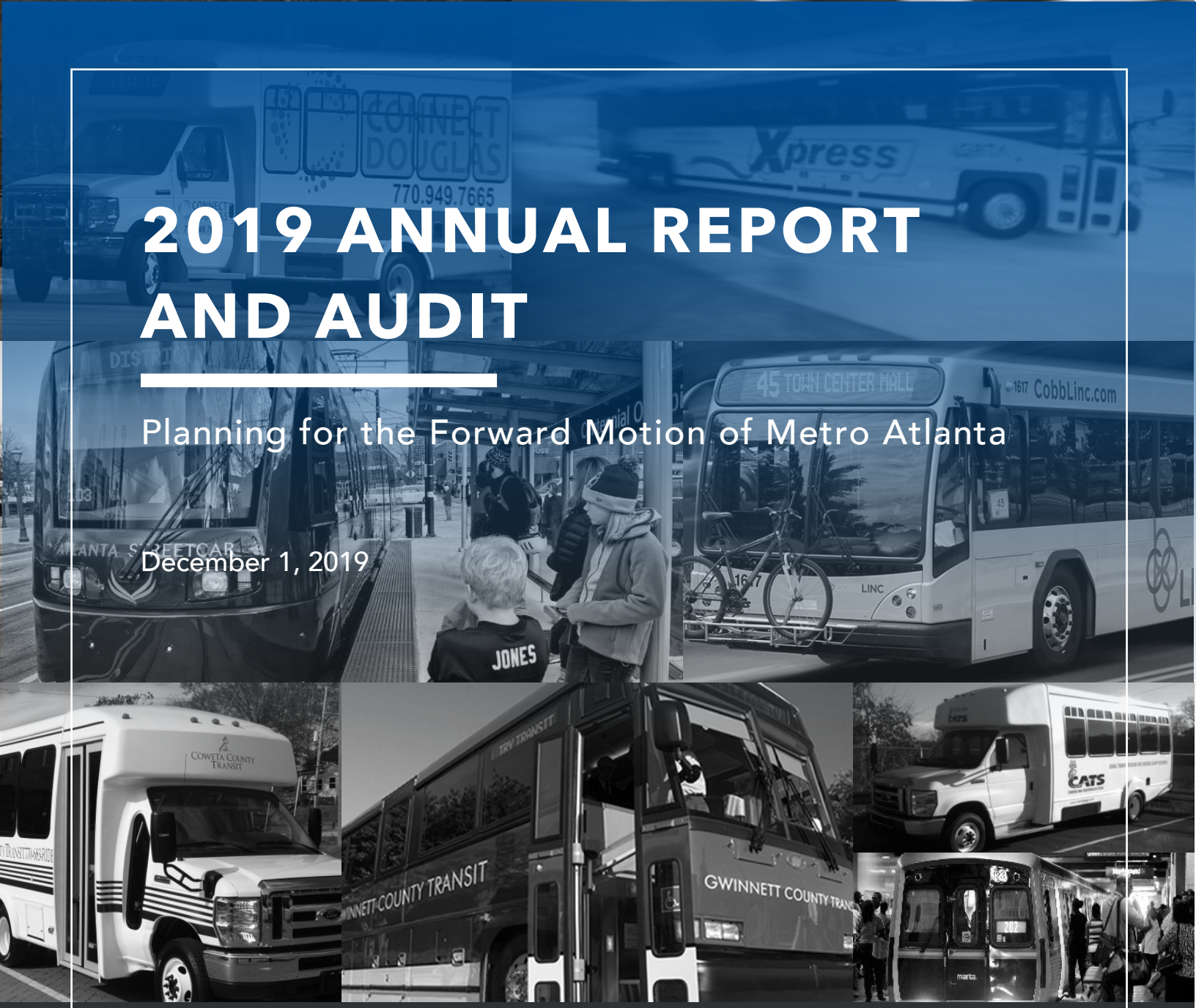
2019 ANNUAL REPORT AND AUDIT

Planning for the Forward Motion of Metro Atlanta

December 1, 2019



ATL

A MESSAGE FROM THE CHAIRMAN AND EXECUTIVE DIRECTOR

We are pleased to present the Atlanta-Region Transit Link Authority's (ATL) 2019 Annual Report and Audit, which is the first comprehensive report and audit of transit planning, funding, and operations within the jurisdiction of the ATL, as required by the state law that established the ATL in 2018. The ATL is a collaborative transit planning, coordination and policy oversight body for the transit systems operating within the 13-county Atlanta metro area.

This Annual Report and Audit provides a comprehensive picture of transit in the region, illustrating the performance and benefits of the metro area's transit services. Through this yearly effort of tracking how well the region's transit services are performing, evaluating that performance over time, and identifying potential areas for improvement, the ATL will be able to better direct investments in the Atlanta region's transit network to promote innovative regional solutions that improve mobility options for our residents. This document, along with the annually-updated ATL Regional Transit Plan (ARTP), serves as one of the two primary work products the Authority will provide state and regional leadership to help inform policy and funding decisions on transit.

In this report, you will find comprehensive data on key performance indicators such as ridership, level of transit investment, on-time performance, level of service, customer satisfaction, and productivity, as well as the economic impact of transit investments and transit accessibility within the Atlanta region. This report required extensive assistance from and collaboration with the transit operators in the region, for which the ATL is grateful. The information contained herein is the most detailed data that has ever existed at a regional level regarding the collective transit systems and operators that help move our residents and visitors around the metro area. With continued refinement and enhancement, the ATL Annual Report and Audit will serve as an extremely valuable resource for policymakers.

In order for the Atlanta region and State of Georgia to continue their sustained economic growth in the coming decades, enhanced and expanded mobility options will be required to accommodate the employment associated with nearly three million additional metro residents. Transit services are primed to play a major role in that future. The ATL stands ready to be a resource by providing State and regional leaders with data-driven, objective information, such as that contained in this report.

Sincerely,

Charlie Sutlive

Charlie Sutlive
Chair, ATL Board of Directors

Christopher Tomlinson

Christopher S. Tomlinson
Executive Director, ATL

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1 INTRODUCTION

1.1 About the Atlanta-Region Transit Link Authority

The Atlanta-Region Transit Link Authority (ATL) was established by Georgia House Bill (HB) 930 in 2018 as a new regional transit governance agency for the 13-county region of Atlanta.[1] The ATL's partner agencies include: the Atlanta Regional Commission (ARC), Cherokee Area Transportation System (CATS), CobbLinc, Connect Douglas, Coweta County Transit (Coweta or Coweta Transit), the Georgia Department of Transportation (GDOT), the Georgia Regional Transportation Authority (GRTA), Gwinnett County Transit (GCT), Henry County Transit (Henry or Henry Transit), Metropolitan Atlanta Rapid Transit Authority (MARTA), and the State Road and Tollway Authority (SRTA).[2] The Center for Pan Asian Community Services (CPACS) is also a transit provider in the region that receives federal funding through the Section 5307 program for its services.[3]

Figure 1: Benefits of the ATL

The benefits of the ATL are shown in **Figure 1** and the ATL's guiding principles are shown in **Figure 2.** The creation of the ATL will enable a more unified regional transit system by improving coordination, integration, and efficiency of transit in the Atlanta region. Per HB 930, the ATL's key responsibility is developing a regional transit plan and prioritizing projects for federal and state funding. Other responsibilities of the ATL include:

- Overseeing the transit plan for the 13-county region
- Promoting collaboration between current and future transit partners
- Partnering with regional stakeholders to think long-term about mobility
- Recommending to state leaders transit projects for funding
- Working with county governments who choose to expand special-purpose local-option sales taxes to fund transit projects
- Prioritizing transit projects to maximize available funding for the region.

[1] Georgia House of Representatives, Georgia House Bill 930.
[2] Atlanta-Region Transit Link Authority, About the ATL.
[3] The Federal Transit Administrations (FTA) Urbanized Area Formula Funding program (Section 5307 program) makes federal grants available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas.

Figure 2: The ATL's guiding principles

Land Use + Economic Development

Create or enhance connectivity and access to job centers, activity centers, and economic centers in line with the region of Atlanta's Unified Growth Policy.

Innovation

Use innovative solutions to improve rider experience, fare collection, cost savings, integration with transit alternatives, and more.

Environmental Sustainability

Offer new or enhanced services as alternatives to SOV travel, and promote the use of alternative fuels to build environmentally sustainable communities.

Equity

Provide new or expanded service to and from low- and moderate-income areas to improve connectivity and focus on investments that better enable people to meet their day-to-day needs.

Return on Investment

Ensure that project financing plans are feasible and promote cost efficient alternatives for new or enhanced service that enable regional economic opportunity and growth.

Mobility + Access

Using cross-jurisdictional services to create regional connectivity for population centers, recreation and employment.

The ATL is also exploring policy and planning changes to support the goal of a more unified regional transit system, including a unified fare payment system, improved routing and scheduling across jurisdictions, and efficiencies in purchasing, maintenance, and operations. By 2023, all MARTA assets shall include the acronym "ATL" as a prominent feature and by January 1, 2019, any newly acquired asset worth more than $250,000 that is regularly visible to the public must display the ATL logo (**Figure 3**).[4]

Figure 3: Example of MARTA and ATL Cobranding

Since the establishment of the ATL, additional funding for transit in the region has been identified through various bonds and general funds included in the FY 2019 state budget.[5] The passage of HB 930 enabled $100 million in bonds in Georgia's

[4] Georgia House of Representatives, Georgia House Bill 930.
[5] Georgia Department of Transportation, SR 400 Express Lanes FAQ.

Fiscal Year (FY) 2019 budget for transit projects. In addition, under the legislation, counties in the region can levy sales taxes of up to 1 percent for up to 30 years to finance new transit construction and operations within that county.[6]

1.2 About the Annual Report and Audit

As a requirement of HB 930, the ATL must develop this 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. This ARA provides a comprehensive picture of transit in the region, illustrating the performance and benefits of the region's transit services.

Covering the ATL's FY 2019 (July 1, 2018 through June 30, 2019), the ARA includes data from all nine transit operators in the 13-county region of Atlanta that receive funding from the federal Section 5307 program and considers system performance, finances, and planning activities during FY 2019.[7] In many cases, data showing transit system trends for the past five years are shown to enable trend analysis.

1.3 Benefits of Tracking and Reporting on Transit Performance

This ARA shows the results of transit performance tracking for all modes of transit, as well as analysis of the economic and societal impacts and benefits of transit. The foremost purpose of performance tracking is to better understand whether transit agencies are providing a high quality, reliable, efficient, equitable, and safe service to their customers. By evaluating performance over time, agencies are able to identify trends, as well as areas for improvement and strategic investments. Performance tracking also enables the agencies and the region to remain accountable for effectively meeting the region's mobility needs with the public resources afforded them. The ARA, along with the ATL's regional transit plan, will together guide investments in Greater Atlanta's transit system to promote innovative and regional solutions to improve mobility for all ATL residents.

In this report, a set of key performance indicators (KPIs) serve as quantifiable measures of performance. Combining data from each agency for regionwide transit performance metrics, the KPI results reveal regional trends across all aspects of the transit system including level of service, ridership, finances, vehicle state of good repair, and their relationships to one another. Agencies can also use them to identify operational issues, capital needs, and key areas for investment. Safety metrics and customer satisfaction data help agencies reduce risk and better meet the needs of their passengers. In addition, equity tracking helps assess whether transit is serving those who need it most. Past performance data informs future transit plans, and

[6] Atlanta Regional Commission, "What 'The ATL' Means for Regional Transit and Metro Atlanta," April 9, 2018. Georgia House of Representatives, Georgia House Bill 930.

[7] There are also agencies in the 13-county region–including Paulding Transit, Fayette Senior Services, Forsyth County Dial-a-Ride, and The Blue Bus in Rockdale County–that provide demand-response and/or deviated-route services and receive funding through the federal Section 5310 program. The services provided by these agencies are not discussed in detail in this Report. In future years, if these agencies begin providing services funded through the federal Section 5307 program, their services may be discussed in more detail in this ARA.

tracked data will be used, over time, to evaluate the success of service improvements and other investments in transit throughout the region.

1.4 How Was the Annual Report and Audit Developed?

The ARA was developed between July 2019 and November 2019. ATL partner agencies and transit providers in the region provided significant support in the ARA development process by providing the data used to conduct the KPI and spending analyses in **Chapter 4** and **Chapter 5**. ARA development was broken down into a few key steps: data collection, KPI identification, data analysis, and writing.

The data collection process began with an inventory to assess data availability. In July 2019, the project team shared a data inventory survey with the transit operators in the region to gain an understanding of the data each agency could provide for the ARA period (FY 2019), as well as for the four previous years. Concurrently, the project team collected data from the National Transit Database (NTD) for the years 2015 through 2017. Following the survey, the project team worked directly with the transit operators to collect each agency's data, based on the survey responses. Once operators provided data the project team reviewed the data and began analyzing it.

As data analysis was underway and the project team developed an understanding of which KPIs could be analyzed for this ARA, the project team conducted two workshops in early October; one with the ATL, MARTA, and GDOT board members, and a second one with staff from the region's transit operators. The workshops helped the project team understand which KPIs stakeholders felt best represent transit performance in the region. The findings from the workshops were used to inform the KPI and the economic benefits analysis in this Report.

1.5 Organization of the Annual Report and Audit

The ARA provides an overview of transit performance and benefits in the 13-county region of Atlanta. The ARA is organized into the following sections.

- **Chapter 2, Our Region**, provides an overview of the 13-county region of Atlanta.
- **Chapter 3, Our Transit Network**, highlights the existing transit network in the region and provides a high-level profile that introduces the transit operators included in the report.
- **Chapter 4, Key Performance Indicators and Trends**, presents key performance trends for the transit agencies in the region.
- **Chapter 5, Economic and Regional Impact**, analyzes the economic benefits of transit for the region and provides insights into the return on investment transit provides for the region.
- **Chapter 6, Transit Needs and Planned Investments**, examines the region's transit needs in terms of the expected value of all proposed investments and available funding.
- **Chapter 7, Moving Transit in the Region Forward**, concludes the report and provides recommendations for improving transit, improving performance tracking, and improving this report as the region moves forward.

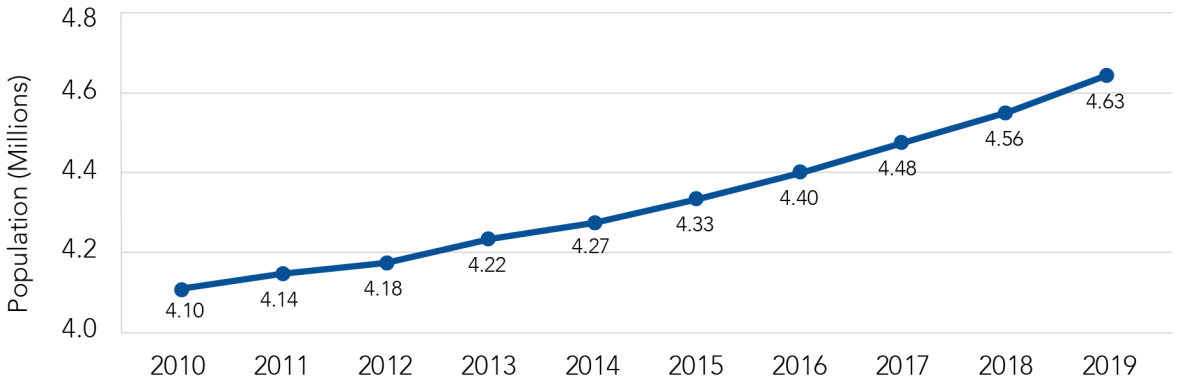
2 THE ATL REGION

2.1 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 5,161,206.[8] The U.S. Census-defined metropolitan statistical area (MSA) of Atlanta-Sandy Springs-Roswell is the most populous metropolitan area in Georgia and the ninth most populous MSA in the country.[9]

The region's population has grown rapidly in recent years, as shown in **Figure 4**.[10] The population of the 10-county region that falls under the ARC's jurisdiction (smaller than the ATL's region) has steadily increased since 2010, growing to over 4.5 million people by 2018.[11] The growth that the region experienced over the past decade (530,000) is expected to continue over the next 30 years, with an additional 2.9 million people living in the Atlanta region by 2050.[12]

Figure 4: Atlanta-region population, 2010-19

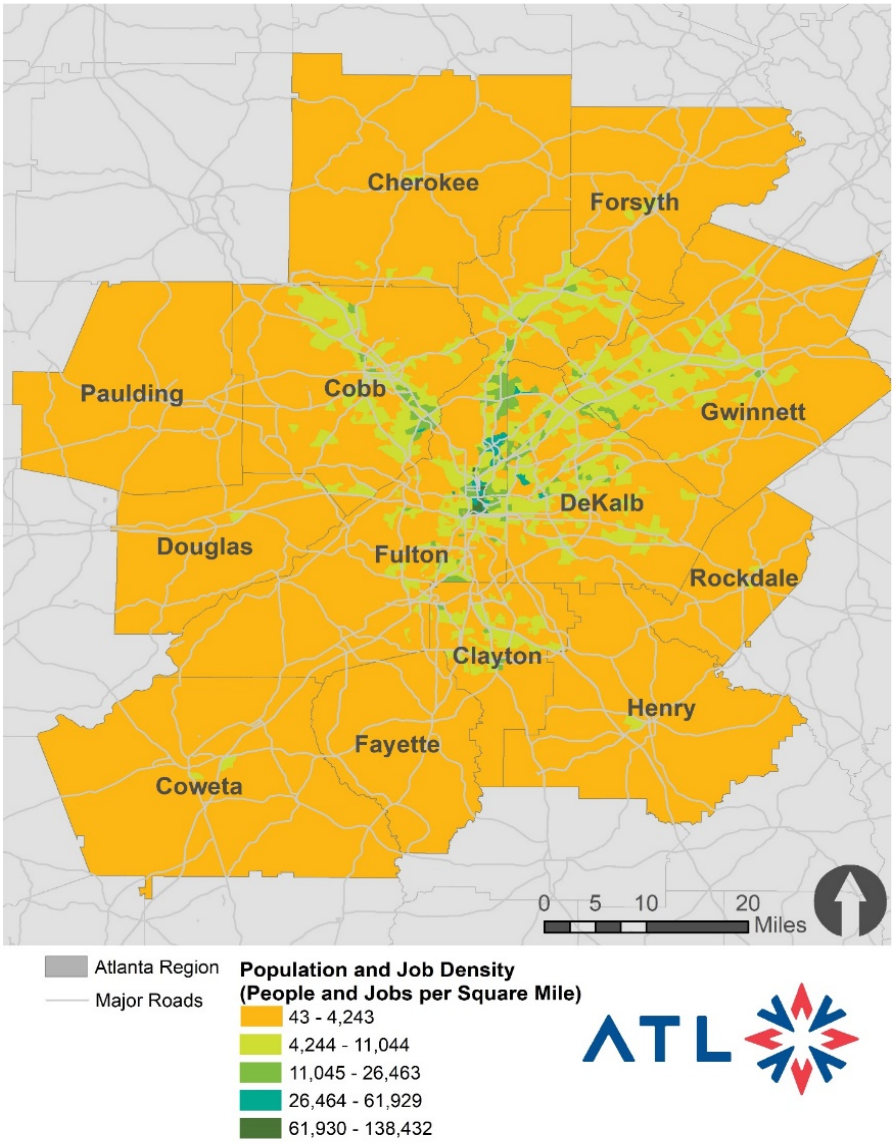


Seniors make up 10 percent of the Atlanta region's total population and youth represent an additional 25 percent.[13] The region is also racially diverse; 58 percent of the region's residents are minorities, with 42 percent of the population identifying as white (non-Hispanic).[14] By 2040, the region is expected to further diversify, with the white (non-Hispanic) share of the population decreasing to less than 35 percent.[15]

[8] U.S. Census, American Community Survey (ACS) 5-year estimates, 2014-2018.
[9] U.S. Census, "New Census Bureau Estimates Show Counties in South and West Lead Nation in Population Growth," April 18, 2019
[10] Atlanta Regional Commission, Atlanta Region Population Estimates.
[11] Ibid.
[12] Atlanta Regional Commission, About the Atlanta Region.
[13] ACS 5-year estimates, 2013-2017.
[14] Ibid.
[15] Atlanta Regional Commission, About the Atlanta Region.

The region's median household income is $63,641. Approximately 18 percent of households earn less than $25,000 per year, 41 percent earn between $25,000 and $75,000, 28 percent earn between $75,000 and $150,000, and 13 percent earn more than $150,000 annually.[16]

Figure 5: Population and job density in the Atlanta region



The Atlanta region is home to several Fortune 500 companies, including Delta Air Lines, Home Depot, Coca-Cola, and the United Parcel Service. The U.S. Centers for Disease Control and Prevention is also headquartered in the region. The top employment sectors in the region are education (24 percent), retail (11 percent), and health (11 percent).[17] While the region's unemployment rate rose during the Great Recession and recovery (approximately 2008 to 2011), the ARC estimates the current unemployment rate to be around 5 percent. The ARC also projects that the region will add over one million jobs over the next 20 years, with continued growth in the health care, retail, education, and professional and scientific sectors.[18]

Both population and job density vary significantly across the ATL's 13 counties, as shown in **Figure 5.** Both population and jobs are concentrated heavily in Clayton,

[16] ACS 5-year estimates, 2013-2017.
[17] U.S. Census, Longitudinal Employer-Household Dynamics.
[18] Atlanta Regional Commission, About the Atlanta Region.

Cobb, DeKalb, Fulton, and Gwinnett Counties, with smaller areas of higher density in the other counties. The highest job density areas (of over 26,464 people and jobs per square mile) are concentrated in downtown and midtown Atlanta.

2.2 Transportation in the Region

2.2.1 Transportation in the Atlanta Region Today

Transportation options in the Atlanta region are vast. The region is home to Hartsfield-Jackson Atlanta International Airport, the busiest airport in the world, hundreds of miles of interstate highways, including I-285, I-85, I-75 and I-20, and a stop on Amtrak's Crescent Line, which travels between New Orleans and New York City. The region is also served by numerous transit agencies, including CATS, CobbLinc, Connect Douglas, Coweta Transit, CPACS, GCT, Henry Transit, MARTA, and SRTA (Xpress), which provide a mixture of rail, fixed-route bus, demand response, commuter bus, streetcar, microtransit, and vanpool services. These agencies are profiled in detail in **Chapter 3.**

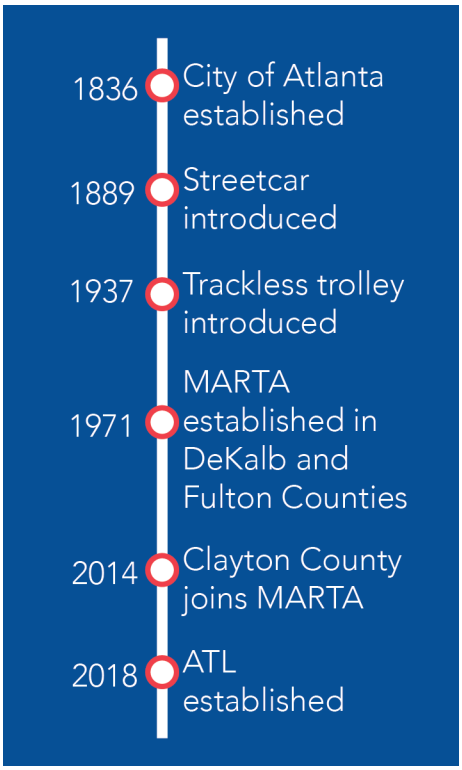
While the region has numerous travel options, like many other U.S. cities, the passenger vehicle remains the dominant mode of travel. In 2017 in the 13-county ATL region, approximately 82 percent of commuters drove alone to work, 10 percent carpooled, 4 percent used public transit, 2 percent walked, and 2 percent used other modes.[19] Of households with individuals that participate in the workforce, 97 percent have at least one vehicle available.[20] However, mode share in some areas of the region differs significantly from regional averages. For example, for those living in downtown Atlanta, 60 percent of commuters drove alone to work, 6 percent carpooled, 12 percent used public transit, 19 percent walked, and 4 percent used other modes or teleworked.[21]

2.2.2 History of Transportation in the Atlanta Region

As transportation trends and technologies have evolved over time so has the region's transportation system (**Figure 6**). Atlanta was established in 1836 at the terminus of the Western and Atlantic Railroads and during the earliest stages of the city's history was a major train hub. In 1889, the electric streetcar was introduced to the region and became the dominant mode of transportation soon thereafter. At their peak in the 1920s, electric streetcars were carrying nearly 100 million passengers annually. The streetcar, however, was eclipsed by the trackless trolley when it was introduced to the region in 1937. Trackless trolleys dominated through 1963, and until 1952, the trackless trolley system was the country's largest.

[19] ACS 5-year estimates, 2013-2017.
[20] Ibid.
[21] Atlanta Regional Commission, Commuting (by Neighborhood Statistical Areas) 2017. This analysis excludes those who reported that they worked from home.

Figure 6: Timeline of key transportation events in the Atlanta region



In the 1960s, the Metropolitan Atlanta Transit Study Commission released a report that recommended a five-county bus and rail system in the counties of DeKalb, Fulton, Clayton, Gwinnett, and Cobb (the counties considered part of the metropolitan area at the time). This led to the passage of the Metropolitan Atlanta Rapid Transit Authority Act in 1965, which established MARTA. MARTA became operational through a 1971 public referendum that was approved by voters in DeKalb and Fulton Counties. In 1972, MARTA purchased the Atlanta Transit System, giving the agency ownership of Atlanta's bus system. In 1975, MARTA began construction on the East Line, the agency's first heavy rail line. The East Line opened to the public in 1979. MARTA's North-South Lines began operating in 1981, with expansions occurring throughout the 1980s and 1990s.[22]

While DeKalb and Fulton counties passed referendums in the 1970s that enabled MARTA's operation in their jurisdictions, the three other counties, Cobb, Clayton, and Gwinnett, included in the 1965 study did not pass legislation enabling MARTA's operation. Cobb County established CobbLinc (previously known as Cobb Community Transit) in 1989, and Gwinnett County established GCT in 2000. Clayton County passed a 1 percent sales tax in 2014 to join MARTA and help fund its operations and capital investments in the county.[23]

The ATL was established with the passage of HB 930 in 2018, following several years of growing interest and investment in transit in the region. In 2015, the State of Georgia passed the Transportation Funding Act (HB 170), which restructured transportation funding to provide over $900 million in revenues to the Georgia Department of Transportation.[24] The passage of HB 170 signaled bipartisan commitment to funding transportation in the state.

Following the passage of HB 170, voters in the City of Atlanta passed two ballot measures: a half-cent sales tax increase to MARTA funding, enabling expansion and system improvements, and a two-fifths percent special-purchase local-option tax to pay for bike lanes, sidewalks, and the right-of-way for Atlanta's Beltline. Together, these referendums total over $2 billion in new transit funding for the region.[25] The

[22] Atlanta History Center, MARTA.
[23] MARTA, Our History.
[24] Georgia Transportation Alliance, Summary of Transportation Legislation.
[25] MARTA, More MARTA FAQs.

half-cent MARTA tax was implemented in the City of Atlanta on March 1, 2017 and is expected to expire in 2057.[26] The special-purpose local-option tax went into effect on April 1, 2017 in the City of Atlanta.[27]

The final major step in laying the groundwork for the ATL was the state's creation of the Commission on Transit Governance and Funding, which brought together representatives from every area of the Atlanta region. Among the key findings from the commission's work is that corporations considering location siting decisions value proximity to transit, providing an economic incentive to build and maintain a robust transit system.

