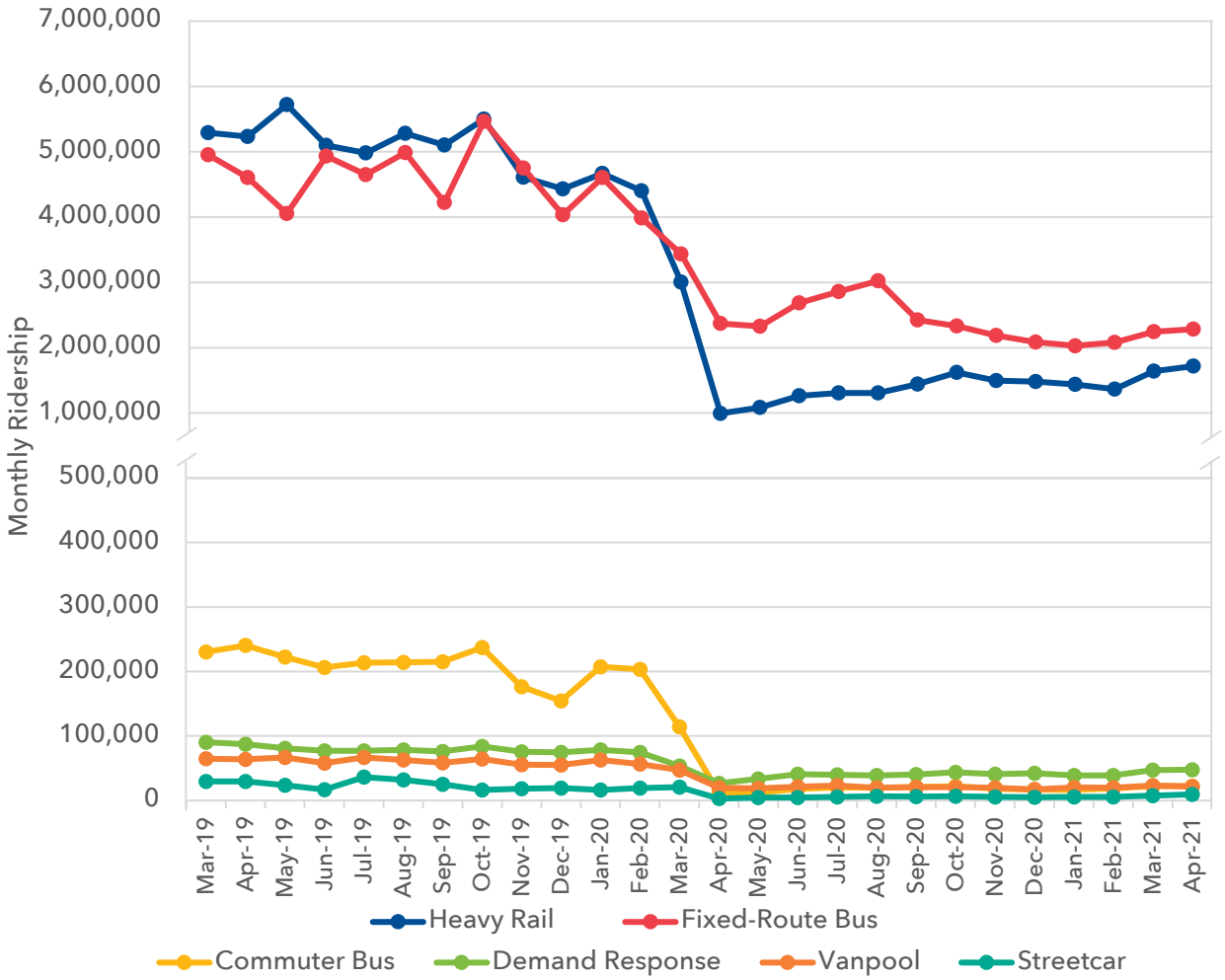
[18] Results from 2020 ATL ARA analysis.

The Impact of COVID-19

The COVID-19 pandemic has had a profound impact on the nation, including the Atlanta region. Transit ridership in the country and across the region declined sharply beginning in March 2020 because of the pandemic. Figure 5 shows monthly ridership by mode between March 2019 and April 2021 in the region.[19]

FIGURE 5

Impact of COVID-19 on Ridership by Mode



SOURCE: NTD MONTHLY MODULE ADJUSTED DATA RELEASE.

[19] Unlinked passenger trips by mode from NTD's monthly module adjusted data release, including CobbLinc, Connect Douglas, GCT, MARTA, and Xpress, available at https://www.transit.dot.gov/ntd/data-product/monthly-module-raw-data-release

Ridership in the region dropped by almost 25 percent between February and March 2020 and then by roughly 50 percent between March and April 2020. While all modes experienced a decline, the decline varied significantly by mode (Figure 5). Until February 2020, heavy rail, for example, carried more riders than fixed-route buses in the region, but heavy rail ridership declined especially sharply. Similarly, ridership on commuter buses, once significantly higher than on modes like demand response, vanpool, and streetcar, dropped and remained low. Ridership fluctuations since the Spring of 2020 may also indicate the relative importance of certain modes for the region's essential workers and transit-oriented populations (Table 2).

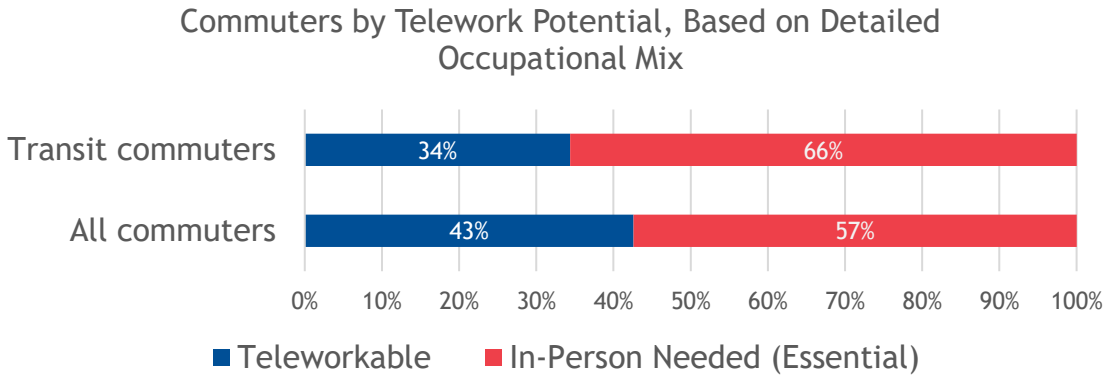
TABLE 2
Change in Ridership by Mode

Mode	**Impact of COVID-19 on Ridership** (April 2019 to April 2020)	**Pre-COVID-19 Ridership Retention** (April 2021 compared to April 2019)
Heavy Rail	-81%	33%
Fixed-Route Bus	-49%	50%
Commuter Bus	-95%	9%
Demand Response	-69%	55%
Vanpool	-69%	34%
Streetcar	-90%	32%

Fixed-route bus and demand-response services stand out as critical modes in the region, while commuter bus riders seem to be the least transit-reliant riders in the region. As seen in Table 2, the impact of COVID-19 on fixed-route buses was the lowest among the modes in the region, and by April 2021, ridership on fixed-route buses and demand respond was 50 and 55 percent of the April 2019 levels, respectively. On the other hand, April 2021 commuter bus ridership was only 9 percent of that two years before. Heavy rail, vanpool, and streetcar have recovered more from the sharp drop in March 2020, but still operate at roughly a third of the ridership of April 2019.

Regardless of mode, many transit commuters who are essential workers continued to rely on transit to get to their in-person jobs throughout the pandemic. Approximately two-thirds of people who typically commute using transit in the Atlanta region cannot do their job remotely, based on their occupation (Figure 6Error! Reference source not found.).[20] By contrast, only 57 percent of commuters by all modes must do their jobs in person. Transit, therefore, serves a relatively higher share of frontline workers compared to other commuting modes.

FIGURE 6
Transit Commuters and All Commuters by Telework Potential



The 2020 ARA offers the following conclusions regarding the importance of transit in the Atlanta region for essential workers:

- Transit provides access for more workers that must be physically present to perform their jobs when compared to other modes or the workforce in general.
- Many transit commuters perform essential functions that keep the economy and society going. Examples include people who prepare food, work as cashiers at grocery stores, clean buildings, handle freight or drive trucks, or serve as nurses and other health care workers. During the pandemic, transit provided access to these workers to make sure they continued to reach their jobs safely.

- Looking forward to the post-pandemic period, regardless of how telecommuting plays out in the recovery, transit must continue to serve frontline workers who need to perform their jobs in person.
- Providing safe and affordable access to frontline workers is also a matter of equity and racial justice. Many frontline occupations served by transit have a higher share of African Americans and people of Hispanic or Latino origin than regional averages across all commuters.

Transit Environment

About the Region

The 13-county ATL region includes Cherokee, Clayton, Cobb, Coweta, Dekalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties, which, combined, have a total population of 5.2 million.[21] The U.S. Census-defined MSA of Atlanta-Sandy Springs-Roswell is the most populous metropolitan area in Georgia and the ninth most populous MSA in the country.[22]

The region's population has and is projected to steadily grow between 2000 and 2050, as shown in Figure 7.[23] The population of the 13-county region increased by almost 1 million people between 2000 and 2010 and is expected to have grown at a similar rate between 2010 and 2020, according to the Atlanta Regional Commission (ARC) projections. The growth the region experienced over the past two decades is expected to continue at a slightly lower rate over the next 30 years.[24] Still, adding 2 million additional residents to the 13-county region by 2050 would be the equivalent of the entire current population of metropolitan Nashville, Tennessee, moving to the region.[25]

Following the negative impacts of the Great Recession, employment in the region grew over the last decade, as shown in Figure 7. Currently, the top employment sectors in the 13-county region are retail (11 percent), health

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[21] U.S. Census, American Community Survey (ACS) 5-year estimates, 2015-2019.

[22] U.S. Census, "New Census Bureau Estimates Show Counties in South and West Lead Nation in Population Growth," https://www.census.gov/newsroom/press-releases/2019/estimates-county-metro.html, April 18, 2019.

[23] Atlanta Regional Commission, Atlanta Region Population Estimates, https://atlantaregional.org/atlanta-region/population-forecasts-estimates/atlanta-region-population-estimates/.

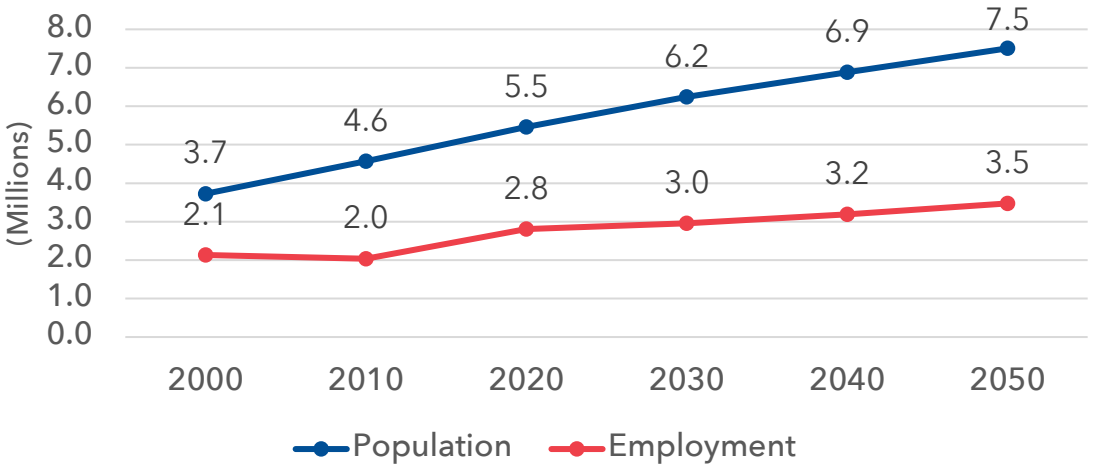
[24] Atlanta Regional Commission, About the Atlanta Region, https://atlantaregional.org/atlanta-region/about-the-atlanta-region.

[25] U.S. Census, Nashville-Davidson-Murfreesboro-Franklin, TN Metro Area 2019 estimated population, https://censusreporter.org/profiles/31000US34980-nashville-davidson-murfreesboro-franklin-tn-metro-area/

care (11 percent), and accommodation and food services (10 percent).[26] ARC projects the region will add 700,000 jobs over the next 30 years, with continued growth in the health care, retail, education, and professional and scientific sectors.[27]

FIGURE 7

13-County ATL Region Population and Employment 2000-2050



Population and employment vary significantly across the ATL's 13 counties, as shown in Figure 8 and Figure 9. Population and jobs are concentrated heavily in Cobb, DeKalb, Fulton, and Gwinnett Counties, with the remaining roughly 30 percent of the population and 20 percent of the employment in the other counties. Fulton County has the highest number of residents (1.1 million) and jobs (900,000). Gwinnett County, despite being the second-most populous county, ranks third in employment, closely behind Cobb County, which has the third-highest population. DeKalb and Cobb Counties are roughly the same size in population (around 760,000).

[26] U.S. Census, Longitudinal Employer-Household Dynamics.

[27] Atlanta Regional Commission, About the Atlanta Region, https://atlantaregional.org/atlanta-region/about-the-atlanta-region.

FIGURE 8
2019 Population by County

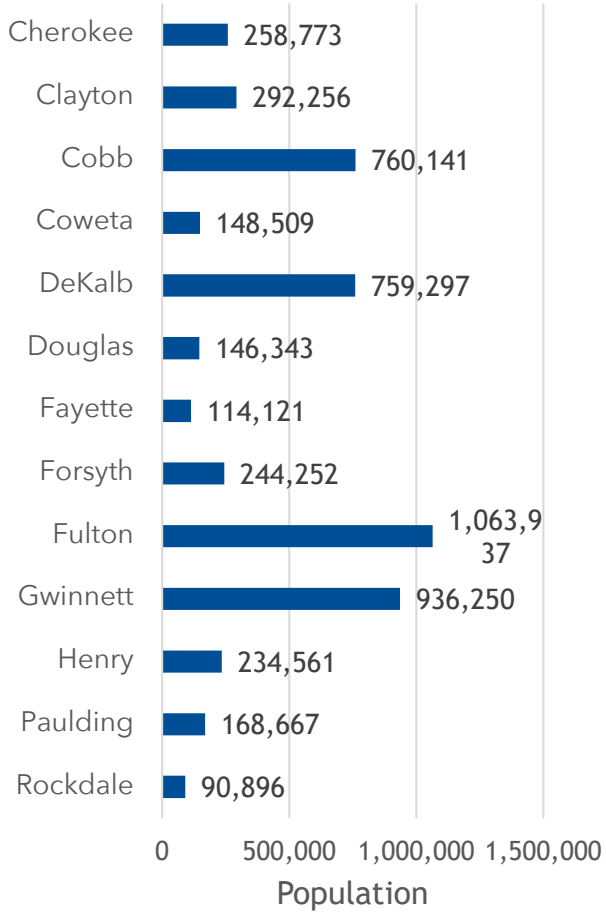


FIGURE 9
2019 Employment by County

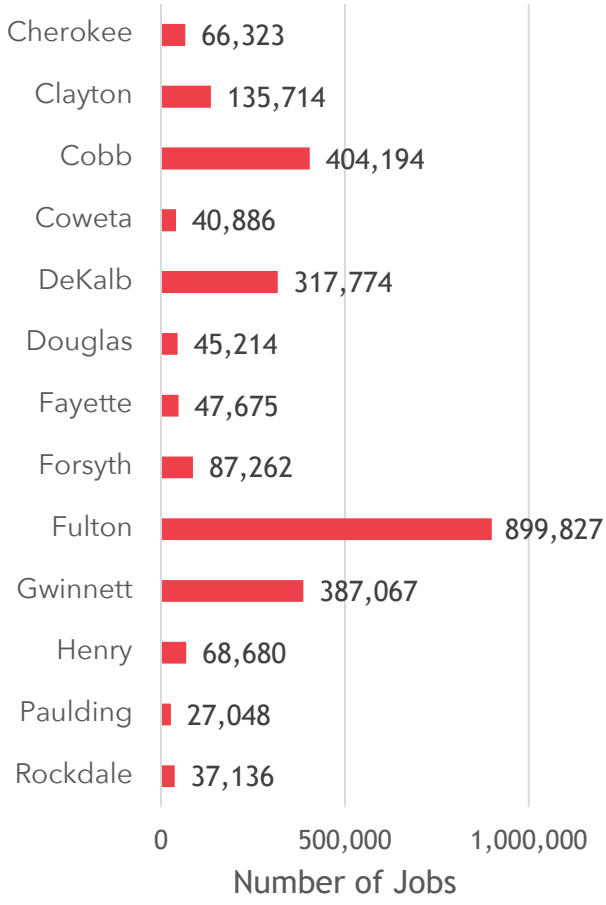
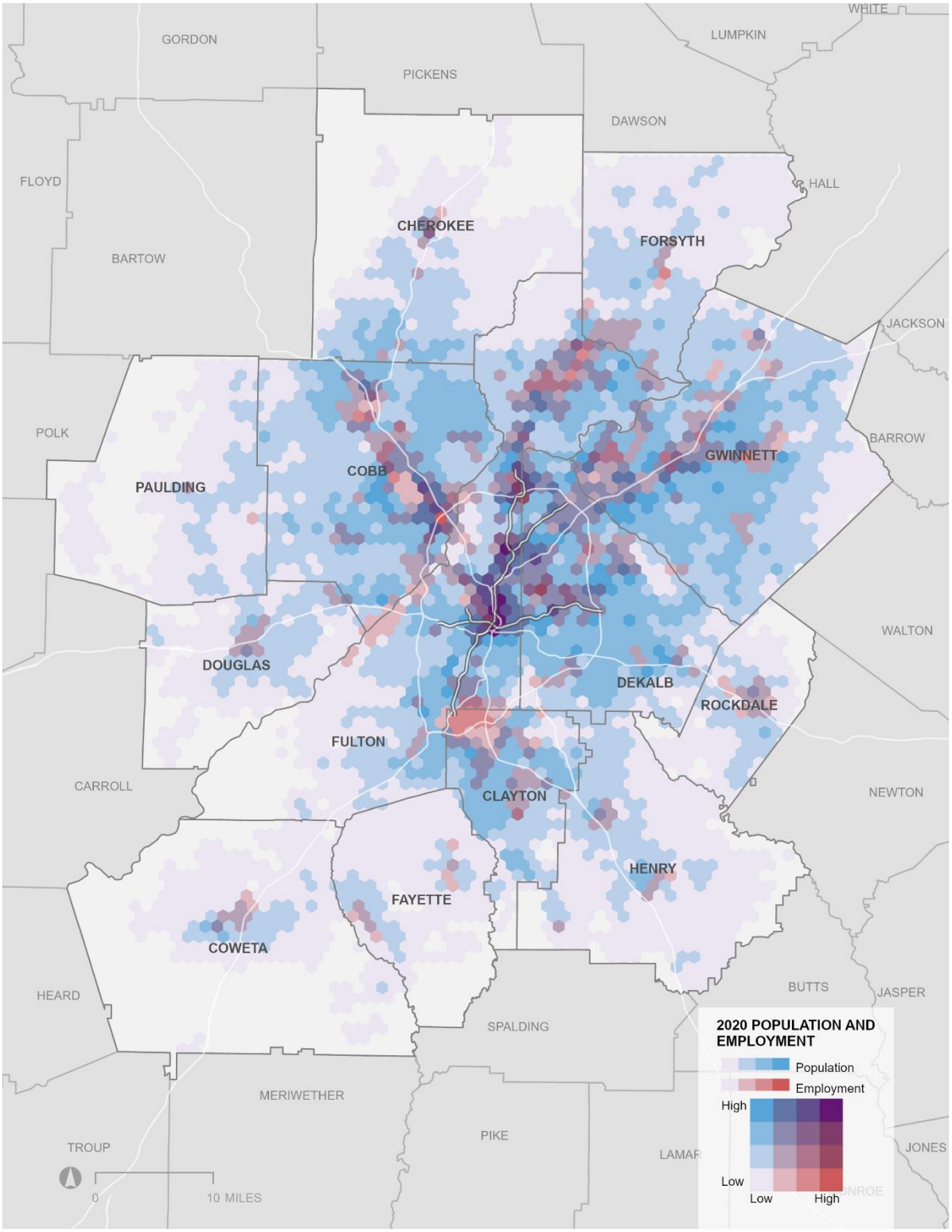


Figure 10 shows the current distribution of the population (blue) and employment (red) in the ATL region (the colors have been overlaid to show where there are concentrations of both).[28] Downtown and Midtown Atlanta and Buckhead are areas with high concentrations of employment and population. Dunwoody and Decatur also stand out as employment centers with higher population densities. Other employment areas include the Hartsfield-Jackson Atlanta International Airport, the I-75 and I-85 corridors, and North Fulton/400 corridor.