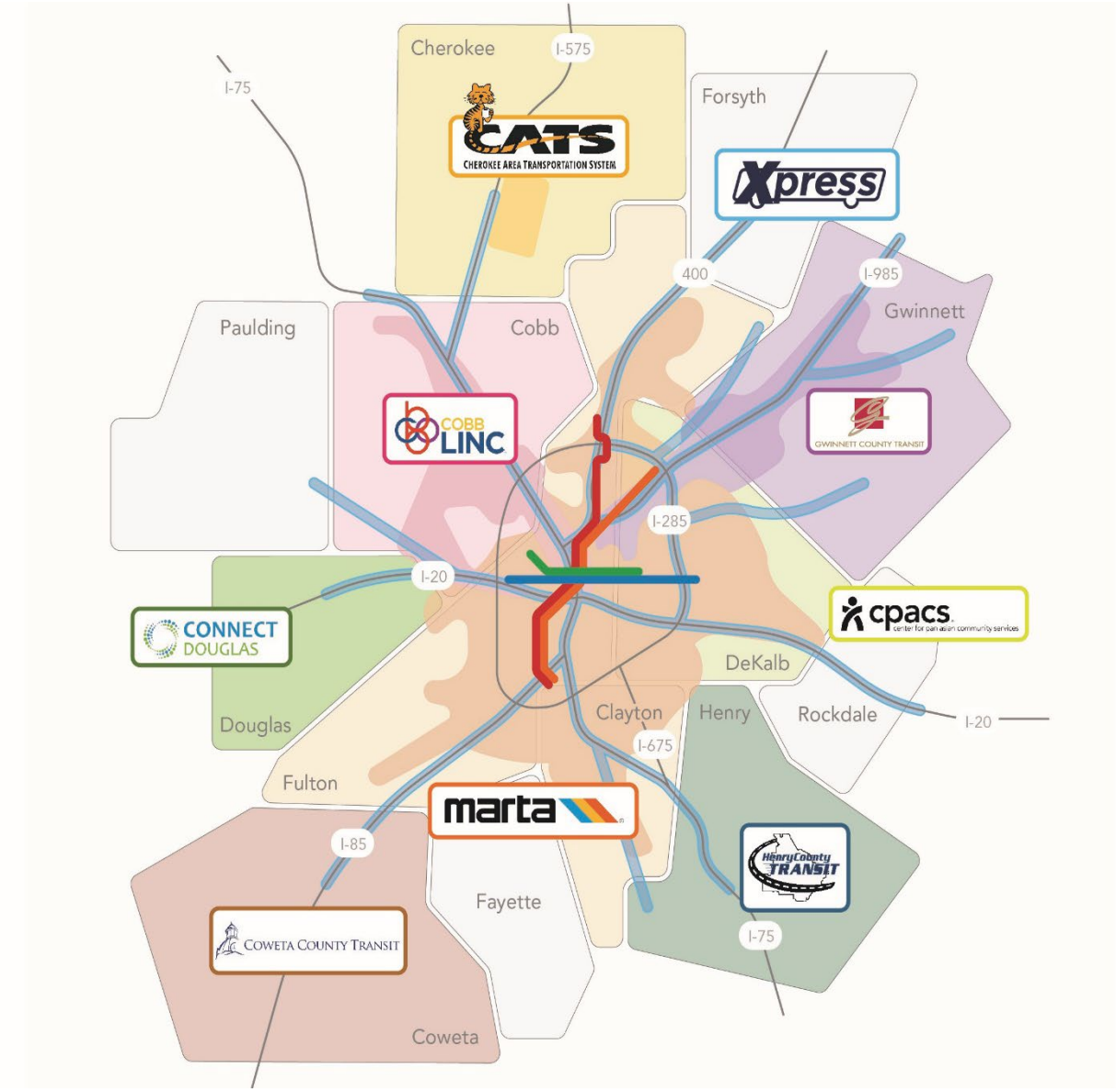
[26] Georgia Department of Revenue, "Policy Bulletin SUT-2017-01 New Atlanta and Fulton County Local Sales Taxes."

[27] City of Atlanta, 10 Questions About the City of Atlanta TSPLOST.

3 METRO ATLANTA'S TRANSIT NETWORK

The Atlanta region has a multimodal transit network with a wide variety of service types. **Figure 7** shows the locations in the region where service providers operate.

Figure 7: The Atlanta region's transit network



There is some overlap in agencies' service areas, particularly because some agencies (CobbLinc, GCT, MARTA, and Xpress) offer commuter and fixed-route bus services that cross jurisdictions. With 45.6 miles and 38 stations, heavy rail provides over half of all transit trips in the region. Since 2014, downtown Atlanta has been served by a 2.7-mile streetcar loop with 12 stops. The Streetcar was operated by the City of Atlanta until July 2018, when MARTA took over its operation. In addition to these two rail networks, six local fixed-route bus systems operate in the region, carrying almost

215,000 riders daily with a fleet of almost 700 buses. An extensive network of 35 commuter bus routes covers the region, with some buses taking advantage of 65 miles of express lanes on interstates. The region is also served by nine demand response and two vanpool services. In addition, GCT implemented a microtransit service pilot program that picks up and drops off riders within specific service zones from September 1, 2018, through April 30, 2019.

3.1 Agency Profiles

The following agency profiles introduce the agencies that provided data for this ARA and the services they provide.

CATS
CHEROKEE AREA TRANSPORTATION SYSTEM

Areas Served
Cherokee County

Types of Service
- Fixed-route bus
- Demand response

Ridership by Mode		Revenue Hours by Mode		Fleet Size	
Fixed route	Demand response	Fixed route	Demand response	Fixed route	Demand response
21,564	49,605	3,444	31,872	3	16

Our mission at CATS is to provide excellence in all areas of service that we provide to the citizens of Cherokee County.

COBB LINC

Areas Served
Cobb County and commuter bus to and from Downtown and Midtown Atlanta

Types of Service
- Fixed-route bus
- Demand response

Ridership by Mode		Revenue Hours by Mode		Fleet Size	
Fixed route	Demand response	Fixed route	Demand response	Fixed route	Demand response
2,345,055	65,010	178,528	46,988	110	30

CobbLinc provides safe, effective and efficient fixed route, Paratransit, Demand Response and Commuter bus service in Cobb County connecting the community to MARTA in the Fulton County area.

CONNECT DOUGLAS

Areas Served
Douglas County

Types of Service
- Fixed-route bus
- Demand response
- Vanpool

Ridership by Mode			Revenue Hours by Mode			Fleet Size		
Fixed route	Demand response	Vanpool	Fixed route	Demand response	Vanpool	Fixed route	Demand response	Vanpool
too new	18,828	71,847	too new	6,885	16,099	12	4	41

Our mission with Connect Douglas is to connect our residents and visitors with the people, places, and events that are important to them. Our goal is to provide a full menu of transportation and mobility options to help people get from Point A to Point B. Our recently launched Connect Douglas fixed route service is going to be so helpful to people who have transportation limitations. — Dr. Romona Jackson-Jones, Chairperson of the Douglas County Board of Commissioners

Coweta County Transit

Areas Served
Coweta County

Types of Service
> Demand response

Ridership by Mode	Revenue Hours by Mode	Fleet Size
Demand response: 36,288	Demand response: 14,683	Demand response: 6

The Coweta County Board of Commissioners realizes the importance of getting where you need to go as efficiently as possible. That is why the Board has worked closely with federal and state officials to make Coweta County Transit Door-to-Door service available to everyone.

cpacs
center for pan asian community services

Areas Served
Clarkston neighborhood of DeKalb County

Types of Service
> Fixed-route bus
> Demand response

Ridership by Mode	Revenue Hours by Mode	Fleet Size
Fixed route: 6,428	Fixed route: 2,714	Fixed route: 2
Demand response: 25,891	Demand response: 10,103	Demand response: 10

Our mission is to promote self-sufficiency and equity for immigrants, refugees, and the underprivileged through comprehensive health and social services, capacity building, and advocacy.

Gwinnett County Transit

Areas Served
Gwinnett County, including commuter buses to Atlanta

Types of Service
> Commuter bus
> Demand response
> Taxi
> Fixed-route bus

Ridership by Mode	Revenue Hours by Mode	Fleet Size
Commuter bus: 439,065	Commuter bus: 39,839	Commuter bus: 43
Demand response: 68,183	Demand response: 29,486	Demand response: 7
Taxi: 463	Taxi: 562	Fixed route: 37
Fixed route: 1,175,252	Fixed route: 92,280	

The mission of the Gwinnett County Department of Transportation is to enhance quality of life by facilitating the mobility of people and goods safely and efficiently. This mission is accomplished by planning, constructing, operating, and maintaining aviation, transit and surface transportation systems.

Henry County Transit

Areas Served
Henry County

Types of Service
> Demand response
> Bus

Ridership by Mode	Revenue Hours by Mode	Fleet Size
Demand response: 70,650	Demand response: 38,844	Demand response: 26
Bus: 418	Bus: 1,888	Bus: 1

Our mission is to provide safe, courteous, dependable and reliable world class transportation to ensure adequate mobility options for all Henry County residents.

marta

Areas Served

Atlanta metropolitan area

Types of Service

- Heavy rail
- Bus
- Demand response
- Streetcar

Ridership by Mode

Heavy rail	65,086,630
Bus	51,447,770
Demand response	803,972
Streetcar	285,077

Revenue Hours by Mode

Heavy rail	839,670
Bus	2,276,018
Demand response	461,382
Streetcar	11,512

Fleet Size

Heavy rail	338
Bus	554
Demand response	211
Streetcar	4

MARTA is one the country's premier public transportation systems, and as we celebrate its 40th year of combined bus and rail service, we are committed to enhancing the user experience for both our daily and occasional users. Our initiatives, service enhancements and planned expansion are all about providing excellent customer service; making sure our capital programs are delivered with efficiently; enhancing the MARTA brand; and being good stewards of our finances. If we do those four things, we believe our riders will see and feel a positive difference.

— Jeff Parker , General Manager/Chief Executive Officer

Xpress

Areas Served

Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale counties

Types of Service

- Commuter bus
- Vanpool

Ridership by Mode

Commuter bus	1,829,104
Vanpool	734,148

Revenue Hours by Mode

Commuter bus	111,880
Vanpool	128,644

Fleet Size

Commuter bus (XPress)	165
Vanpool (operated by SRTA)	266

Xpress wants to make its interstates safer and more efficient, saving lives, gas, and time. Xpress also wants to help riders be more productive in their jobs, lower their stress, and increase their quality of life, as well as make the region more attractive to employers. Xpress seeks to provide an extraordinary return on investment to taxpayers who support its services.

4 KEY PERFORMANCE INDICATORS AND TRENDS

The KPIs presented in this ARA represent measures of transit performance that, together, provide a comprehensive view of the region's transit services and their performance. The KPIs highlighted in this chapter, which were selected based on both data availability and workshop input from stakeholders, cover many aspects of transit service including ridership, finances, operations, quality, productivity, equity, customer satisfaction, state of good repair, and safety. Data trends by mode are shown for each service or agency and at the regional level. Data is shown from 2015 to 2019 to allow for a better understanding of trends over the past five years.[28] These results and trends help reveal how the residents of the ATL use transit and the role of each agency in enhancing mobility in the region.

Not all transit agencies in the region were able to provide data, or data broken out by mode, for all KPIs or for all five years. Details regarding data sources and availability are provided in **Appendix A**.

4.1 Ridership

This section analyzes trends in ridership, which is measured in unlinked[29] transit trips, including looking at ridership by mode and considering factors that may be influencing transit ridership changes.

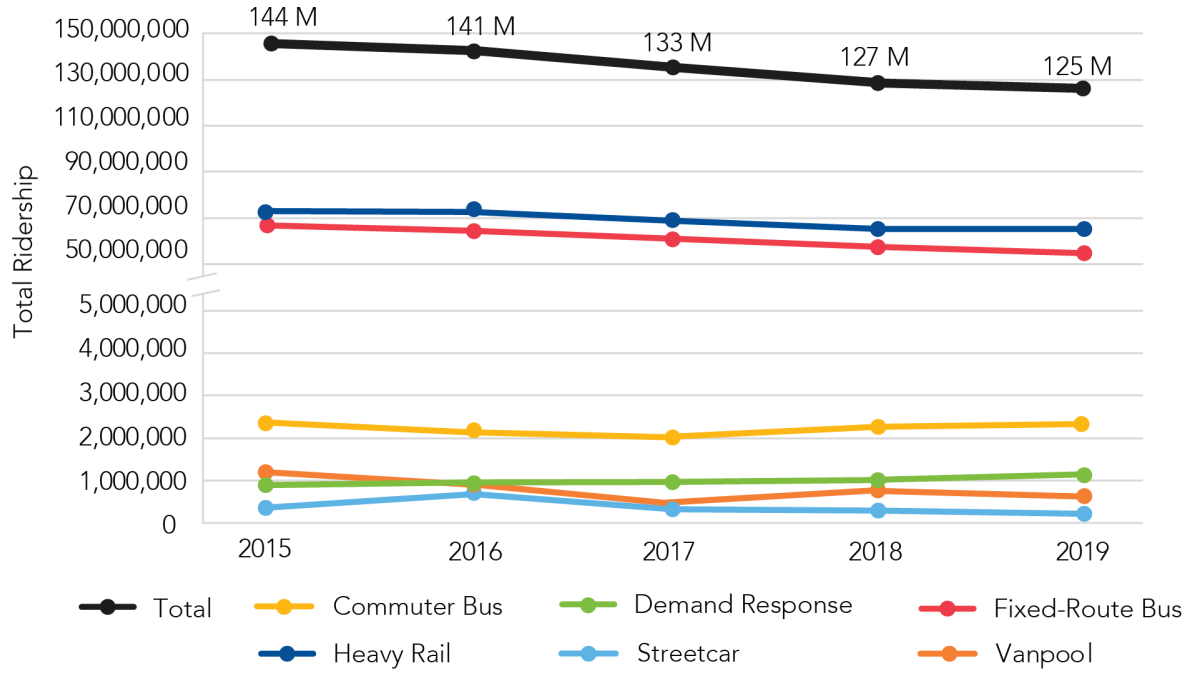
4.1.1 Ridership by Mode

Figure 8 shows total regional ridership trends by mode.

[28] Unless otherwise noted, data for FY 2019 in **Chapter 4** refer to the ATL's fiscal year, beginning in July and ending in June. Data for 2015–18 refer to that agency's fiscal year. For more on data limitations due to differing fiscal years, see the **Appendix**.

[29] Unlinked passenger trips refer to the total boardings on an individual vehicle, as opposed to linked passenger trips, which count any transfers a passenger makes as part of one trip. Unlinked trips is the national data standard for measuring ridership.

Figure 8: Regional transit ridership by mode



Between 2015 and 2019, total transit ridership in the Atlanta region declined from 144 million to 125 million passenger trips (about 13 percent), which is generally consistent with national trends. In the region, fixed-route bus and rail trips make up nearly 97 percent of all transit trips. Fixed-route bus ridership declined by 18 percent over the past five years, while rail ridership declined by 10 percent. However, rail ridership increased very slightly between 2018 and 2019.

Regional commuter bus ridership has grown by 2 percent since 2015. Commuter bus service is provided by CobbLinc, GCT, and SRTA, which operates the State's Xpress System.

Trends in Nationwide Transit Ridership

> Between 2015 and 2019, total transit ridership in the United States decreased by 8 percent.

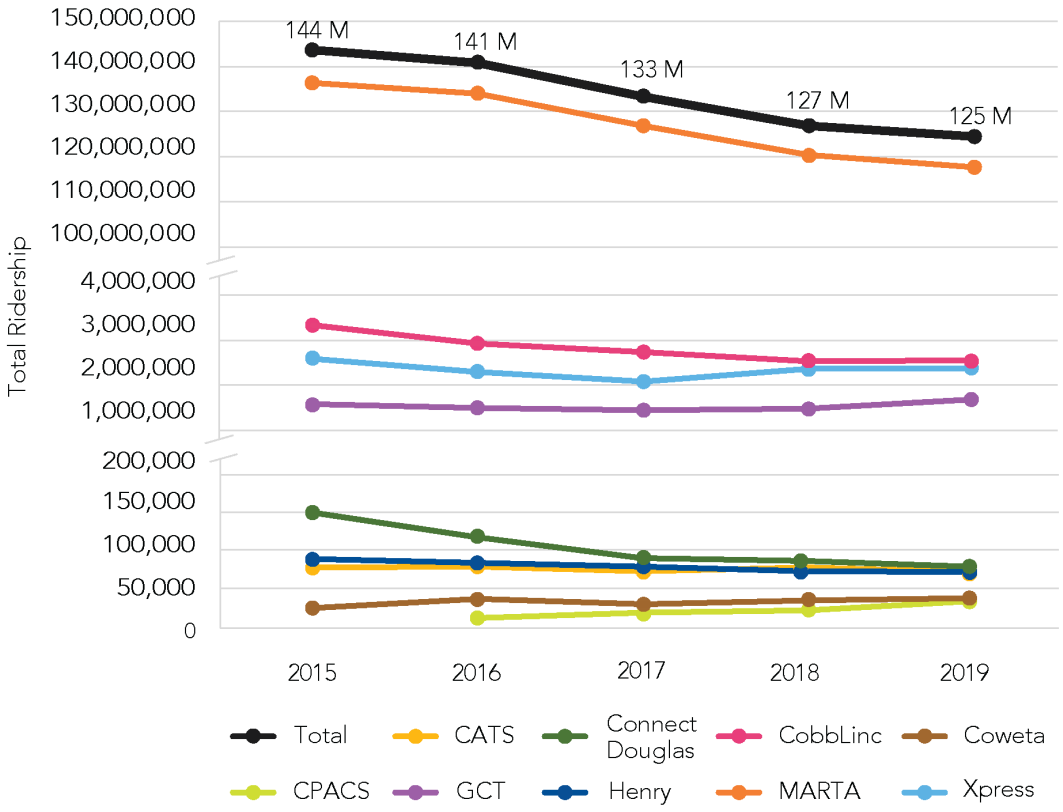
Apart from SRTA, every transit agency operating in the ATL offers a demand response service, and most have experienced growth in recent years. Regionally, demand response ridership grew by 29 percent since 2015, with some agencies' ridership more than doubling in that time.[30] In addition, vanpool ridership has declined by 29 percent since 2015.

[30] In some cases the growth in ridership of demand-response service can be a negative indicator related to poorly performing fixed-route service; poor access to fixed-route service; limited fixed-route service (schedule, span, frequency); or other factors. In some cases, it can also be associated with new services being offered or the growth of the senior population.

4.1.2 Ridership by Agency

Total transit ridership in the region is heavily influenced by riders of MARTA bus and rail, as trips taken on MARTA make up 95 percent of all transit trips in the region. **Figure 9** shows ridership by agency.

Figure 9: Total annual ridership by agency



While some agencies have experienced ridership growth during some years throughout the five-year period, the overall trend between 2015 and 2019 for all of the agencies *except* Coweta, CPACS, and GCT has been of ridership decline. Though MARTA lost the largest total number riders, the loss represented only 14 percent of MARTA's total ridership; some agencies have experienced more significant ridership declines relative to the amount of service they provide. Coweta, CPACS, and GCT have all increased the amount of service they provide over the five-year period, which likely explains their ridership increases.

Rider Demographics

Understanding the ridership demographics for an agency is important for gauging how well an agency is serving the public. Most of the agencies included in this ARA collect information on rider demographics through a variety of means including on-board surveys and counts of discount fare use. These analyses coupled with accessibility analyses illustrate how well an agency is linking customers to opportunity.

MARTA, the largest service provider in the region, tracks both the use of discount fares as well as ridership demographics at its rail stations. Use of a discount fare on MARTA transit service has remained largely stable over the past five years, ranging from 10 to 11 percent of all trips. This indicates that only a small percentage of MARTA customers utilize a discounted fare.

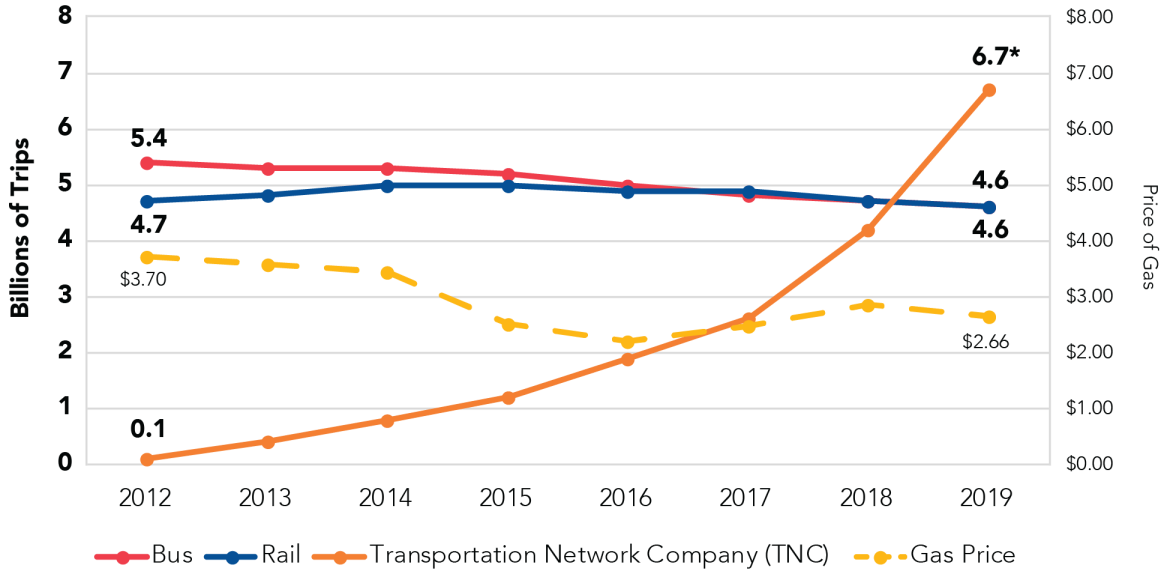
Relative to the region's population, MARTA's rail customers are more likely to be non-white and are more likely to have low or moderate incomes. In 2018, the most recent year that this data is available, 77 percent of MARTA's rail passengers self-identified as non-white, a larger percentage than the minority population in the region, which makes up 58 percent of the population. Seventy-eight percent of riders identified themselves as earning under $75,000 a year; this percentage is higher than the 59 percent of the region's population overall who earn under $75,000.

4.1.3 TNCs and New Mobility

The decline in public transportation ridership is not unique to the Atlanta region. Nationwide, bus ridership has steadily declined since 2012, and rail ridership, which was rising until 2015, has decreased since then. Gas prices, which remained relatively low between 2015 and 2019, and the overall strength of the economy are two significant factors often related to transit ridership declines. In addition, the rise in services provided by transportation network companies (TNCs), such as Lyft and Uber, and the rise of active and "micromobility" travel options, such as bikeshare and scooter options, are influencing the decrease in public transportation ridership.[31] **Figure 10** shows the decrease in transit ridership in the country and its temporal coincidence with other changes that may be influencing these trends.

[31] Freund, Sarah, "Uber and Lyft hurt CTA ridership, slow down buses, and worsen congestion," Curbed Chicago, October 28, 2019.

Figure 10: Bus, rail, and estimated TNC ridership in the U.S., and gas prices, 2012-2019

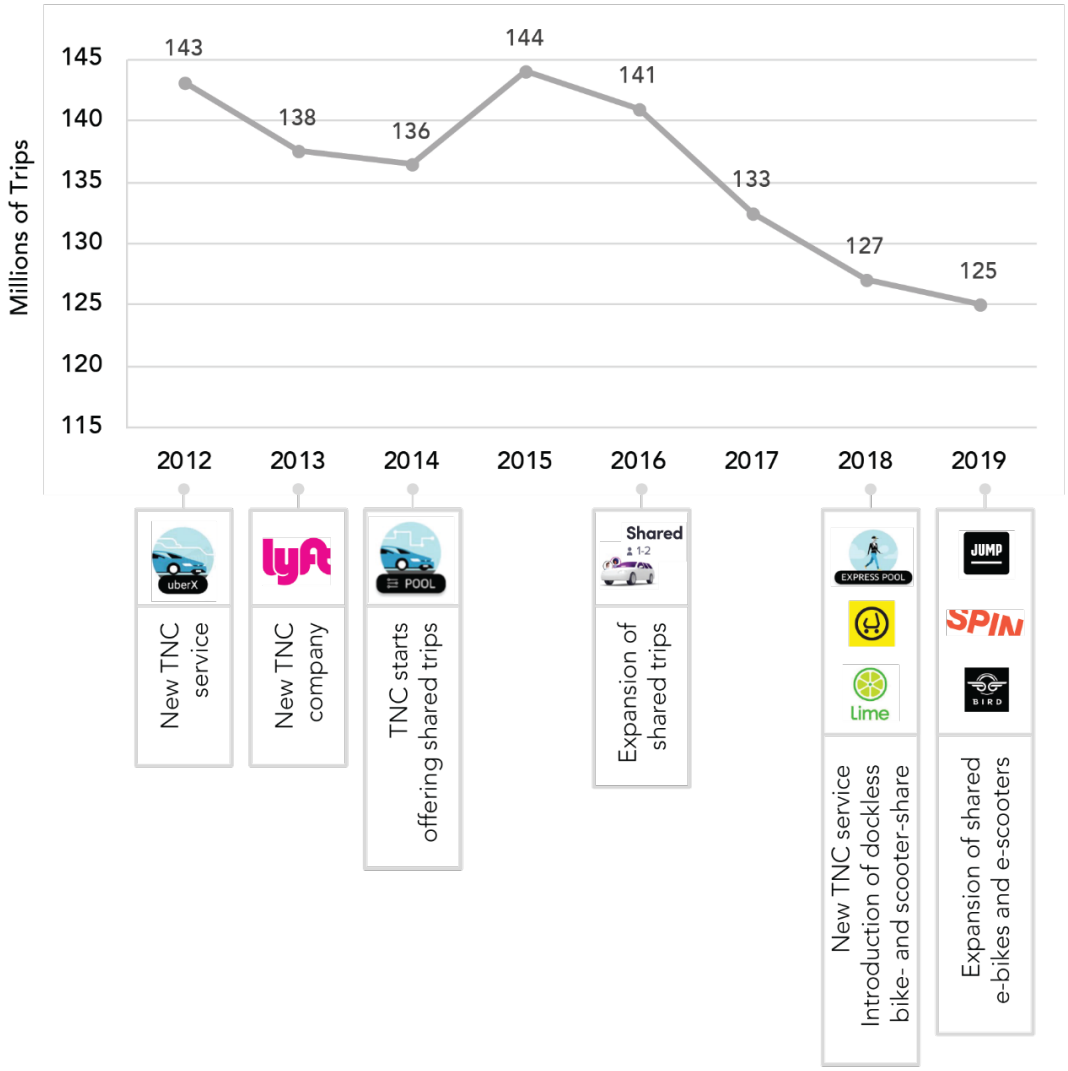


Number of TNC trips in 2018 was projected and the 2019 estimate was based on trends. Sources: APTA,[32] Schaller Consulting,[33] American Automobile Association.[34]

TNCs and new mobility options likely impact transit ridership differently and this impact varies by mode. A recent study found that TNCs contribute to more significant decreases in bus ridership relative to rail ridership.[35] The same study highlights that the introduction of a bikeshare system can increase light and heavy rail ridership while also contributing to a decrease in bus ridership. **Figure 11** shows the region's transit ridership at the various points in time when new TNC companies and services, and micromobility services entered the Atlanta market over the past several years. In the last few years, TNCs have made the for-hire sector a major provider of urban transportation services. Research suggests they compete the most with public transportation, walking, and biking.[36]

[32] American Public Transportation Association, Ridership Report, 2019.
[33] Schaller Consulting, "The New Automobility: Lyft, Uber and the Future of American Cities," 2018.
[34] American Automobile Association, Gas Prices. U.S. Inflation Calculator, Gasoline Prices Adjusted for Inflation.
[35] Michael Graehler, et al., "Understanding the Recent Transit Ridership Decline in Major US Cities: Service Cuts or Emerging Modes?", Transportation Research Board Annual Meeting, 2019.
[36] Schaller Consulting.

Figure 11: ATL ridership and new mobility milestones in the region



As shown in **Figure 11**, transit ridership in the region increased in 2015, despite the presence of TNC companies and the introduction of shared trip options. However, it has been decreasing since then, while TNC companies have begun to offer shared services that are more affordable than their initial service offerings, and micromobility options have expanded. The City of Atlanta requires operators of shared dockless mobility devices—electric scooters or bikes—to submit monthly reports sharing quantitative and qualitative summaries of devices, safety, operations, and education efforts. Such reports are important tools in understanding the role of these travel options in urban mobility and in

Notable Lime scooter ridership findings

- Almost 40 percent of riders in Atlanta combine their trip with transit
- 37 percent of riders in Atlanta displaced a car trip with their most recent Lime ride

Source: Lime presentation to the ATL, 2019.

highlighting the potential of these devices to complement transit networks and reduce car trips.

While new travel options are likely contributing to some decline in transit ridership, it is difficult to generalize about these impacts, and it is very likely that the impacts depend in part on both the land use context and the presence (or lack) of other available transportation options in the area relative to transit. It is also possible that the presence of TNCs and other new travel options are leading people to make trips they simply would not have made were these new travel options not available.

4.2 Level of Transit Investment

This section summarizes the operating and capital expenses of each agency in the region to illustrate the level of investment in transit.

4.2.1 Operating Expenditures

A transit agency's operating expenditures include the costs of labor and benefits, vehicle maintenance, materials (such as fuel or tires), utilities, and casualty and liability insurance. The region's operating expenditures for transit in 2019 totaled over $580 million, which is lower than in 2015 but not the lowest in the last five years. These figures are shown in **Table 1** and **Figure 12**. Figures in the light blue cells in **Table 1** and dotted lines in **Figure 12** refer to budgeted figures, as actual expenditures were not available.

Table 1: Operating expenditures by agency (in millions)

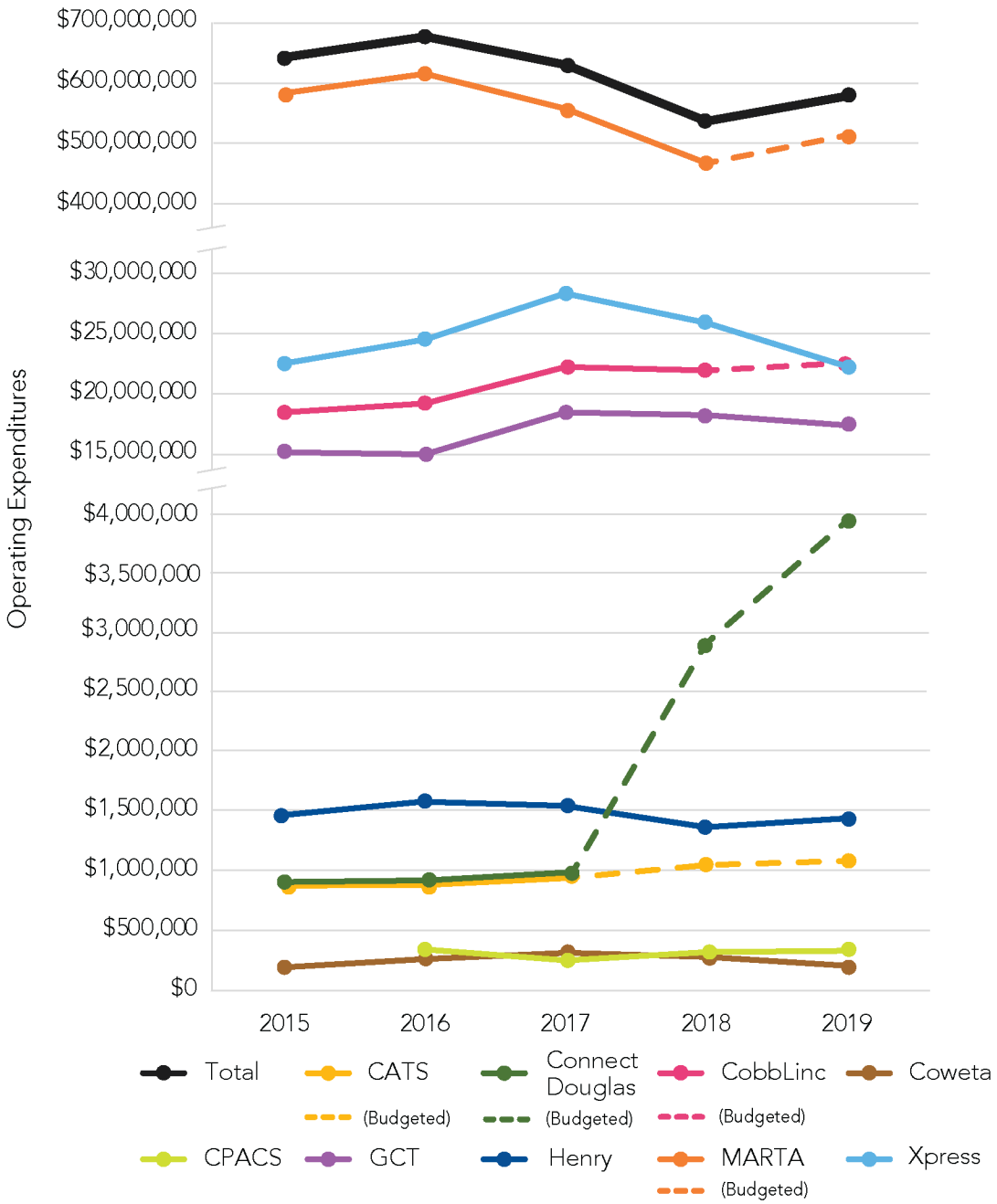
Agency	2015	2016	2017	2018	2019
CATS	$0.8 M	$0.8 M	$0.9 M	$1.1 M	$1.1 M
CobbLinc	$18.5 M	$19.2 M	$22.2 M	$22 M	$22.6 M
Connect Douglas	$0.8 M	$0.9 M	$1 M	$0.9 M	$3.2 M
Coweta	$0.3 M	$0.4 M	$0.4 M	$0.4 M	$0.3 M
CPACS*	-	$0.5 M	$0.4 M	$0.5 M	$0.5 M
GCT	$15.2 M	$15 M	$18.5 M	$18.3 M	$17.4 M
Henry Transit	$1.4 M	$1.6 M	$1.5 M	$1.3 M	$1.4 M
MARTA	$583.7 M	$615 M	$557.7 M	$467.4 M	$513.9 M
Xpress	$22.5 M	$24.5 M	$28.3 M	$25.9 M	$22.3 M
Total	**$643.2 M**	**$677.8 M**	**$631 M**	**$537.6 M**	**$582.6 M**

** Transit operations started in FY 2016. Blue cells refer to budgeted figures, as actual expenditures were not available.*

Operating expenditures in the region show a general downward trend over the last five years, despite the increase in operating expenditures from 2015 to 2016 and from 2018 to 2019. These trends vary significantly across agencies, however. Fluctuations in operating expenditures in the region are closely related to MARTA's

expenditures, which make up about 90 percent of the region's total operating expenditures. In 2019, MARTA accounted for 88 percent of the region's operating budget, while accounting for 95 percent of the ridership.

Figure 12: Operating expenditures by agency



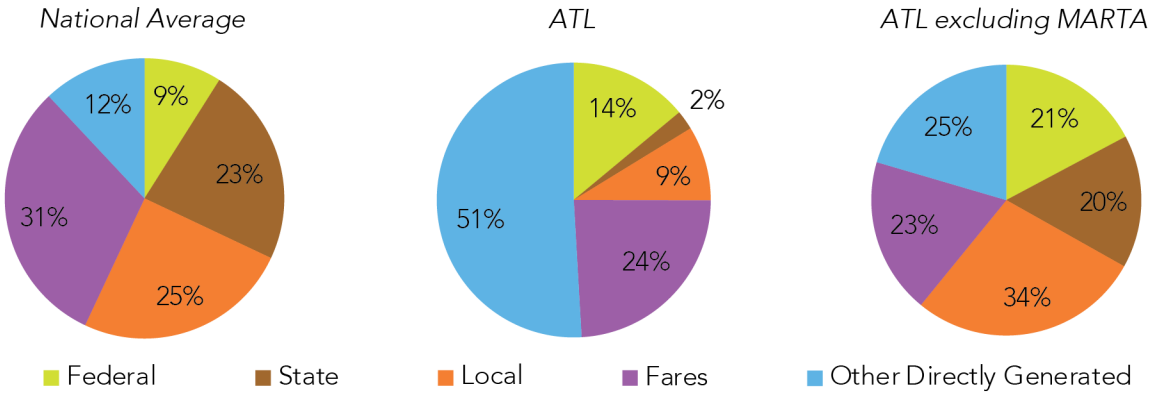
After MARTA, CobbLinc, GCT, and Xpress are the next three largest agencies, with annual operating expenditures of between $15 million and $30 million. CATS,

Connect Douglas, Coweta, CPACS, and Henry have operating budgets of $3.5 million or less.

MARTA's operating expenditures have been trending downward: They were (per the FY 2019 budget) 14 percent lower in 2019 than in 2015. CobbLinc's and GCT's expenditures have been increasing, while Xpress's operating expenditures in 2019 were only slightly lower than in 2015. Operating expenditures for all three of the moderate size agencies (CobbLinc, GCT, and Xpress) peaked in 2017, while CobbLinc's operating expenses began growing again in 2019. Among the smaller agencies, CATS, Connect Douglas, and Coweta have shown upward trends in operating expenditures in the last five years.

In 2017, the region had a greater percentage of its operating revenues generated directly by the agencies relative to national averages. **Figure 13** shows operating revenue sources nationally, in the region, and for all agencies combined *except for* MARTA, in 2017.

Figure 13: Operating revenues by source (2017)



Relative to national averages, directly generated operating revenues in particular make up a significantly larger portion of all operating revenues in the Atlanta region. Directly generated revenues are primarily sales taxes levied to fund MARTA. By contrast, relative to national averages, state funding, local funding, and fares make up smaller portions of operating revenues in the Atlanta region for transit. When looking at all the providers in the Atlanta region *apart from* MARTA, the proportions are more similar to national averages. In most years, no state funding is provided for operating MARTA's services.

4.2.2 Capital Expenditures

A transit agency's capital expenditures include the costs of new vehicles, stations, maintenance facilities, fare collection equipment, information systems, or other one-time procurements. **Table 2** and **Figure 14** show capital expenditures for each agency since 2015.

Table 2: Capital expenditures by agency

Agency	2015	2016	2017	2018	2019
CATS	$36,037	$122,076	$0	$24,754	$184,375
CobbLinc	$1,874,639	$20,192,816	$16,675,040	$12,076,758	$4,110,789
Connect Douglas	$1,051,741	$413,275	$520,043	$1,884,978	$769,932
Coweta	$0	$0	$1,416	$90,888	$128,304
CPACS*	-	$109,953	$120,528	$172,867	$174,500
GCT	$175,779	$12,674,087	$8,700,430	$5,206,500	$19,660,204
Henry	$153,957	$306,738	$221,805	$146,706	-
MARTA	$218,664,084	$158,687,878	$141,480,048	$244,424,367	-
Xpress	$1,053,516	$8,416,016	$15,770,545	$12,305,762	$8,342,081
Total	$223,009,753	$200,922,839	$183,489,855	$276,333,580	$33,370,185

** Transit operations started in FY 2016. Blue cells refer to budgeted figures, as actual expenditures were not available.*

Unlike operating expenditures, capital expenditures in the Atlanta region were on an upward trend between 2015 and 2018.[37] Unsurprisingly due to the nature of capital expenditures, the variation between years in the region is also greater than the variation in operating expenditures, but it is still heavily tied to MARTA's figures. MARTA accounted for 98 percent of the region's capital expenditures in 2015, but its proportion decreased in the following years. CobbLinc, GCT, and Xpress had the next highest capital expenditures between 2015 and 2019, totaling between $45 million and $55 million each.

[37] This may be the case for 2019 as well; however, because 2019 data for MARTA's and Henry's capital expenditures were not available at the time of publication, it was not possible to confirm this trend.

Figure 14: Capital expenditures by agency

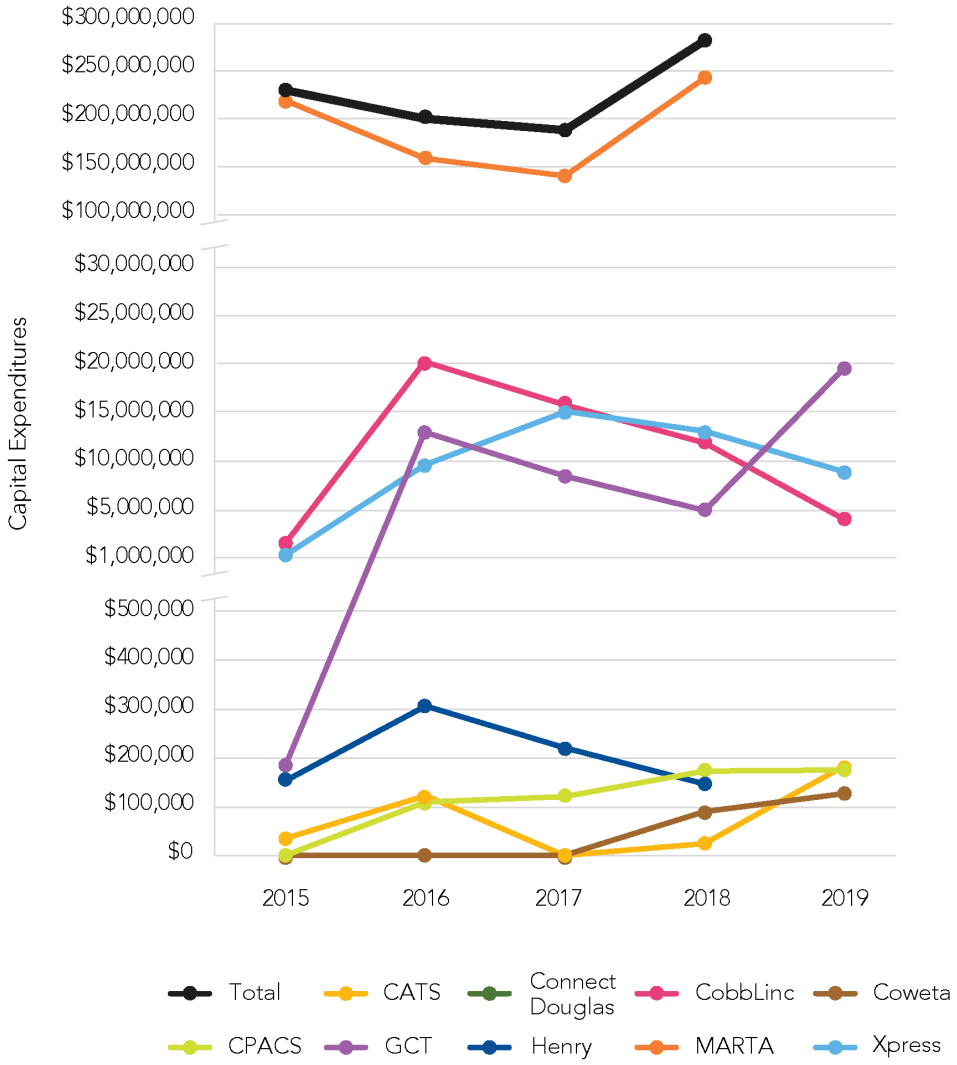
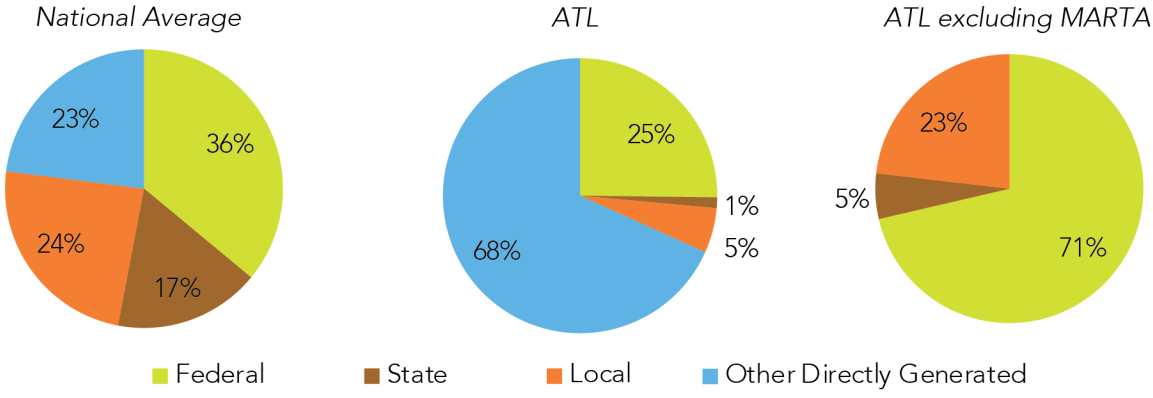


Figure 15 shows capital revenues by source nationally, in the region, and for all ATL agencies combined except for MARTA, in 2017.

Figure 15: Capital revenues by source (2017)



Sales taxes and fees levied by MARTA covered the majority of the agency's (and region's) capital expenditures in FY 2017. Excluding MARTA, no other agency considerably applied fares or other directly generated funds to capital improvements. Relative to national averages, across the ATL region, federal and local funding also make up smaller proportions of capital revenues, and state funding for capital expenditures is minimal. Among the non-MARTA ATL agencies, federal funding made up almost twice the share of all capital revenues compared to national averages, the state share of funding was very modest, and local contributions were on par with national averages.

4.2.3 Operating Expenditures per Capita

Operating expenditures per capita is a measure of the total investment in transit operations relative to the population of a region. As the Atlanta region's population has grown since 2015, operating expenditures have also increased (**Table 3**), resulting in year-over-year fluctuations but relatively modest average annual growth on a per capita basis. The growth in per capita operating expenditures in the region are significantly less than the rate of inflation over the five-year period, which totaled about 8 percent. Increasing operating expenditures reflect inflation and the overall increase in revenue hours and revenue miles of service provided, including newly implemented services such as fixed-route bus service in Douglas and Henry Counties. On a per capita basis, the Atlanta region expends significantly less on providing transit service relative to peer regions such as Miami, Minneapolis, and Seattle.

Table 3: Total operating expenditures per capita by fiscal year

2015	2016	2017	2018	2019*
$105.58	$111.33	$99.40	$105.37	$108.62

**FY 2019 figures represent budgeted operating costs.*

4.3 On-Time Performance

On-time performance is one of the most critical metrics from a customer perspective: If transit cannot be relied upon to arrive on time, travelers will look to other modes of transportation to get to their destinations. Maintaining high on-time performance rates is a function of traffic conditions, operations planning including scheduling realistic arrival times or windows, and accurately estimating dwell time.

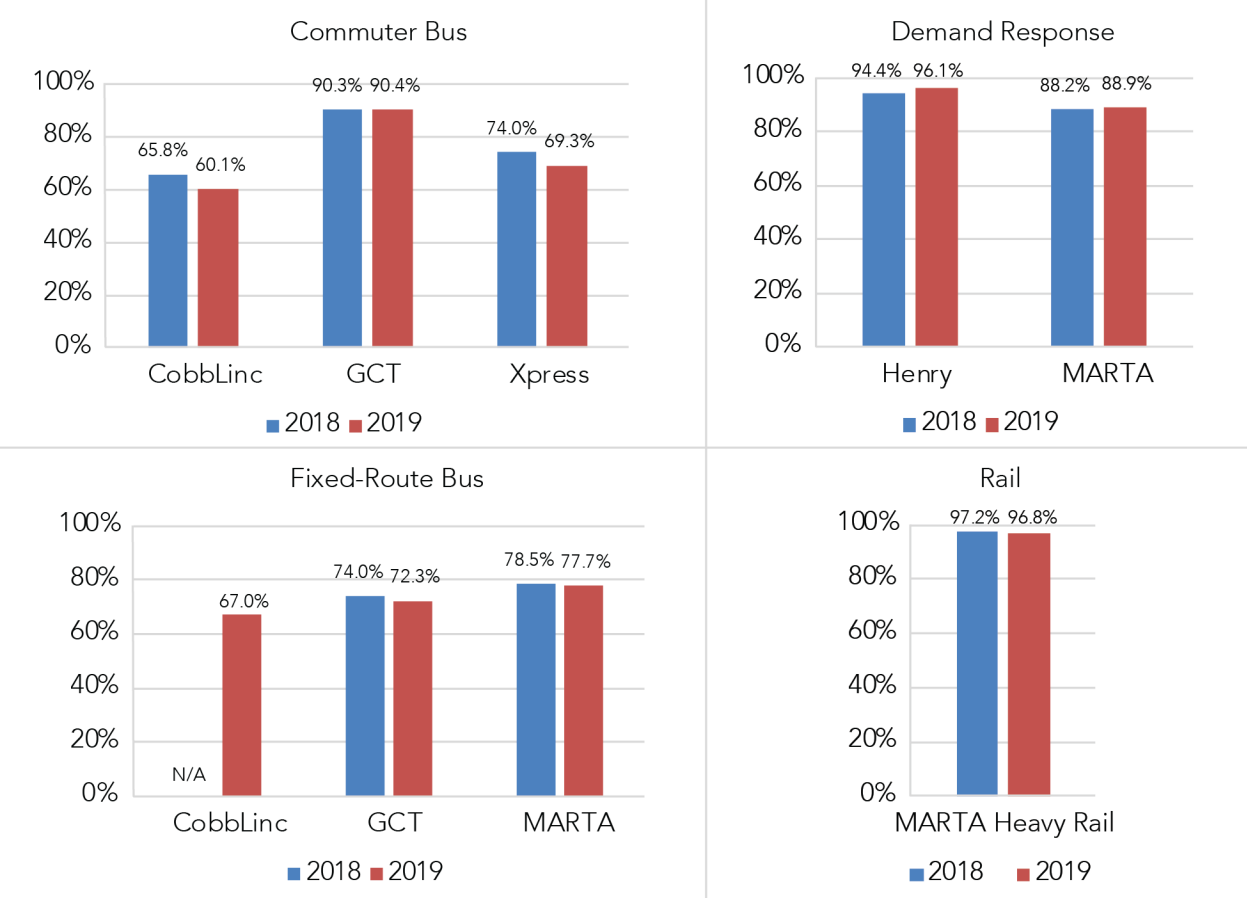
For fixed-route bus, commuter bus, and rail, most agencies in the ATL region define "on time" as between zero minutes early and five minutes late of a scheduled departure. For demand-response service, agencies said they define "on time" as within either a 30- or 35-minute window relative to the scheduled pick-up time. These definitions are listed in **Table 4** by agency and by mode (for agencies that were able to provide data).

Table 4: On-time performance definitions by agency and mode

Agency	Mode	OTP definition (before/after schedule)
CobbLinc	Fixed-route bus | Commuter bus	0 minutes/5 minutes
GCT	Fixed-route bus | Commuter bus	0 minutes/5 minutes
Henry	Demand response	35-minute window from scheduled time
MARTA	Fixed-route bus | Heavy rail	0 minutes/5 minutes
	Demand response	30-minute window from scheduled time
Xpress	Commuter bus	*Pick-up stops:* 0 minutes/5 minutes *Drop off-only stops:* No later than 5 minutes

On-time performance is shown, by mode, in **Figure 16.**[38]

Figure 16: On-time performance by mode (2018-19)



Most of the region's on-time performance dropped slightly from 2018 to 2019, with the exceptions of GCT commuter bus and MARTA demand response, which improved their on-time performance. The best-performing modes in 2019 with respect to on-time performance were MARTA heavy rail (97 percent on time) and Henry demand response (96 percent on time). In general, on-time performance is heavily influenced by the level of traffic congestion; the lack of influence of traffic congestion helps to explains why MARTA heavy rail has the highest reliability among all modes in the region.

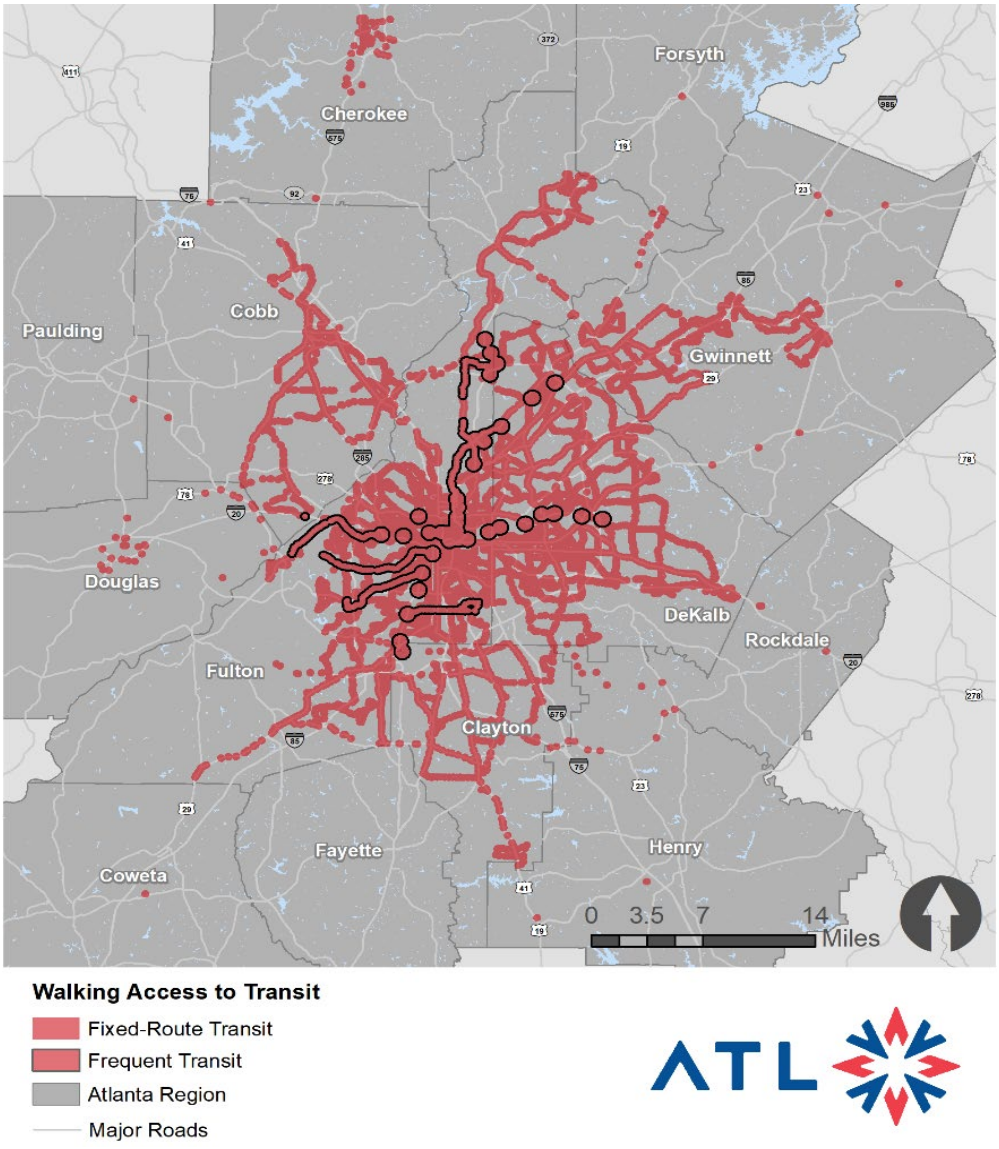
[38] Too little data was available for FY 2017 and prior for meaningful trend analysis. Also, because not every agency was able to provide the number of timepoints used to calculate on-time performance, agency- and region-wide averages could not be calculated.

4.4 Equity

4.4.1 Access to Transit

Access to fixed-route transit (bus, streetcar, and rail) has significant implications for mobility and equity. Areas with fixed-route transit provide much greater access to opportunity for their residents, and this access is even more critical for those who do not have access to other forms of transportation. **Figure 17** shows walking access to transit in the Atlanta region.[39]

Figure 17: Fixed-route and frequent transit access area



The red areas shown in **Figure 17** are those within walking distance to fixed-route transit stops (both bus and rail) as of September 2019. The red areas outlined in black

[39] Walking access to transit was defined as a quarter-mile radius around bus stops and a half-mile radius around rail stations.

are areas that have not only access to fixed-route transit, but access to *high frequency* fixed-route transit, which is defined by the presence of 15-minute (or greater) average service frequency throughout the day.

Table 5 shows the total number and percentage of different population groups with access to fixed-route transit and high frequency fixed-route transit.[40]

Table 5: Access to fixed-route transit and high frequency fixed-route 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	542,714	206,400	38.0%	32,607	6.0%
Minority Population	2,733,546	911,291	33.3%	116,455	4.3%
Total Population (2017)	4,943,718	1,286,940	26.0%	189,906	3.8%

Twenty-six percent of the ATL region's population resides within walking distance to fixed-route transit. A greater proportion of low-income and minority groups have access to fixed-route transit, at approximately 38 and 33 percent of residents, respectively. Just under 4 percent of the ATL region's population has access to frequent transit. However, among low-income and minority groups, this figure rises to approximately 6 percent and slightly over 4 percent, respectively.

This demonstrates both that current services are more likely to be available to low-income and minority households relative to the population overall, and also that a very small proportion of the region's total population (of any demographic group) currently has access to high frequency transit. It is important to note that this analysis does not take into account pedestrian barriers, such as highways, that may make walking to transit more difficult; research shows that the presence of pedestrian infrastructure has a significant impact on transit usage by expanding transit catchment areas.[41]

4.4.2 DBE/MBE Participation

Many public agencies set goals for working with Disadvantaged Business Enterprises (DBEs) and Minority-Owned Business Enterprises (MBEs). These programs are in place

[40] ACS 5-year estimates for 2013-2017. This analysis used 2017 population data, as this is the most recent year for which data at the required level of detail was available. However, the analysis reflects services available as of September 2019.