[28] Areas shown in gray do not meet a density threshold of two jobs or residents per acre.

FIGURE 10

2020 Population and Employment



SOURCE: ARC ABM

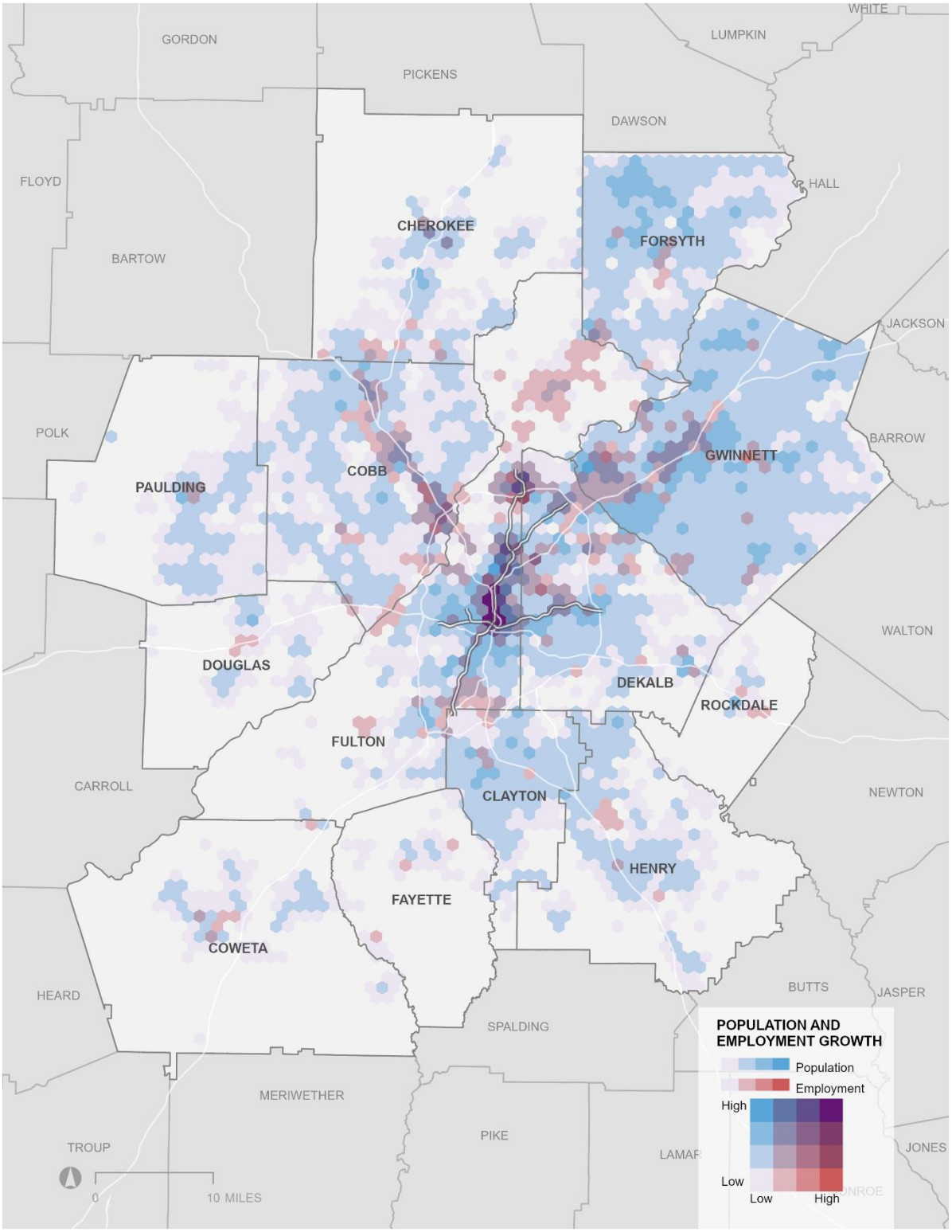
Projected population and employment growth between 2020 and 2050 also vary by county, as shown in Figure 11.[29] The total population is projected to increase in all 13 counties by 2 million people, or 38 percent, with Gwinnett showing the greatest net increase, of 475,000 residents, and Cobb, DeKalb, and Forsyth Counties growing by 200,000 about residents each by 2050. Forsyth County shows the greatest percent increase in population in the region, at 86 percent. Regarding employment, most counties have projected increases of between 20 and 30 percent. Fulton County has the highest total number of jobs increase, almost 240,000, followed by Cobb and DeKalb Counties, with over 90,000 and 80,000, respectively.

Figure 11 shows the locations across the region where population growth (blue) and employment growth (red) are expected to occur between 2020 and 2050. While Forsyth and Gwinnett Counties project widespread moderate population growth, in Fulton County, population and employment growth is anticipated to be highly concentrated along MARTA's heavy-rail lines, including near the Hartsfield-Jackson Atlanta International Airport, as well as along the 400 corridor in the northern part of the county. Areas that show greater overlapping population and employment growth include Downtown and Midtown Atlanta, areas near MARTA's Buckhead and Dunwoody stations, and along I-75 in Cobb County and I-85 in Gwinnett County.

[29] Atlanta Regional Commission, ARC 20-County Data Dashboard, https://33n.atlantaregional.com/21-county-data-dashboard.

FIGURE 11

Projected Population and Employment Growth from 2020 to 2050



SOURCE: ARC ABM

The region's 2019 median household income was slightly above $72,000, over $3,000 more than the national median.[30] As shown in Figure 12, Clayton County had the lowest median income in the 13-county region, and DeKalb, Douglas, and Rockdale Counties had median incomes considerably below the region's median. Forsyth County stands out with a median household income of $40,000 above the region's median, and Fayette and Cherokee County's median incomes are also among the highest.[31]

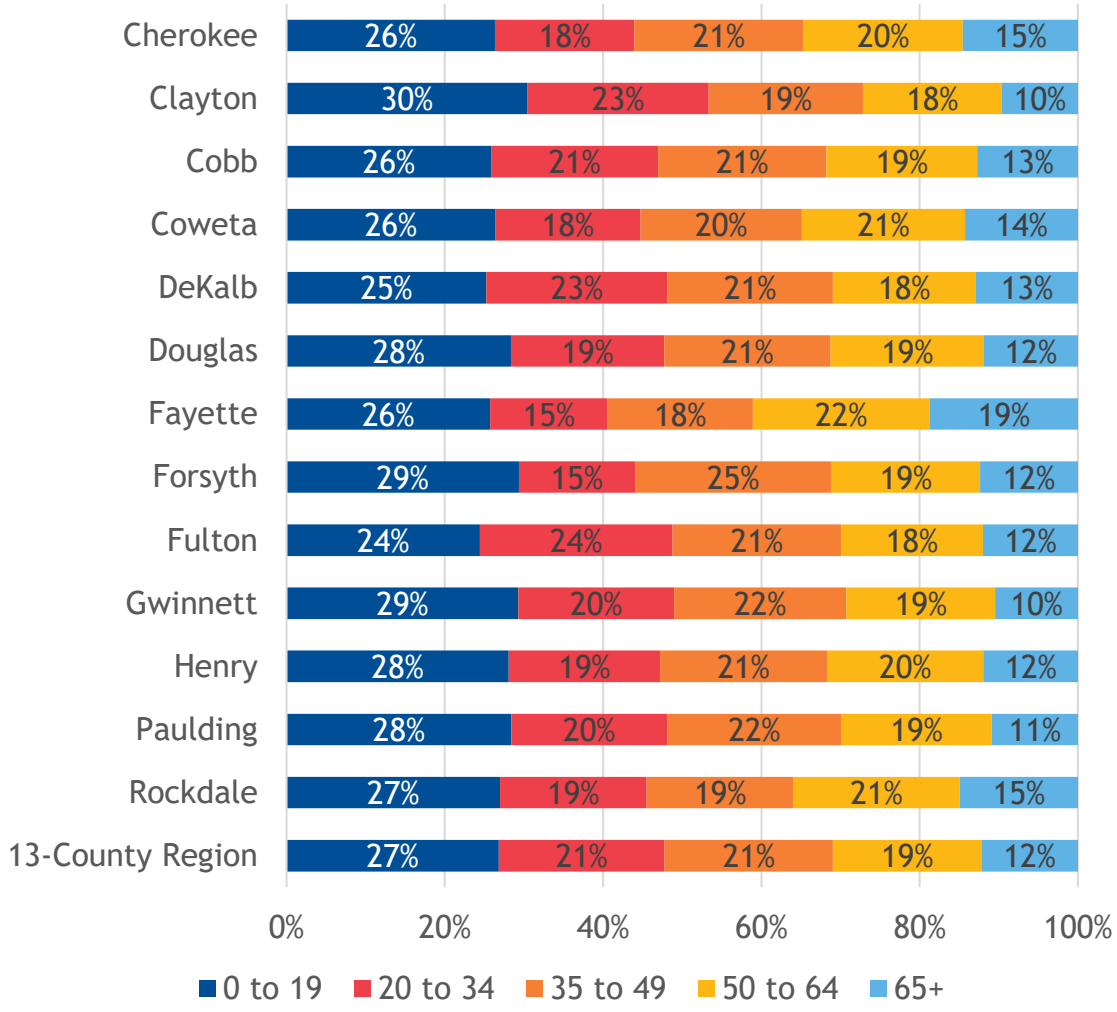
FIGURE 12
2019 Median Income by County

[30] The U.S. median household income was $68,703 in 2019, https://www.census.gov/library/stories/2020/09/was-household-income-the-highest-ever-in-2019.html#:~:text=The%20U.S.%20median%20household%20income,Census%20Bureau%20statistics%20released%20today.

[31] Atlanta Regional Commission, ARC 20-County Data Dashboard, https://33n.atlantaregional.com/21-county-data-dashboard.

As the Baby Boomer generation ages, the region's population is expected to age considerably in the coming decades. Currently, seniors 65 and over make up 12 percent of the 13-county region's total population, as shown in Figure 13. In general, counties present a reasonably even age cohort distribution, with youth making up between 25 and 30 percent of the population and older adults between 10 and 15 percent, except in Fayette County, which has a higher proportion of older adults.

FIGURE 13
2019 Population Age Distribution by County



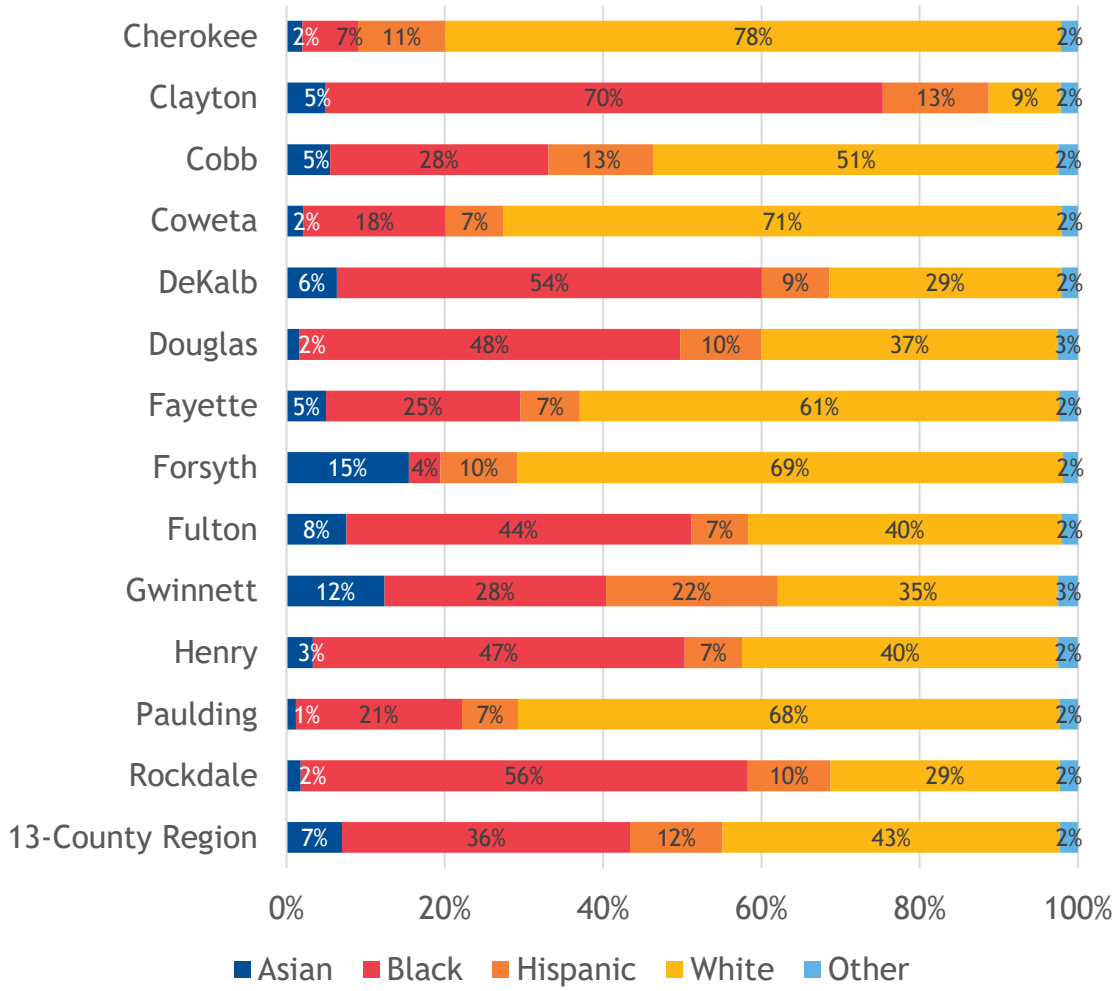
The 13-county region is racially diverse; 36 percent of the population identifies as Black, and 43 percent of the population identifies as White (non-Hispanic or Latino), as shown in Figure 14. However, these percentages vary

significantly at the county level. Almost 80 percent of Cherokee County residents identify as White (non-Hispanic or Latino), and in Coweta, Forsyth, and Paulding Counties, that number is close to 70 percent. By contrast, 70 percent of Clayton County's population identifies as Black, and a significant share of the population is Hispanic or Latino. Over half of the population identifies as Black in DeKalb and Rockdale Counties. According to the ARC's forecasts for 2050, the White (non-Hispanic or Latino) share of the population is expected to decrease to less than 35 percent and the Hispanic or Latino population is projected to grow to over 20 percent in the ARC's 21-county region.[32]

[32] Atlanta Regional Commission, Population & Employment Forecasts, https://atlantaregional.org/atlanta-region/population-employment-forecasts/.

FIGURE 14

2019 Population Race and Ethnicity by County



Overall, the region's current and projected demographics point to an increasing reliance on the current transit system and demand for new transportation options. The demographic and socioeconomic trends discussed in the above sections have some key implications for transit planning.

- Areas with many low- and moderate-income residents are particularly in need of new or expanded service and improvements to connectivity and mobility options. In these locations, transit riders are more sensitive to fares; therefore, maintaining affordable fares will be important for keeping transit accessible.

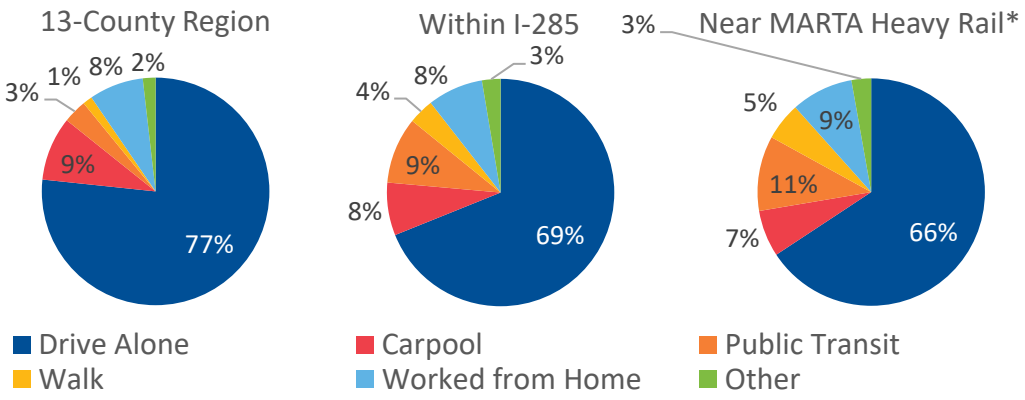
- A growing aging population requires changes in service provision and expanded mobility options for all to retain older populations' mobility and independence.
- With minority populations significantly concentrated or clustered in certain counties and areas, and the projection of region becoming increasingly diverse, ensuring these are well served by transit will be imperative for ensuring the region's transit network provides equitable access.
-

About Transit Riders in the Region

While communities in the Atlanta region are served by numerous operators that provide a variety of transit services, driving remains the dominant mode for commuting. As shown in Figure 15, in 2019, across the 13-county ATL region, only 3 percent of residents used public transit, whereas approximately 77 percent of commuters drove alone to work, 9 percent carpooled, 1 percent walked, and 2 percent used other modes, while 8 percent teleworked (i.e., did not travel at all).

FIGURE 15

Commute Mode Share in the Atlanta Region



SOURCE: 2015-2019 U.S. CENSUS AMERICAN COMMUNITY SURVEY (ACS) 5-YEAR ESTIMATES 2015-2019. *NEAR MARTA HEAVY RAIL IS DEFINED AS WITHIN A ½ MILE LINEAR BUFFER OF A MARTA RAIL LINE.

The share of commuters using transit varies within the region. As shown in FIGURE 15, the percentage of transit commuters within the I-285 perimeter is three times greater than in the 13-county region overall. Also, while the 13-county region's share of commuters taking transit or walking are 3 and 1 percent, respectively, these numbers are 11 and 5 percent for commuters living closer to MARTA's heavy rail lines. At the county level, Fulton and DeKalb Counties have the highest share of transit commuters in the region, followed by Clayton County, as shown in TABLE 3. In all other counties in the region, up to 1 percent of commuters take public transit to work.