[41] T.A. Litman, "Economic Value of Walkability," T*ransportation Research Record: Journal of the Transportation Research Board*, 1828(-1), 3–11, 2003.

to make sure that public monies are used to support businesses owned by historically disadvantaged populations. Some public agencies strive to award a target percentage of their contracted dollars within a given time period to DBE/MBE businesses. Each agency sets its own DBE/MBE goal using a methodology provided by the Federal Transit Administration, which takes into account the history of DBE/MBE participation and the number of DBE/MBE business located in the area.[42] **Table 6** summarizes the DBE/MBE goals and actual performance for five agencies for the past four years, with years exceeding the goal in green and years falling short of the goal in red.

Table 6: DBE/MBE participation goals and performance

	CobbLinc		Connect Douglas		GCT		MARTA		SRTA (including Xpress)	
Fiscal Year	Goal	Actual	Goal	Actual	Goal	Actual	Goal	Actual	Goal	Actual
2015	7%	10%	19%	2%	5%	4%	30%	55%	11%	10%
2016	7%	7%	19%	2%	5%	4%	30%	32%	11%	15%
2017	7%	4%	19%	4%	5%	2%	30%	33%	11%	5%
2018	7%	13%	15%	0%	5%	4%	16%	23%	8%	16%
2019	7%	23%*	15%	TBD	6%	TBD	16%	TBD	8%	4%*

**Data shown is for January-June 2019 only.*

MARTA, the most regional and by far the largest of the service providers, exceeded its DBE/MBE goal every year for the period between 2015 and 2018, significantly exceeding its goals in 2015 and 2018. In addition, Xpress and CobbLinc met their DBE/MBE goals during at least half of the years during that period, and Xpress significantly exceeded its goal in 2018. The other two agencies—Connect Douglas, and GCT—did not meet their DBE/MBE goals in any year in this period, although GCT came within 1 percent in 2015, 2016, and 2018.

4.5 Level of Service

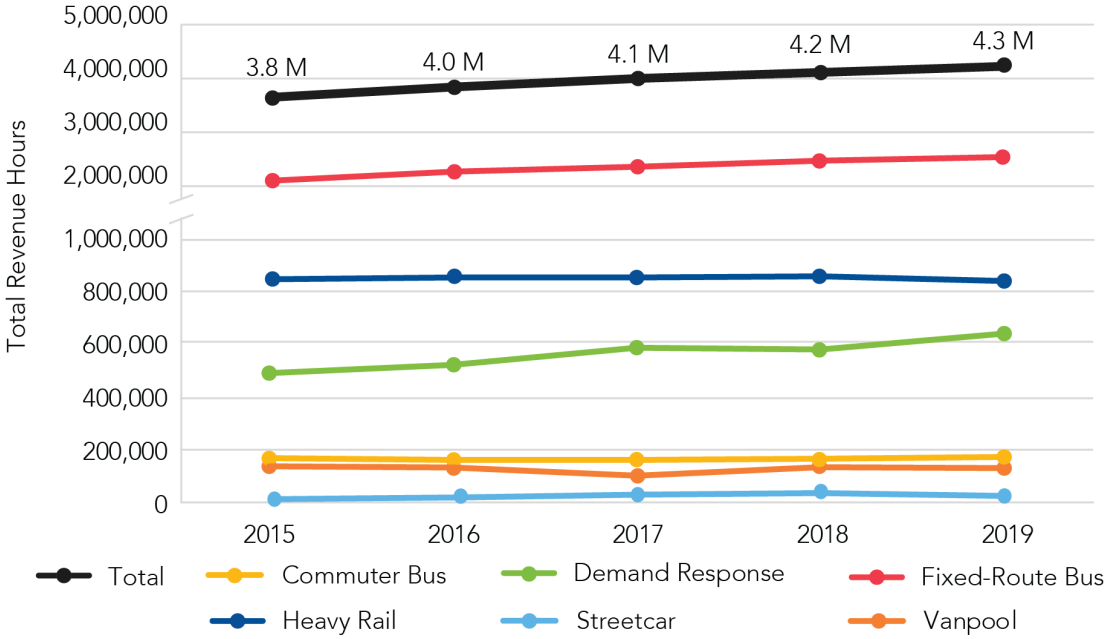
Level of service is the amount of transit service provided, typically measured in terms of vehicle revenue hours and vehicle revenue miles. The level of transit service in the Atlanta region overall has continued to grow in recent years despite declining ridership.

[42] Agencies can set race-neutral and/or race-conscious goals. Race-neutral programs assist all small businesses, while race-conscious programs focus specifically on providing business opportunities to MBEs. Federal regulatory changes implemented in 2018 led agencies to prioritize race-neutral DBE participation, resulting in some Atlanta-area agencies' DBE/MBE goals to decrease in that year. For more information, see: U.S. DOT, "What's New in the New DOT DBE Rule?" 2016.

4.5.1 Level of Service by Mode

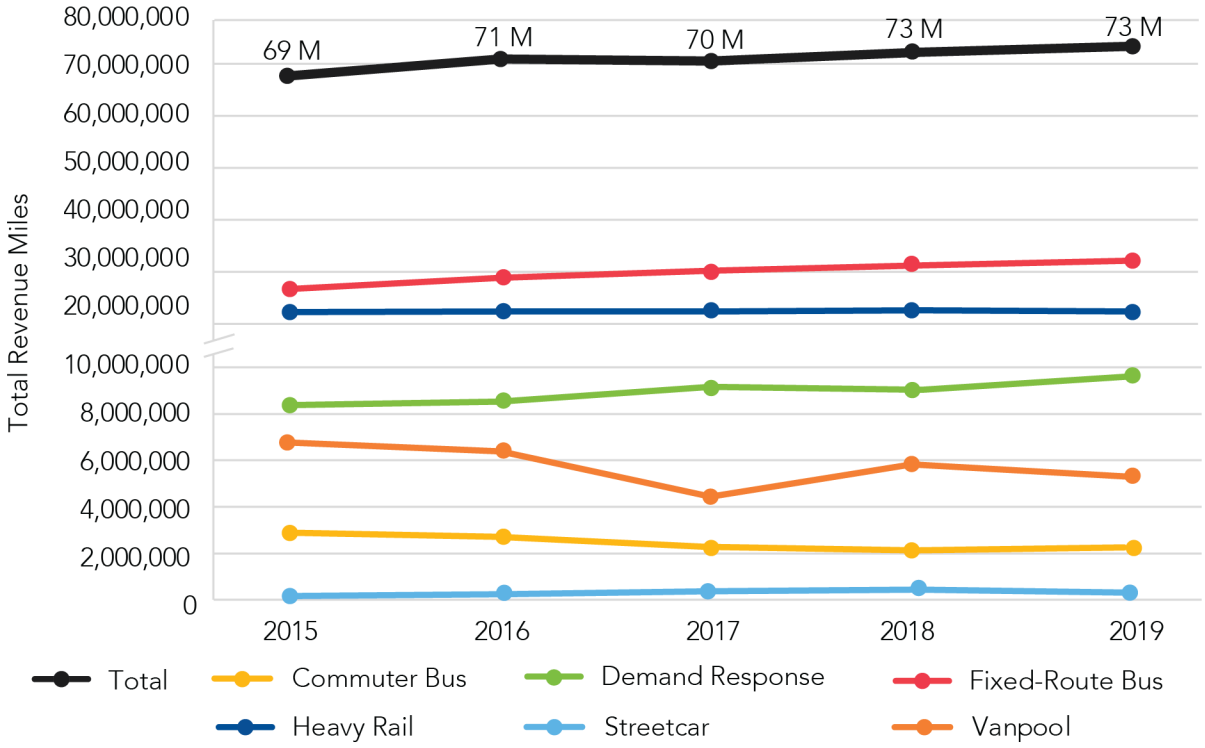
Level of service in the Atlanta region has increased over the past five years, both for revenue hours (**Figure 18**) and revenue miles (**Figure 19**).

Figure 18: Regional revenue hours of service by mode



Across all modes, total revenue hours of service have increased by 15 percent since 2015. Revenue hours of each individual mode have also increased slightly, with the largest increases in fixed-route bus and demand-response services.

Figure 19: Revenue miles of service by mode



Across all modes, total revenue miles of service have increased by 7 percent since 2015. Revenue hours of each individual mode have also increased slightly, with the largest increases in fixed-route bus and demand-response services.

4.5.2 Level of Service by Agency

Figure 20 and **Figure 21** compare revenue hours and miles of service by agency.

Figure 20: Revenue hours by agency

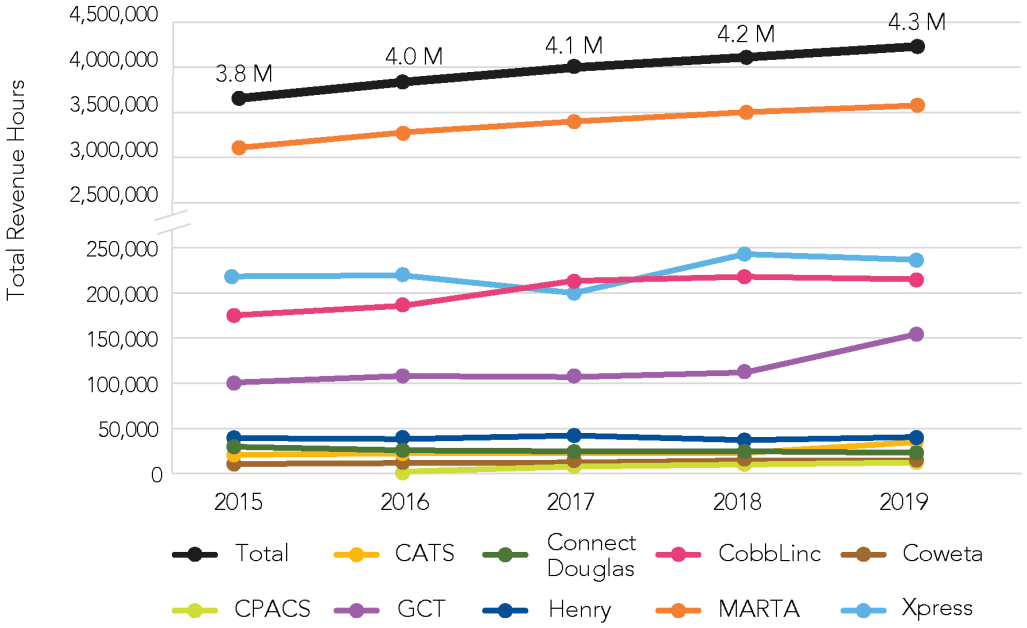
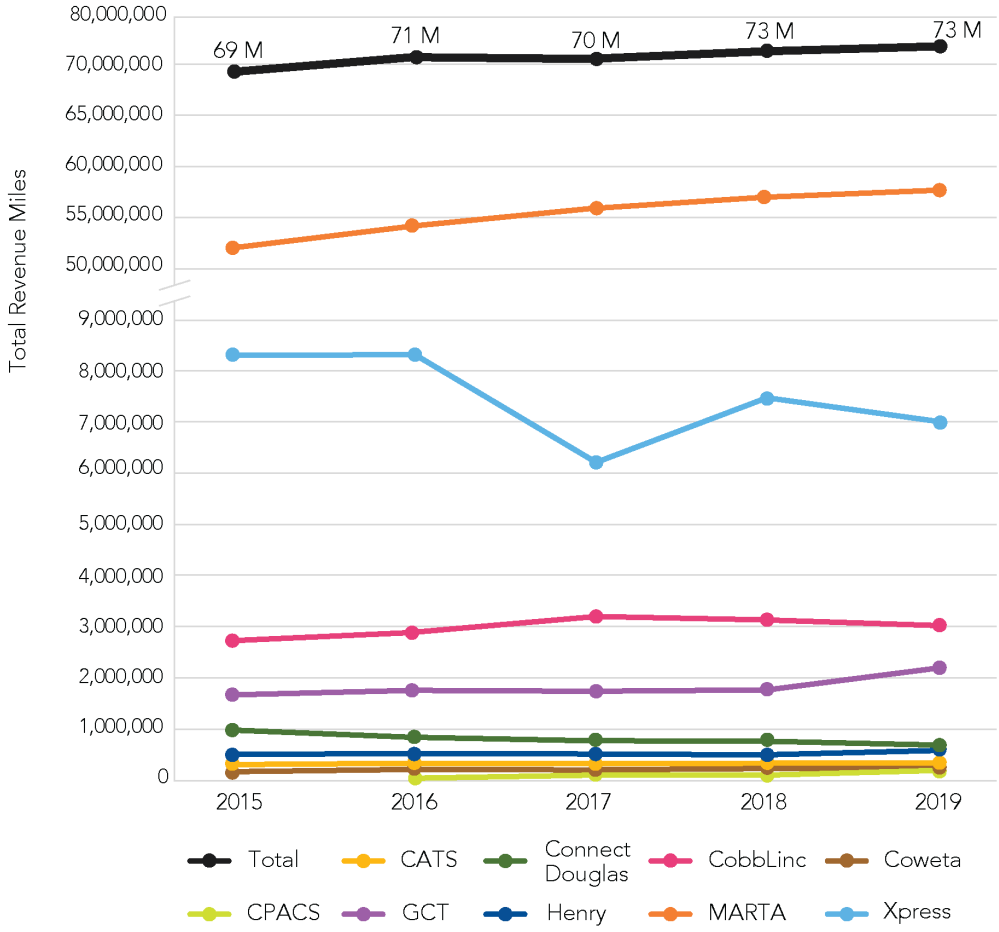


Figure 21: Revenue miles by agency



Most agencies have increased their levels of service over the past five years. GCT significantly increased its service; its revenue hours and revenue miles increased by 53 percent and 32 percent, respectively, largely because of an increase in fixed-route bus and demand-response services.

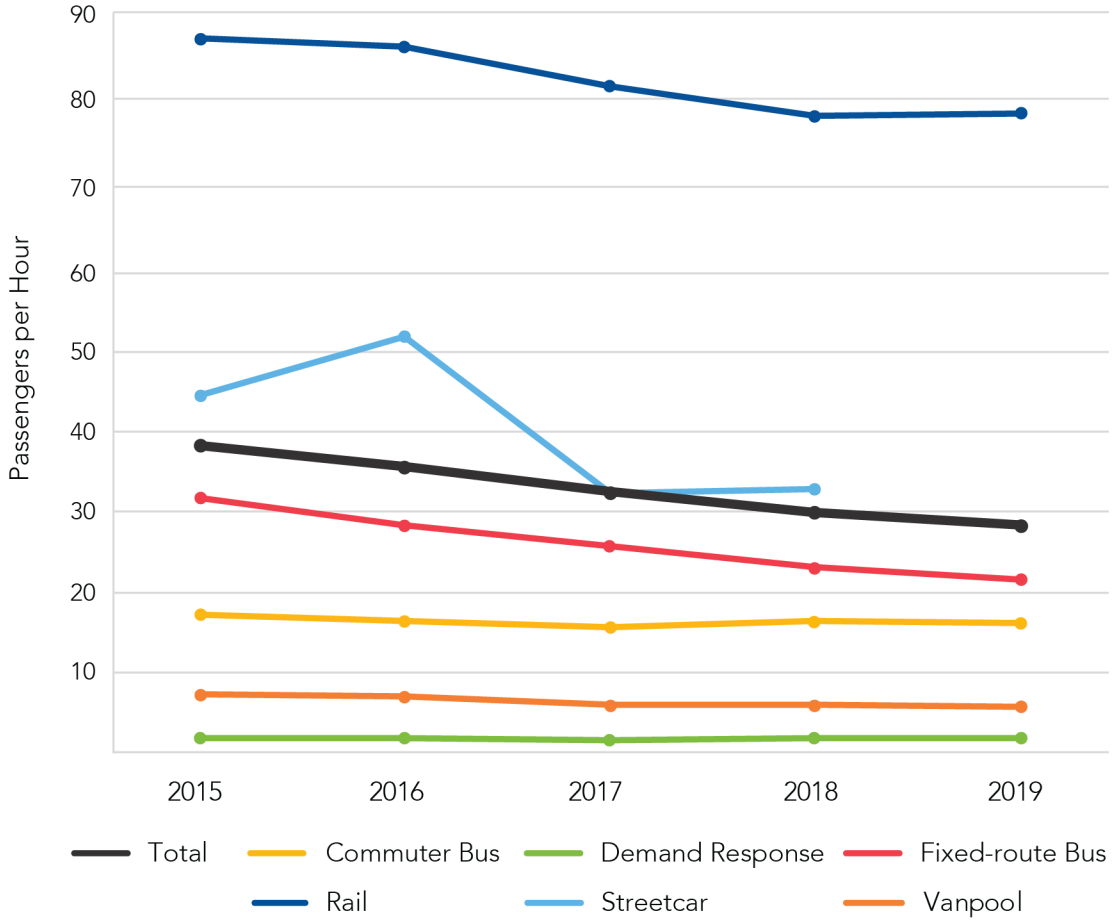
4.6 Operational Productivity

Operational productivity measures how many passengers are being served relative to the amount of service provided. Passenger trips per revenue hour and passengers per revenue mile of service are two key measures of operational productivity. Transit agencies that maximize operational productivity are able to serve more passengers with a given amount of resources. Operational productivity is influenced by agency efficiency as well as by demographics (e.g., presence of transit-dependent populations) and any factors that influence ridership such as fares, gas prices, and the market, including the land use context.

4.6.1 Passengers per Revenue Hour

The total passengers per vehicle revenue hour of service is shown in **Figure 22** for each of the transit modes provided in the ATL region: commuter bus, demand response, fixed-route bus, rail, streetcar, and vanpool. The regional total represents total passenger trips served divided by the total vehicle revenue hours provided in the region.

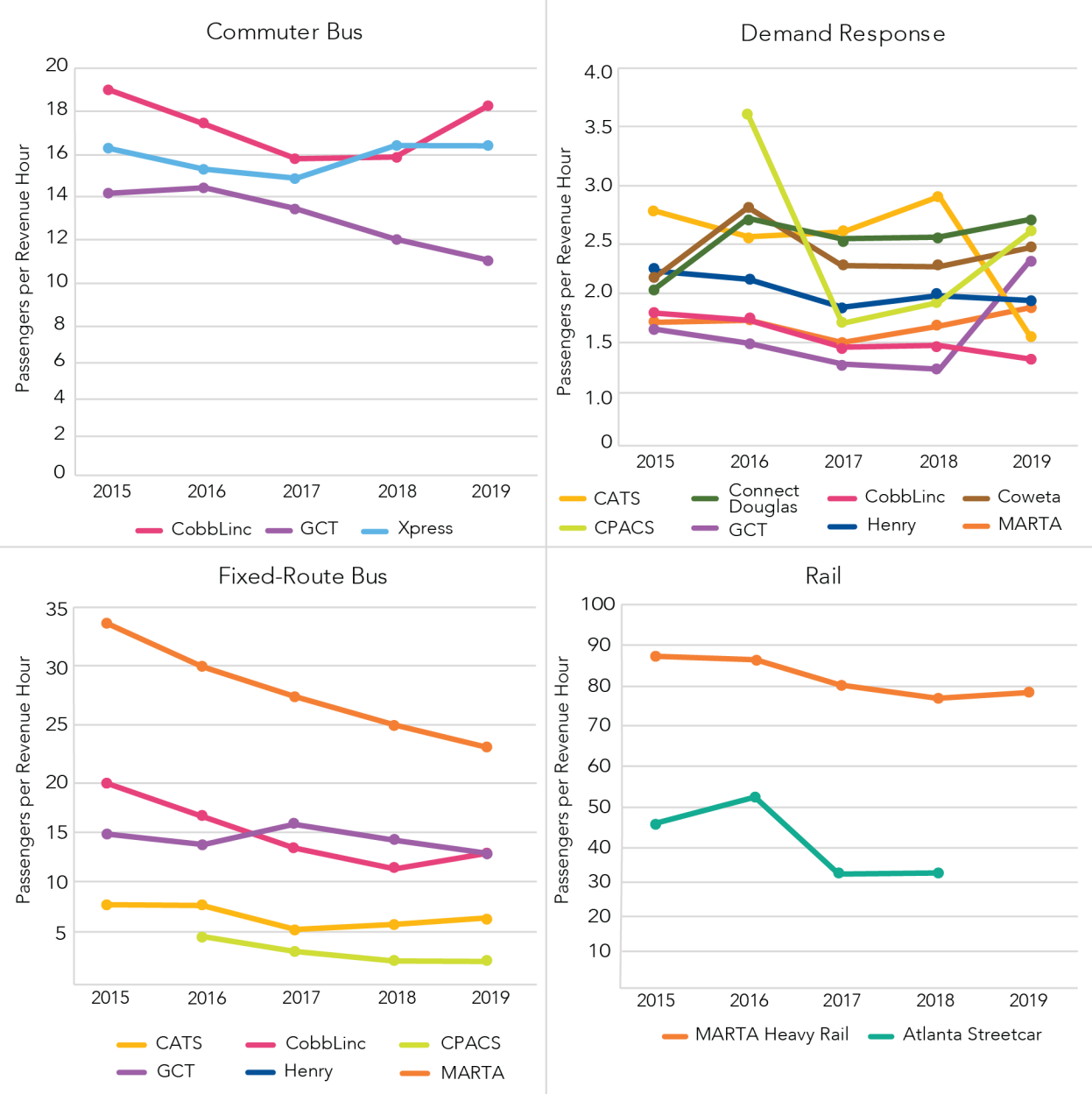
Figure 22: Passengers per revenue hour by mode



Across all modes, operational productivity by revenue hour decreased from 38 passengers per revenue hour in 2015 to 29 in 2019. This trend is generally consistent with national trends. However, rail, streetcar, and commuter bus passengers per revenue hour have increased slightly in recent years. Rail passengers per revenue hour, which is the highest of all modes, increased in 2019 due to a small decrease in service hours without significant loss of ridership. Commuter bus passengers per revenue hour also increased in 2018 and 2019 compared to 2017, reflecting ridership increases that outpaced increases in service hours. The region's fixed-route bus passengers per revenue hour fell nearly 32 percent from 2015 to 22 passengers per revenue hour in 2019. Meanwhile, passengers per revenue hour remained nearly constant for vanpool and demand response, though these two modes have lower productivity overall.

Figure 23 shows passengers per revenue hour for each transit service in the region.

Figure 23: Passengers per revenue hour by service



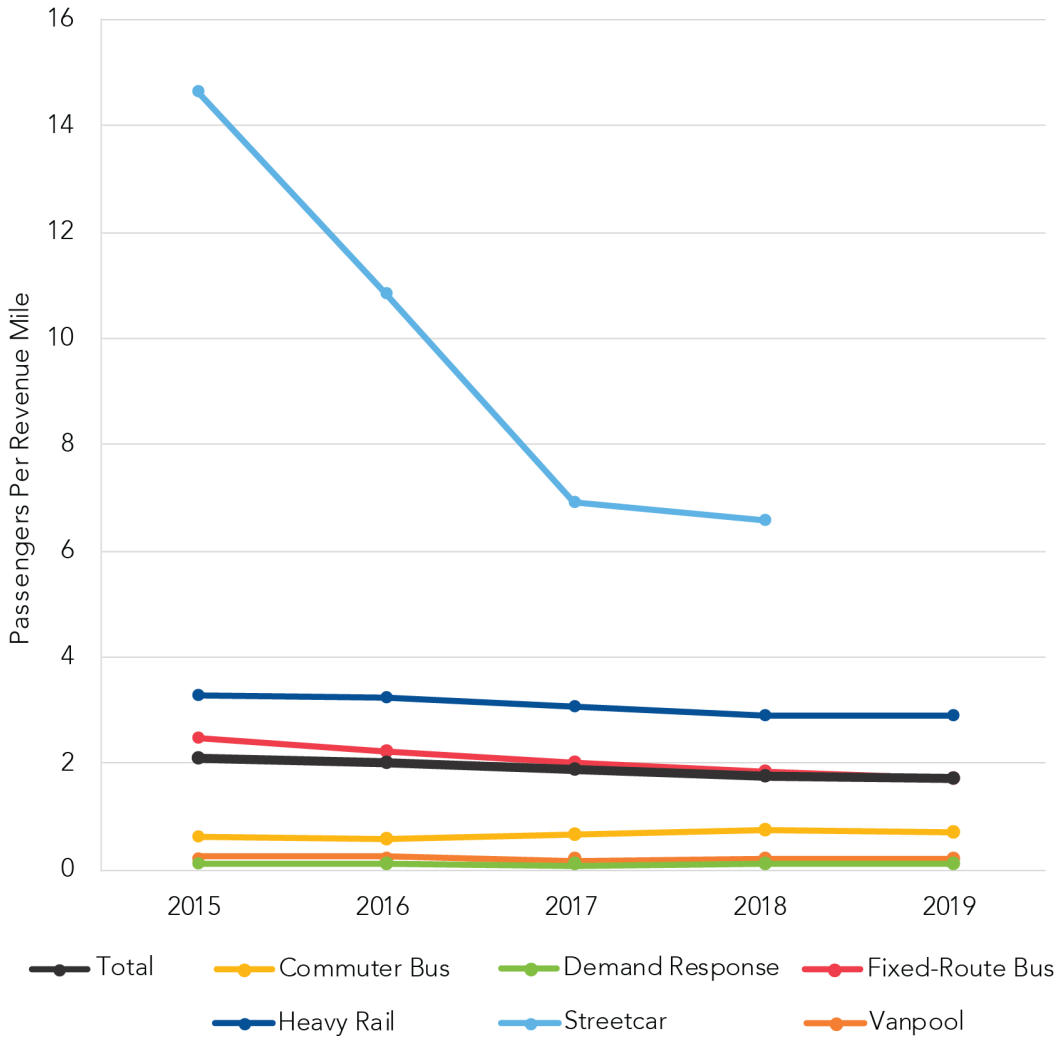
All fixed-route bus and rail services served fewer passengers per revenue hour in 2019 than in 2015 (or 2016, in the case of CPACS); however, CobbLinc's and CATS's bus service productivity increased between 2018 and 2019 as did MARTA heavy rail's, indicating the reversal of a negative trend. Despite declines in passengers per revenue hour between 2015 to 2017, Xpress commuter bus productivity recovered in 2018, and remained stable at 16 passengers per revenue hour in 2018 and 2019. CobbLinc also experienced declines in passengers per revenue hour between 2015 and 2018 but recovered in 2019, reaching 18 passengers per revenue hour. Trends in

passengers per revenue hour for demand response services varied according to individual changes for each agency. Connect Douglas, Coweta, GCT, and MARTA all saw increases in 2019 relative to 2015, with fluctuations in both directions in the interim.

4.6.2 Passengers per Revenue Mile

Operational productivity can also be measured in terms of passengers per revenue mile. Trend lines for the total passengers per revenue mile by mode are displayed in **Figure 24**. Similar to passengers per revenue hour, factors influencing ridership are also likely to influence performance with respect to this metric.

Figure 24: Passengers per revenue mile by mode

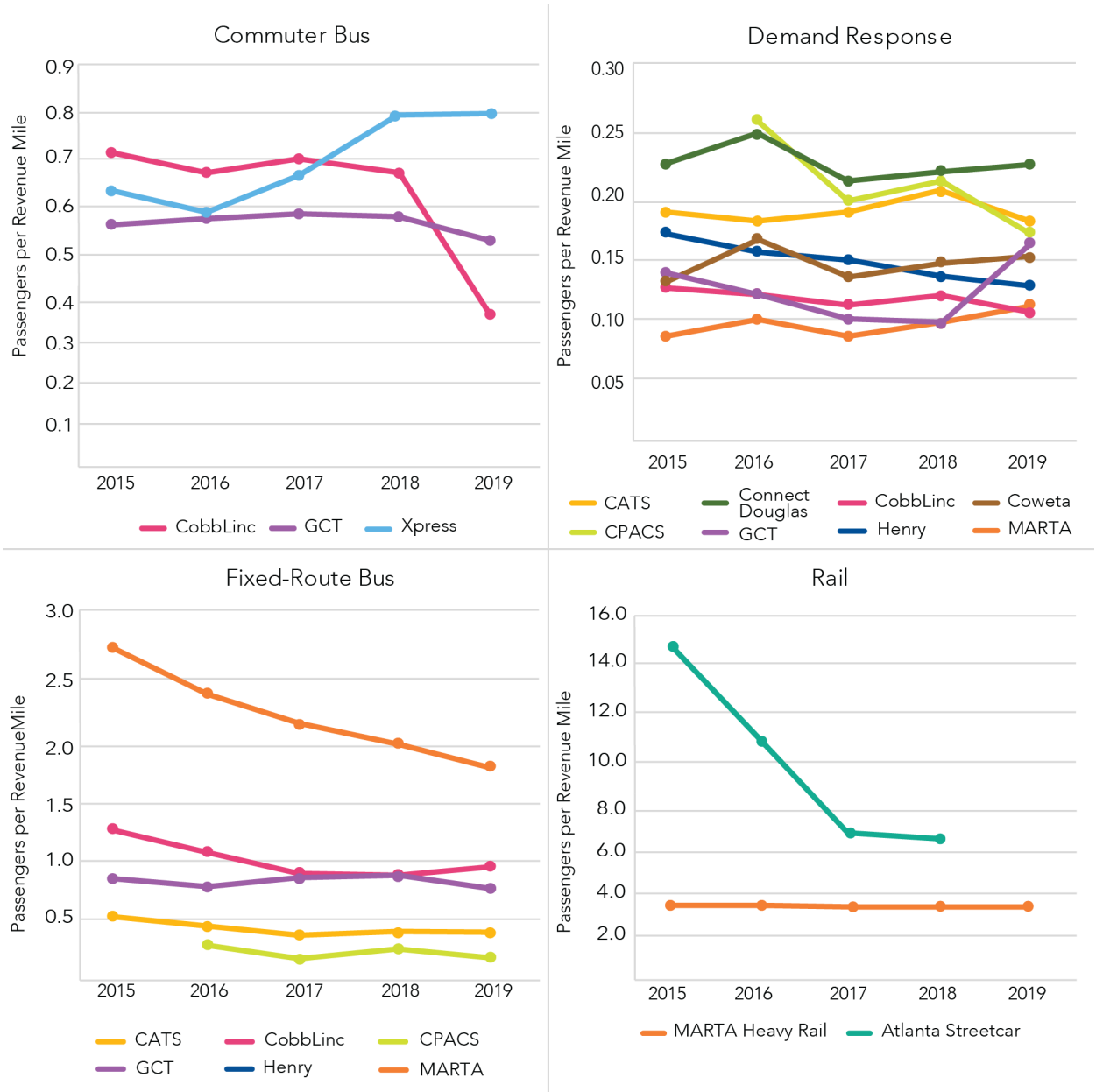


Similar to total passengers per revenue hour, all trips divided by total revenue miles in the ATL region across all modes showed a slight decrease in the past five years. Fixed-route bus passengers per revenue mile decreased most significantly. However, heavy rail passengers per revenue mile increased slightly in 2019, and commuter bus

operational productivity per revenue mile improved to 0.7 passengers per revenue mile since 2015. The region's vanpool and demand response services, which serve fewer passengers per revenue mile than other modes, remained relatively constant in operational productivity over recent years. In 2019, vanpool served 0.14 passengers per revenue mile, while demand response served 0.12 passengers per mile of revenue service. Likely due to its short length and the use of the Streetcar for relatively short trips, passengers per revenue mile is very high for Streetcar, although it decreased after fares were implemented in 2016.

Operational productivity as passengers per revenue mile is shown by mode for each agency in **Figure 25**.

Figure 25: Passengers per revenue mile by service



Across the five-year period, fixed-route bus passengers per revenue mile decreased for CATS, CobbLinc, and MARTA, while the GCT and CPACS fixed-route bus services served about the same passengers per revenue mile. Furthermore, CobbLinc saw an uptick in its passengers per revenue mile in 2019 compared to the previous year. MARTA's heavy rail passengers per revenue mile also remained relatively constant. However, passengers per revenue mile for the Streetcar decreased significantly from 2015 to 2018, which, again, may have been partly due to fare implementation. Commuter bus productivity per revenue mile increased for Xpress over the five-year period to reach 0.80 passengers per revenue mile in 2019, while CobbLinc and GCT commuter bus operational productivity fell slightly from 2015 to 2019.

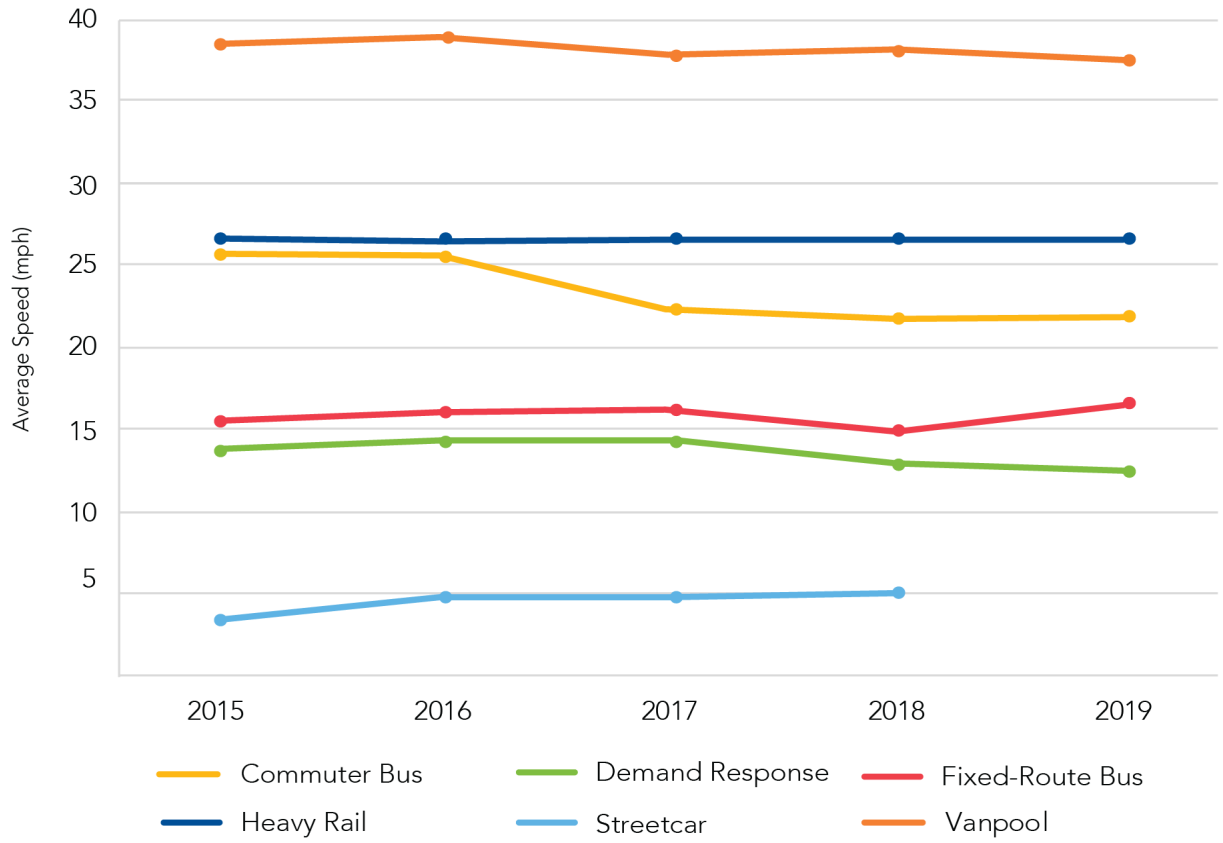
The trends for demand response varied by agency. In 2019, the demand response services served between 0.11 and 0.23 passengers per revenue mile. It may be difficult for agencies with large service areas to significantly increase operational productivity with respect to passengers per revenue mile, since demand response vehicles often carry relatively few passengers at a time and may travel farther distances, resulting in more revenue miles per passenger. However, GCT's demand response passengers per revenue mile increased in 2019 after increasing its level of service significantly, likely due to the introduction of GCT's microtransit pilot program.

4.6.3 Average Travel Speeds

Travel speeds illustrate, on average, how quickly transit service transports passengers. Operational speed is impacted by numerous factors, including frequency of stops and presence of traffic congestion. For example, commuter bus services, which have more limited stops and often travel on highways (sometimes in toll lanes), operate at much higher speeds than fixed-route buses.

Average travel speeds by mode were *estimated* by dividing total revenue miles by total revenue hours. Average travel speeds by mode in the region are shown in **Figure 26**.

Figure 26: Revenue miles per revenue hour by mode



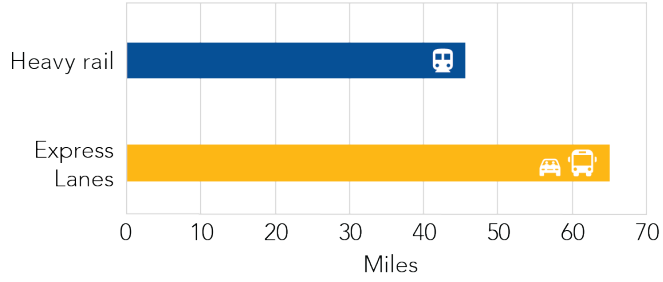
In general, average transit operating speeds in the region as a whole are similar to national averages. The region's heavy rail, fixed-route bus, and vanpool services operate at equivalent or faster speeds than national averages, while all other modes are slightly slower than the national average.

Operating speeds in the Atlanta region ranged in FY 2019 from approximately five miles per hour at a low to 38 miles per hour at a high. Over the five-year period, operating speeds remained largely stable, with small gains in demand response and fixed-route bus service and small declines in commuter bus service.

4.6.4 Transit Priority Infrastructure

Transit services, when prioritized on roadways or in other separated right-of-way (ROW) such as below or above-grade tracks, provide a better customer experience and also enhance the return on investment. Transit prioritization typically involves investments in, or upgrades to, infrastructure to speed up transit vehicles. Investments in dedicated

Figure 27: Miles of transit-dedicated right-of-way



ROW for public transportation can significantly improve transit travel speeds, leading to more competitive travel times and more reliable operations, not only improving customer satisfaction and ridership, but also reducing operating costs.[43]

From December 1994 through October 2001, GDOT deployed the region's first system of controlled access or "managed lanes," commonly referred to as High Occupancy Vehicle (HOV) Lanes. HOV lanes are designed to decrease driving times, reduce stress and improve the region's air quality by designating the lanes for the exclusive use of carpools, vanpools, and transit buses — all ways of travel that reduce single-occupancy vehicles (SOVs) on our busy roads. Approximately 90 lane-miles of HOV lanes operate on I-75, I-85 and I-20 24 hours a day, seven days a week in the following areas:

- I-75 inside I-285 (Cobb, Fulton, and Clayton Counties)
- I-75/I-85 (Downtown Connector)
- I-85 between Brookwood Interchange and I-285- DeKalb County
- I-20 east of I-75/I-85 (Downtown Connector) - Fulton, DeKalb Counties

Table 7: Miles and opening of Express Lanes on interstates

System	Miles of Lane	Opening Year
I-85	15	2011
I-75 South	10	2017
I-85 Extension	10	2018
Northwest Corridor	30	2018
Total	**65**	

Since 2011, the Atlanta region has been implementing a system of tolled managed lanes called "Express Lanes" consisting of High Occupancy Toll (HOT) lanes and Express Toll Lanes (ETLs), which now exceed the heavy rail network in length (**Figure 27**). Currently, the region has 65 miles of Express Lanes for high occupancy vehicles—buses, vanpools, (and in the case of HOT lanes, carpools)—that single occupancy vehicles can access by paying a toll using SRTA's Peach Pass toll system. As shown in **Table 7**, all of the region's miles of Express lanes have been added in the last decade, and the ATL is currently considering additional projects that would increase the presence of preferential as well as dedicated ROW for transit in the region. For this reason, tracking this KPI over time will enable measurement of the region's level of investment in infrastructure that prioritizes transit and thereby maximizes the number of people that can travel on roadways and along other ROW.

4.7 Financial Productivity

Financial productivity measures indicate how efficiently financial resources are being used to provide transit service. Services that demonstrate higher financial productivity are able to offer more service to more people relative to each dollar spent. As with most transit productivity metrics a strong market for transit service,

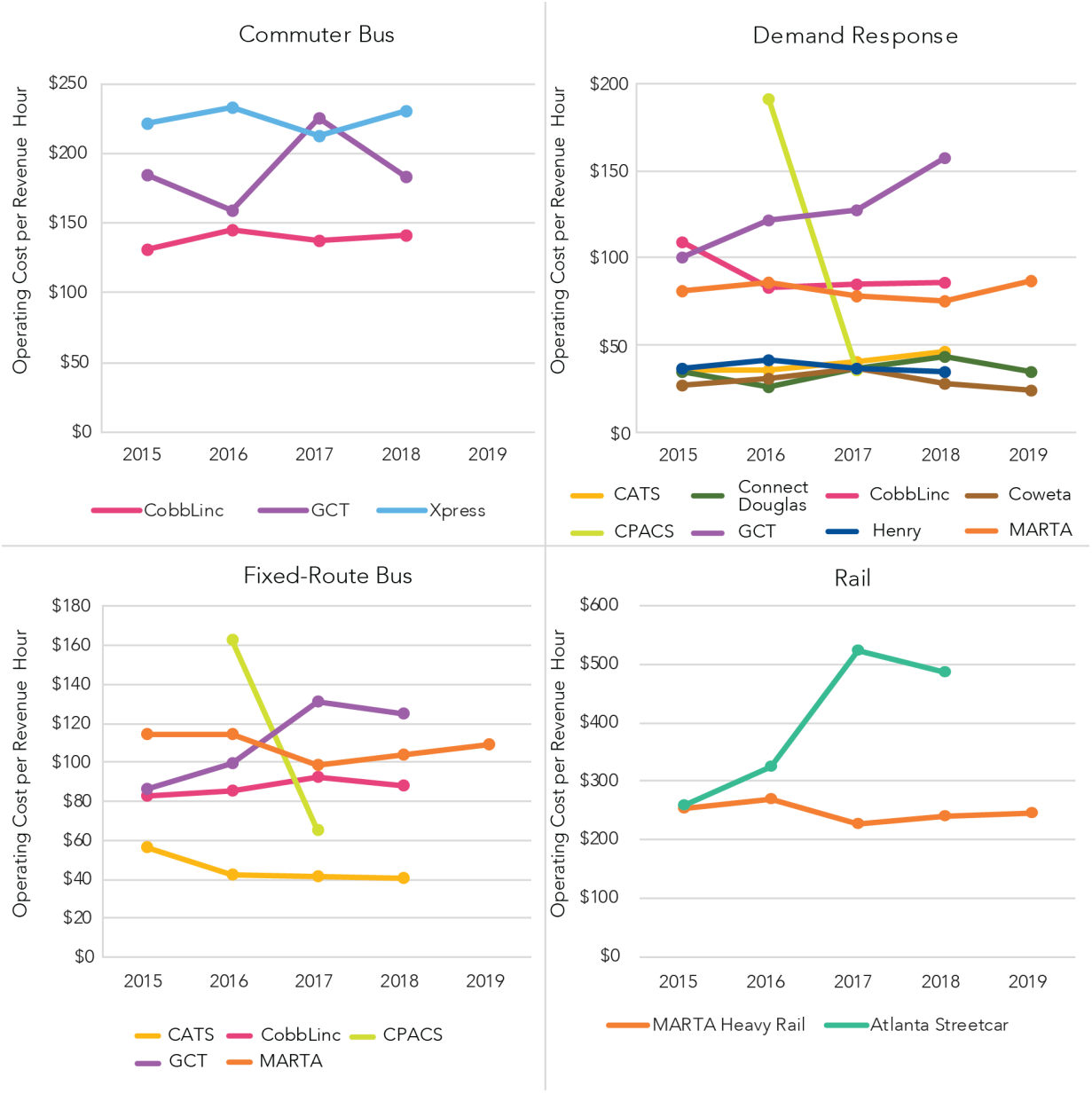
[43] NACTO, "Why Transit Streets Matter," Transit Street Design Guide, 2019.

both in terms of population and land use, has a significant and positive impact on financial productivity.

4.7.1 Operating Cost per Revenue Hour

Operating cost per vehicle revenue hour measures financial productivity relative to the level of service offered. Factors influencing operating cost per revenue hour include operating speed, operator wages, and general expenses including fuel and administration. **Figure 28** shows the trends in financial productivity per revenue hour by mode for each ATL agency.

Figure 28: Operating cost per revenue hour by mode

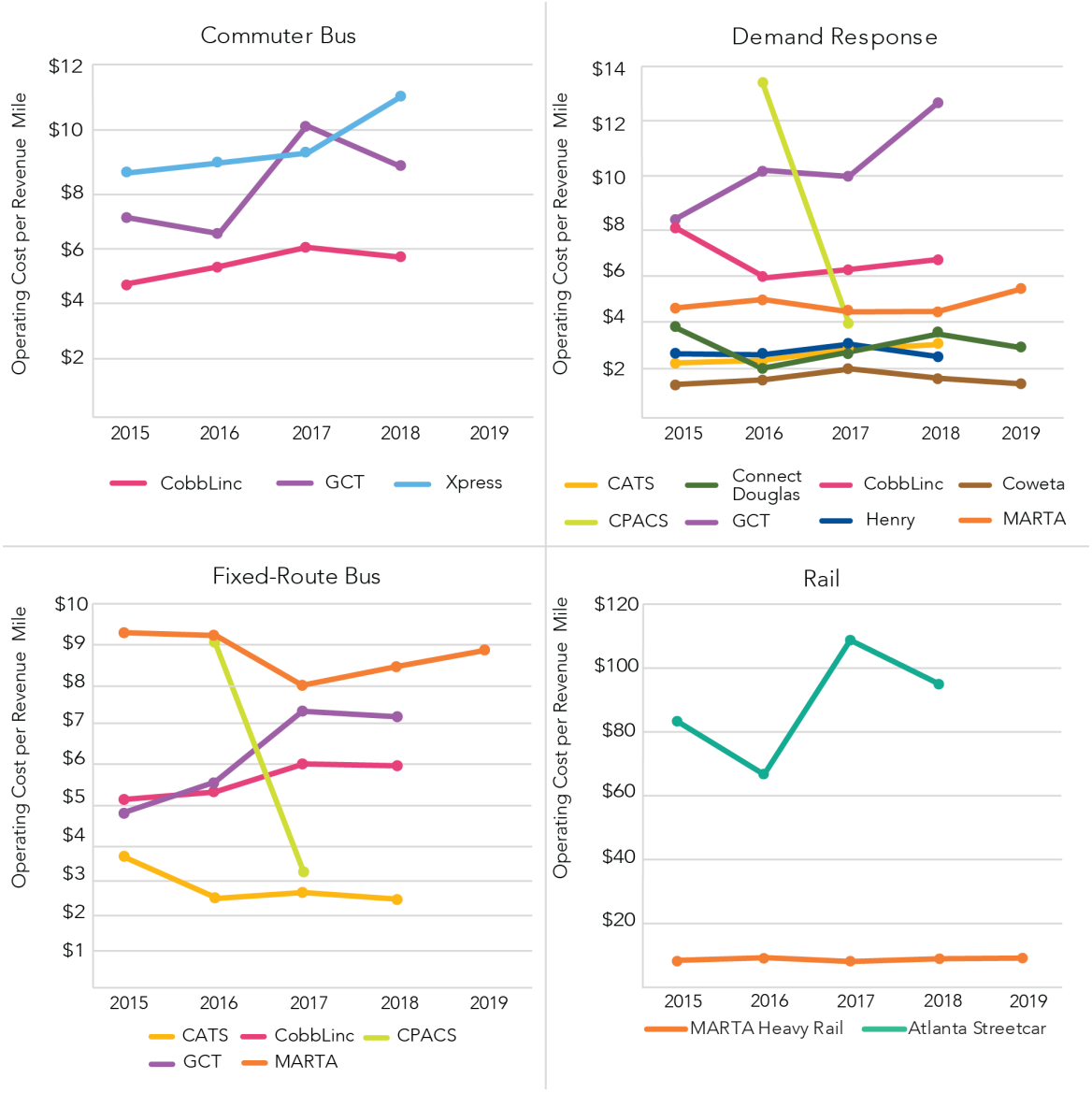


Between 2015 and 2019, MARTA's operating cost per revenue hour maintained similar levels for each mode. Commuter bus operating cost per revenue hour fluctuated each year, with slight increases in 2018 compared to 2015. The operating cost per revenue hour for demand response services, which was typically lower than commuter bus service, remained relatively constant for most agencies. GCT saw an increase in operating cost per revenue hour for both its fixed-route bus and demand-response services. Operating cost per revenue hour decreased significantly for CPACS, which increased levels of service in 2017 without major increases in operating cost. This could be due to the high level of costs associated with initiating operations in 2016. The Streetcar, which began offering more service in 2016, increased operating costs in 2017 before slightly reducing operating cost per revenue hour in 2018.

4.7.2 Operating Cost per Revenue Mile

The operating cost per vehicle revenue mile is another metric that assesses the financial productivity of transit operations. Factors influencing operating cost per revenue mile include operating speed, operator wages, and fuel prices. **Figure 29** shows the trends in financial productivity per revenue mile for each transit service in the ATL.

Figure 29: Operating cost per revenue mile by mode

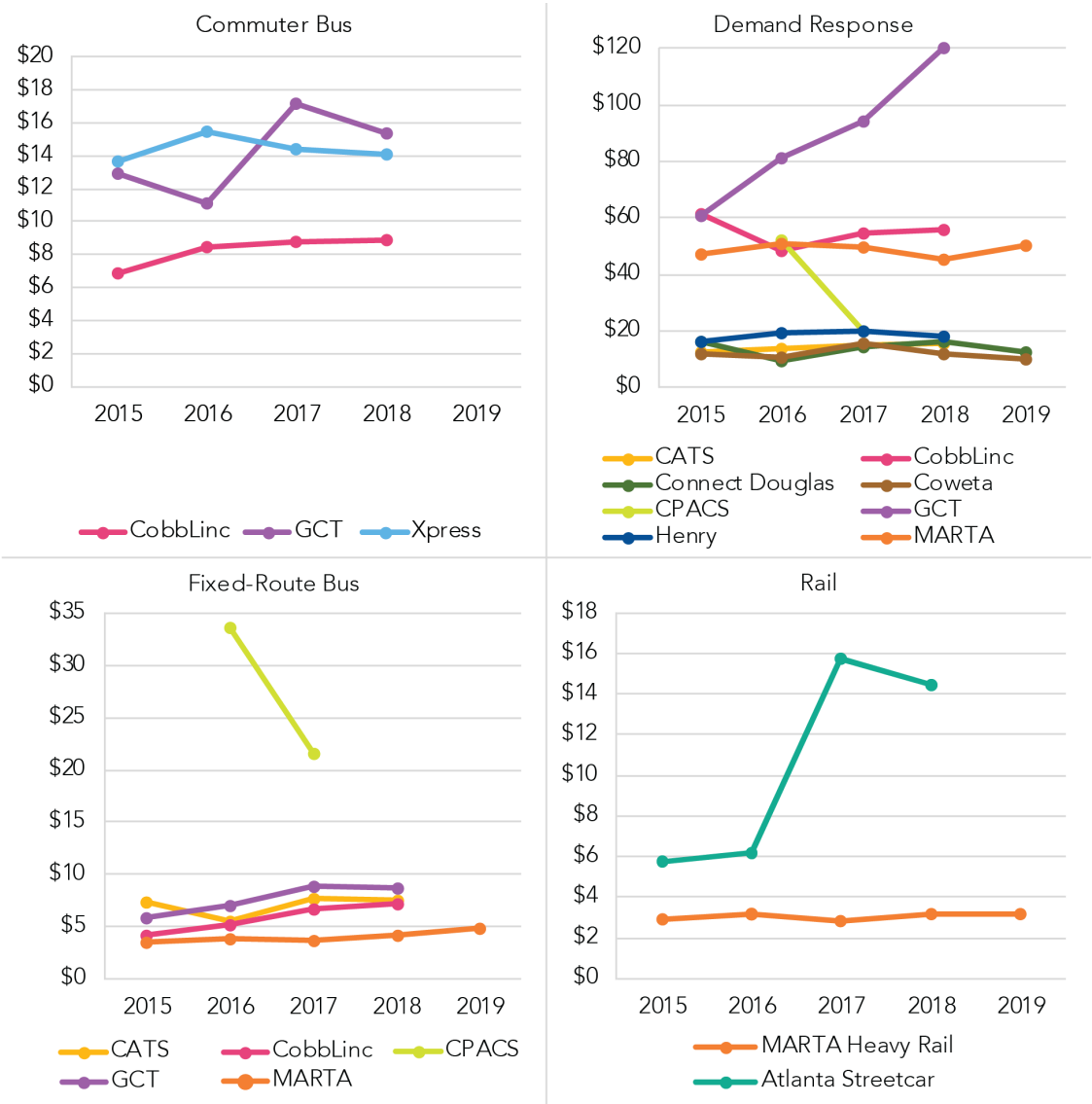


Between 2015 and 2019, operating costs per revenue mile have generally increased across modes and agencies. In general, MARTA's costs per revenue mile were fairly steady across modes. Many other agencies (apart from CPACS, which was not operational for parts of the five-year period) such as CATS, CobbLinc, Connect Douglas, Coweta, and Henry experienced some year-to-year fluctuations but only modest increases when comparing 2015 to 2019. GCT saw increases with respect to costs per revenue mile; this could be explained by GCT's investments in new services. Sometimes investments in new service can lead to temporary declines in financial productivity, as there is typically a period after service implementations during which current and potential riders gradually become aware of a new service and begin to use it. In the case of demand response transit, agencies' service area sizes can be a significant driver of operating cost per revenue mile.

4.7.3 Operating Cost per Passenger

Another indicator of financial productivity is the operating cost per passenger trip (**Figure 30**). Performance on this metric can improve if agencies' ridership increases at a rate that outpaces growth in operating expenditures, or if an agency cuts service and does not see a proportionate decline in ridership.

Figure 30: Operating cost per passenger by mode



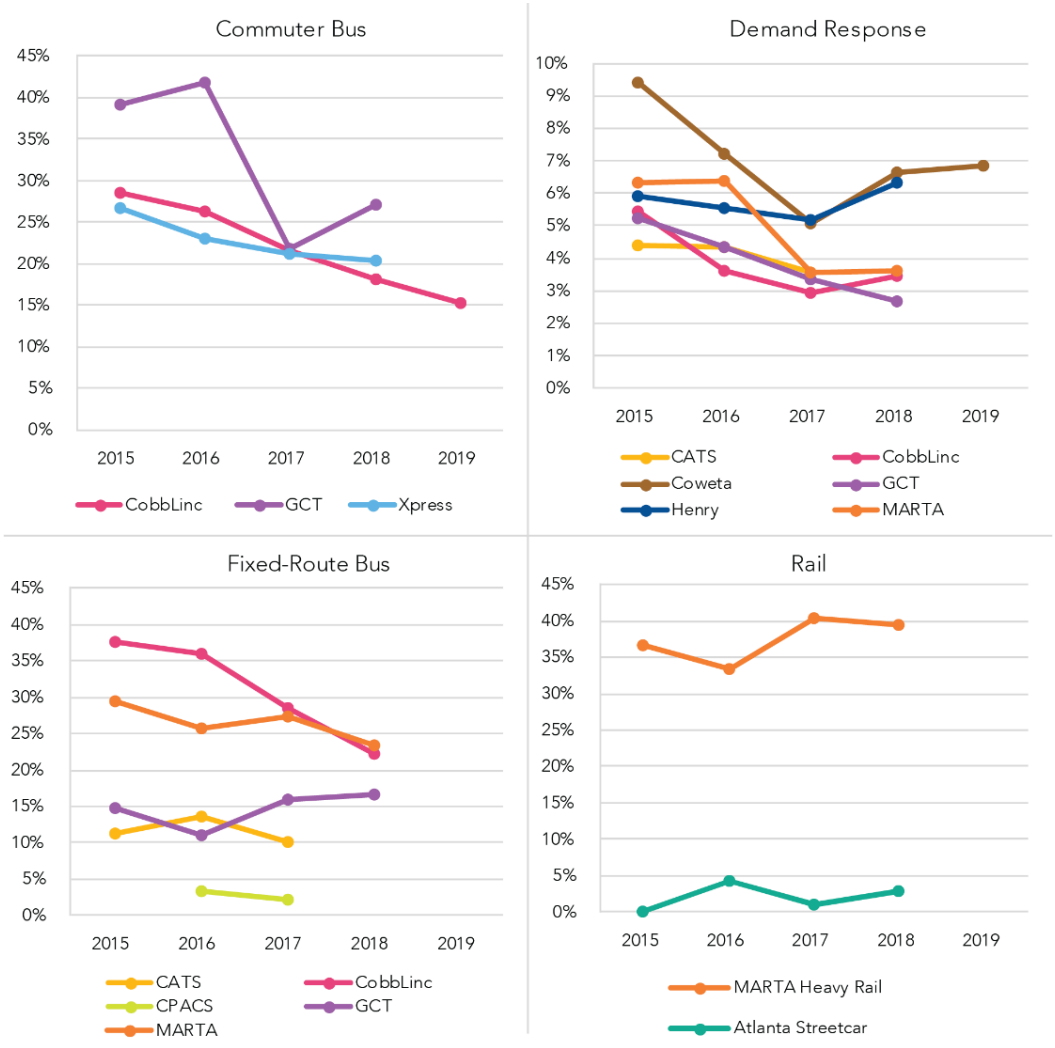
As fixed-route bus ridership has decreased over the past five years, operating costs per passenger trip have generally increased slightly. This is not surprising given that the amount of service provided in the region also continued to increase slightly each year. The most significant changes were observed by CPACS, the Streetcar, and GCT. All of these agencies experienced significant service changes, service additions, or a combination of such changes that were outpaced by ridership gains that could explain the fluctuations.