TABLE 3

Commute Mode Share by County

County	Drive Alone	Carpool	Public Transit	Walk	Worked from Home	Other
Cherokee	80%	9%	1%	1%	10%	1%
Clayton	77%	12%	3%	1%	4%	2%
Cobb	79%	8%	1%	1%	9%	2%
Coweta	83%	9%	1%	1%	5%	2%
DeKalb	72%	10%	7%	2%	7%	2%
Douglas	82%	9%	1%	1%	6%	2%
Fayette	79%	8%	1%	0%	9%	3%
Forsyth	78%	8%	1%	1%	12%	1%
Fulton	72%	7%	7%	3%	9%	3%
Gwinnett	79%	11%	1%	1%	6%	1%
Henry	82%	9%	1%	0%	7%	1%
Paulding	84%	8%	0%	1%	7%	1%
Rockdale	79%	11%	1%	1%	7%	2%

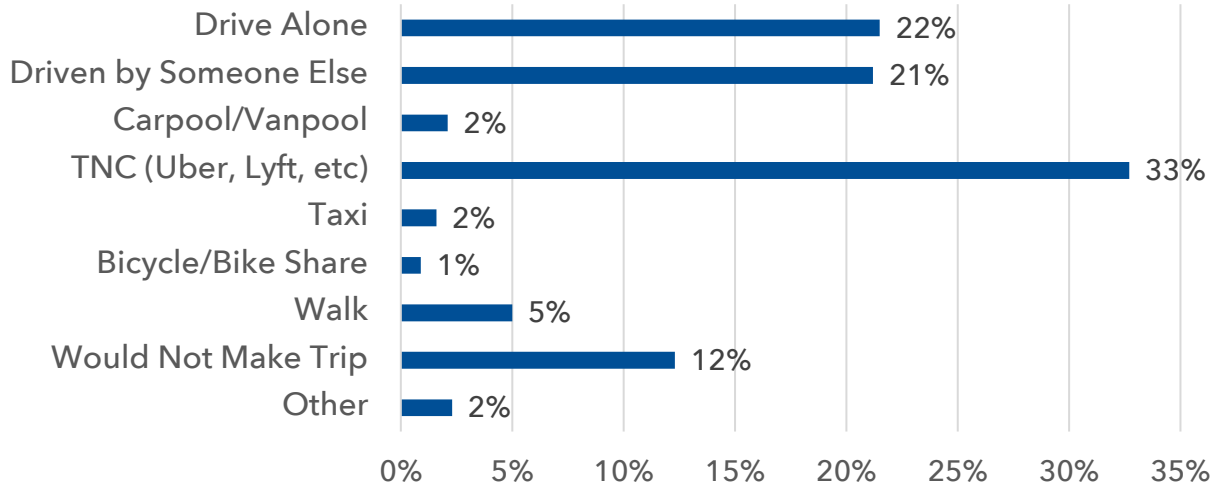
SOURCE: 2015-2019 U.S. CENSUS AMERICAN COMMUNITY SURVEY (ACS) 5-YEAR ESTIMATES 2015-2019.

ARC's 2019 Regional Commuter Survey results indicate that choosing how to travel to work is strongly shaped by the dependability of the travel mode.[33] The overwhelming majority of respondents noted that congestion is a severe problem in the region. While avoiding congestion and ensuring a reliable trip is critical in trip decisions, motivations vary by mode used. The cost of commuting, for example, is particularly noted by transit riders and carpoolers as the main deciding factor. Lack of a personal vehicle was most common among bus riders, followed by carpoolers and commuters who walked to work.

While a significant number of riders use transit due to the lack of a vehicle, **over half (53 percent) of commuters taking transit in the Atlanta region could have used one of their household vehicles for their trip**, according to the 2019 Atlanta Regional Transit On-Board Survey. If transit were unavailable, 22 and 21 percent of the respondents would either drive alone or be driven by someone else, respectively, as shown in Figure 16. TNCs such as Uber and Lyft, are a notable alternative in the region, chosen by 33 percent of the respondents. However, 12 percent of the riders said they would not make the trip if transit were not available.

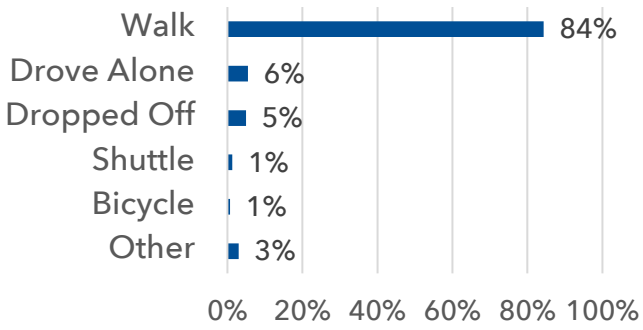
FIGURE 16

How Respondent Would Make Trip if Bus or Rail Were Not Available



[33] ARC 2019 Regional Commuter Survey.

FIGURE 17
Mode of Accessing Transit in the Atlanta Region



The vast majority of transit riders in the region (84 percent) walk to access transit stops or stations, as shown in FIGURE 17. Driving alone and being dropped off by someone else are the second and third most common modes riders access transit, with 6 and 5 percent, respectively. Shuttles and bicycling were even less commonly used modes for accessing transit.

The Atlanta Regional Transit On-Board Survey also provides an in-depth view of transit riders' demographics in the region. While 36 percent of the ATL region's population identifies as Black or African American, two-thirds (67 percent) of transit riders in the region identify as Black or African American (Figure 18). The annual household income of at least 70 percent of transit riders is below $75,000, indicating that the majority of riders reside in households with an income below the region's median household income in 2019 (Figure 19). These findings highlight how people of color and low and moderate income populations are more reliant on transit, and that transit therefore has an important role in supporting equity, one of the ATL's six governing principles, in the region.

FIGURE 18
Respondent Race/Ethnicity

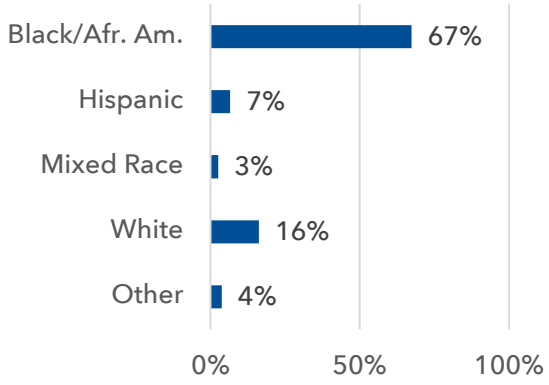
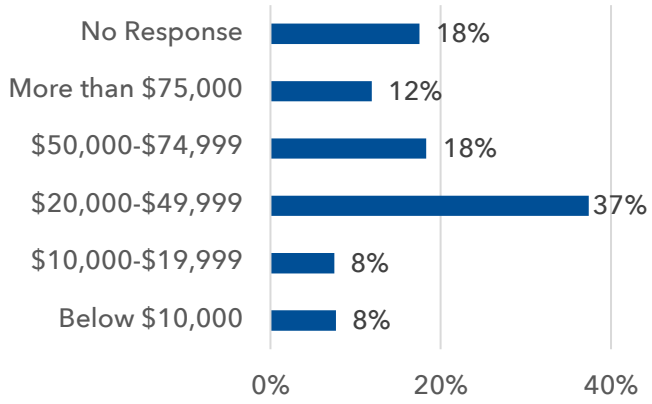


FIGURE 19
Respondent Annual Household Income



In line with the forecasts discussed in the About the Region section, transit ridership is projected to grow in the 13-county region. By 2050, the ARC projects that there will be over half a million daily transit trips in the region, an increase of 77 percent from 2020 modeled ridership. The projected transit ridership growth by county is shown in Table 4. While forecasted transit ridership growth in Coweta and Douglas Counties is modest, Cobb, Forsyth, and Gwinnett's daily unlinked transit trips are projected to more than double in the 30-year period.

TABLE 4

Projected Transit Ridership Growth

County	2020 Daily Unlinked Transit Trips[34]	2050 Daily Unlinked Transit Trips	Growth
Cherokee	704	1,207	71%
Clayton	14,523	28,355	95%
Cobb	15,699	43,023	174%
Coweta	420	433	3%
DeKalb	63,583	111,995	76%
Douglas	1,533	1,777	16%
Fayette	422	679	61%
Forsyth	549	1,280	133%
Fulton	208,541	345,832	66%
Gwinnett	10,044	24,500	144%
Henry	1,081	1,604	48%
Paulding	230	323	40%
Rockdale	698	949	36%
13-County Region	318,027	561,957	77%

SOURCE: ARC ABM

[34] Unlinked transit trips are the number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.

Land Use

Land use plays a significant role in determining why, where, and how people travel. In the Atlanta region, a low-density development pattern with wide roadways and separated land uses has led to more auto-oriented design while making walking, bicycling, and using transit more difficult. In recent years, communities across the Atlanta region have increasingly pursued alternative development patterns and mixed land uses, which improves the viability of transportation options other than driving, in some cases priming these communities to be suitable for fixed-route transit options. It is important to acknowledge the many types of communities and land use patterns within the region, and that matching appropriate levels of mobility and transit to varied development patterns will be key to providing a balanced transportation system across the region and meeting the travel needs of the region's citizenry.

Planning for Transit

Planning for transit at the regional level is often based on determining how to best allocate a limited number of resources across a large, complex region. Unlike roads, which are used by a broader range of travelers and are inherently viewed by the public as necessary to maintain, transit has historically received much more limited resources compared to other travel modes. In transit's case, planning is often done with an objective of maximizing ridership while maintaining coverage. However, transit investment decisions and the ability to efficiently leverage their potential benefits are further challenged by the large number of cities and counties within the Atlanta region and the dispersed nature of land use, zoning, and development planning and regulations.

The greatest opportunity for the region to invest in transit in a way that "moves the needle" in terms of making transit a convenient and viable travel choice is to identify places that are primed for transit-oriented environments and destinations. This concept, when applied to community design, offers opportunities for a person to "live locally" with amenities that include housing, employment, shopping, education, recreational and community-based

facilities while facilitating easy, affordable access to other regional centers and amenities. Often, places that have embraced this concept have higher densities of population, employment, and a mixture of land uses that are designed to be more walkable and bikeable. Particularly as the share of the region's younger and older generations grow, transit-oriented communities are becoming more valued, which represents an opportunity for the expansion of fixed-route and higher capacity transit in the region. What is seen as traditional transit, such as heavy rail, BRT, and LRT, lends itself to areas that have these characteristics, whereas modes such as fixed-route bus and flexible services such as microtransit are more appropriate for lower-density areas.

The ATL understands that our diverse region does not have a "one size fits all" solution and that public transportation is necessary beyond regional and town centers. While connections among activity centers may form the backbone of Atlanta's regional transit system, other modes and services will be necessary to serve less populated areas and provide critical linkages to education, employment, and economic opportunity.

Local Land Use Planning and Transit

In the State of Georgia, land use planning is driven by "Home Rule" status, in which local and municipal governments have a high level of control over land uses and development approvals. Since 1989, the Georgia Planning Act has required that a comprehensive plan be completed and updated every five years by local governments to maintain their Qualified Local Government (QLG) status. Locally-driven comprehensive plans address a variety of topics from housing to utilities – but rising to the top in terms of importance to public transportation and community-building is the framework the plan offers regarding how land is currently used and should be developed, redeveloped, or remain undeveloped in the future.

While land use planning, including zoning regulations and development approvals, are controlled at the local level in the region, transit planning is generally conducted at the county and regional level. Thus, the region and counties, while attempting to make transit investment decisions that will impact and be significantly impacted by development patterns, have

sometime little control or leverage to ensure that transit-oriented and transit-supportive land use policies and decisions will be enacted that will leverage transit investments as a community-building and economic development benefit. Additionally, residents, employees, and visitors to the Atlanta Region make few of their decisions based on jurisdictional boundaries and it is commonplace that residents work outside of their county of residence. As residents and their daily travels are significantly impacted by decisions outside of their home county, a coordinated regional response to land use decisions and mobility initiatives is needed.

As land use and public transportation decisions are inextricably linked, investments will require significant communication and coordination across multiple levels of government for the region's transit investments to reach their full potential positive impact. To identify regional priorities as part of the 2022 ARTP, an understanding of local land use patterns and policies, future plans, and momentum or commitment toward those plans will be necessary or may need to be aligned as part of the evaluation and prioritization process. Additionally, a regional strategy that aligns and directs transit investments in places where the built environment and multimodal transportation network promotes and supports transit-oriented development, or vice versa, will be critical. Information regarding local land use planning will information decisions in future ATL tasks and planning work.

Building Blocks for Transit

As the ARTP identifies and plans for the future of transit in the Atlanta region, the region's current and future land use patterns will provide essential building blocks to identify and support key destinations and drivers of travel and ridership. The consideration of land use, socioeconomic factors, and transportation characteristics influences transit propensity, or the level of potential demand for transit travel. Land use considerations for enhanced transit investments will likely include and/or be based upon:

- Connecting major activity centers (population, employment, and entertainment centers) across the region.
- Creating logical and right-fitted connections from more distant local centers to the region as a whole.

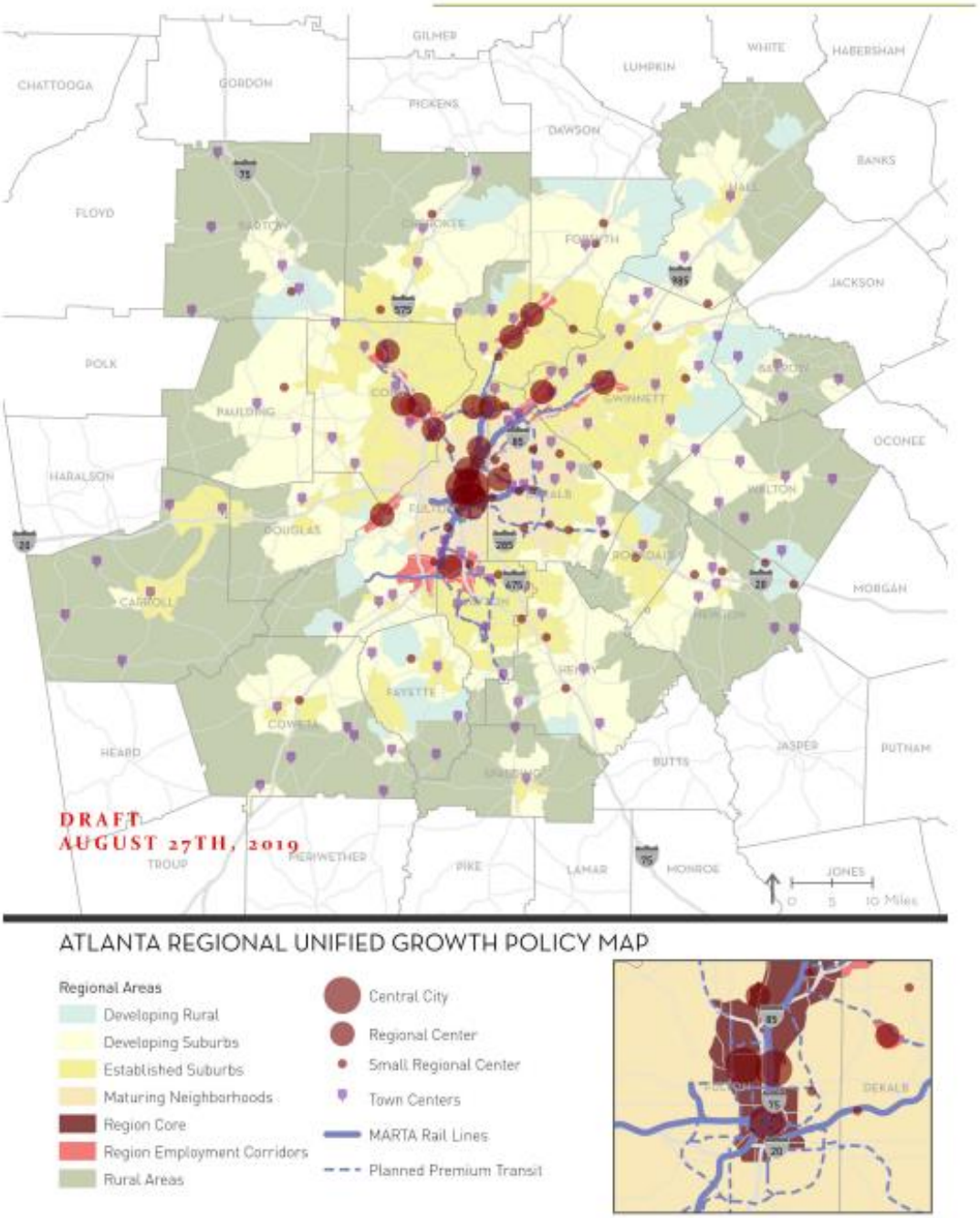
The Unified Growth Policy Map (UGPM) is developed by the ARC to document and direct future growth based on existing and projected land use patterns. The UGPM represents a culmination of local city and county plans as well as the larger Atlanta region's policies and forecasts. The map is a living document and serves as a guide for the region's vision for future growth and development as well as areas for preservation and protection.

Based on the ARC's UGPM shown in Figure 20 in conjunction with regional population and employment patterns (Figure 9), the highest densities of population and employment generally follow the region's major transportation corridors including I-85, I-75/575, I-20, I-285, and GA-400. The tie between the region's land use patterns and major corridors is further reinforced within the UGPM by the typology of Regional Employment Corridors surrounded by residential land use patterns, including Developing Suburbs, Established Suburbs, or Maturing Neighborhoods.

The region's major activity centers—including Town Center; Cumberland; Fulton Industrial; Airport; Southlake; Downtown; Midtown; Buckhead; Emory; Perimeter; Norcross; North Point; Gwinnett Place; Marietta; and the Windward/McGinnis/McFarland area—all lie along the region's major transportation corridors. Core activity centers serve as major 'live, work, play' destinations within the region. In some cases, they may not currently generate significant travel demand, but their locations indicate where land use form and patterns may be more "transit-ready." In recent years, several smaller town centers including Woodstock, Cumming, Newnan, McDonough, and Suwanee among others, have begun to generate investment and activity as localized activity centers in more suburban/rural portions of the region. These centers may not serve as destinations for regional travel but serve as important community hubs. Strategically connecting these local centers to regional activity centers should be considered as part of the regional transit vision.

FIGURE 20

The Atlanta Regional Unified Growth Policy Map



Transit Propensity

Transit propensity measures the presence of populations and activities that generate demand for transit within the ATL region.[35] Demographic and employment data such as age, income, commute mode, and the number of jobs in various sectors are synthesized in four primary propensity indices used for the analyses in this section, as outlined in Table 5. Two additional indices each combine two of the primary indices to evaluate transit use propensity during peak periods and throughout the day.

TABLE 5

Transit Propensity Indices and Variables[36]

Primary Indices	Variables	
Transit-Oriented Populations Origins Index	Population	All-Day Hybrid Index
	Age	
	Income	
	Vehicle Ownership	
	Disability Status	
Activity Destinations Index	Retail & Restaurant	
	Recreation	
	Healthcare & Social Assistance	
	Education	
	Government	
Commuter Origins Index	Labor Force	Peak Period Hybrid Index
	Non-SOV Commute Mode	
Employment Destinations Index	Employment	

[35] Transit propensity indices' numerical results are ranked using natural breaks (Jenks) in a scale from low to moderate to high within a study area. Areas shown in gray in the maps in this section (which are generally on the periphery of the 13-county region) are those that do not meet a minimum density of two residents or jobs per acre.