In general, heavy rail and fixed-route bus had the lowest average operating cost per passenger trip, between $3 and $9 per passenger, with commuter bus and the Streetcar costing a bit more on average—between $6 and $17 per passenger trip. Demand-response services had much higher operating costs per passenger trip; in the Atlanta region, these ranged from $10 to over $100 per trip.

4.7.4 Farebox Recovery

Farebox recovery measures how much of the total operating cost for a service is offset by passenger fare revenues (**Figure 31**). Farebox recovery is a valuable metric for understanding the portion of operating expenses covered by fares; however, it is not a metric that should be considered in isolation. One reason for this is that fares tend to be a significant factor in influencing results with respect to other financial productivity metrics, particularly those that consider ridership. In addition, an agency may decide to keep fares low to meet a goal of improving access to opportunity for transit-dependent residents. For these reasons, evaluating financial productivity is most effective when considering results for more than one indicator.

Figure 31: Farebox recovery ratio by mode



Between 2015 and 2018, farebox recovery for the ATL most often reflected changes in ridership, which directly impacted fare revenue.[44] Fixed-route bus providers CobbLinc and MARTA experienced decreases in farebox recovery, reflecting decreasing ridership and fare revenue and steady or increasing operating costs. Meanwhile, GCT slightly increased its farebox recovery by managing increasing costs for additional fixed-route bus service with increasing revenues from growing ridership. MARTA's heavy rail service has a consistently high farebox recovery ratio relative to other ATL transit services, with fare revenues covering 39 percent of operating costs in 2018. The Streetcar, which did not collect fares in 2015, has shown increasing farebox recovery outside of a fall in ridership, which lowered revenues in 2017. Farebox recovery has decreased overall for all three commuter bus services between 2015 and 2019, although Xpress farebox recovery declines have slowed in recent years and GCT's farebox recovery increased between 2017 and 2018.

As with other modes, demand response farebox recovery has fallen for most services since 2015. Farebox recovery is typically lower for demand-response services, covering between 2 and 10 percent of operating costs due to lower fares and higher costs per passenger trip.

4.8 Customer Satisfaction

It is important for transit agencies to understand how customers perceive the quality of their service. There are multiple ways to measure customer satisfaction, including surveys asking riders if they are satisfied with various aspects of the transit service and keeping records regarding complaints, compliments, and/or comments. Additionally, agencies may examine how quickly complaints are addressed in order to minimize dissatisfaction with the transit system.

Table 8 shows each agency's current practices with respect to measuring customer satisfaction. Two agencies only track customer satisfaction through a survey, while three agencies only track the number of complaints received. Additionally, three agencies use both customer satisfaction surveys and complaint logs to measure customer satisfaction and one agency does not use a survey or track the number of complaints received.

[44] Connect Douglas and CPACS do not charge fares for their demand-response services, and Henry does not charge fares for its fixed-route service, so they are not shown in Figure 31.

Table 8: Customer satisfaction tracking measures by agency

Agency	Complaint Tracking	Customer Satisfaction Survey	Methodology	Data Availability (Years)
CATS		✓	Survey asks about booking experience, quality of service, bus cleanliness, experience, driver safety, driver courtesy, and driver efficiency	2019
Cobb	✓	✓	Inventory of all complaints and compliments, organized by topic.	2017–2019
Connect Douglas	✓		Tracks complaints and how each was addressed. Includes comments asking for expanded service.	2019
Coweta			Written complaints are addressed as they arise and documented. Informal customer complaints (verbal) are handled by the operator or staff.	
CPACS		✓	Survey asks about satisfaction in 11 different areas. Overall satisfaction found by averaging rates.	2016–2018
GCT	✓		Log of all complaints, comments, and compliments.	
Henry	✓		Quarterly report card reflects the number of complaints and how quickly they were addressed.	2018–2019
MARTA	✓	✓	Conducts customer satisfaction survey and reports on the number of complaints, by topic, from each year per 1000 boardings.	2015–2019
Xpress	✓	✓	Includes complaints by topic and route. Also conducts on-board survey asking about satisfaction, including by route and provider.	2018

GCT and Xpress both administered an online and phone-based survey during multiple years as well. Xpress conducted an online survey in 2016 with a specific focus of evaluating the effectiveness of implemented service changes. The agency conducted additional online survey's in February and September of 2017 and has plans to establish a regular schedule for online customer surveys in 2017. Although many other agencies only collected data regarding customer complaints or customer satisfaction in certain years, MARTA collected data on both for all years, helping provide the most complete representation of customer satisfaction possible. **Table 9** shows survey results by agency for all years in which data was available.

Table 9: Customer satisfaction metrics by agency

	Percent of Riders Satisfied with Service				
Agency	**2015**	**2016**	**2017**	**2018**	**2019**
CATS	–	–	–	–	93
CPACS	–	94	–	98	–
GCT	–	–	80	–	–
MARTA	74	78	80	80	75
Xpress	–	–	–	79	–

It is important for each agency to measure customer satisfaction as they continue to provide service to riders in the region. Tracking the number of complaints received (either directly or through third-party contractors) is an important metric that can be used to evaluate customer satisfaction over time. Additionally, administering surveys every few years in which respondents are asked about their satisfaction with the agency's transit service can help agencies better understand what aspects of their service need to be improved and how customers are feeling about the service over time. Particularly if new services are added, it can be valuable to see if they have a positive impact on customer satisfaction. While on-board or phone surveys are resource-intensive and therefore difficult for smaller agencies to administer frequently, there are various online survey providers that can allow agencies to administer surveys to at least a portion of their riders with relatively modest effort.

4.9 State of Good Repair

There is a strong correlation between the state of an agency's vehicle fleet and its reliability of service; vehicles that break down more often lead to less dependable service, which in turn negatively impacts ridership. KPIs related to a fleet's state of good repair include the share of those vehicles that exceed their useful life, the average vehicle age, and mean distance between vehicular failures (MDBF). A younger fleet and a high MDBF are signs that a transit agency has adequate resources to support its fleet's state of good repair and thereby minimize deferred maintenance costs and on-route disruptions to service.

4.9.1 Share of Fleet Past Useful Life Benchmark (ULB)

> Useful Life Benchmark (ULB), per the FTA, is "the expected lifecycle of a capital asset for a particular transit provider's operating environment, or the acceptable period of use in service for a particular transit provider's operating environment."[45]

A higher percentage of vehicles past the ULB indicates that more of an agency's fleet is likely to incur maintenance costs or accumulate safety incidents. Although the FTA provides a default ULB, agencies and operators can adjust these estimates in either direction. For instance, MARTA follows a higher ULB for its 310-Series and 311-Series heavy rail passenger cars because it performed mid-life overhauls on these trains in 2008. Connect Douglas, CPACS, GCT, and Henry developed their own ULB guidelines as part of a Transit Asset Management Plan (TAMP) prepared by ARC on behalf of the agencies in 2016.[46] They considered service frequency, weather, geography, historical maintenance patterns, and manufacturer guidelines in addition to the default ULB to agree upon a shared set of ULB guidelines. CobbLinc and Xpress provided their own ULBs, which matched FTA guidelines. The ULB for CATS and Coweta vehicles was estimated based on the FTA default guideline for each vehicle type. The differing guidelines are summarized in **Table 10**.

Table 10: ULB guidelines (in years)

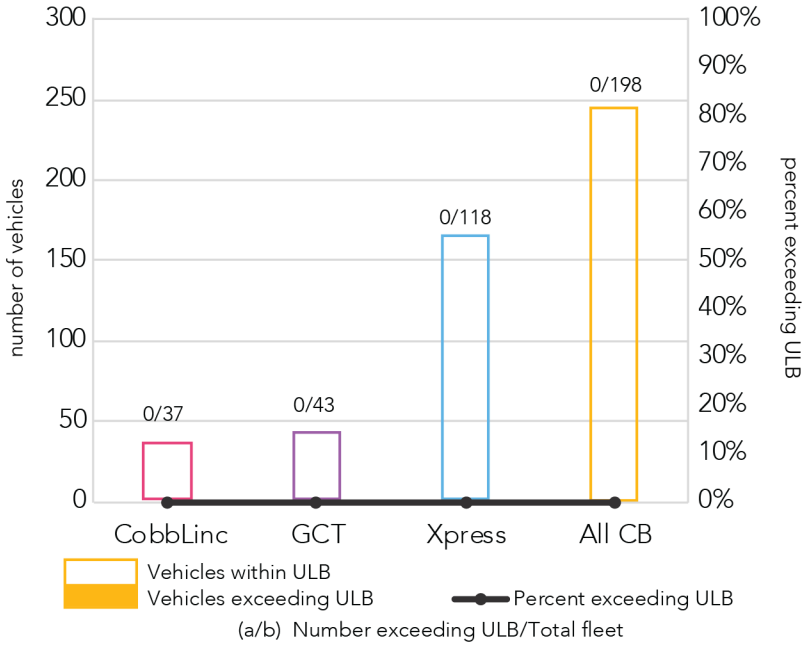
ULB guideline (agencies using this guideline)	Bus*	Cutaway bus**	Heavy rail passenger car Light rail passenger car	Automobile Van
FTA Default ULB (CATS, CobbLinc, Coweta, Xpress)	14	10	N/A	8
ARC TAMP ULB (Connect Douglas, CPACS, GCT, Henry)	12	5	N/A	6
MARTA	12	6	HR 310- and 311-Series: 40; HR 312-Series: 22; LR: 30	N/A

**Includes standard, articulated, and over-the-road buses. These buses are operated on commuter and fixed-route bus services.*
***Cutaway buses are operated mostly on demand-response services, as well as CPACS and Henry fixed-route service.*

[45] Federal Transit Administration, Performance Management.
[46] Atlanta Regional Commission, Transit Asset Management Plan, 16-17, 2016.

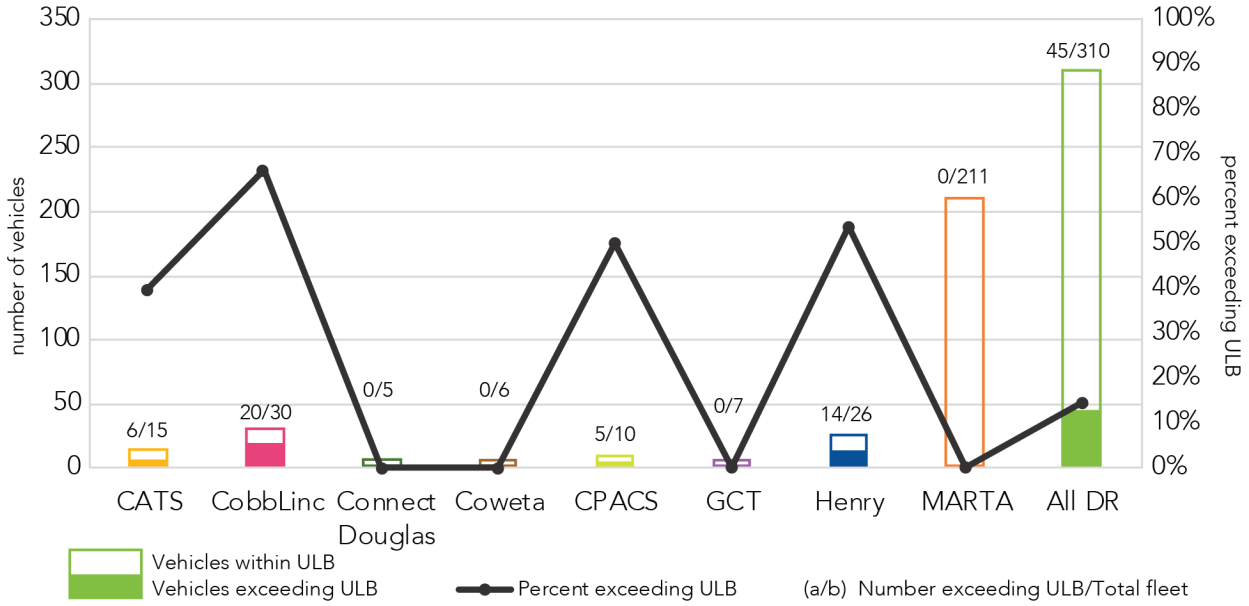
The share of fleets past ULB is illustrated in **Figure 32** through **Figure 36**. All agencies provided fleet rosters for analysis. A vehicle manufactured in 2019 was considered to be zero years old.

Figure 32: Percent of vehicles past ULB, commuter bus (2019)



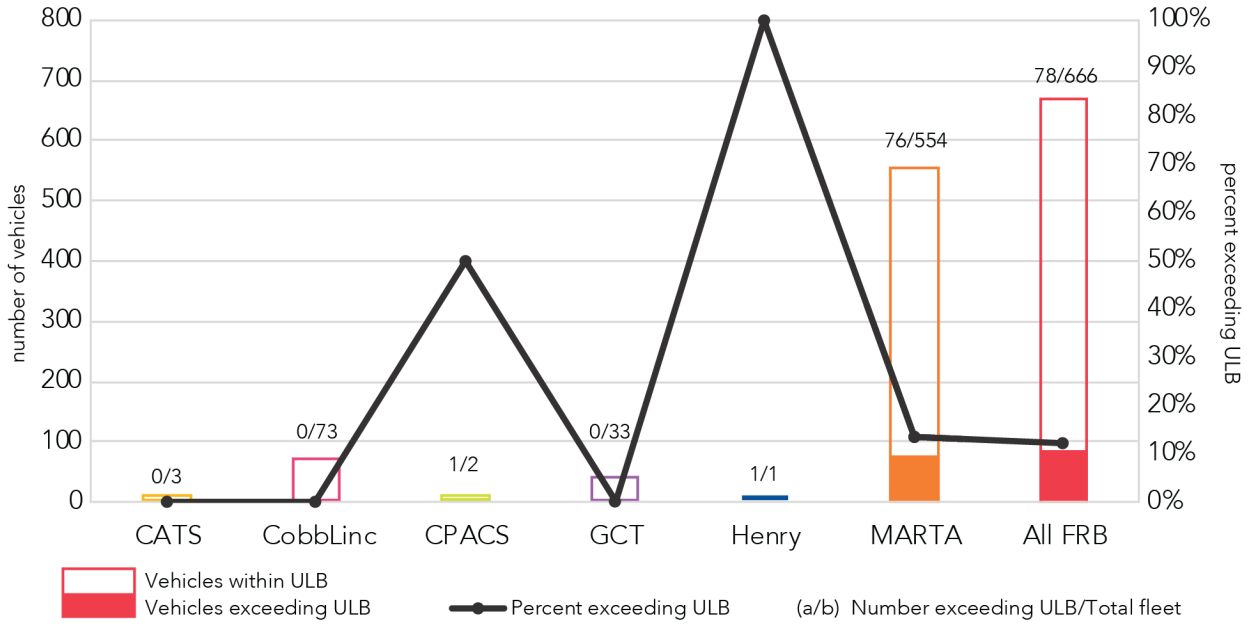
Every commuter bus operating within the region is within its ULB. In 2017 and 2018, Xpress performed a midlife overhaul on all of its commuter buses that were reaching their ULB within the next two years, which extended ULBs for these buses by an additional six years. When a fleet is in excellent condition, there is a higher correlation between reliability issues (such as on-time performance or missed trips) and other factors (such as scheduling, congestion, preventive maintenance, incidents, etc.).

Figure 33: Percent of vehicles past ULB, demand response (2019)



All of Connect Douglas's, Coweta's, GCT's, and MARTA's demand-response vehicles are within their ULB. CobbLinc operates the highest share of demand-response vehicles exceeding their ULB, at 67 percent. Fifteen percent of the region's demand-response vehicles exceed their ULB, which is the highest among any mode.

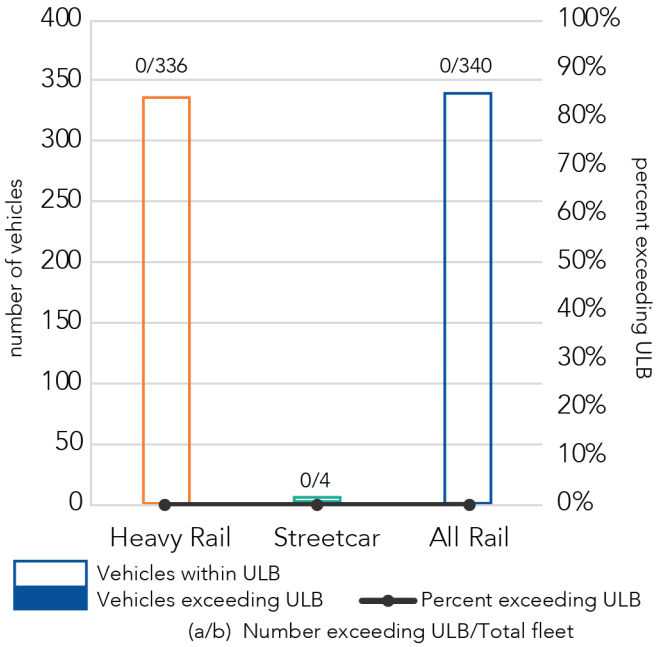
Figure 34: Percent of vehicles past ULB, fixed-route bus (2019)



All of CATS's, CobbLinc's, and GCT's fixed-route buses are within their ULB. CPACS and Henry each have one fixed-route bus exceeding ULB, but that one bus makes up 50 percent and 100 percent of those agencies' fixed-route fleets, respectively. At 12

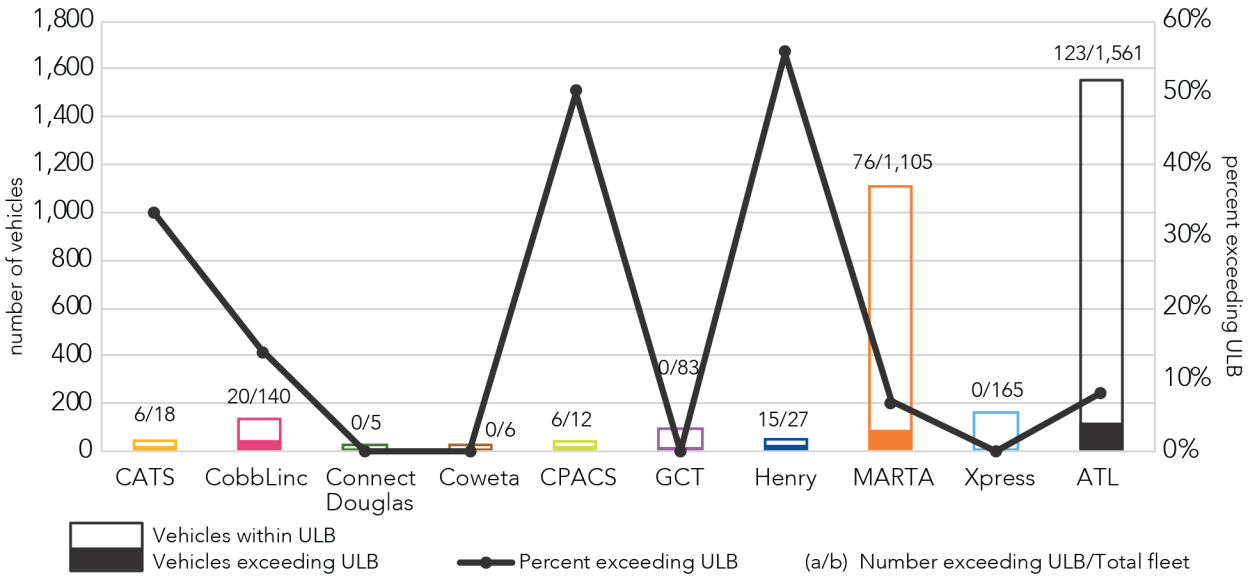
percent, fixed-route bus is the mode with the lowest nonzero share of vehicles exceeding ULB in the ATL region.

Figure 35: Percent of vehicles past ULB, rail (2019)



No rail cars exceed ULB in the ATL region. MARTA is the only agency to operate rail; it has an extensive fleet management plan that sets certain benchmark dates to target rail cars for maintenance. With nearly a quarter of MARTA's rail fleet reaching the end of its life cycle this year or next (46 will reach their ULB by the end of 2019 and another 34 by the end of 2020), MARTA's planned procurement of new rail cars coincides with the end of the useful life of many current vehicles.

Figure 36: Percent of vehicles past ULB by agency (2019)



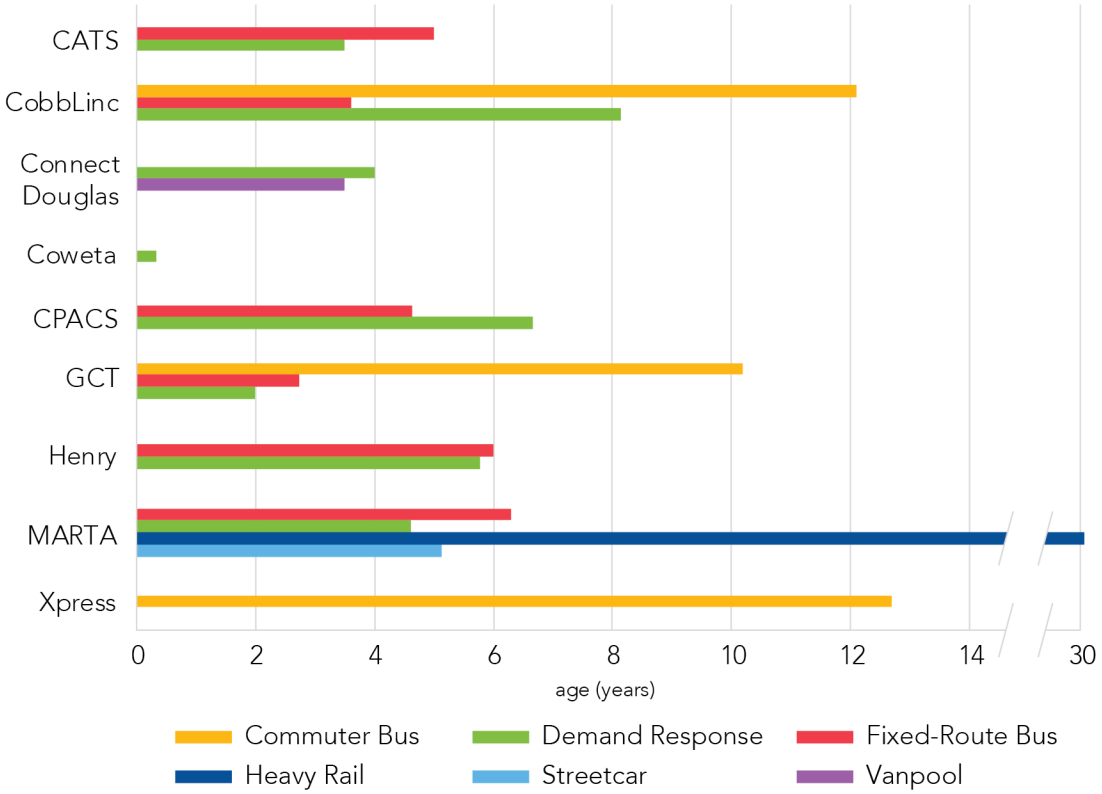
Note: The Connect Douglas total (and thus the overall ATL total) includes 70 vanpool vehicles, 19 of which exceed their ULB. This data was not shown in previous figures.

In the ATL region overall, 8 percent of active revenue vehicles exceed their ULB. The data varies significantly by agency. None of Connect Douglas's, Coweta's, GCT's, or Xpress's vehicles exceed their ULBs. Impressively for its large fleet (1,105 vehicles), MARTA operates only 7 percent vehicles exceeding ULB. Although half or more of CPACS's and Henry's fleets exceed their ULB, they both have very small fleets (12 and 27 vehicles, respectively). Nevertheless, should Henry's single fixed-route bus face route-disruptive maintenance issues, which is more likely with its older age, the agency could be forced to disrupt service until the bus is repaired or pull a bus from demand response to serve the fixed route.

4.9.2 Average Fleet Age

Figure 37 summarizes the average fleet age by agency and by mode as of 2019. All agencies provided fleet rosters for analysis. A vehicle manufactured in 2019 was considered to be zero years old.

Figure 37: Average fleet age (2019)



Coweta has the youngest fleet, with each of its demand-response buses an average of 0.3 years old (five of the six buses were manufactured in 2019). MARTA has the oldest fleet, at an average of 13.3 years; however, this is expected, given that it is the only agency that operates rail service, and rail cars have a longer ULB than buses.

The average fleet age across all transit agencies in the U.S. between 1991 and 2015 ranged from 7.0 to 8.8 years.[47] (However, most U.S. transit agencies do not operate rail, and rail vehicles typically raise the average fleet age.) In Atlanta, Xpress is the only service besides MARTA with an average fleet age of older than eight years, so most of the region has fleets with an average age on par with or better than the national average.

4.9.3 Mean Distance Between Failures

A vehicular failure refers to a mechanical incident that prevents a vehicle from completing its scheduled revenue trip or from starting the next one. Mean distance between failures (MDBF) is calculated by dividing the total number of vehicle revenue hours by the total number of failures. A high MDBF indicates that vehicles are well-

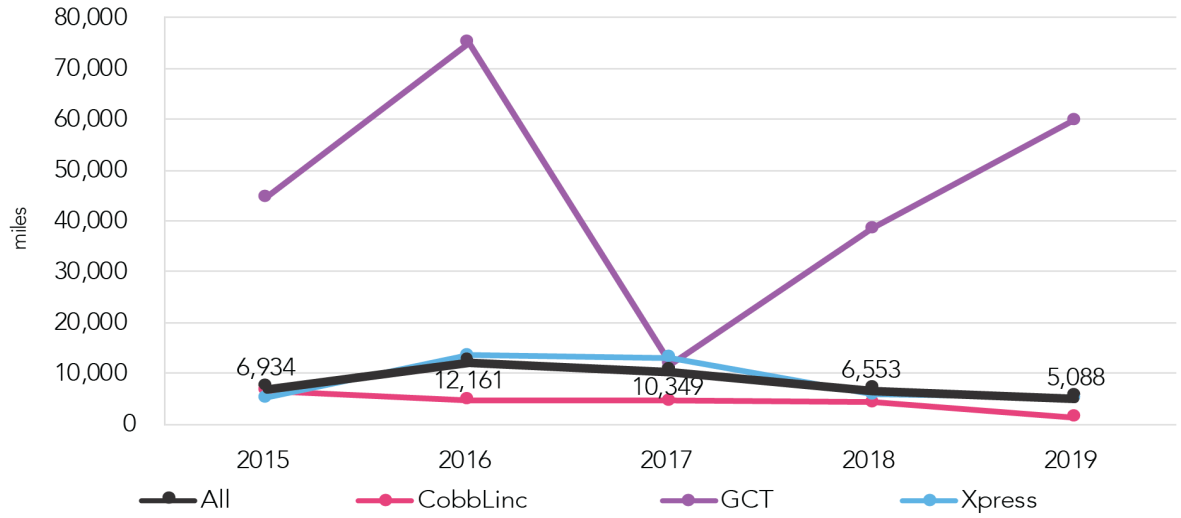
[47] Li Tang, et al., "Characteristics of Bus Transit Vehicles in the United States: A 30-Year National Trend Analysis," Transportation Research Record: Journal of the Transportation Research Board, 2018.

maintained and are breaking down less frequently, thus providing more reliable service.

The following figures summarize the MDBF by agency, by mode, and overall for the region, from 2015 to 2019. Due to differing reporting requirements, data on MDBF exists only for Cobb, Connect Douglas, GCT, MARTA, and Xpress.[48] Data for the Streetcar exists through 2018, when it was operated by the City of Atlanta. The labeled datapoints are for region-wide or mode-wide figures only.

Commuter buses have the lowest MDBF of any mode in 2019 (**Figure 38**).

Figure 38: Mean distance between failures, commuter bus

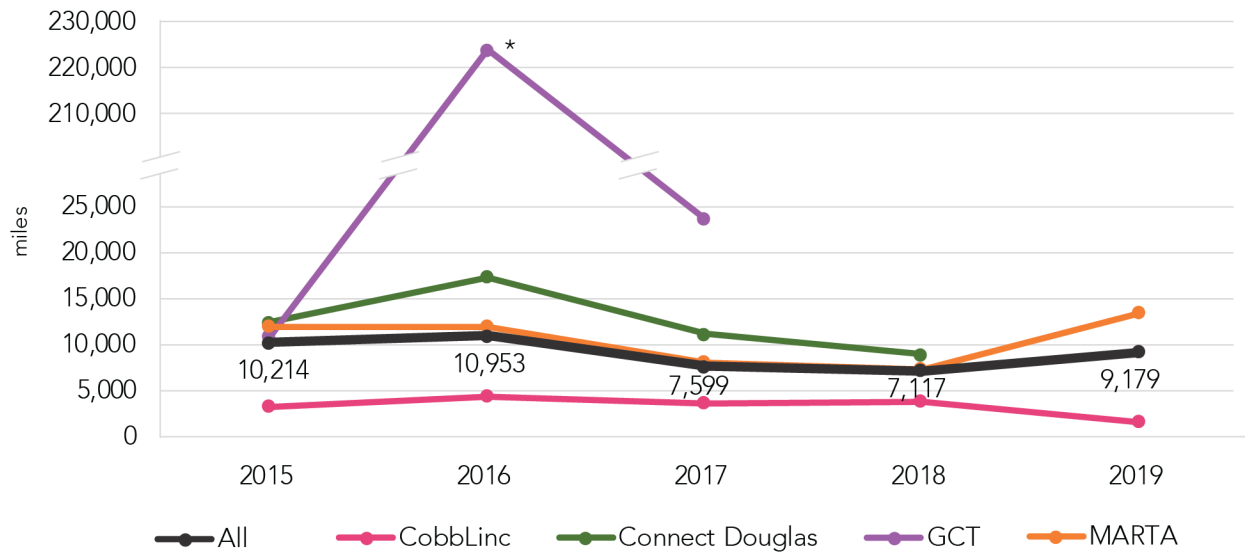


Commuter bus MDBF has been decreasing since 2016, when it was at 12,200 miles. The overall MDBF for commuter bus generally follows the trend of Xpress service MDBF, since Xpress makes up the largest share of commuter bus service in the region.

Demand-response vehicles had the highest performance with respect to MDBF of any non-rail mode in the region in 2015 and 2018 (**Figure 39**).

[48] See **Appendix** for more on how some agencies may calculate failures differently or not at all.

Figure 39: Mean distance between failures, demand response

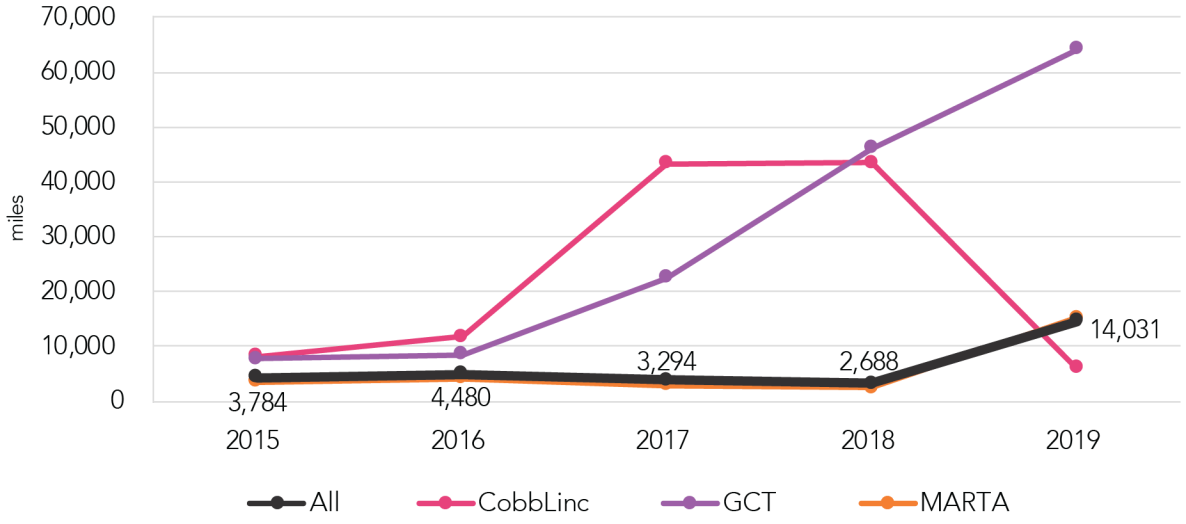


**GCT demand-response vehicles experienced no failures in 2016, so the MDBF is reported as the total vehicle revenue miles.*

CobbLinc had the lowest MDBF of any agency operating demand-response service, with a 57 percent decrease from 2018 to 2019 (**Figure 39**). GCT demand-response vehicles experienced no failures in 2016 (it was operating a new fleet) and only nine in 2017, keeping its MDBF in those years among the highest of any mode in the ATL region over the five-year period.

Improvements in GCT and MARTA maintenance led to a marked increase in MDBF among fixed-route buses in 2019 (**Figure 40**).

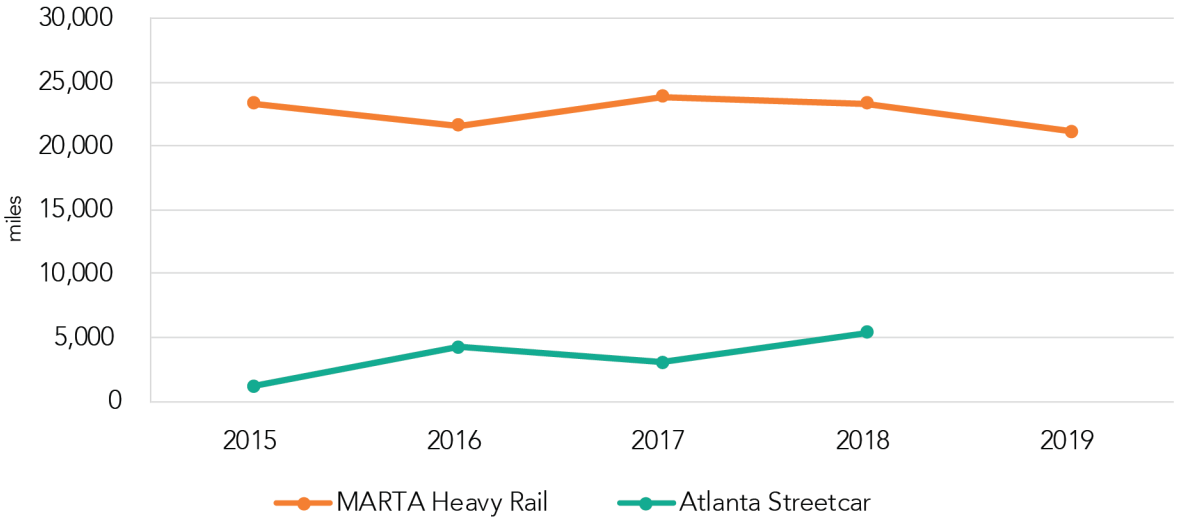
Figure 40: Mean distance between failures, fixed-route bus



MARTA reached an MDBF of 15,100 miles, with the fixed-route bus regional average just below that at 14,000. MARTA operates so much of the region's fixed-route bus service (in 2019, MARTA's revenue miles made up 87.8 percent of the total fixed-route bus revenue miles) that the mode-wide trend line is nearly identical to that of the MARTA.

There is a significant difference in MDBF between the two rail modes operated in Atlanta (**Figure 41**).

Figure 41: Mean distance between failures, heavy and light rail



MDBF for MARTA heavy rail has remained consistently between 20,000 and 25,000 for the last five years, the highest performance for MDBF of any mode in the ATL region. The Streetcar has a relatively low MDBF (3,000 miles in 2017); however, its revenue miles are very small portion of all of MARTA's rail service (0.3 percent in 2017).

4.10 Safety

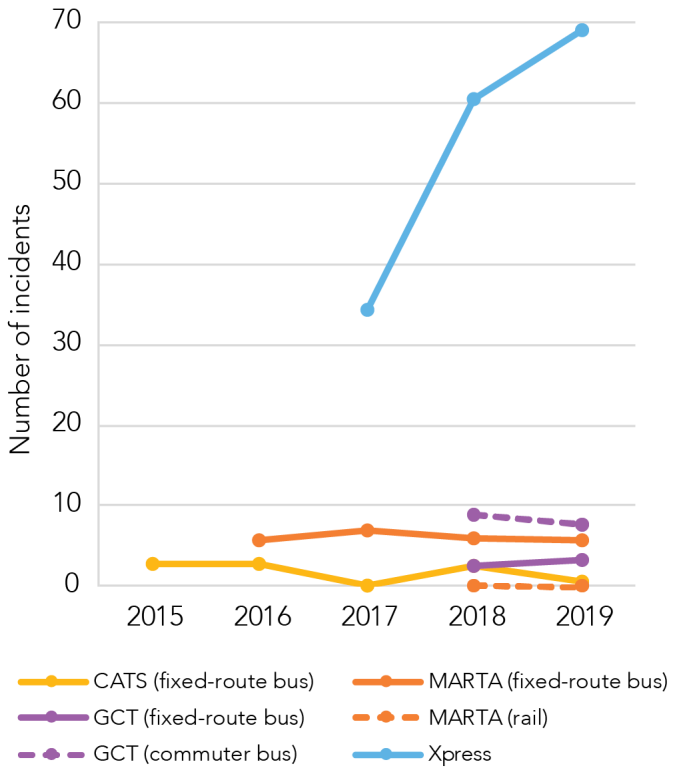
The safety of passengers, operators, and other members of the public is a priority for all ATL agencies. In order to monitor transit safety, the number of safety incidents was measured against the total number of revenue hours and passenger trips annually. Safety incidents may include collisions, fires, derailments, evacuations, property damage, vandalism, assault, or other crime events, any injuries that require immediate medical transport, and fatalities.

4.10.1 Safety Incidents per Revenue Hours

In 2019, ATL agencies provided over 4.2 million revenue hours of service and experienced just over 2,200 safety incidents. Even as transit service increases in the region, each transit agency aims to reduce the number of safety incidents. Comparing incidents to total revenue hours helps monitor this progress relative to the amount of service provided.

Figure 42 shows how the number of safety incidents per 10,000 revenue hours have changed since 2015, as data was available.

Figure 42: Fixed-route safety incidents per 10,000 revenue hours



Since 2017, MARTA's fixed-route bus service has reduced safety incidents, even as service has increased. In 2019, MARTA's fixed-route bus service provided 54 percent of the region's revenue hours and had 59 percent of the safety incidents, or about six

Perceptions of Personal Safety

For many people, personal safety is a key consideration in deciding whether to use transit. MARTA has one of the more safe transit systems in the United States when compared to other large systems. MARTA achieves this result through the deployment of more than 10,000 surveillance cameras and its See & Say smartphone application, which allows customers to contact MARTA police discreetly and quickly. Emergency phones that connect customers to the police and operators are also available throughout the system.

MARTA's 2018 Quality of Service Survey Report shows that MARTA customers recognize MARTA as having above average performance in terms of safety perceptions. However, customers also have the perception that MARTA could do more to control and prevent nuisance behaviors. Both factors—safety and nuisance behaviors—are cited by riders as key factors, meaning they have above-average impact on customer satisfaction, however; customers said that nuisance behavior is particularly a concern when it occurs on trains (rather than off the train).

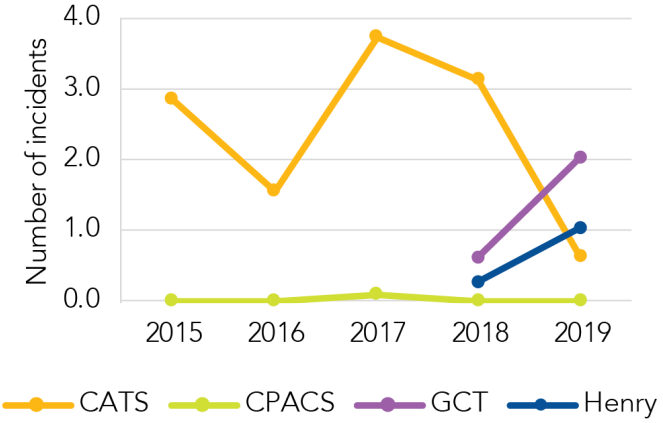
In recent years, MARTA's "Ride with Respect" campaign, increased police presence, and increased focus on issues of nuisance behavior have all sought to address these issues; future surveys will help measure the success of these initiatives.

incidents for every 10,000 revenue hours of service. Meanwhile, the heavy rail service had only five incidents in 2019, or less than 0.1 per 10,000 revenue hours.

CATS, which provided less than 10,000 revenue hours of fixed-route service each year prior to 2019, had only one or two fixed-route safety incidents annually. GCT experienced a decrease in incident rates on its commuter bus services from 2018 to 2019, while GCT fixed-route bus had an increase in incident rates during the same period. Safety incidents on Xpress have increased from 34 per 10,000 revenue hours in 2017 to 69 per 10,000 revenue hours in 2019.

Demand response safety incidents per 10,000 revenue hours are shown in **Figure 43** as data was available. Since 2015, CATS demand response service has experienced between two and seven safety incidents per year, or between one and four incidents per 10,000 revenue hours. CPACS has been nearly incident-free since 2016, with only one safety incident in 2017. Meanwhile, incident rates for GCT and Henry increased from 2018 to 2019.

Figure 43: Demand response safety incidents per 10,000 revenue hours



Note: CPACS safety data is combined for its demand-response and fixed-route services.

4.10.2 Safety Incidents per Passenger Trip

Comparing safety incidents to total ridership is indicative of the risk placed on each rider when they decide to take transit to their destination.

The number of safety incidents per 100,000 passenger trips for each fixed-route and demand-response service, respectively, is shown in **Figure 44** and **Figure 45** as data was available. The one CPACS safety incident (for both its modes) that occurred in 2017 is shown under its demand-response service in **Figure 45.**

Figure 45: Fixed-route safety incidents per 100,000 passenger trips

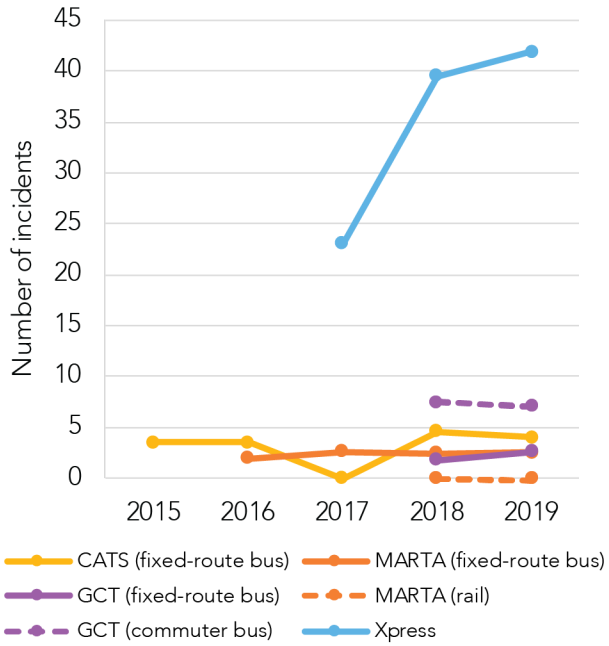
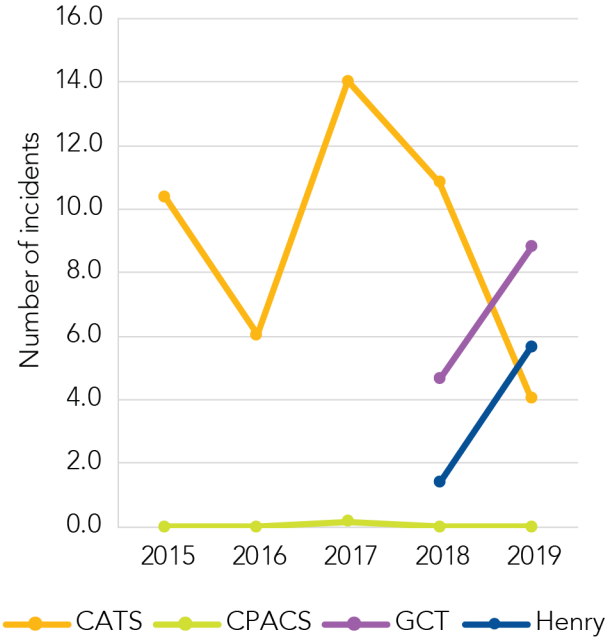


Figure 44: Demand response safety incidents



Trends for the safety incident rates closely follow the incident per revenue hour rates. MARTA's fixed-route bus service, which provided about 42 percent of passenger trips in the region in 2019, experienced 59 percent of safety incidents, or fewer than three incidents per 100,000 passenger trips. CATS, which served less than 100,000 passenger trips per year, had only one or two fixed-route safety incidents annually. GCT experienced a decrease in incident rates on its commuter bus services from 2018 to 2019, while GCT fixed-route bus had an increase in incident rates during the same period. Safety incidents on Xpress have increased from 23 per 100,000 passenger trips in 2017 to 42 per 100,000 passenger trips in 2019.

Since 2015, CATS's demand-response service has experienced between two and seven safety incidents per year, or between four and 14 incidents per 100,000 passenger trips. CPACS experienced just one safety incident in 2017. Incident rates for GCT demand response increased from under five incidents per 100,000 passenger trips in 2018 to nearly nine in 2019. Similarly, Henry's incident rates increased from about 1.5 per 100,000 passenger trips in 2018 to just under six in 2019.

4.11 Technologies Used

The types of technologies used by each agency for different purposes—dispatch and scheduling, asset management, transit signal priority, automatic passenger counters (APC), automated vehicle location (AVL), and camera systems—vary significantly, as shown in **Table 11**.

Table 11: Technologies Used by Providers

Agency	Dispatch/ Scheduling	Asset manage-ment	Transit signal priority	APC	AVL	Camera systems
CATS	QRyde (2018)	N/A	N/A	N/A	N/A	AngelTrax (2019); Provision (2014)
Cobb-Linc	Trapeze	InFor (contractor)	Applied Information (2019)	Clever Devices (2015)	Clever Devices (2015)	Apollo Systems (2016); Seon (2011)
Connect Douglas	QRyde (2019)	N/A	N/A	N/A	N/A	N/A
Coweta	QRyde (2018)	N/A	N/A	N/A	N/A	AngelTrax (2015)
CPACS	Ridescheduler.com	N/A	N/A	N/A	N/A	N/A
GCT	Avail (2011)	Transtrack	N/A	Avail (2011)	Avail (2011)	TSI (2011)
Henry	RouteMatch (2011)	N/A	N/A	N/A	N/A	Seon (2011)
MARTA	Trapeze (2018); BlockBuster (2018); Teledriver (2017); TransitMaster (2015)	Trapeze (2006)	Opticom	Clever Devices (2018)	Clever Devices (2018)	Apollo Systems
Xpress	RouteMatch (2016)	InFor (contractor)	N/A	N/A[49]	Route-Match (2016)	Apollo Systems (2017)

The use of up-to-date technologies by the providers has implications for their ability to meet the ATL's Innovation Governing Principle, which puts priority on using innovation solutions to improve rider experience, fare collection, cost savings, integration with transit alternatives and more.

For dispatch and scheduling purposes, three of the nine agencies utilize the QRyde software, CobbLinc and MARTA use Trapeze software, and Henry Transit and Xpress use RouteMatch. Cobb County and MARTA also use Clever Devices for both APC and

[49] Xpress will update its Computer-Aided Dispatch/AVL system in 2020. This system will have APC functionality.

AVL purposes, while GCT uses Avail technology. On-board cameras are primarily manufactured by either AngelTrax, Apollo Systems, or Seon.

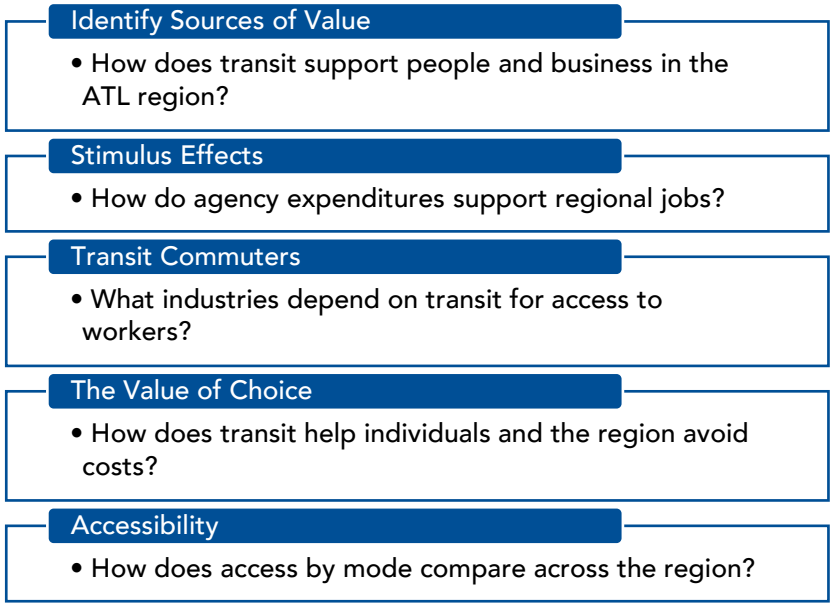
Technology and data management have a significant role to play in the process of coordinating bus service efficiently across the region, and there may be opportunities for agencies to consider sharing or using interoperable technologies. For example, active headway management across agencies could improve transit OTP on key corridors in the region and would require use of the same or interoperable technologies. Ongoing conversations between agencies coordinated through the ARC and the ATL will be critical in identifying and pursuing opportunities to integrate technologies and/or achieve additional buying power in the acquisition of technologies to improve service.

5 ECONOMIC AND REGIONAL IMPACT

5.1 Understanding and Measuring the Value of Transit

Transit supports the 13-county ATL region by providing mobility options to individuals, supporting societal goals of equity and sustainability, and enhancing regional economic development. Because there are many ways in which transit benefits the people and businesses of the Atlanta region, this chapter presents information and data from multiple perspectives. As shown in **Figure 46**, the analysis is guided by a series of questions.

Figure 46: Approach to understanding and measuring the value of transit



The analysis begins by identifying sources of value – i.e., the specific ways in which transit delivers value in the ATL region. While some goals of transit investments are shared across regions, it is important to ground any analysis in the values and realities of the Atlanta area.

This chapter addresses each of the approach elements in the following sections:

- **Section 5.2** summarizes five key themes related to the social and economic importance of transit, as identified through interviews with regional stakeholders and through a review of existing regional plans and strategy documents.
- The next analysis investigates the ways in which transit agencies support regional jobs and revenue across the 13-county region through their budgetary expenditures. Transit agencies serve not only as employers themselves, but also generate additional multiplier impacts within the economy, as their spending generates additional sales and jobs through effects on suppliers and on businesses where workers spend their money. These stimulus effects are summarized in **Section 5.3**.
- **Section 5.4** focuses on the economic importance of people who use the transit system to get to work. It profiles the industries that today depend on transit for access to workers and examines forecasted growth in these industries.
- **Section 5.5** assesses the value that transit provides as a transportation option, compared to other modes available to users. This analysis explores how transit helps both individuals and the Atlanta region as a whole avoid costs.

- Finally, **Section 5.6** evaluates transit from an accessibility perspective, examining how transit connects people to jobs and businesses to their workforce. This analysis also compares levels of accessibility across different modes and considers the alignment of the current transit network with forecast future growth in the region.

5.2 The Social and Economic Importance of Transit in the Region

The following sections summarize five key themes related to the social and economic importance of transit. These were identified through interviews with regional experts on transit and economic development, as well as through a review of regional planning and strategy documents.

5.2.1 Addressing Population Trends

> "Demand for services such as transportation and meal delivery will continue to rise in response to an aging population."
>
> — Metro Atlanta Regional Economic Competitiveness Strategy[50]

Transit is viewed in the Atlanta region as a way of managing and responding to population trends. This includes both growth pressures and adapting to changing needs and preferences of regional residents. Between 2010 and 2018, Atlanta had the fourth fastest growing population of all metro areas.[51] Given existing capacity constraints on the regional road network, additional investment in transit can help proactively accommodate the needs from subsequent increases in demand. Transit can also help to support more efficient development patterns. By co-locating origins with destinations, transit-oriented development can help systems function more cost-efficiently by leveraging existing transportation assets.

Additionally, the Atlanta region is aging rapidly. Among all metropolitan areas in the United States, it was found to be the city with the largest increase in the population of seniors from 2000 to 2013.[52] The region must provide mobility options for these seniors who either cannot or choose not to drive, to ensure they can reach medical appointments and other needed services, as well as remain engaged in society overall.

Finally, many experts in the region view transit as a way of providing the mobility options desired by the region's younger workforce. Younger people, especially Millennials, appear to have significantly different lifestyle preferences than previous generations and desire to use the transportation system in a more multimodal manner.[53]

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[50] Atlanta Regional Commission, Metro Atlanta Regional Economic Competitiveness Strategy - Chapter 1: Summary Background and SWOT Analysis, 2017.

[51] U.S. Census, Top 10 Metropolitan Areas in Numeric Growth: 2010 to 2018.

[52] Forbes, "Aging America: The U.S. Cities Going Gray The Fastest," 2014.

[53] Yongsung Lee, et al. "Are Millennials More Multimodal? A Latent-Class Cluster Analysis with Attitudes and Preferences among Millennial and Generation X Commuters in California," Transportation, 2019.

5.2.2 Supporting Equity and Inclusive Growth

One of the core goals of transit in the Atlanta region is supporting equity and inclusive growth. The Atlanta Regional Transportation Plan estimates that the "transportation disadvantaged," such as persons with disabilities, low-income households and older adults, make up as much as 30 to 40 percent of the region's population.[54] By providing an affordable mobility option, transit can help connect individuals with economic opportunity and provides for more equal participation in society.

> "For disadvantaged populations, a diversity of transportation options are the key to gaining access to jobs, services and other opportunities they need to improve their quality of life"
>
> — Atlanta's Regional Transportation Plan

Nevertheless, the region also faces challenges in this area. Regional experts point to the recent "suburbanization of poverty," a trend Atlanta shares with other regions: As economic development in the city center pushes up housing prices in the region's core, low-income households are displaced from transit-oriented areas to locations that are less well served by transit. Starting in the 2000s, the poverty rate in the suburbs in the United States started to increase faster than in cities nationwide. In 2015, there were three million more poor people in the suburbs than in large metropolitan areas. Atlanta was one of several cities that saw its suburban poor population more than double from 2000 to 2015.[55] When transit is not a viable option outside of certain high-density neighborhoods, people in those communities suffer from increased transportation costs due to the necessity of car ownership, despite lower housing costs. Expanding transit to reach these communities is a challenge that must be addressed to provide more equitable access to economic, educational, and other opportunities.

5.2.3 Serving Commuting Needs for Transit Users and Non-Users

Transit currently plays a major role in serving commuting needs within the portion of the region where it offers meaningful access. For example, half of all MARTA customers use transit to commute to the city of Atlanta, Fulton County and DeKalb County.[56] In these places where transit is a competitive mobility option, it provides benefit to both transit users and those who remain on the road network, by increasing the efficiency of the transportation system overall and helping to manage congestion.

[54] Atlanta Regional Commission, Regional Transportation Plan, 2019.
[55] Brookings Institute, "The Changing Geography of US Poverty," 2017.
[56] Wes Clark, et al., "The Economic Impact of Metropolitan Atlanta Rapid Transit Authority on the Economy and Labor Mobility of the Region," Carl Vinson Institute of Government, 2013.