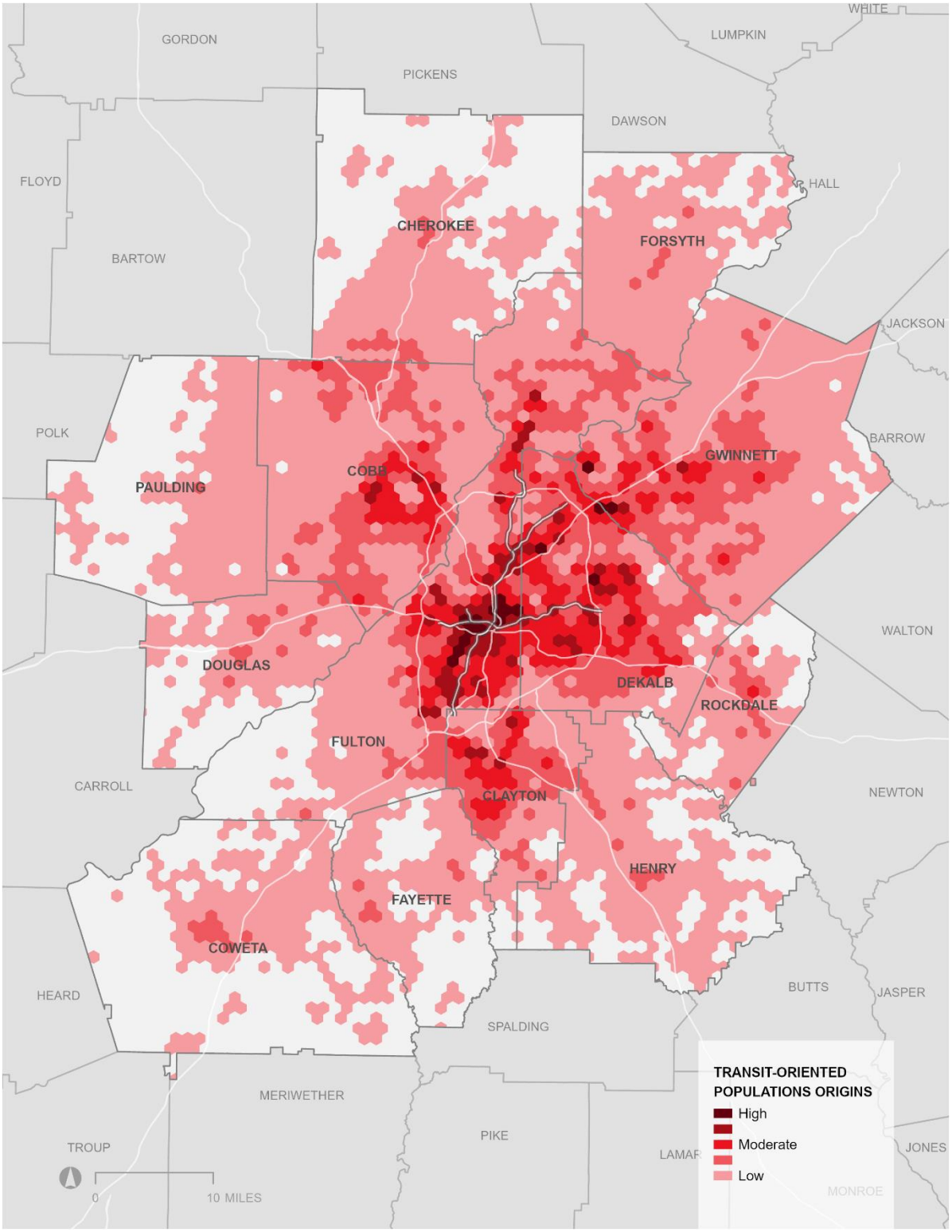
[36] Source: US. Census American Community Survey (ACS) 5-year estimates 2015-2019, Longitudinal Employer-Household Dynamics (LEHD) 2018.

All-Day Propensity

All-day demand for transit is often highest in areas with residents who rely on transit and businesses or public places that generate activity throughout the day. The first propensity index shown in this section, Transit-Oriented Populations (TOP) Origins, represents areas with high concentrations of youth, seniors, disabled residents, low-income households, and populations with low vehicle ownership. In the ATL region, TOP propensity is highest in the core of Atlanta, with additional pockets of high and moderate-to-high propensity distributed across DeKalb County, southwest Gwinnett County, Clayton County, and central Cobb County (Figure 21). Low-density and rural areas of the remaining counties have a low propensity, with relatively fewer transit-oriented populations.

FIGURE 21

Transit-Oriented Populations Origins Transit Propensity Index

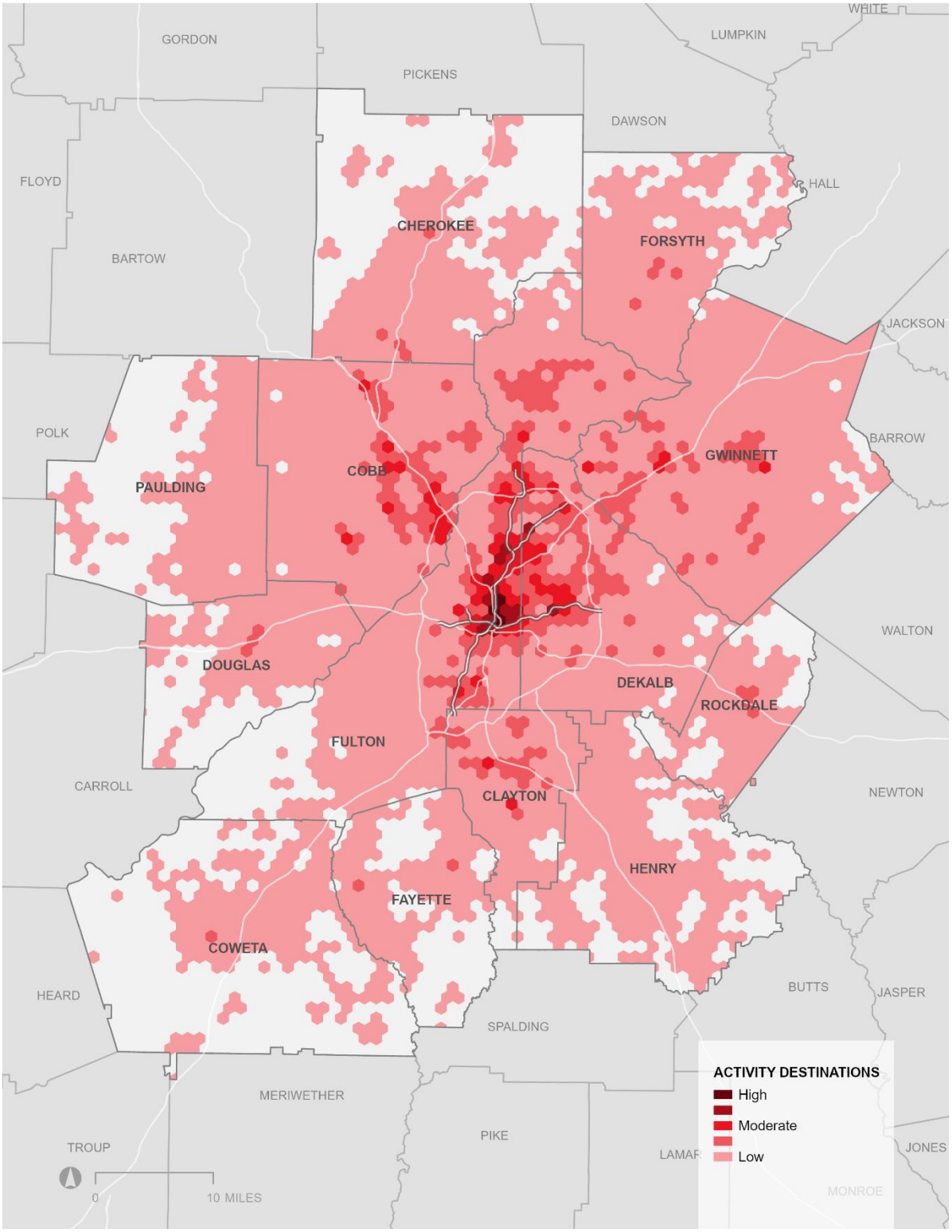


SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, LEHD 2018

The Activity Destinations propensity index identifies areas with relatively high employment in businesses and services that generate demand throughout the day, including restaurants, retail, recreation areas, healthcare and social services, government facilities, and schools. Figure 22 shows this propensity index is highly concentrated in central Atlanta and to the north and west of downtown Atlanta inside the Perimeter. Most of the region has moderate to low Activity Destinations propensity, with comparatively fewer activity generators.

FIGURE 22

Activity Destinations Transit Propensity Index

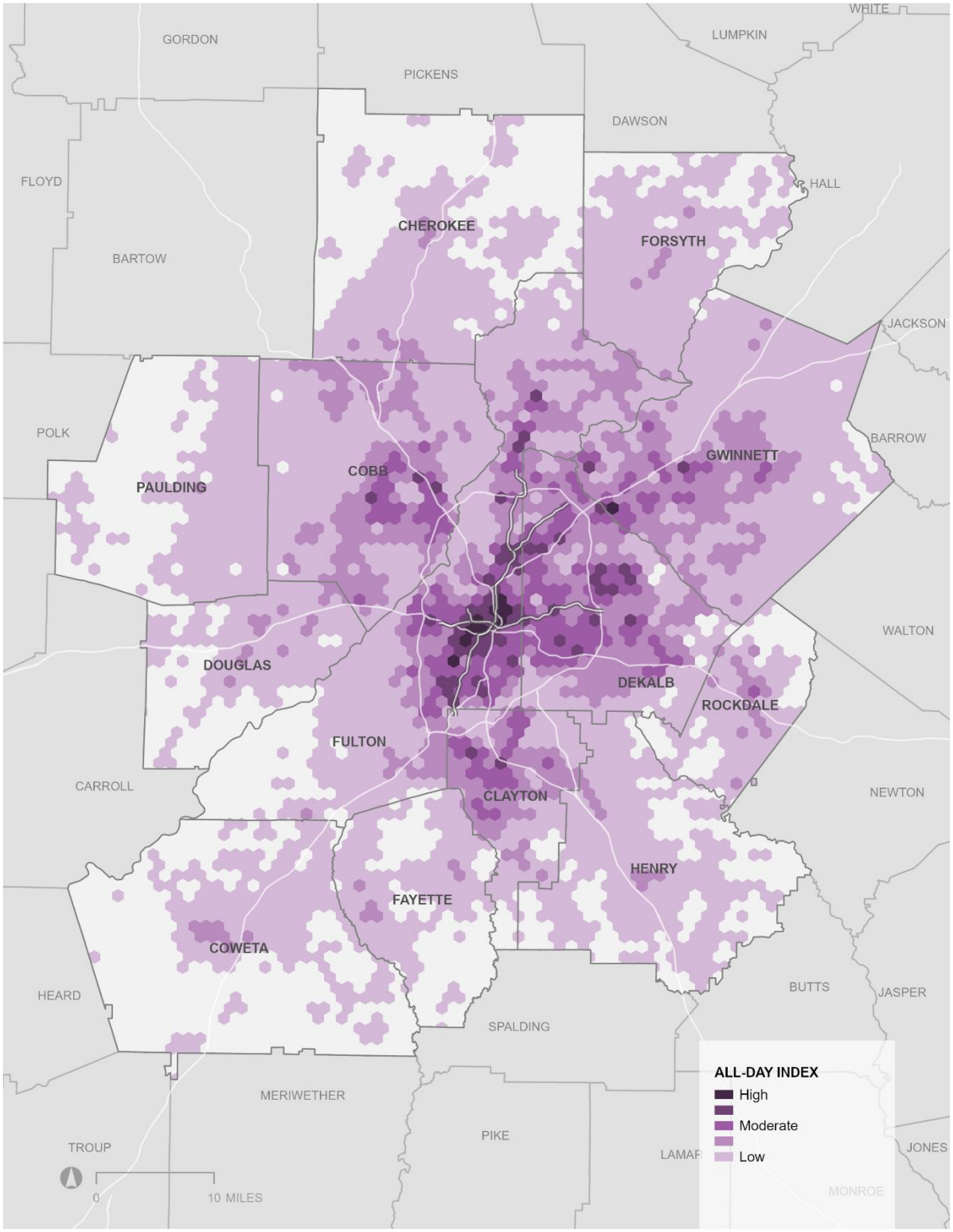


SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, LEHD 2018

The All-Day index combines the TOP Origins and Activity Destinations indices to identify areas that may produce transit demand from either a residential origin or an activity destination. Together, all-day propensity is highest in central Atlanta and inside the Perimeter, as shown in Figure 23. The inner suburbs of DeKalb, Gwinnett, Clayton, and Cobb County also exhibit moderate-to-high all-day propensity.

FIGURE 23

All-Day Transit Propensity Index



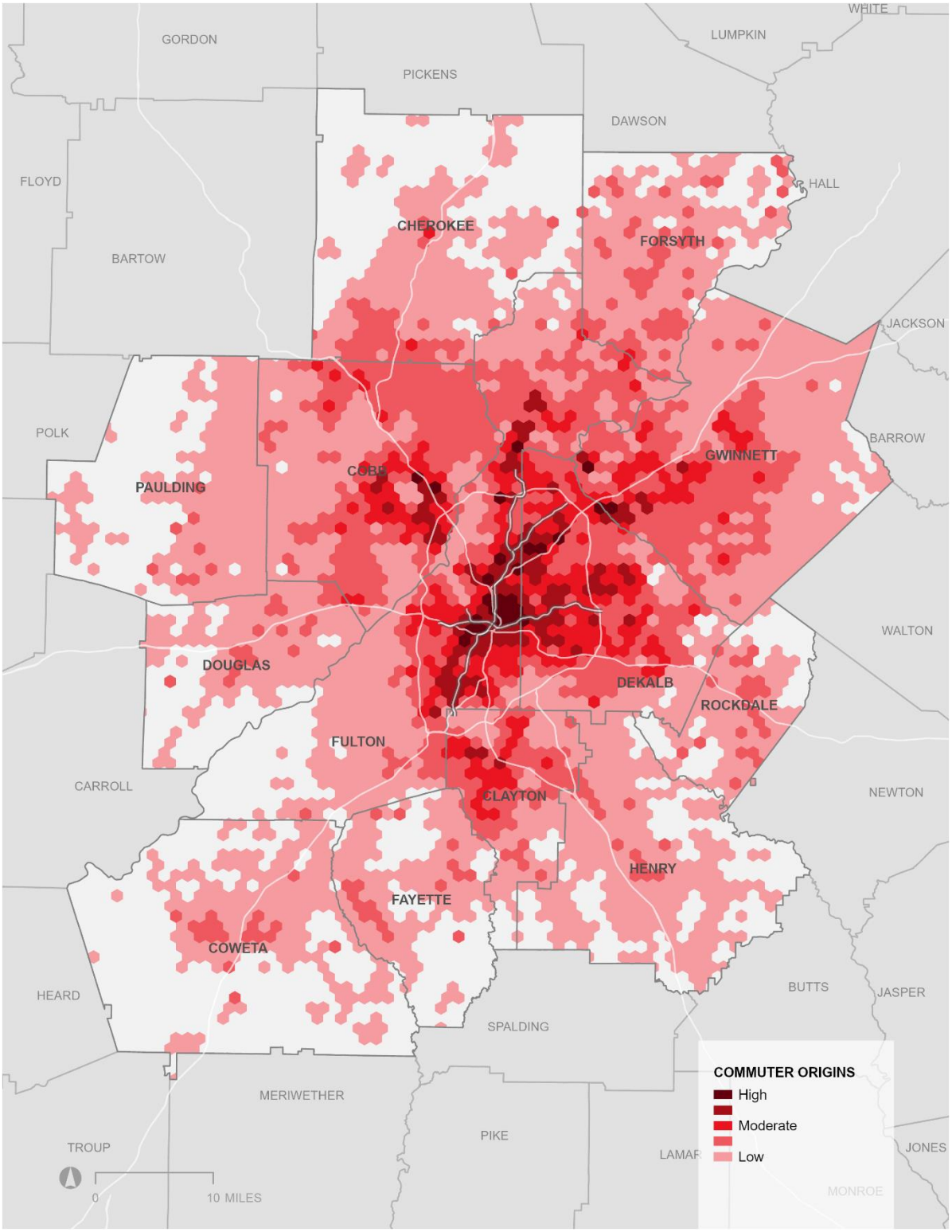
SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, LEHD 2018

Peak Period Propensity

Transit use during peak periods is dominated by commute trips between home and work. The Commuter Origins index represents areas with high concentrations of working-age residents and carpool or transit commuters. In the ATL region, commuter origins are widely distributed across the urban and suburban areas of Fulton, DeKalb, Gwinnett, Clayton, and Cobb counties. Figure 24 shows the highest propensity is present in the dense core of Atlanta, as well as dense centers outside the Perimeter in Cumberland, Sandy Springs, and Gwinnett Village.

FIGURE 24

Commuter Origins Transit Propensity Index

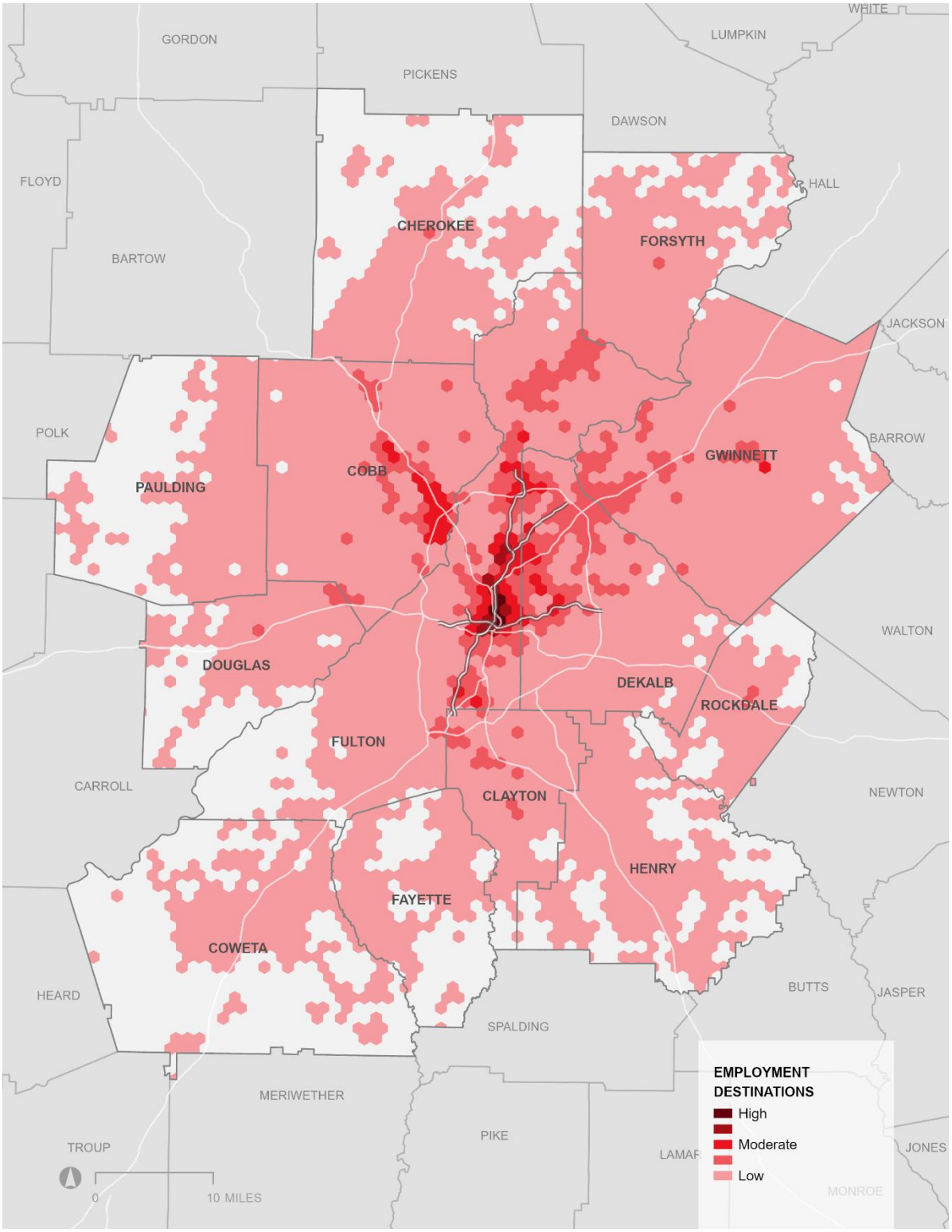


SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, LEHD 2018

Peak period destinations are represented by the Employment Destinations index. High employment propensity is densely concentrated major job centers including Downtown and Midtown Atlanta, Buckhead, Perimeter Center, and Cumberland, as shown in Figure 25. Beyond these areas, the majority of the ATL region has low-to-moderate employment destination propensity.

FIGURE 25

Employment Destinations Transit Propensity Index

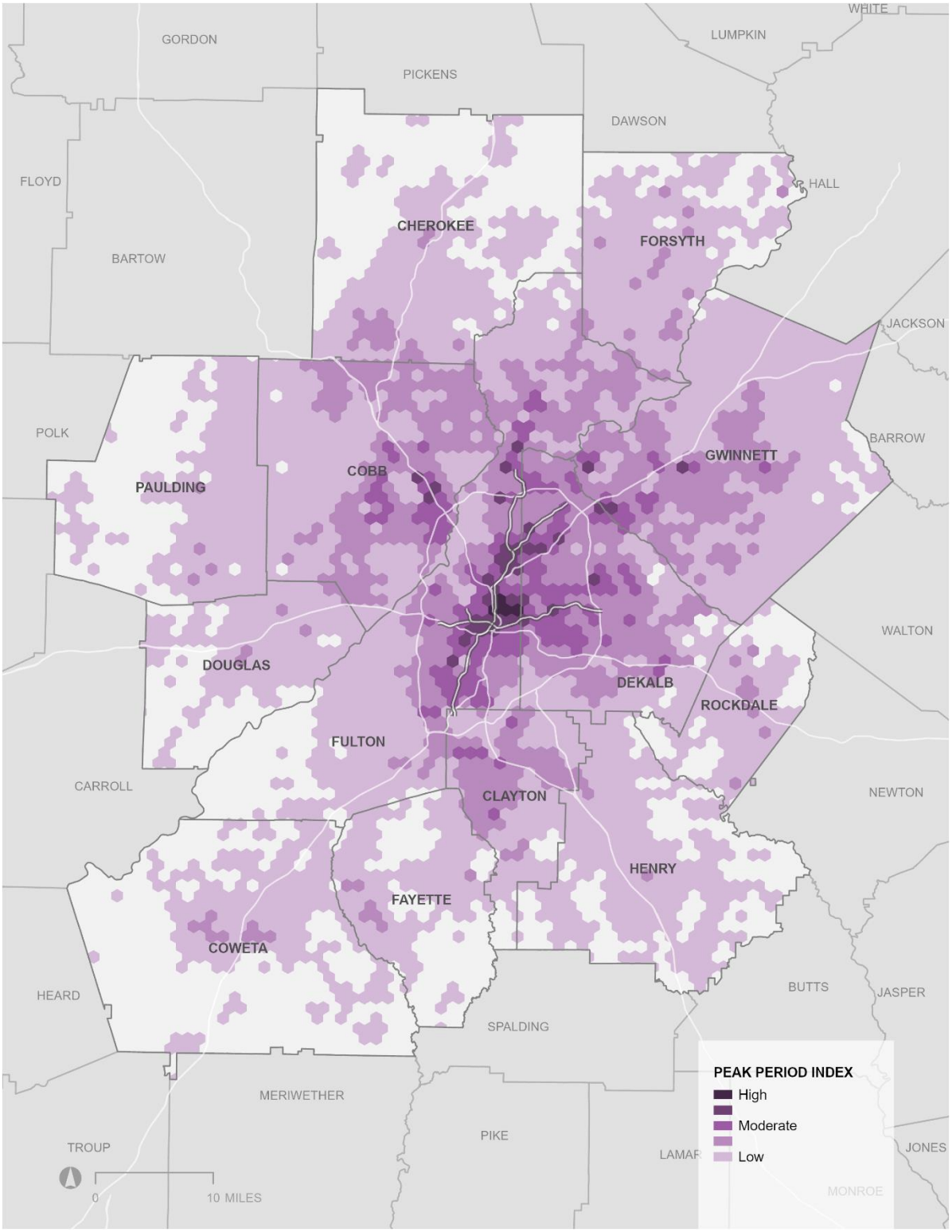


SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, LEHD 2018

The Peak Period index combines the Commuter Origins and Employment Destinations indices to identify areas that generate transit demand from either a residential origin or a work destination. Consistent with the population and employment patterns in the region, Figure 26 shows Peak Period propensity is high in major job centers and high-density areas, including central Atlanta, Buckhead, Sandy Springs, and Cumberland. Medium-density suburbs in DeKalb, Gwinnett, Clayton, Fulton, and Cobb counties exhibit moderate propensity, while less dense areas of the region have low Peak Period propensity.

FIGURE 26

Peak Period Transit Propensity Index



SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, LEHD 2018

In-Person and Teleworking Jobs

Throughout the COVID-19 pandemic, transit has remained crucial to provide access for many workers who must be physically present to perform their jobs. While transit must continue to serve workers performing in-person activities, telework may become more widespread after the pandemic ends. One way of understanding the importance of transit for different workers is to examine where jobs that are more or less likely to be performed remotely are concentrated in the region.

The recent National Bureau of Economic Research paper entitled "How many jobs can be done at home?" assessed the feasibility of working at home, sharing results by industry sector and highlighting how lower-wage jobs are more likely to be performed in person. [37] The following analysis combines these research findings with data on workplace for the ATL 13-county region.[38]

Whereas relatively few jobs in restaurants, retail, transportation, and health care could be performed at home, most jobs in finance, corporate management, and professional and scientific services could be. Across all industry sectors, an estimated 39 percent of jobs in the ATL region can potentially be performed entirely at home. Table 6 lists the share of jobs in the region in industry sectors in which low-wage workers are more likely to perform an in-person job and sectors in which more than 70 percent of workers could telework.

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[37] Dingel, J. I., & Neiman, B. (2020). How many jobs can be done at home? (No. w26948). National Bureau of Economic Research. Survey data from the Occupational Information Network Program (O*NET), sponsored by the U.S. Department of Labor. The report classifies the feasibility of working at home for all occupations based on the nature and habits of work in that occupation and reports the share of jobs that can be done at home by each 2-digit North American Industry Classification System (NAICS) sector.

[38] 2019 Longitudinal Employer-Household Dynamics (LEHD).

TABLE 6

ATL Jobs by Industry and Share of Jobs That Can Be Done at Home

Two-Digit NAICS Sector[39]	Share of ATL's 13-county region jobs	Share of jobs that can be done at home
Lower Telework Ability Industries		
Accommodation and Food Services	9.5%	4%
Retail Trade	11%	14%
Transportation and Warehousing	6%	19%
Health Care and Social Assistance	10.5%	25%
Higher Telework Ability Industries		
Educational Services	8%	83%
Professional, Scientific, and Technical Services	9%	80%
Management of Companies and Enterprises	3%	79%
Finance and Insurance	5%	76%
Information	4%	72%

SOURCE: LEHD, DINGEL ET AL.

Although certain jobs could be performed at home, permanent telework policies predicate a workplace culture promoting or supporting telework. For example, despite the adoption of remote learning during the pandemic, it is unlikely that educational practices would significantly reshape after the pandemic. Still, the number of workers in the Atlanta region who telework at least once a week increased by 80 percent in the decade before the pandemic, and this trend is likely to accelerate in some industries after the pandemic. The COVID-19 Follow-Up Survey of ARC's 2019 Regional Commuter Survey shows that close to 70 of the respondents would be interested in continuing to telework some or all the time after the pandemic.[40]

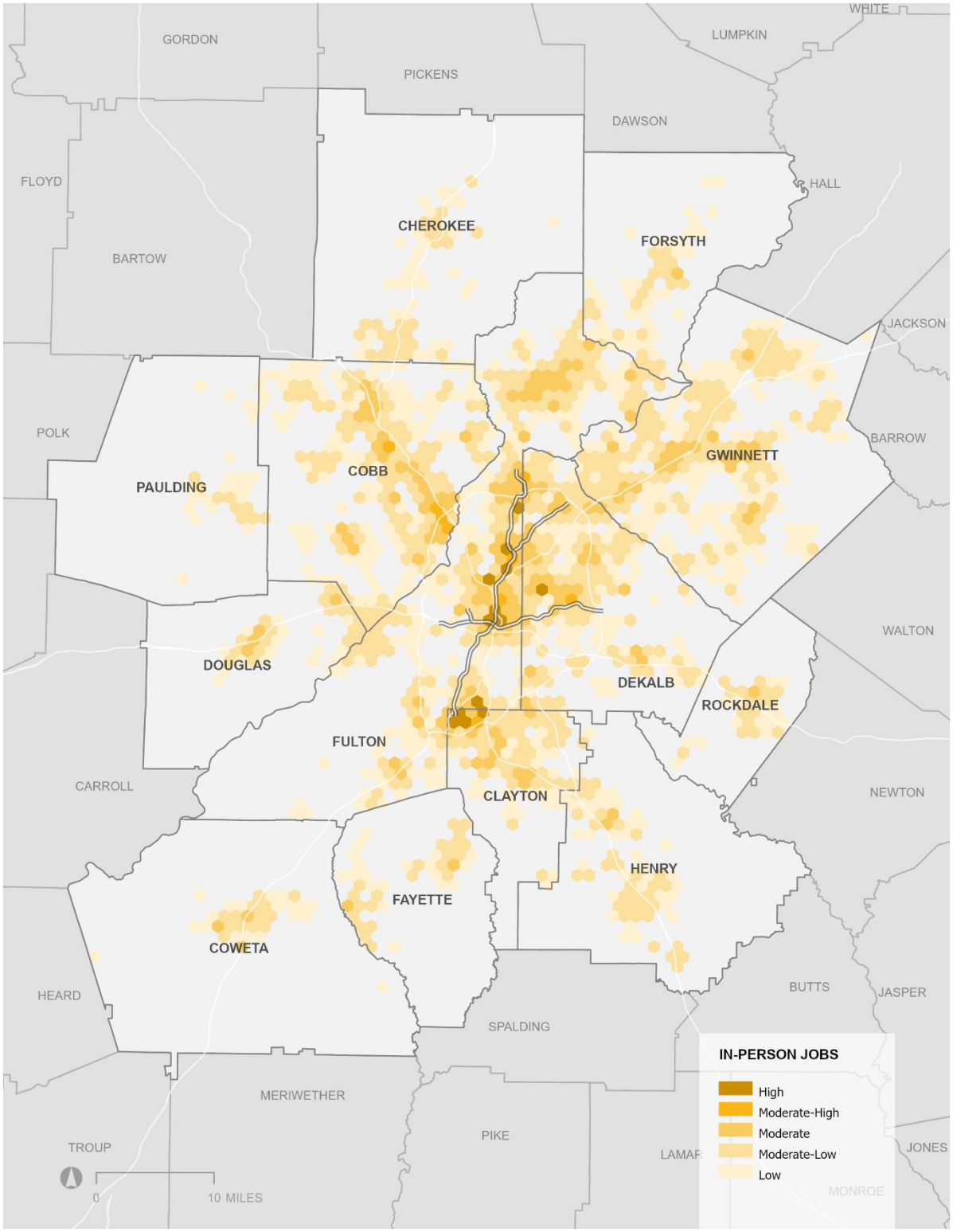
[39] Based on the North American Industry Classification System (NAICS), https://www.bls.gov/bls/naics.htm.

[40] ARC Regional Commuter Survey, https://atlantaregional.org/regional-commuter-survey#2020-covid

Jobs in industries with a high share of low-wage, in-person jobs are dispersed throughout the region, as shown in Figure 27. Areas with a high concentration of in-person jobs in the region include the Hartsfield-Jackson Atlanta International Airport, downtown Atlanta, and a few large medical centers, which are mostly well served by transit.

FIGURE 27

Density of Jobs in Industries with High Share of In-Person Jobs

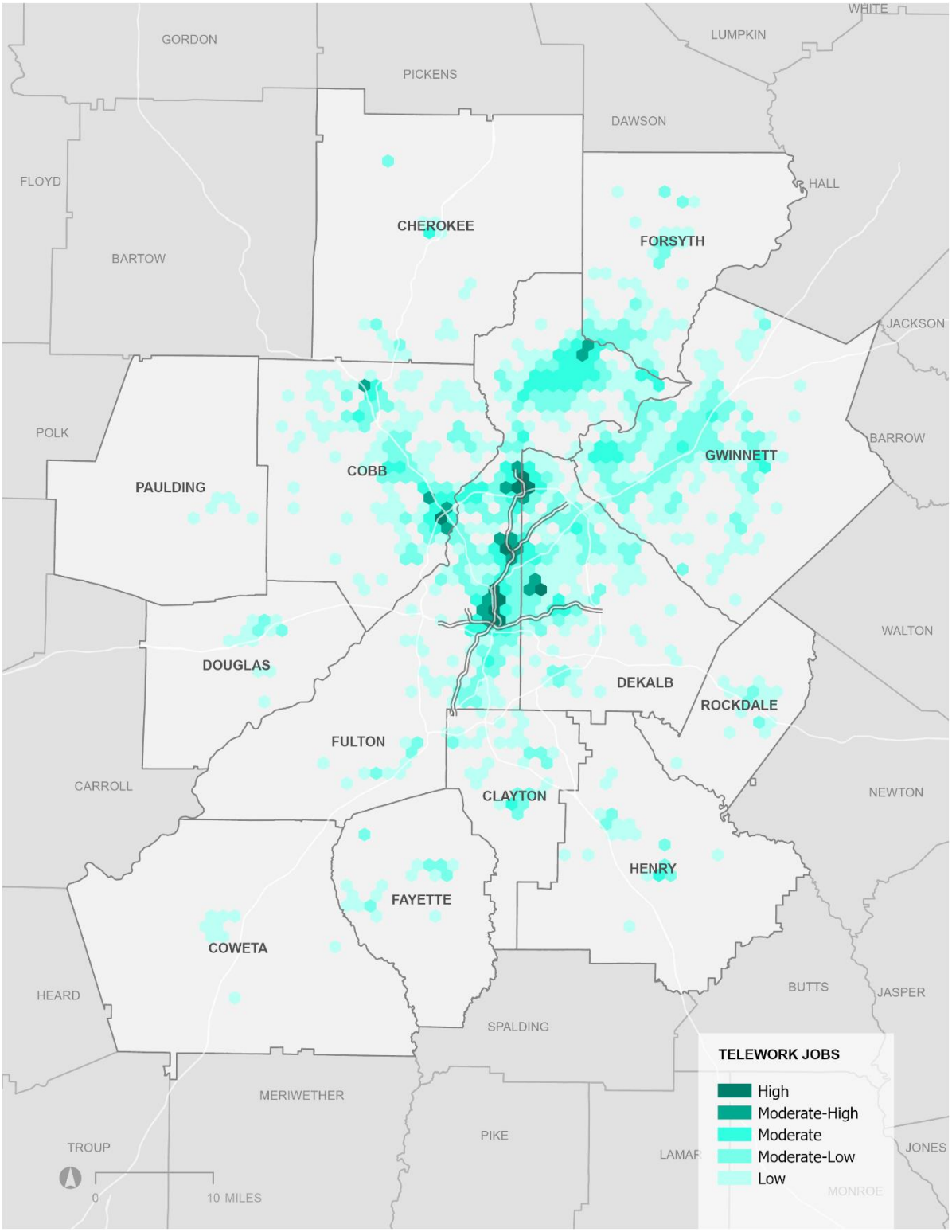


SOURCE: LEHD 2019, DINGEL ET AL.

Jobs in industries with greater telework ability are highly concentrated in Downtown and Midtown Atlanta and near MARTA's heavy-rail system (Figure 28). Unlike in-person jobs that are distributed in moderate and moderate-high densities throughout the region, the density of telework jobs outside the aforementioned areas tends to be low. This helps to explain why ridership on MARTA's fixed-route bus system dropped considerably less than ridership on rail during the pandemic.

FIGURE 28

Density of Jobs in Industries with Greater Telework Ability



SOURCE: LEHD 2019, DINGEL ET AL.

Travel Flows

The success of a transit route is dependent on a myriad of factors – but a very important (albeit simple) factor is the ability for the route to serve trips that a significant number of people are already traveling (using any mode). Identifying where people are traveling throughout the region is the first step in evaluating whether, to what extent, and where travelers' needs are (and are not) being met by transit. This section shows travel patterns and volumes, measured in total daily trips, throughout the 13-county ATL region.[41]

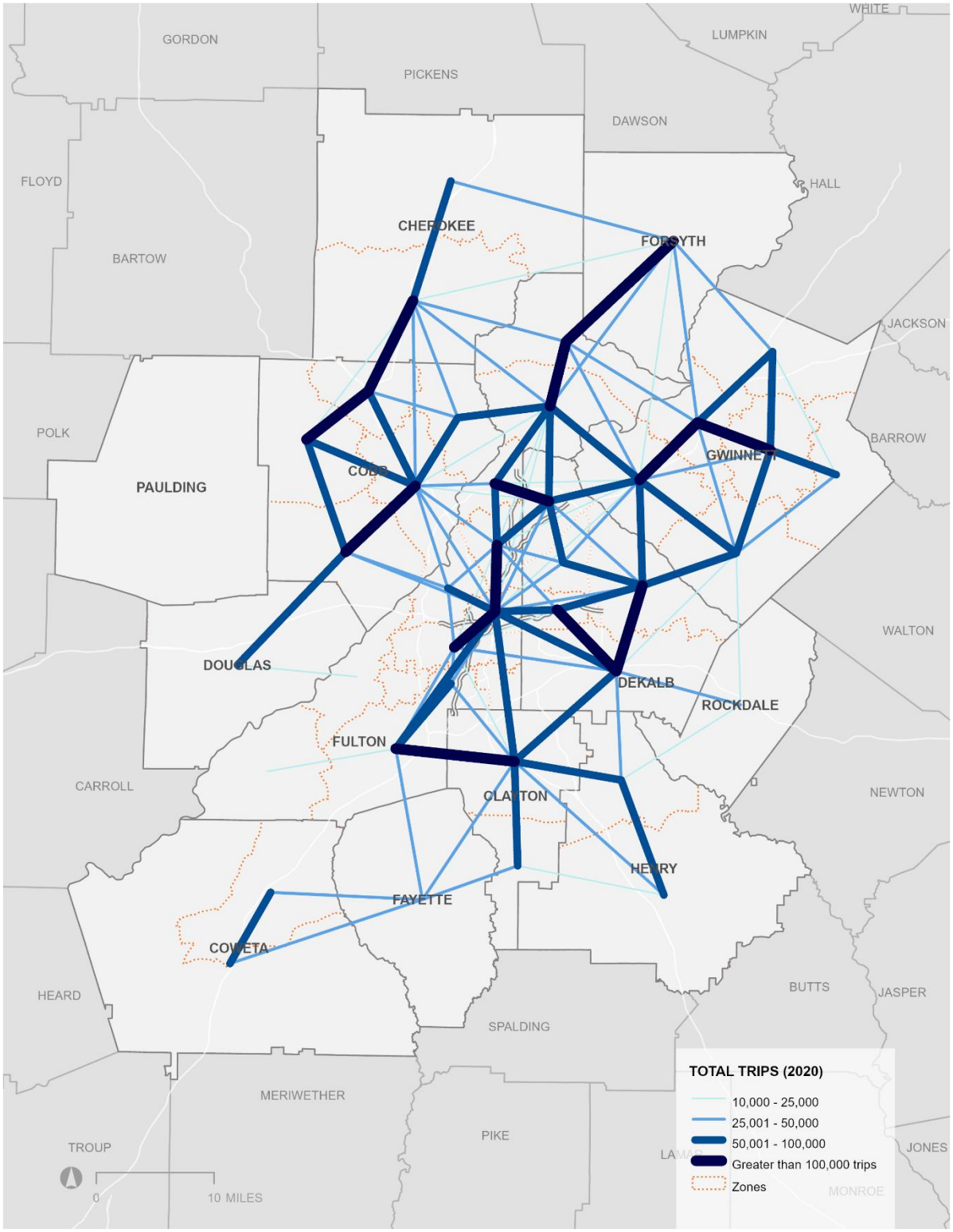
All Trips

Figure 29 shows the origin and destination pairs and their total daily trips (regardless of mode) in 2020, while FIGURE 30 reflects the same data subset for year 2050. Figure 31 shows the change between the two previous maps.

[41] Transportation Analysis Zones (TAZs) were strategically aggregated for this analysis based on the location of activity centers and centers of density within each County. The number of aggregated zones applied within the 13-county area was influenced by factors such as land area as well as relation and distance to the urban core. The origin-destination travel flows were then assessed based on the aggregations.

FIGURE 29

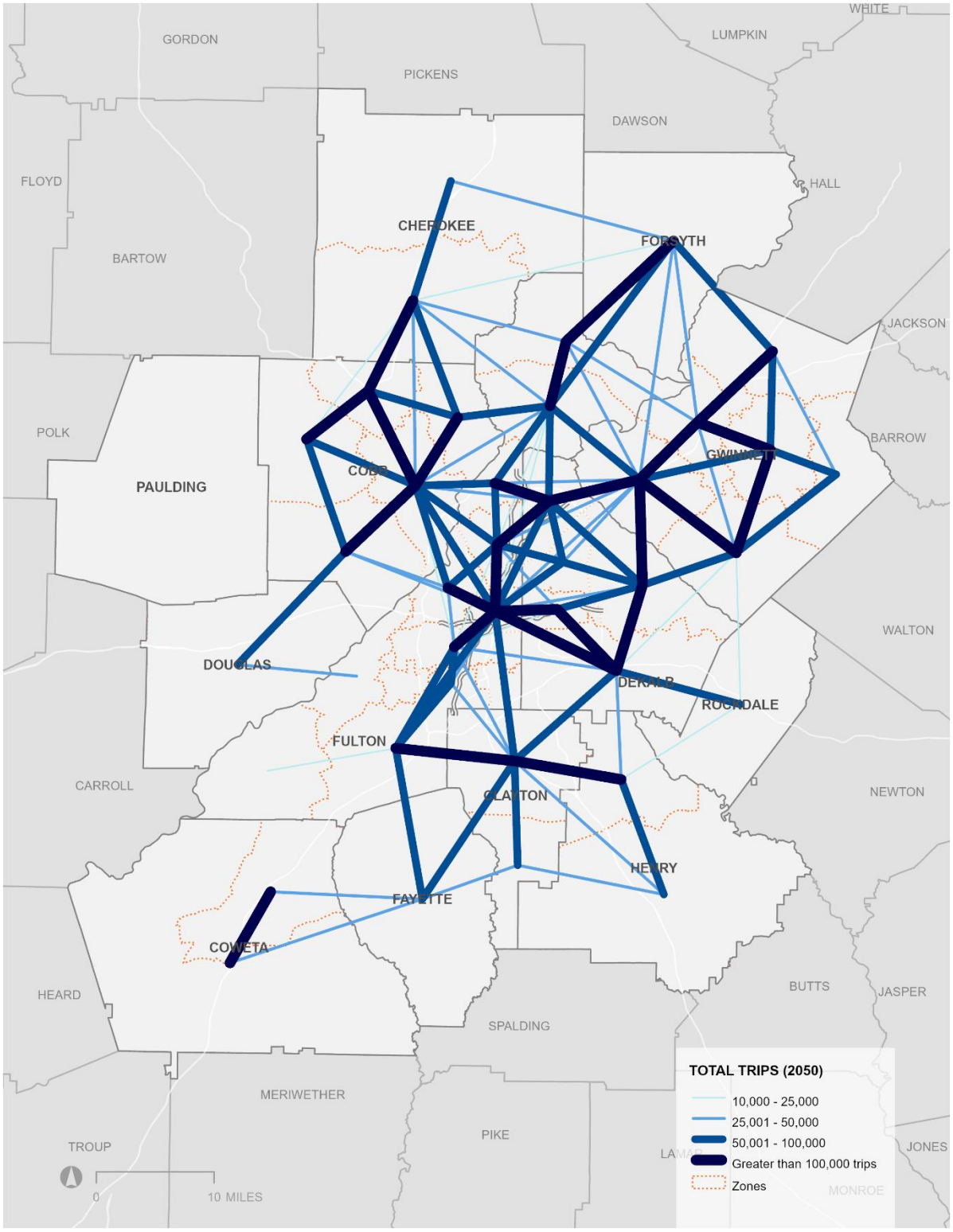
Total Trips in the Atlanta Region in 2020 (All Modes)



SOURCE: ARC ABM

FIGURE 30

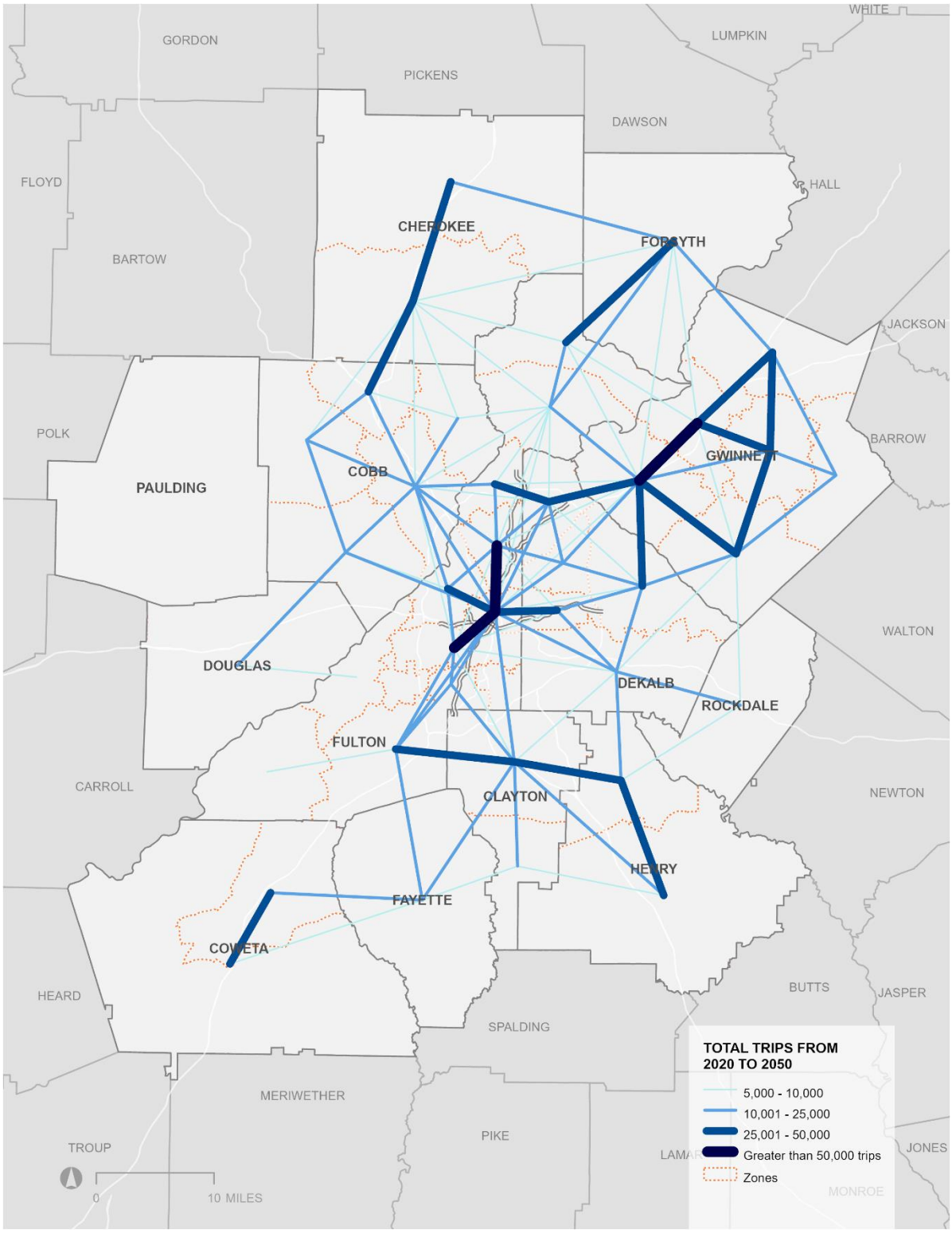
Total Trips in the Atlanta Region in 2050 (All Modes)



SOURCE: ARC ABM

FIGURE 31

Difference in Total Trips in the Atlanta Region between 2020 and 2050 (All Modes)

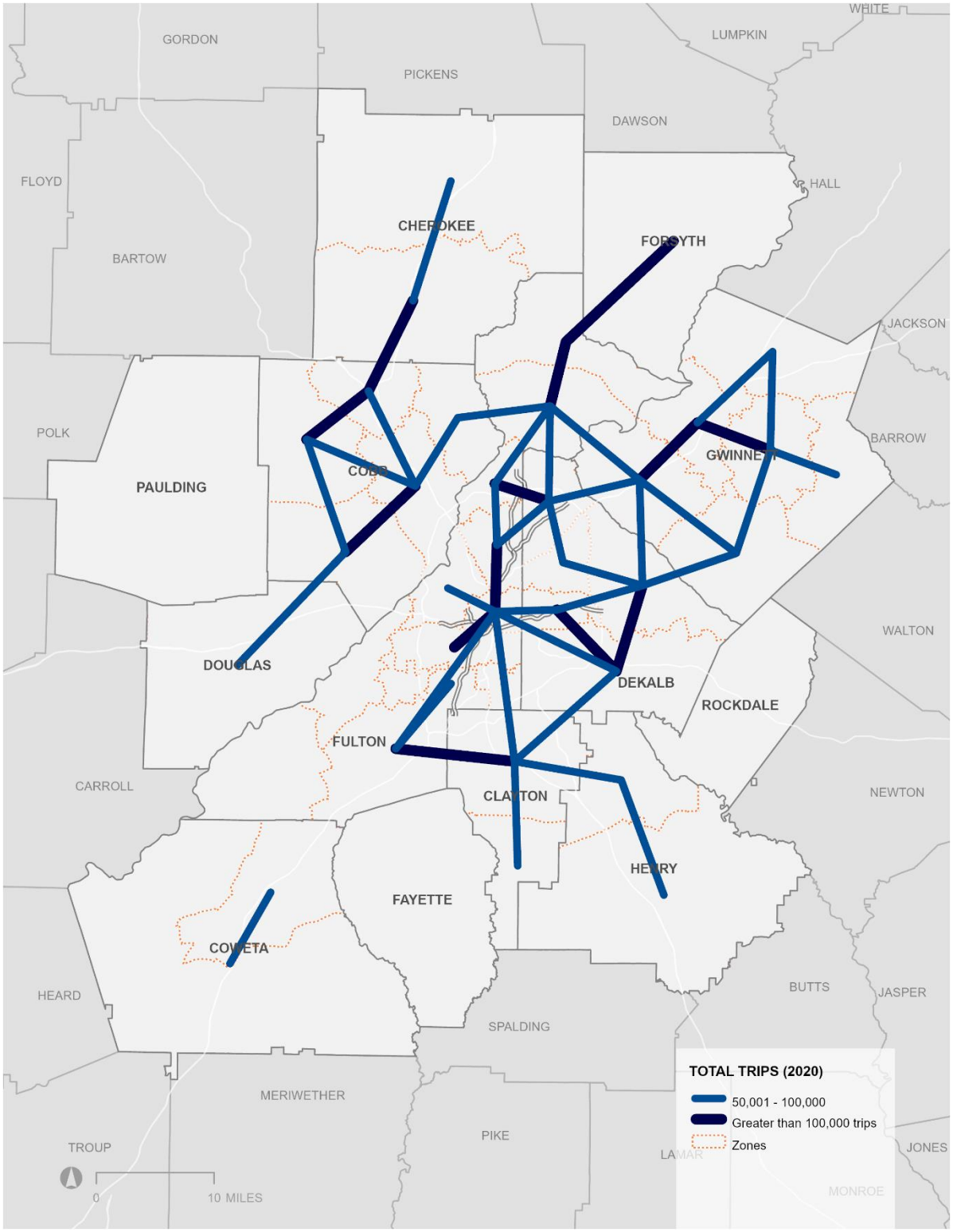


Highest Volume Trip Pairs

To identify the highest origin-destination pairings, aggregated TAZ pairs that were larger than 50,000 daily trips are shown in Figure 32 and Figure 33 for 2020 and 2050, respectively.

FIGURE 32

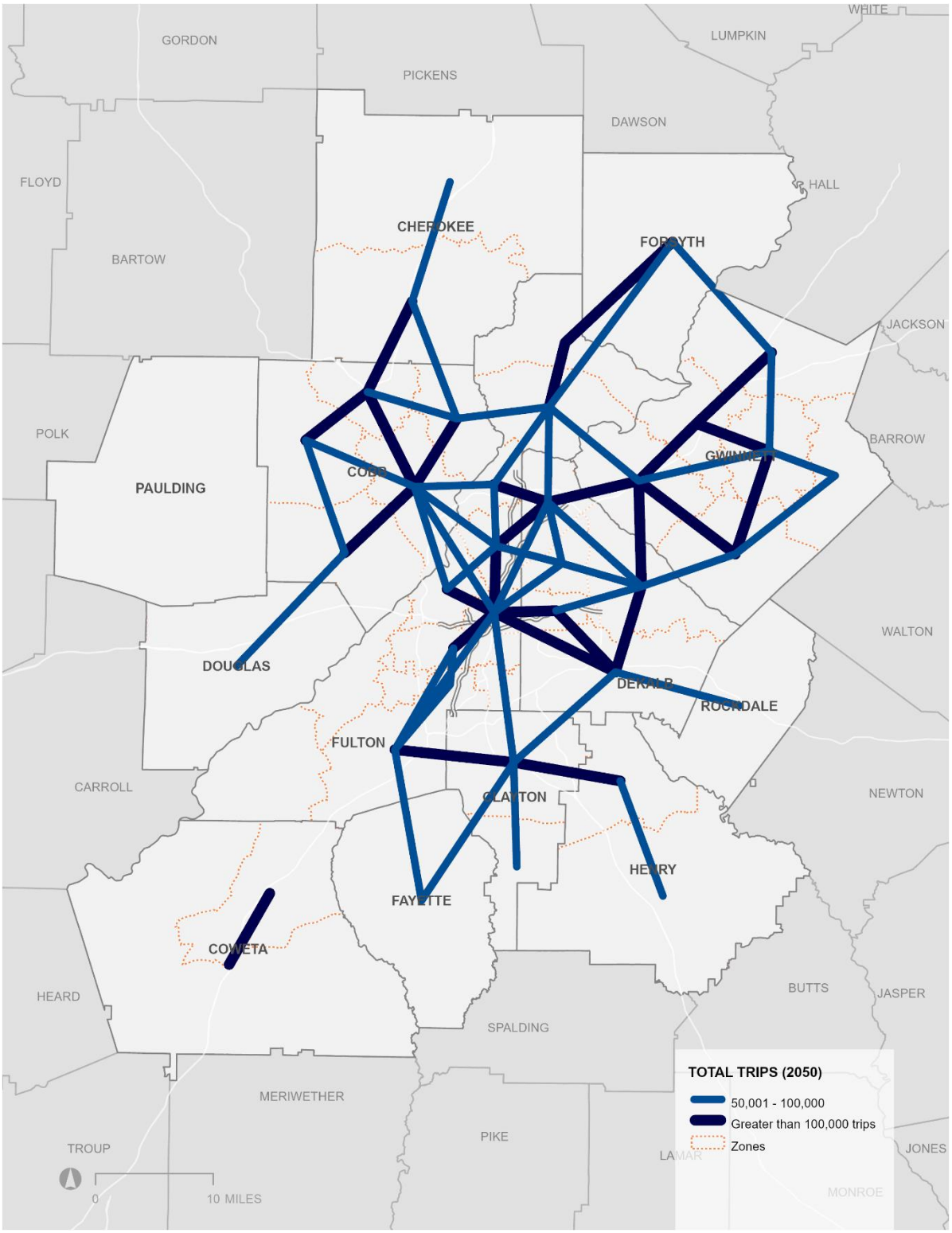
Highest Volume Travel Flows in 2020



SOURCE: ARC ABM

FIGURE 33

Highest Volume Travel Flows in 2050



SOURCE: ARC ABM

Travel Flow Analysis Findings

Based on a review of the significant origin-destination pairs (2020) in the 13-county Atlanta region, the highest travel flows (greater than 100,000 trips) of major county-to-county connections are:

- Cherokee County – Cobb County
- Forsyth County – North Fulton County
- North Fulton County – DeKalb County
- DeKalb County – City of Atlanta
- Clayton County – South Fulton County

Beyond county-to county travel flows, there are also a significant number of intra-county connections (trips with origins and destinations both inside the same county) that have greater than 100,000 trips in 2020. (Note: general descriptors of zones have been included for discussion purposes; aggregations do not follow city boundaries.)

- Cobb County – Northwest Cobb to North-central Cobb
- Cobb County –Marietta/Cumberland to South Cobb
- North Fulton County – Milton/Johns Creek to Roswell/Alpharetta
- Gwinnett County – Norcross/Snellville to Duluth
- Gwinnett County – Duluth to Lawrenceville
- DeKalb County – South DeKalb to East DeKalb
- DeKalb County – South DeKalb to South Central DeKalb
- City of Atlanta –Airport South to Downtown/ Midtown
- City of Atlanta – Downtown/Midtown to Buckhead

When comparing years 2020 and 2050, the number of total trips for the same connections generally increase in magnitude. There are also new connections that arise above the 50,000 trips threshold for the Atlanta metro area with the majority of those centered in Cobb, City of Atlanta, and DeKalb Counties.

There are several travel flows in the region that do not meet the threshold (greater than 50,000 trips) to be included in this section. Although some of these flows do not have the same volume of movement occurring as the movements listed above, they still provide an opportunity to provide transit

connections between more local destinations and the regional transit network. A few general local to regional connections to note include:

- Forsyth County (Cumming) to South Gwinnett County (Norcross)
- Gwinnett County (Suwanee, Sugar Hill) to Fulton County (Atlanta)
- Henry County (McDonough) to South Fulton County (College Park)
- South Cobb County (Power Springs) to Fulton County (Atlanta)
- Fulton County (Roswell) to Cobb County (Marietta)
- Coweta County (Newnan) to Fayette County (Peachtree City)

Access Overview

The Network

The 11 primary partner agencies in the ATL region profiled in this report offer fixed-route or demand-response services in every county except Fayette County. Local bus routes operate in the urban and suburban areas of Clayton, Cobb, DeKalb, Fulton, and Gwinnett Counties, as well as in the central hubs of Cherokee, Douglas, and Henry Counties. Paratransit service is available within ¾-mile of all fixed-route bus service, and demand-response services to the general public are available throughout Cherokee, Coweta, Forsyth, Henry, and Pauling Counties, and in the CPACS service area in DeKalb and Gwinnett Counties. Commuter bus routes begin or end in every county, except Fayette County, connecting to the region's largest job and activity centers. MARTA's heavy rail service reaches from central Atlanta to regional job centers and commuter hubs near the Perimeter. In Downtown Atlanta, the streetcar provides a circulator service between hotspots for tourism and recreation. This section provides information about people's access to fixed-route transit, as well as service span and frequency, and the travel time competitiveness of transit in the region.

Access to Fixed-Route Transit

One of the most common ways residents access fixed-route transit services (local fixed-route bus, commuter buses, heavy rail, and streetcar) is by walking to the nearest bus stop or rail station.[42] For riders without another mode of transportation, walking may be the only way they access transit. Easy access to transit is particularly important for populations that are more dependent on public transportation, including low-income and minority residents. High-frequency transit also increases the value of transit access, as it reduces wait

[42] Walking access was measured along the road network at ¼-mile from bus stops and ½-mile from rail stations.

times and allows riders to use transit without planning around a limited service schedule.

As shown in Table 7, over 1.2 million people, or nearly 24 percent of the region's population, live within walking distance of fixed-route transit. Compared to the region overall, low-income and minority residents have a higher rate of access to transit, with about 36 percent and 30 percent of low-income and minority residents within walking distance to transit, respectively. Frequent transit routes – defined as those routes offering average headways of 15 or fewer minutes throughout the weekday – are available to a small portion of the region's population, with only 3.2 percent of residents within walking distance. Similar to transit overall, low-income and minority populations have comparatively higher access to frequent transit, with 3.4 percent and 5.3 percent of residents within walking distance, respectively.

TABLE 7
Access to Fixed-Route Transit and High-Frequency Transit Among Sociodemographic Groups

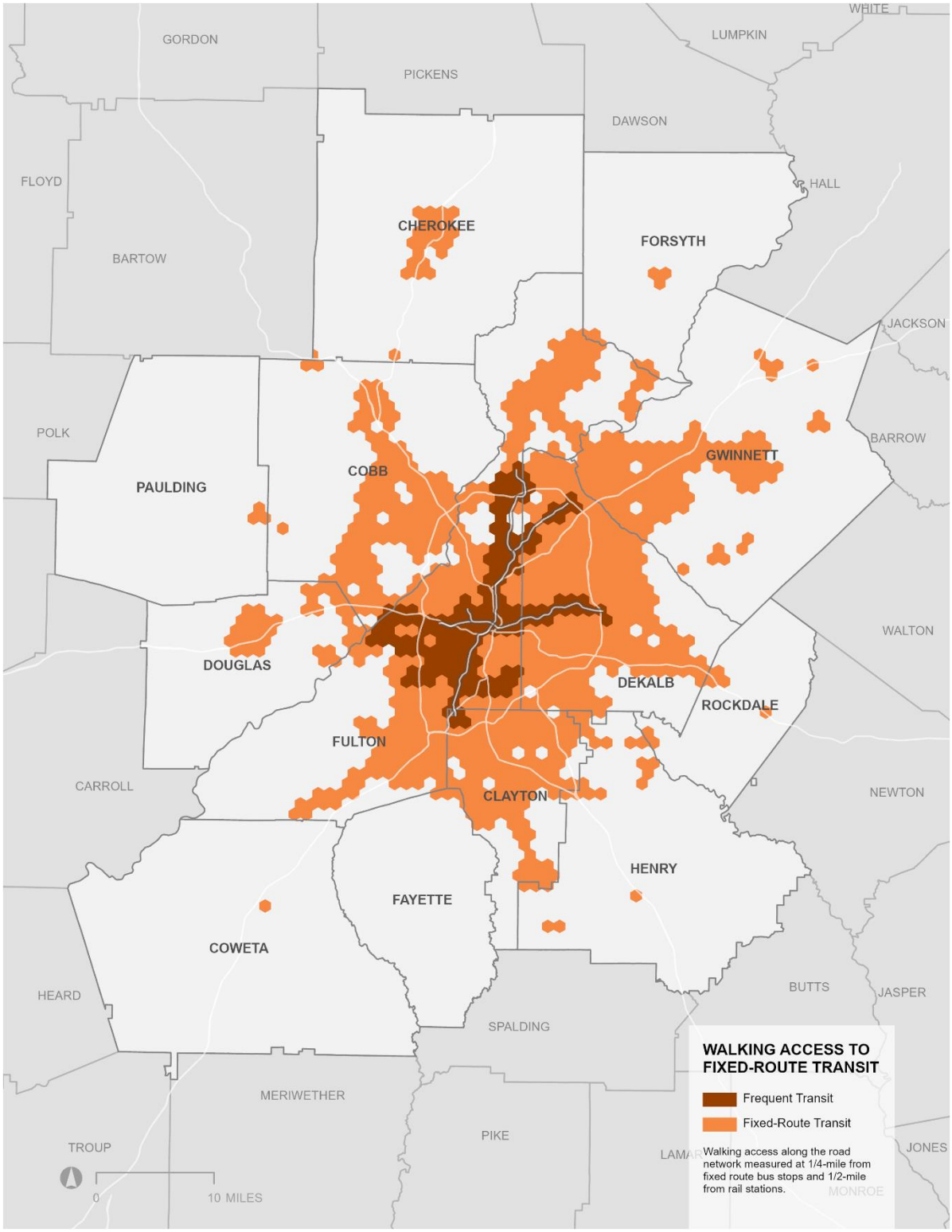
Population Group	ATL Total	Access to Fixed-Route Transit		Access to High-Frequency Transit	
		Number	Percent	Number	Percent
Low-Income Households	498,459	177,422	35.6%	26,368	5.3%
Minority Population	2,865,537	845,297	29.5%	96,373	3.4%
Total Population (2019)	5,073,570	1,202,530	23.7%	161,037	3.2%

SOURCE: ACS 5-YEAR ESTIMATES 2015-2019, FALL AND WINTER 2019 GTFS

Figure 34 shows the availability of fixed-route transit within walking distance across the ATL region. For a region-scale visualization, the areas with transit access have been simplified, and not all areas within each cell are within walking distance to transit. Large portions of Clayton, DeKalb, and Fulton counties have access to fixed-route transit, along with the denser parts of Cobb and Gwinnett counties. The remaining counties have limited access to transit in only a few key areas. Frequent transit is accessible along the MARTA rail lines and near frequent bus routes in the southwest portion of the City of Atlanta.

FIGURE 34

Walking Access to Fixed-Route and Frequent Transit



SOURCE: FALL AND WINTER 2019 GTFS

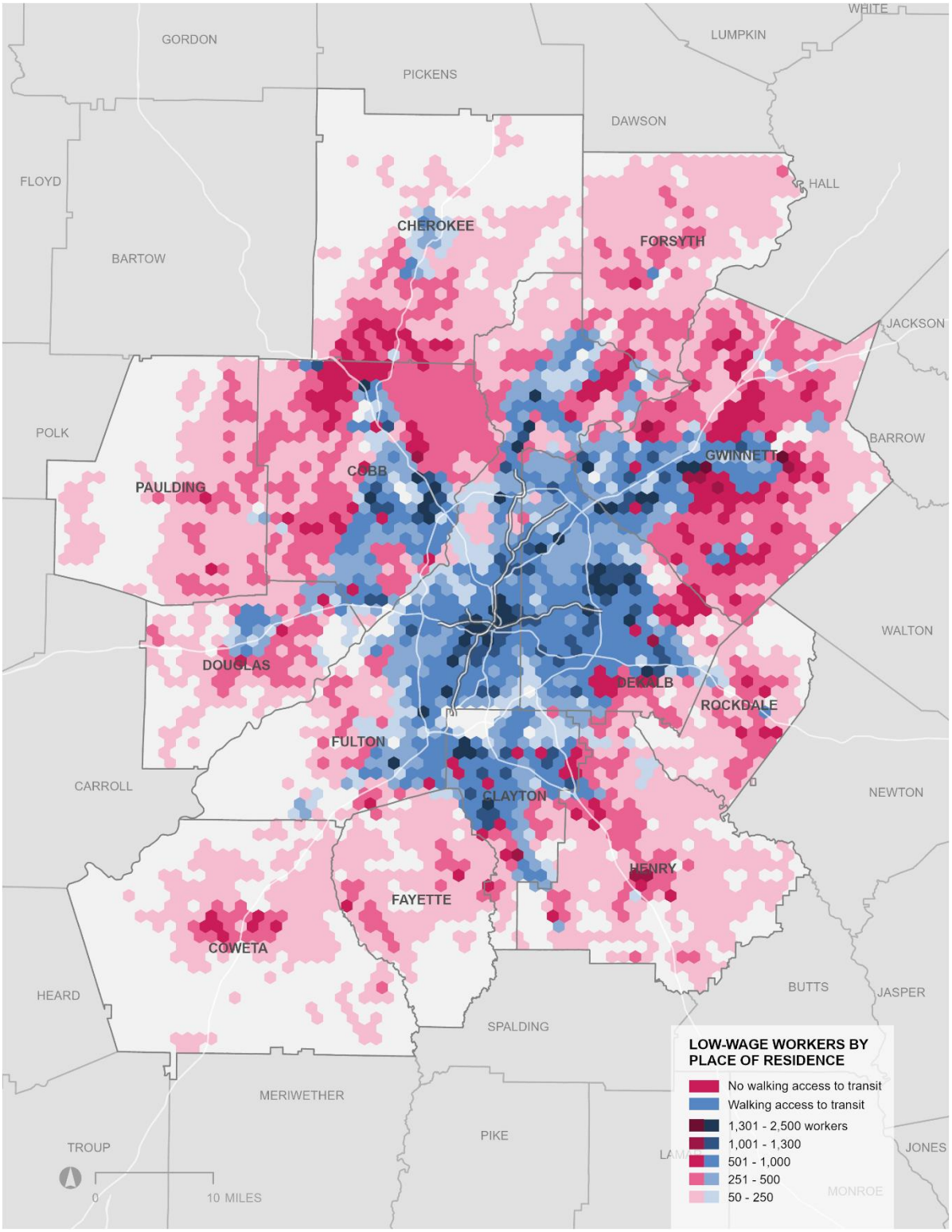
Access to Transit for Low-Wage Workers

In addition to low-income and minority households, low-wage workers represent a key group that often requires access to transit.[43] Many low-wage jobs are essential jobs, and many low-wage workers rely on transit to get to their jobs. Figure 35 shows the place of residence for workers of low-wage jobs across the region. Areas in blue have access to fixed-route transit, while areas in pink lack transit access. Many low-wage workers do not live within walking distance of transit, especially in areas along the fringe of the transit network. Significant gaps where low-wage workers lack access include northern Cobb County, southern Cherokee County, and central Gwinnett County, as well as secondary gaps in Rockdale County, Henry County, and Coweta County.

[43] Low-wage jobs are defined as jobs that pay $3,333 per month or less.

FIGURE 35

Access to Fixed-Route Transit for Low-Wage Workers by Place of Residence

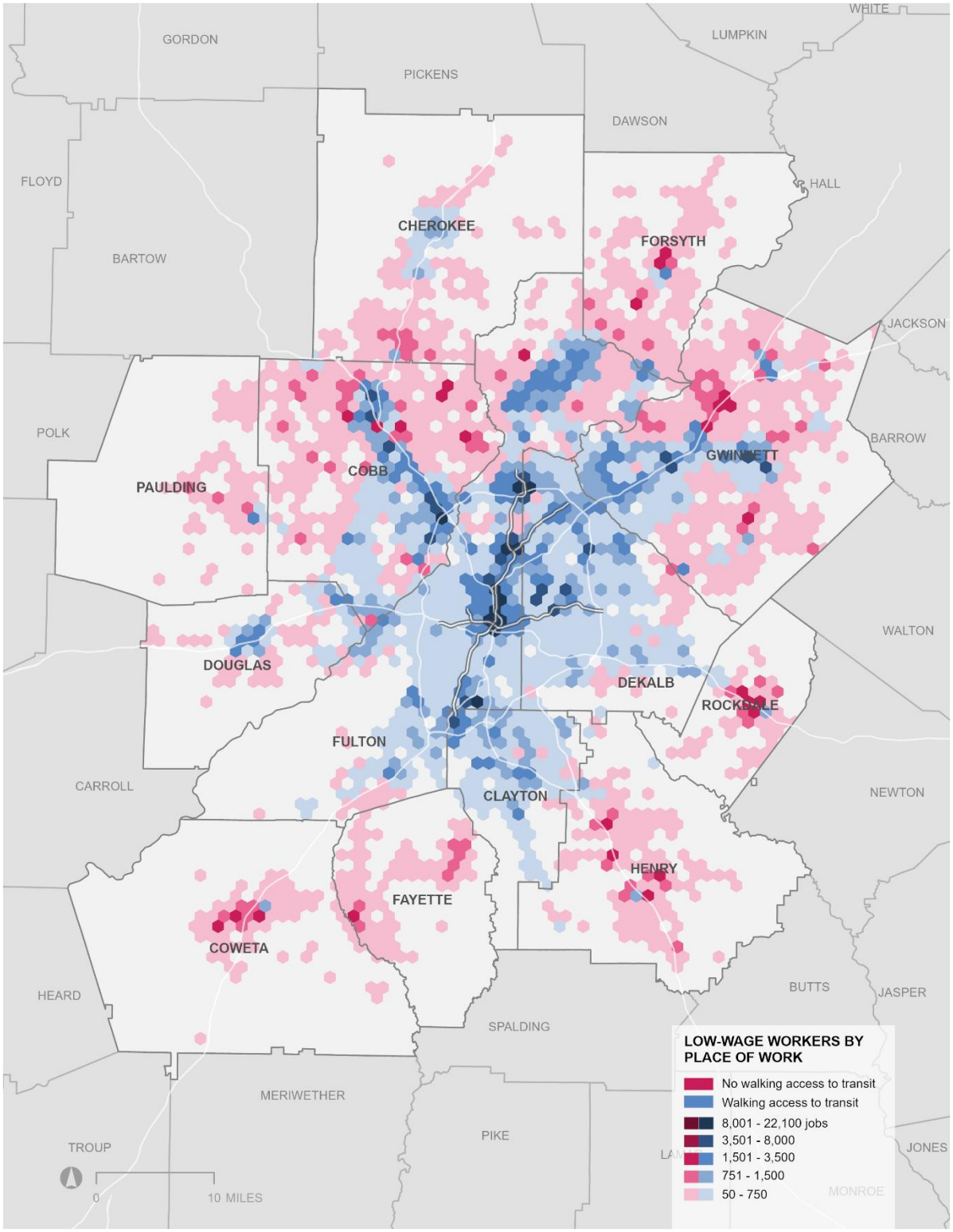


SOURCE: LEHD 2018, FALL AND WINTER 2019 GTFS

The distribution of low-wage jobs is significantly more concentrated than the places of residence for low-wage workers, as shown in Figure 36. Low-wage jobs are located in clusters in central and northern Atlanta and along major corridors throughout the region. Key low-wage job centers without walking access to fixed-route transit include Conyers in Rockdale County, Peachtree City in Fayette County, Newnan in Coweta County, Suwanee in Gwinnett County, and Cumming in Forsyth County. As noted in the Impact of Transit section, car ownership and operations costs claim 25 percent of a typical transit commuter income (about $36,000), so providing an affordable transportation option to lower-income residents is critical.

FIGURE 36

Access to Fixed-Route Transit for Low Wage Workers by Place of Work



SOURCE: LEHD 2018, FALL AND WINTER 2019 GTFS

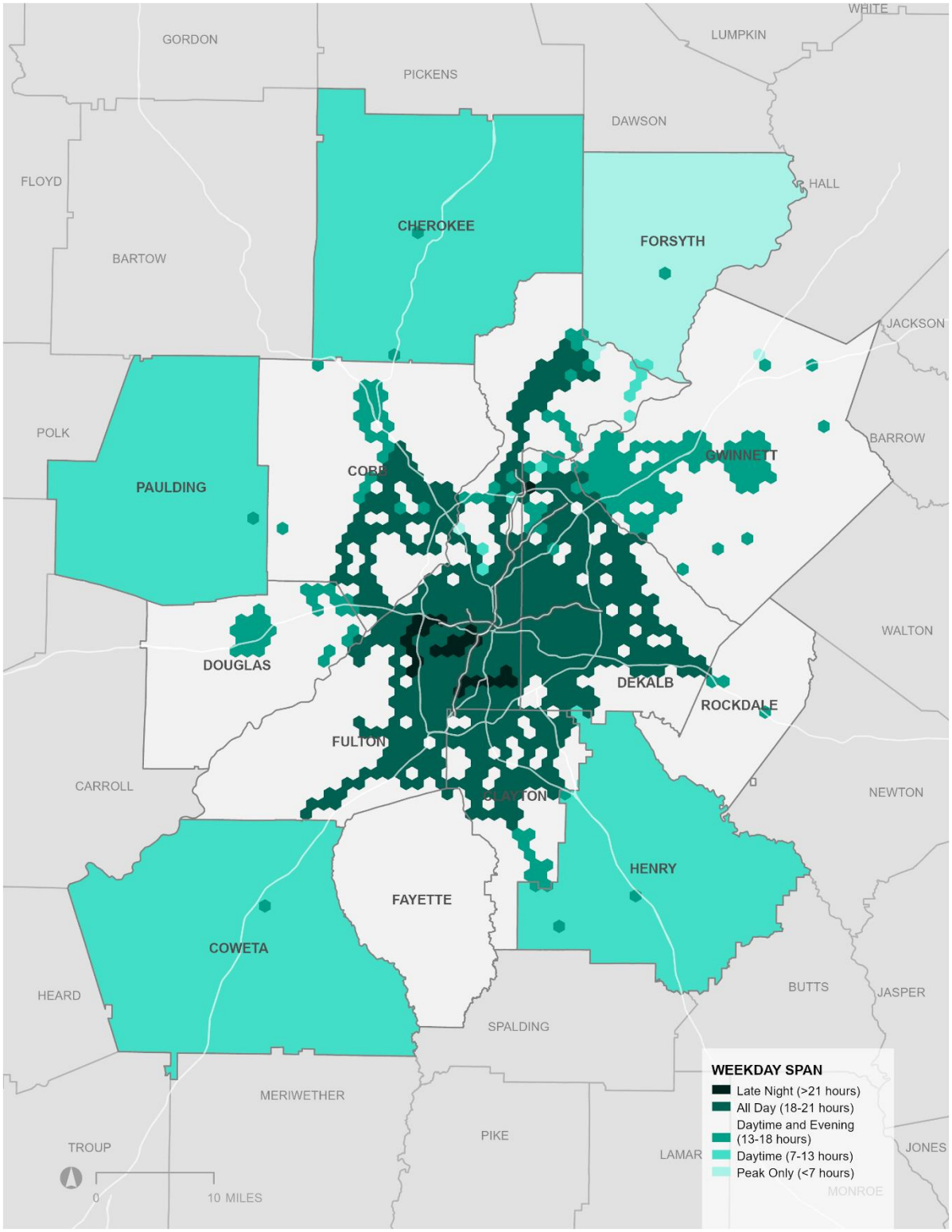
Service Spans

The weekday span of service for ATL transit services is shown in Figure 37. On weekdays, fixed-route bus and rail service is offered all day (i.e., for more than 18 hours) for most MARTA and CobbLinc routes in Cobb, Clayton, DeKalb, and Fulton counties, with a handful of late-night routes in south and southwest Atlanta. Along with the Connect Douglas and GCT fixed-route bus services, a few areas in Cobb, Fulton, and Clayton counties only have service in the daytime and evening, with 13 to 18 hours of service daily. Most commuter bus services operate predominantly during traditional peak periods in the daytime and evening at stops at park-and-ride facilities throughout the region. The countywide demand-response services in Cherokee, Coweta, Henry, and Paulding counties offer service for 8 to 12 hours during the daytime, while Forsyth County's demand-response service only operates during the morning peak and midday.[44]

[44] Peak period is from 6:00 a.m. to 9:00 a.m. and 3:00 p.m.-7:00 p.m. on weekdays. Midday period is from 9:00 a.m. to 3:00 p.m. on weekdays.

FIGURE 37

Weekday Fixed-Route and Demand Response Span of Service

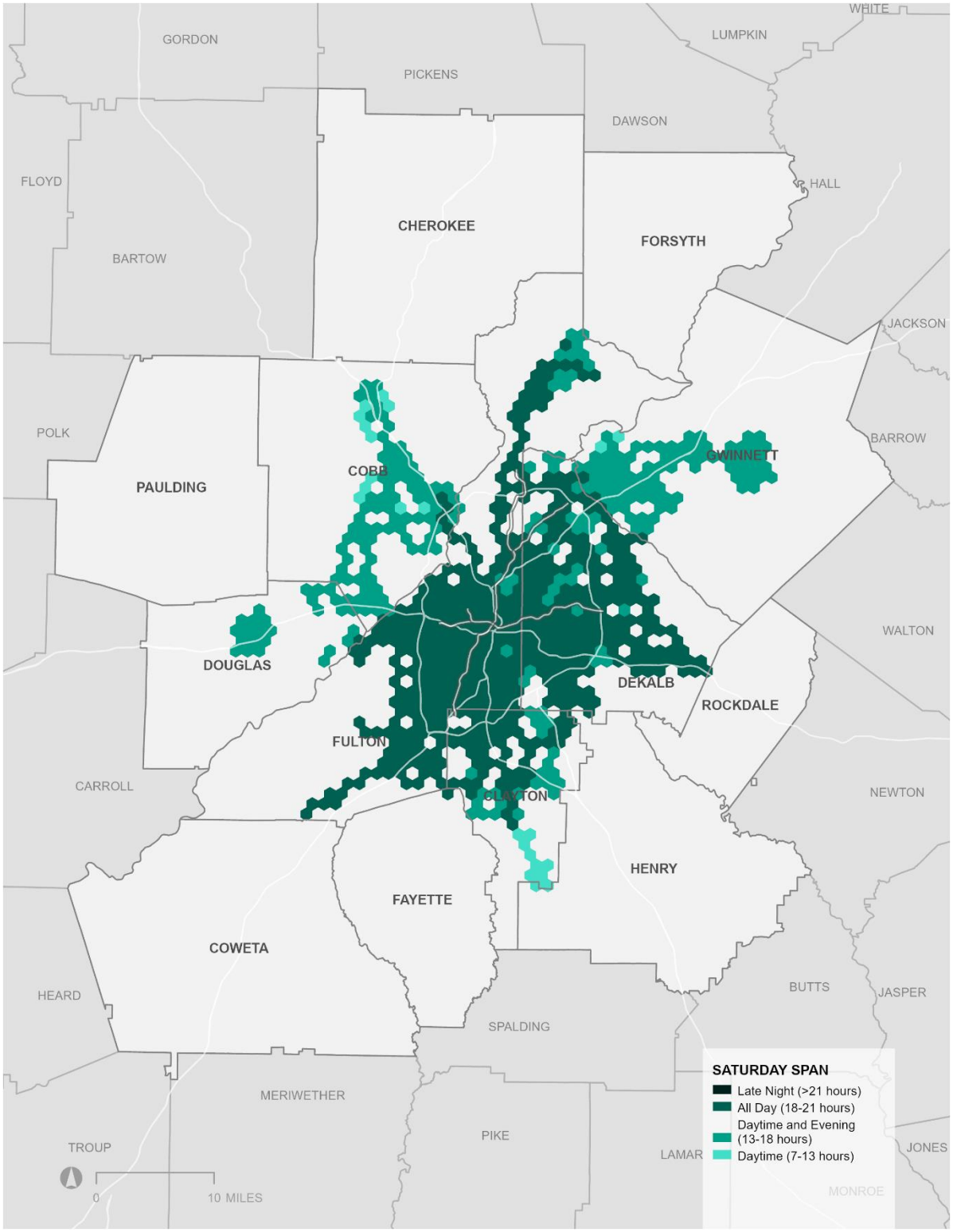


SOURCE: FALL AND WINTER 2019 GTFS

On weekends, some services have a reduced span, as shown in Figure 38, which shows the Saturday span of service. Many services do not operate on weekends at all, including Xpress commuter bus service, fixed-route bus in Henry County, and the demand-response services in Cherokee, Coweta, Forsyth, Henry, and Paulding counties. CobbLinc and GCT have Saturday service but do not operate on Sunday. Most MARTA bus routes continue to operate all day on weekends; however, no routes have more than 21 hours of service. In Cobb County, the majority of bus routes have a shorter span than on weekdays, with less than 18 hours of service. Weekend span in Gwinnett County is similar to weekdays. There is no peak-only service on weekends.

FIGURE 38

Saturday Fixed-Route and Demand Response Span of Service



SOURCE: FALL AND WINTER 2019 GTFS

Service Frequencies

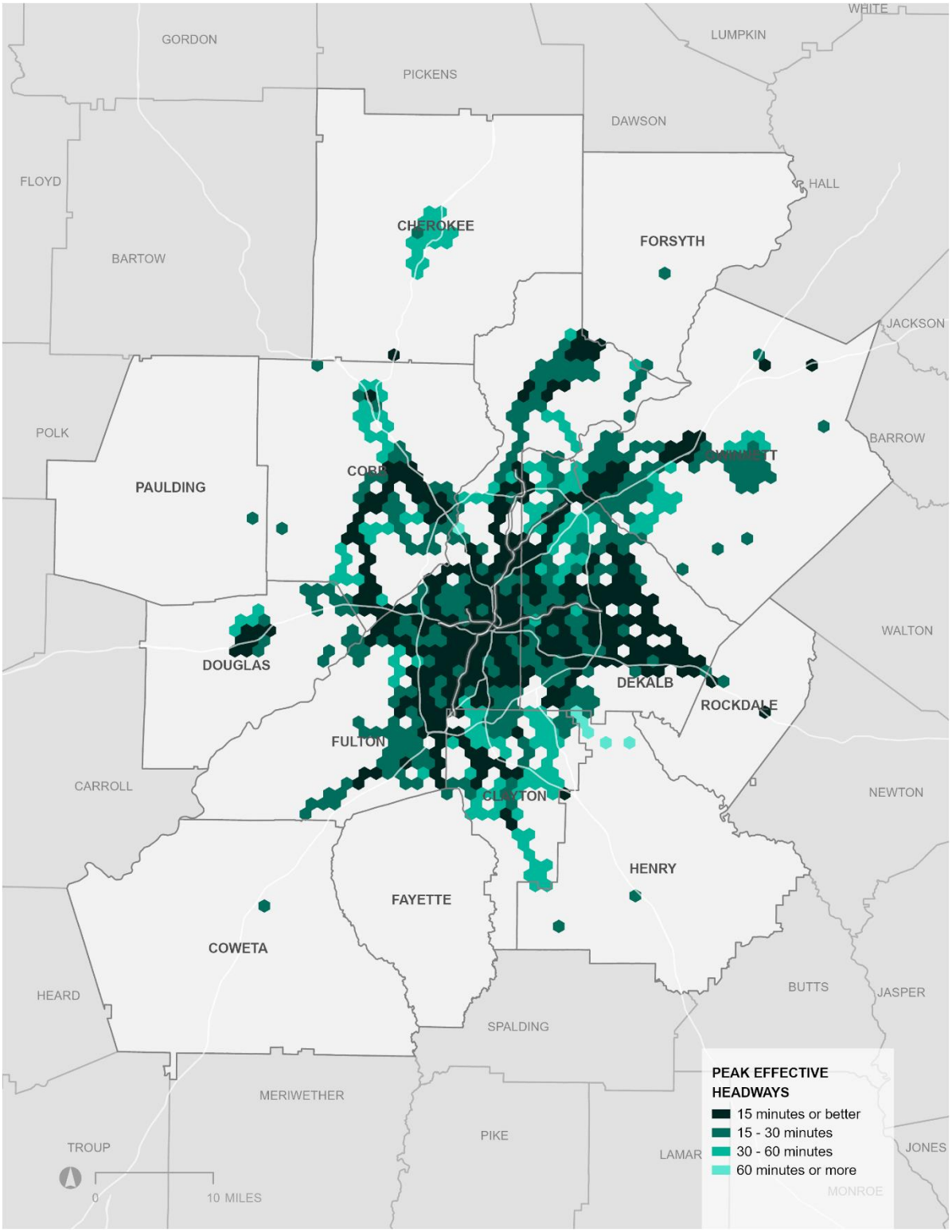
The weekday afternoon peak and off-peak frequencies of fixed-route service (including local bus, commuter bus, and rail) are shown in Figure 39 and Figure 40, respectively.[45] The headways shown in these maps represent the combined arrivals of all routes at a stop headed in the same direction. This measure of frequency does not represent the frequency of individual routes; rather, it represents the average number of trips available on any route at a stop within a one-hour window. Each cell shows the combined headway from the stop with the best frequency inside that cell.

In the peak period, effective frequency is high across the urban areas of MARTA's service area in DeKalb and Fulton counties, with buses arriving at a stop every 15 minutes or less along major corridors. Most of MARTA's service area has arrivals every 15-30 minutes, with the remainder of service available at least once an hour in northern DeKalb and Clayton Counties. In Cobb County, frequency varies by corridor, with arrivals ranging from 15 minutes or less to 60 minutes. Connect Douglas services in Douglasville also offer arrivals every 15 minutes or less. In Gwinnett County, effective headways of 30 minutes or less are available in most areas with fixed-route service. During the peak, commuter bus frequency is high throughout the region, with arrivals at least every 30 minutes at most park-and-ride locations.

[45] Peak period frequencies were evaluated between 3:00 p.m. and 7:00 p.m. on weekdays; off-peak frequencies were evaluated between 9:00 a.m. and 3:00 p.m. on weekdays.

FIGURE 39

Weekday Peak Fixed-Route Frequency

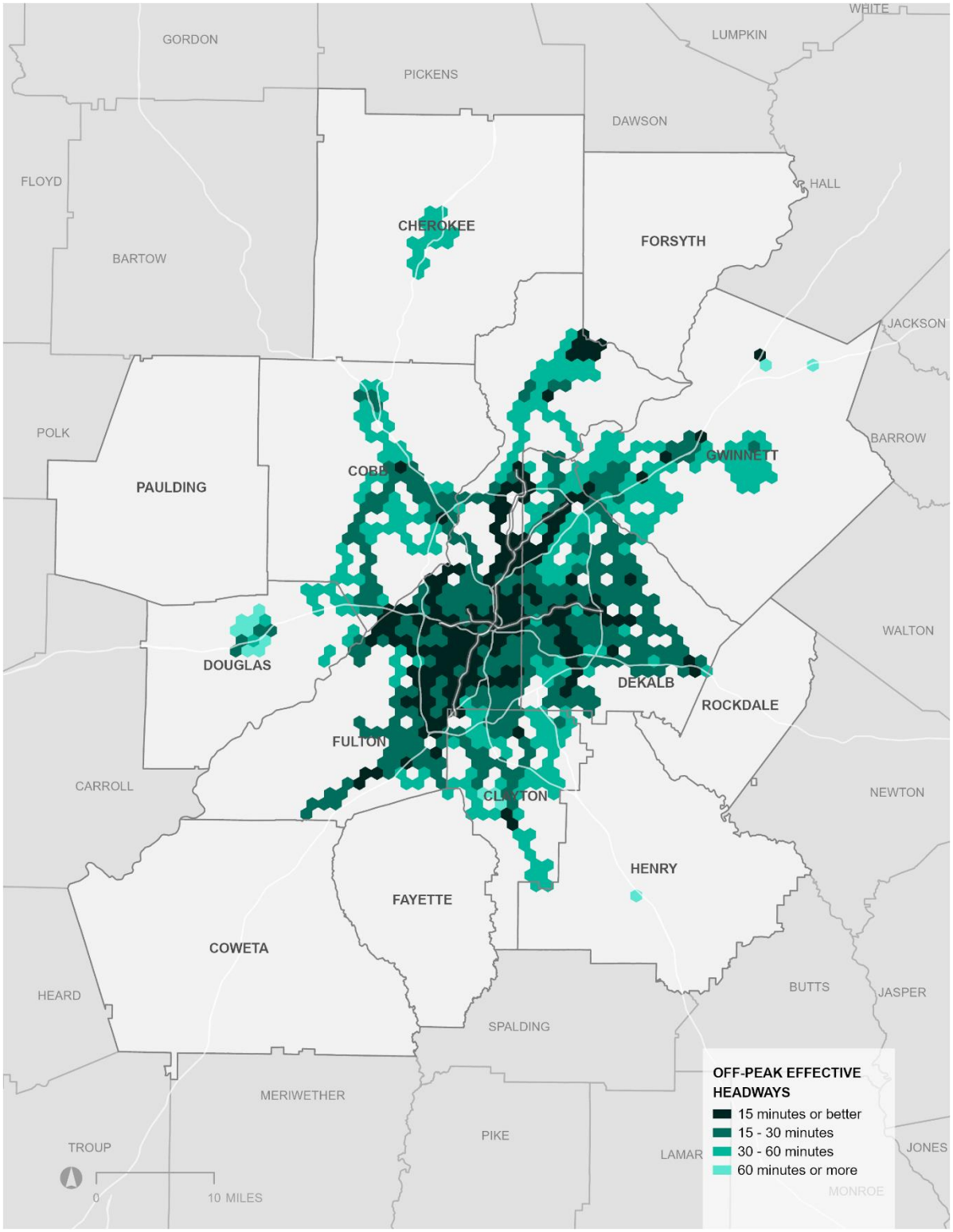


SOURCE: FALL AND WINTER 2019 GTFS

Off-peak service is typically less frequent than peak period service. While frequent MARTA arrivals remain in Atlanta and along the heavy rail corridors, effective headways are reduced to 30- or 60-minute intervals in most of DeKalb County, as well as in northern Fulton County. The major corridors in Cobb County no longer have arrivals every 15 minutes or better, with more areas experiencing 30- or 60-minute intervals between buses. Frequencies are also reduced in Douglas County, with arrivals every 60 minutes or more at most bus stops. In Gwinnett County, most effective headways are reduced to 60 minutes or better. There is very little commuter bus service in the off-peak period.

FIGURE 40

Weekday Off-Peak Fixed-Route Frequency



SOURCE: FALL AND WINTER 2019 GTFS

In the near future, MARTA plans to improve its bus network as part of the MARTA 2040 Transforming Transit Program. MARTA is conducting a detailed study of bus routes in its service area to meet the needs of current better and future travel demands materialized into a Bus Network Redesign.[46] The program aims to deliver faster and more reliable service, reduce travel times, improve regional connectivity, and promote safety. Each bus route will be evaluated and possibly modified, with some routes undergoing more substantial changes than others. The bus network redesign is expected to be completed in 2021. Proposed changes will go into effect after public hearings and Board adoption in 2022.

Travel Time Competitiveness

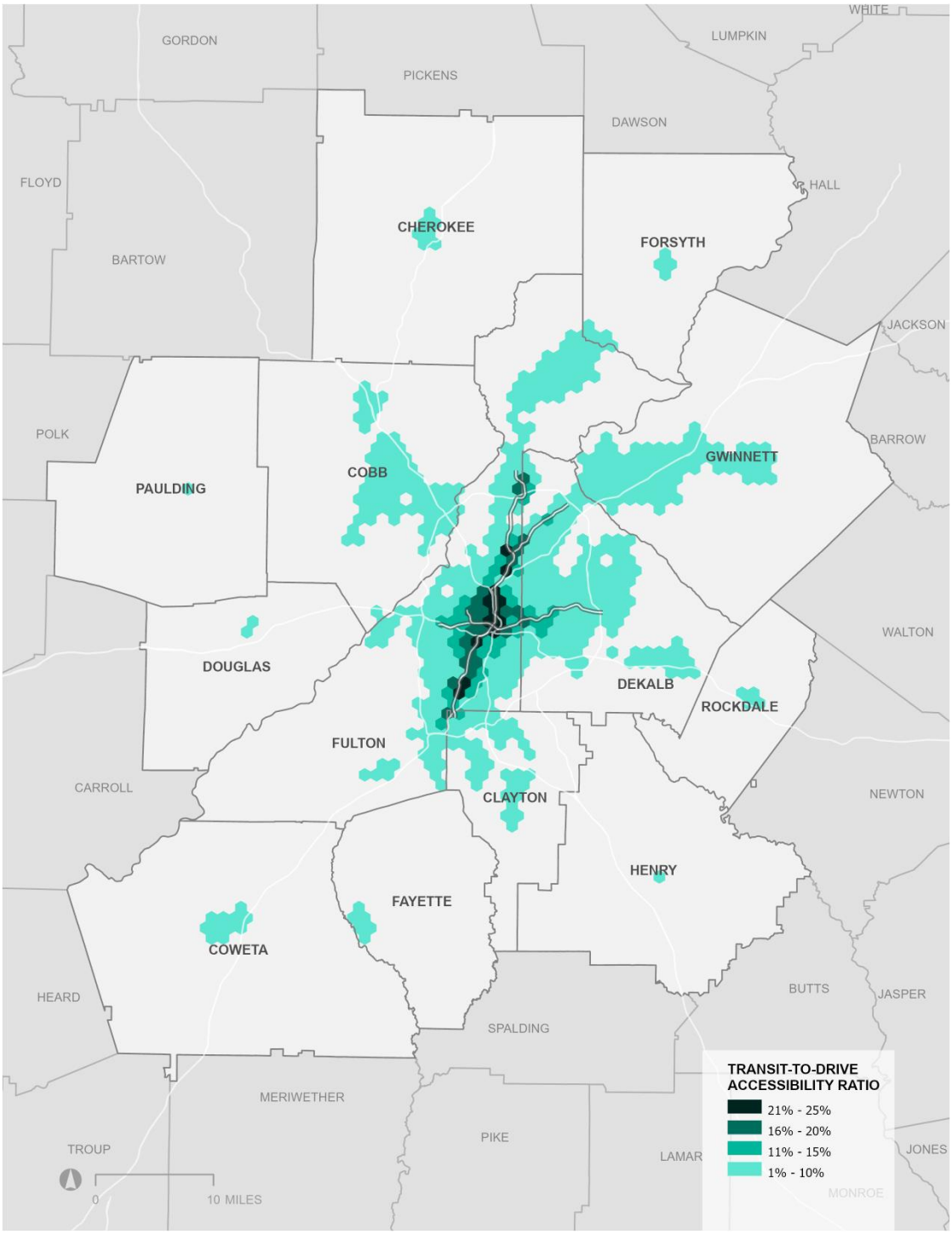
Transit contributes to accelerating opportunities for economic growth by providing access to jobs and attracting new business. However, access to and the level of transit service varies significantly across the region, time of the day, and days of the week. These characteristics impact transit's travel time competitiveness to driving.

In order to understand the degree to which transit provides a competitive alternative to driving, Figure 41 shows the ratio of transit access to drive access in the region within 45 minutes of travel time during the morning peak period. In the Atlanta region, transit is most competitive in the core of the region but is not a time-competitive travel option in the periphery beyond the boundaries of the rail and bus network. Moreover, even in the most accessible core, job accessibility by transit peaks at about 25 percent of that by car, meaning that only 25 percent of the jobs accessible by car within 45 minutes are accessible by transit in 45 minutes. This highlights the remaining challenges with making transit a competitive modal alternative for regional residents.

[46] MARTA Network Redesign Factsheet, https://itsmarta.com/uploadedFiles/More/About_MARTA/News_and_Press/MARTA_News/MARTA_Network%20Redesign%20Factsheet_031021.pdf.

FIGURE 41

Percentage of Jobs Within a 45-Minute Drive Accessible by Transit during the Morning Peak



SOURCE: 2019 ARA. ANALYSIS USING FIXED-ROUTE TRANSIT SERVICE INFORMATION AND DRIVING TRAVEL TIMES AND JOB COUNTS FROM THE ARC ABM. TRAVEL TIMES ARE FOR 7:00 - 9:00 A.M.

Key Findings

This section summarizes the key findings of this report's four main sections.

- *Transit Services*: The Atlanta region has a multimodal transit network operated by over a dozen transit providers with a wide variety of service types. Despite the COVID-19 pandemic, those operators provided over 100 million trips in FY 2020. While the region saw ridership decreases across modes during the pandemic, the decline in commuter bus was the greatest, and significantly more pronounced in heavy rail, vanpool, and streetcar compared to fixed-route bus and demand response, indicating a relatively higher importance of the two latter modes for the region's essential workers and transit-oriented populations. Many commuters who are essential workers continued to rely on transit to get to their in-person jobs. Approximately two-thirds of people who typically commute using transit in the Atlanta region cannot do their job remotely, based on their occupation.
- *Transit Environment*: ARC projects population and employment increases of 38 and 24 percent, respectively, between 2020 and 2050 in the 13-county ATL region. By 2050, ARC projects over half a million daily transit trips in the region, an increase of approximately 40 percent from the 2020 ridership. All-day transit use propensity is highest in central Atlanta and inside the I-285 perimeter, and peak period propensity is highest in major job centers and high-density areas, including central Atlanta, Buckhead, Sandy Springs, and Cumberland. In line with the propensity indices, the share of commuters using transit to access work is three times higher within the I-285 perimeter compared to the region as a whole.
- *Travel Flows*: The volume of travel by all modes throughout the region is anticipated to increase significantly between 2020 and 2050. An analysis of travel flows indicates that the highest volumes of travel flows are *within* Cobb, DeKalb, Fulton, and Gwinnett Counties, and within the City of Atlanta, as well as between the following county (and county/city) pairs: Cherokee-Cobb; Forsyth-

(North) Fulton; (North) Fulton-DeKalb; DeKalb-City of Atlanta; Clayton-(South) Fulton.

- *Access Overview*: Over 1.2 million people, or nearly 24 percent of the region's population, live within walking distance of fixed-route transit. Low-income and minority residents have a higher rate of access to transit compared to the region overall, with about 36 and 30 percent living within walking distance to transit, respectively. However, frequent transit is available to only 3.2 percent of residents within walking distance. Low coverage and long headways impact transit's travel time competitiveness to driving. Even in the areas of the region with the highest level of transit service, only 30 percent of the jobs accessible by car within 45 minutes are accessible by transit in 45 minutes.

Looking Ahead

This report provided an overview of the state of the transit system in the Atlanta region. The findings in this report—particularly those related to opportunities and challenges for transit in the region; travel flows; and transit service coverage, frequency, and access—will serve as the starting point for the accessibility analysis and identification and classifications of key corridors for transit in Task 4.