> "A limited transit network forces most workers to drive alone to work. The lack of transit options regionally also limits employment opportunities."
> — Metro Atlanta Regional Economic Competitiveness Strategy

Despite these options, the majority of jobs in the Atlanta region are only accessible by car.[57] The regional dependence on personal automobiles has caused harmful levels of traffic congestion. Access Across America ranked Atlanta as the 7th metro area with the highest loss in job accessibility due to congestion.[58] As a result, Atlanta was ranked 29th in auto accessibility and 32nd in transit accessibility to jobs.[59] Providing more transit options across larger portions of the region could further enhance the value of transit by getting commuters off the roads, reducing congestion and getting people to work faster, regardless of whether they choose to drive. Supporting transit-oriented development could also play a significant role in reducing traffic, especially in high density areas like Buckhead.

5.2.4 Enhancing Sustainability

Transit also enhances sustainability by reducing harmful emissions from the transportation industry. In the American Lung Association's annual "State of the Air" report, five counties in the Metro Atlanta region (DeKalb, Fulton, Gwinnett, Henry and Rockdale) received "F" grades for ozone pollution levels from 2015 to 2017.[60] Ozone is linked to emission of nitrogen oxides from cars and trucks.

> "Funded projects will support multimodal travel, more livable and affordable neighborhoods, and the development of jobs and housing in existing town centers and near transit… shortens the length of automobile trips, thus helping to reduce both vehicle miles traveled and emissions of carbon dioxide and other pollutants."
> — Atlanta's Regional Transportation Plan

When investment in transit is integrated with land use planning and policies, some trips can be shifted from SOVs, thereby lowering the number of vehicle miles traveled (VMT) in a region. This, in turn, reduces auto emissions and improves regional air quality. The Atlanta Regional Commission considers air quality a 'major consideration' in transportation planning.[61] Reduced VMT is also linked to lower emissions of harmful greenhouse gases (GHGs). According to estimates by the United States Environmental Protection Agency, the transportation sector accounts for 29 percent of all U.S. GHG emissions, of which light-duty vehicles such as personal cars account for 59 percent.[62]

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[57] Brookings Institute, "Where the Jobs Are: Employer Access to Labor by Transit," 2012.
[58] Accessibility Observatory at the University of Minnesota, Access Across America: Auto 2017."
[59] Ibid.
[60] American Lung Association, Report Card: Georgia.
[61] Atlanta Regional Commission, Air Quality.
[62] United States Environmental Protection Agency, Fast Facts on Transportation Greenhouse Gas Emissions.

5.2.5 Supporting Regional Businesses

> "As businesses look to attract millennials to their work force and create economic mobility for under- and unemployed, they are specifically looking for proximity to transit as a key feature in location decisions."
>
> — Economic Benefits of Investing in Transit

The Atlanta Region's Plan, ARC's long range plan, states that improving the region's quality of life through improved mobility is a goal aimed at attracting a strong workforce, which in turn attracts companies to the area to foster a stronger regional economy.[63] As such, accommodating Millennials' preference for a "menu" of transportation options is becoming increasingly important to the regional economy. Cities like Atlanta need to develop mobility options to attract and retain an educated workforce.

In part due to the desire to access the young, educated workforce, proximity to MARTA stations was a key factor in location decisions for large Atlanta-based companies such as Kaiser Permanente, Mercedes-Benz and State Farm.[64] Regional economic development professionals report that businesses in technology sectors and the entertainment industry increasingly expect or ask for high quality transit access. Meanwhile, parts of the region that are underserved by transit, such as Union City, report missing out on economic opportunities, such as conferences and the development of job centers, due to their inability to compete with locations better served by transit.[65] Going forward, transit can play a key role in building vibrant places that meet the needs of businesses and residents.

5.3 Regional Impacts of Transit Agency Operations and Expenditures

5.3.1 Understanding Direct and Multiplier Impacts

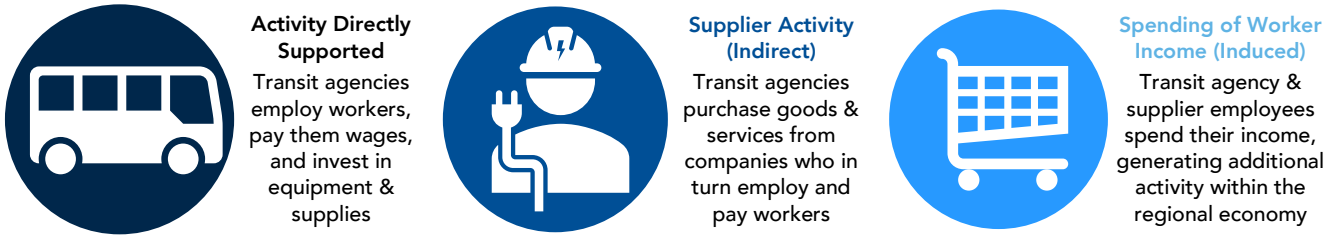
As transit service providers, the nine transit agencies operating in the ATL region create jobs and generate business sales through budget expenditures on items such as maintenance and capital purchases. The total economic impacts of these expenditures are comprised of three distinct categories—direct, indirect, and induced impacts—as illustrated in **Figure 47** and defined below.

[63] Atlanta Region's Plan, Work with Local Communities to Implement a Regional Approach to Workforce Development.

[64] HNTB Companies, Economic Benefits of Investing in Transit, Metro Atlanta's Chamber and Georgia Transportation Alliance, 2019.

[65] Interview with Vince Williams, Mayor of Union City, 2019.

Figure 47: Transit agency operations and expenditures generate direct, indirect, and induced impacts



- **Direct impacts** represent the initial transactions in the regional economy that are supported by transit agencies, including the capital and operating budget of each agency. These direct impacts in turn stimulate additional demand for local goods and services due to indirect and induced effects—sometimes called "multiplier" or "spinoff" effects.
- **Indirect supplier impacts** represent the additional economic activity associated with business-to-business purchase of goods and services. For example, if a transit agency pays another company for assistance with vehicle repairs, this is a first order indirect impact. If the repair company in turn sources materials from other businesses located in the Atlanta region, this will further enhance the indirect supplier impacts of transit agency expenditures. Each supplier has a portion of its revenue supported by transit agencies and will also use that revenue to pay workers as well as their own suppliers.
- **Induced impacts** are additional impacts associated with spending of worker income on items such as housing, retail purchases, and services. Those expenditures support jobs in associated industries, whose workers then also spend their salaries in the Atlanta region.

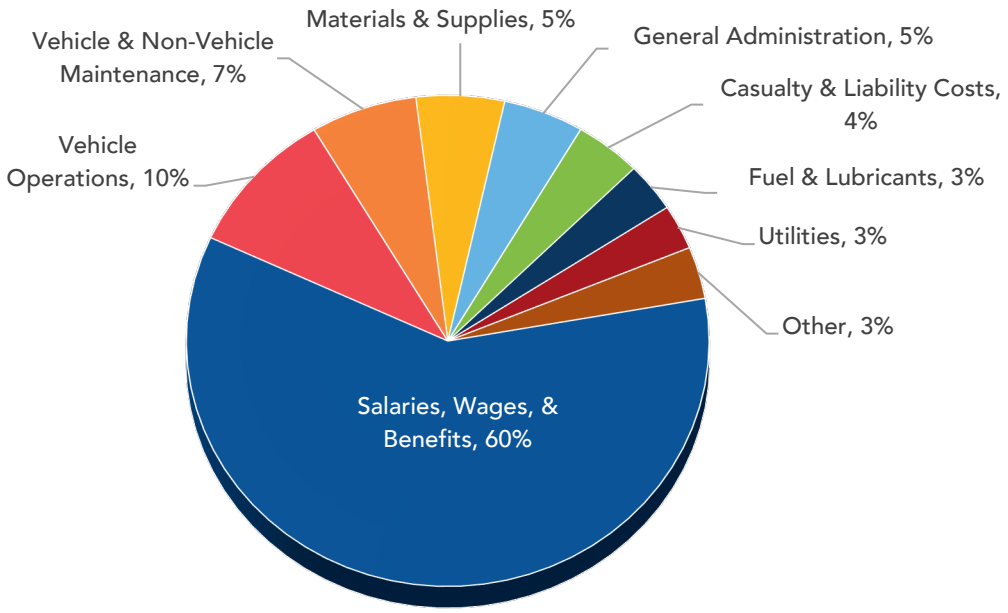
Each type of impact is additionally characterized using the measures of jobs, income, value added, and output, defined as follows:

- **Jobs**, which includes both part- and full-time positions.
- **Income** covers total compensation for work, including gross wages, salaries, proprietor income, employer provided benefits and taxes paid to governments on behalf of employees.
- **Value added** consists of compensation of employees, taxes paid on production and imports, and gross operating surplus. Value added equals the difference between an industry's gross business output and the cost of purchased goods and services. Value added for companies across industries and across the U.S. is a measure of Gross Domestic Product.
- **Output**, also known as business revenue or sales, is equivalent to value added plus the cost of purchased goods and services.

5.3.2 Direct Impacts

In FY 2018, transit agencies within the ATL region invested a total of $814 million in operating, maintaining, and improving the regional transit network.[66] **Figure 48** summarizes transit agency operations and maintenance expenditures from FY 2018, by type of expenditure. Transit agencies are first and foremost service providers and therefore rely significantly on their workforce to deliver safe effective service. This is reflected in the approximately 60 percent of operating costs allocated to worker salaries, wages and benefits. **Figure 49** similarly summarizes transit agency capital expenditures from FY 2018 by type. In the case of capital expenditures, the majority of expenditures are made towards vehicles and stations, with additional significant investment in transit guideway infrastructure and communications equipment.

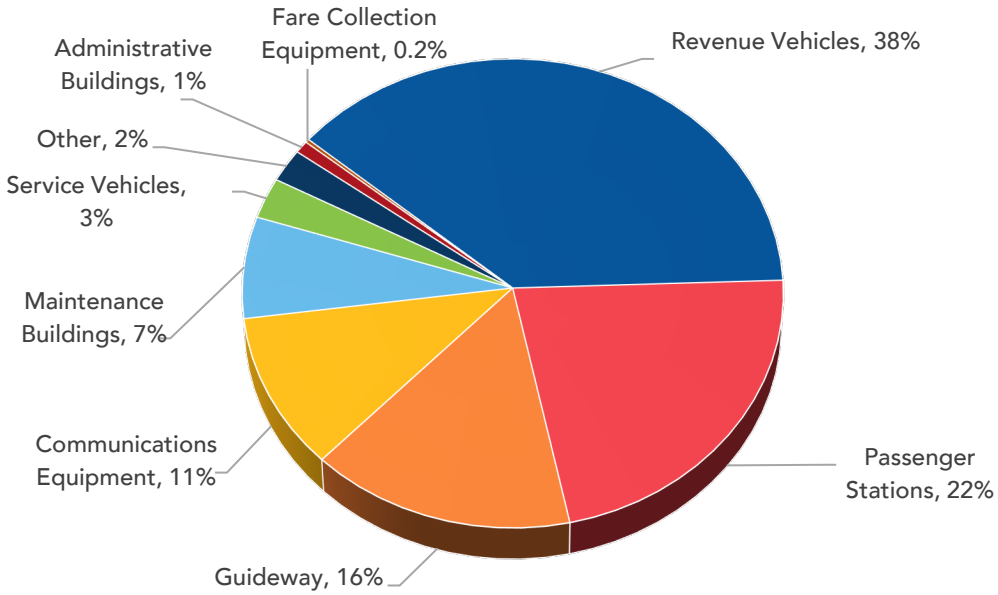
Figure 48: Distribution of transit agency operations and maintenance expenditures by category (FY 2018)



Source: Research team analysis of individual agency budget reports. Reporting categories based on the National Transit Database.

[66] The analysis is based on FY 2018 data rather than FY 2019 data in order to incorporate more complete information on actual rather than planned expenditures.

Figure 49: Distribution of transit agency capital expenditures by category (FY 2018)



Source: Research team analysis of individual agency budget reports. Reporting categories based on the National Transit Database.

5.3.3 Total Stimulus Impacts on the Regional Economy

Table 12 and **Table 13** summarize the annual economic impact of transit agency expenditures. Direct impacts represent the activity of the transit agencies themselves including capital purchases. Budget expenditures are adjusted within the analysis to account for the proportion of each agency's demands that can be met locally, based on regional economic data.[67] Because of this, a share of expenditures, such as for purchases of vehicles, do not contribute to the local economy and are not counted in the direct impacts. Indirect impacts include the goods and services purchased by transit agencies as well as additional impacts on suppliers. Induced impacts capture the spending of worker income.

With multiplier impacts, the total impact of ongoing agency operations and maintenance expenditures reaches upwards of 11,000 jobs in the Atlanta region, contributing $912 million in value added to the Gross Regional Product and over $1.5 billion in output to the economy. Similarly, capital expenditures in FY 2018 supported a total of nearly 1,600 jobs, earning over $95 million in income, and supporting $237 million in regional business sales.

[67] Estimated based on local purchase coefficients for the relevant sector obtained from the IMPLAN modeling system.

Table 12: Economic impact of transit agency operations and maintenance expenditures (FY 2018)

Impact Type	Jobs	Income ($M)	Value Added ($M)	Output ($M)
Direct Impacts	3,579	$321	$321	$538
Supplier Purchases (Indirect)	4,248	$204	$294	$551
Employee Respending (Induced)	3,329	$165	$298	$489
Total Impacts	**11,156**	**$689**	**$912**	**$1,578**

Source: Research team analysis using TREDTransit™. Note: some labor expenses reported by CPACS as capital expenditures have been reclassified as operating expenses for the purposes of this analysis. In some cases, jobs were imputed based on reported wages information.

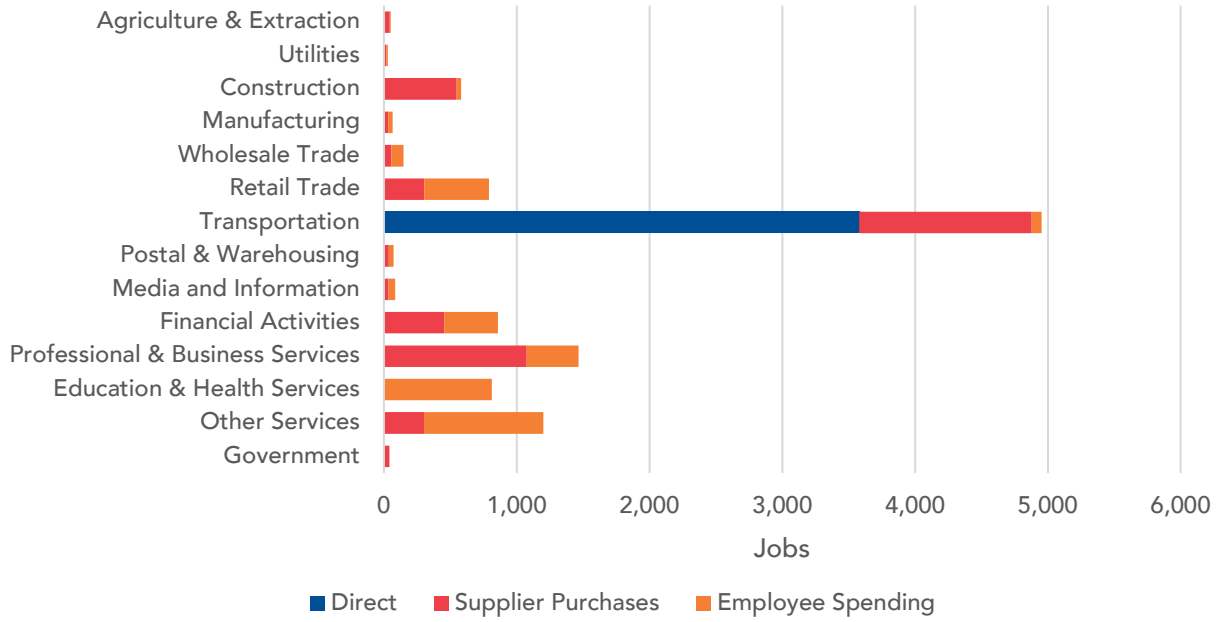
Table 13: Economic impact of transit agency capital expenditures (FY 2018)

Impact Type	Jobs	Income ($M)	Value Added ($M)	Output ($M)
Direct Impacts	941	$59	$78	$132
Supplier Purchases (Indirect)	250	$16	$27	$45
Employee Respending (Induced)	406	$20	$36	$60
Total Impacts	**1,597**	**$95**	**$141**	**$237**

Source: Research team analysis using TREDTransit™. Note: some labor expenses reported by CPACS as capital expenditures have been reclassified as operating expenses for the purposes of this analysis. In the absence of data on capital expenditures by type for smaller agencies, funds were allocated according to observed patterns of expenditures of other agencies in the region.

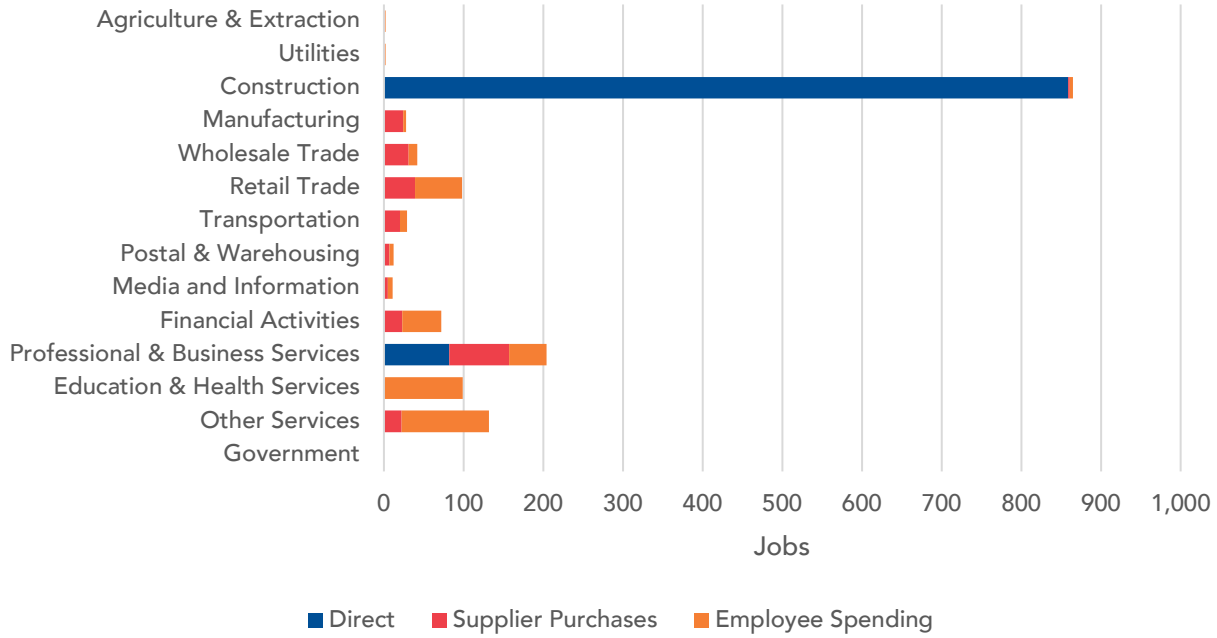
Figure 50 and **Figure 51** show how these impacts can be further traced to effects on individual industries within the Atlanta economy. Major affected industries include, as expected, transportation and construction industries, but also professional and business services, as well as sectors supported by consumer spending such as retail and education and health services.

Figure 50: Total jobs by sector – 2018 annual transit agency operations and maintenance



Source: Research team analysis using TREDTransit™

Figure 51: Total jobs by sector – 2018 transit capital expenditures



Source: Research team analysis using TREDTransit™

5.4 Transit Commuters and the Regional Economy

80,785 WORKERS
can get to work because of transit

$2.9 BILLION in ANNUAL WAGES
brought home by transit commuters

$9.0 BILLION in ANNUAL SALES
facilitated by transit commuters

4 PERCENT
transit commuter share, regionwide

Transit plays a critical role in connecting businesses with their workforce. According to the most recent ARC transit survey from 2009 to 2010, 45 percent of all transit trips in the region are between a person's home and their workplace.[68] The American Community Survey Public Use Microdata Sample, a product of the U.S. Census Bureau, collects data on individuals' reported travel mode to work, earnings, and the industry in which they are employed. This data source counts 80,785 workers in the Atlanta region that use transit to reach their jobs.[69] These individuals earn $2.9 billion in annual wages. While transit commuters account for only 4 percent of all commuters in the region, they nevertheless facilitate $9.0 billion in annual business sales through their work in diverse industries.[70]

Table 14 provides additional detail on the top twenty industry sectors in which transit commuters work. Over 12,500 workers from restaurants and bars across the region rely on transit to get to work. Other top affected industries include educational services and professional, scientific, and technical services. Also of note is the role of transit in providing access to 971 workers in air transportation. Hartsfield-Jackson Atlanta International Airport, the world's busiest airport, is a major regional employer and served directly by the MARTA Red and Gold Lines.

Average annual wages or salary income of transit commuters is approximately $36,000. Nevertheless, transit usage encompasses both low- and high-income workers, as shown by the wage distribution in Table 14. This is also borne out by regional survey data. The 2009-2010 ARC transit survey found that more than 50 percent of the transit riders have a total annual household income less than $30,000, while 12.6 percent had household incomes over $75,000.[71]

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[68] Atlanta Regional Commission, Regional On-Board Transit Survey, 2009-2010.

[69] Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek, IPUMS USA: Version 8.0 [2013-2017 American Community Survey 5-Year Estimates, Public Use Microdata Sample]. Minneapolis, MN: IPUMS, 2019. Because of PUMA geographies, Newton County is included in addition to the 13-county ATL region.

[70] Sales estimates are based on ratios from 2017 regional IMPLAN industry economic data and adjustment factor from the Bureau of Economic Analysis (BEA) to translate wage and salary income into total compensation.

[71] Atlanta Regional Commission, Regional On-Board Transit Survey, 2009-2010.

Table 14: Jobs, wages and sales supported by transit commuters

NAICS[72]	Industry	Transit Commuters	Average Wages*	Wages (Millions)	Sales (Millions) **
722	Food Services and Drinking Places	12,579	$17,199	$216	$693
611	Educational Services	5,794	$33,295	$193	$352
541	Professional, Scientific, and Technical Services	5,748	$70,710	$406	$851
561	Administrative and Support Services	5,684	$17,729	$101	$220
92	Public Administration (non-military)	5,661	$62,883	$356	$546
23	Construction	3,563	$28,934	$103	$351
52	Finance and Insurance	3,325	$71,724	$238	$1,034
721	Accommodation	3,052	$26,522	$81	$288
622	Hospitals	2,732	$41,299	$113	$279
445	Food and Beverage Stores	2,563	$20,081	$51	$142
624	Social Assistance	2,144	$23,201	$50	$101
621	Ambulatory Health Care Services	2,053	$37,016	$76	$152
452	General Merchandise Stores	1,882	$15,664	$29	$91
812	Personal and Laundry Services	1,504	$15,785	$24	$47
42	Wholesale Trade	1,254	$35,052	$44	$140
448	Clothing and Clothing Accessories Stores	1,139	$24,527	$28	$125
517	Telecommunications	1,096	$81,072	$89	$431
623	Nursing and Residential Care Facilities	1,087	$24,505	$27	$57
481	Air Transportation	971	$41,567	$40	$137

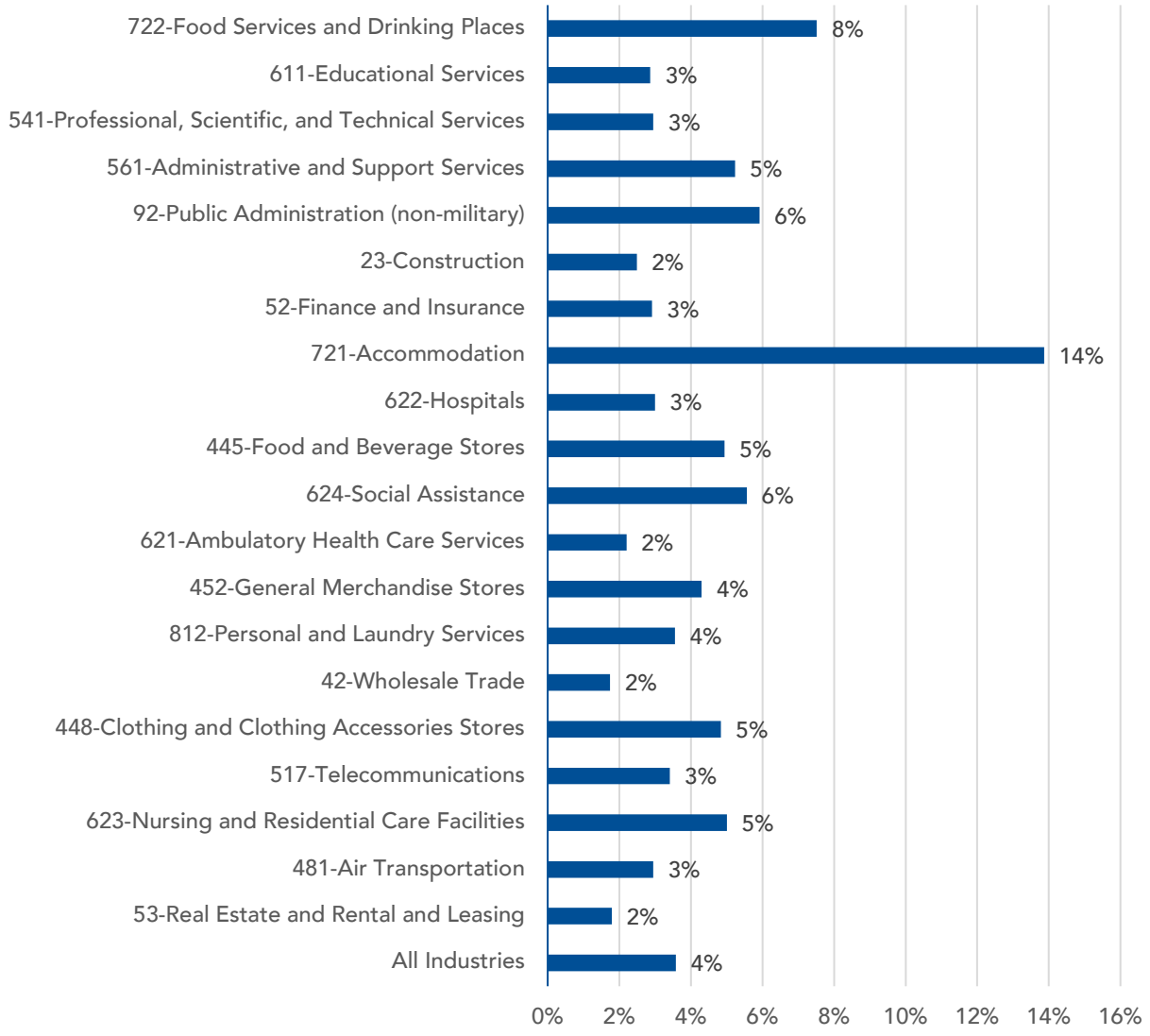
[72] Industry codes are from the North American Industry Classification System (NAICS).

NAICS[72]	Industry	Transit Commuters	Average Wages*	Wages (Millions)	Sales (Millions) **
53	Real Estate and Rental and Leasing	903	$33,679	$30	$325
	All Other Industry Classifications	15,352	$36,931	$567	$2,640
	Total (Industry Information Available)	**80,086**	**$35,753**	**$2,863**	**$9,000**
	Unspecified Industry***	699	$24,382	$17	$54
	TOTAL	**80,785**	**$35,655**	**$2,880**	**$9,054**

*Source: Research team analysis using 2013-2017 American Community Survey 5-Year Estimates, Public Use Microdata Sample. Sales estimates are based on ratios from 2017 regional IMPLAN industry economic data and adjustment factor from the BEA to translate wage and salary income into total compensation. NOTES: *Wages or salary income in the past 12 months, in constant dollars. **Also called business revenues or total output. ***Imputed based on ratio between business revenue and wages for all other industries with transit commuters.*

Figure 52 shows the transit commute mode share of the twenty industries that have the greatest overall number of transit commuters. This data shows that while many industries have a mode split close to the regional average of 4 percent, some have a much greater proportional reliance on transit relative to other modes. Workers in restaurants, bars, and hotels are particularly likely to use transit to travel to work.

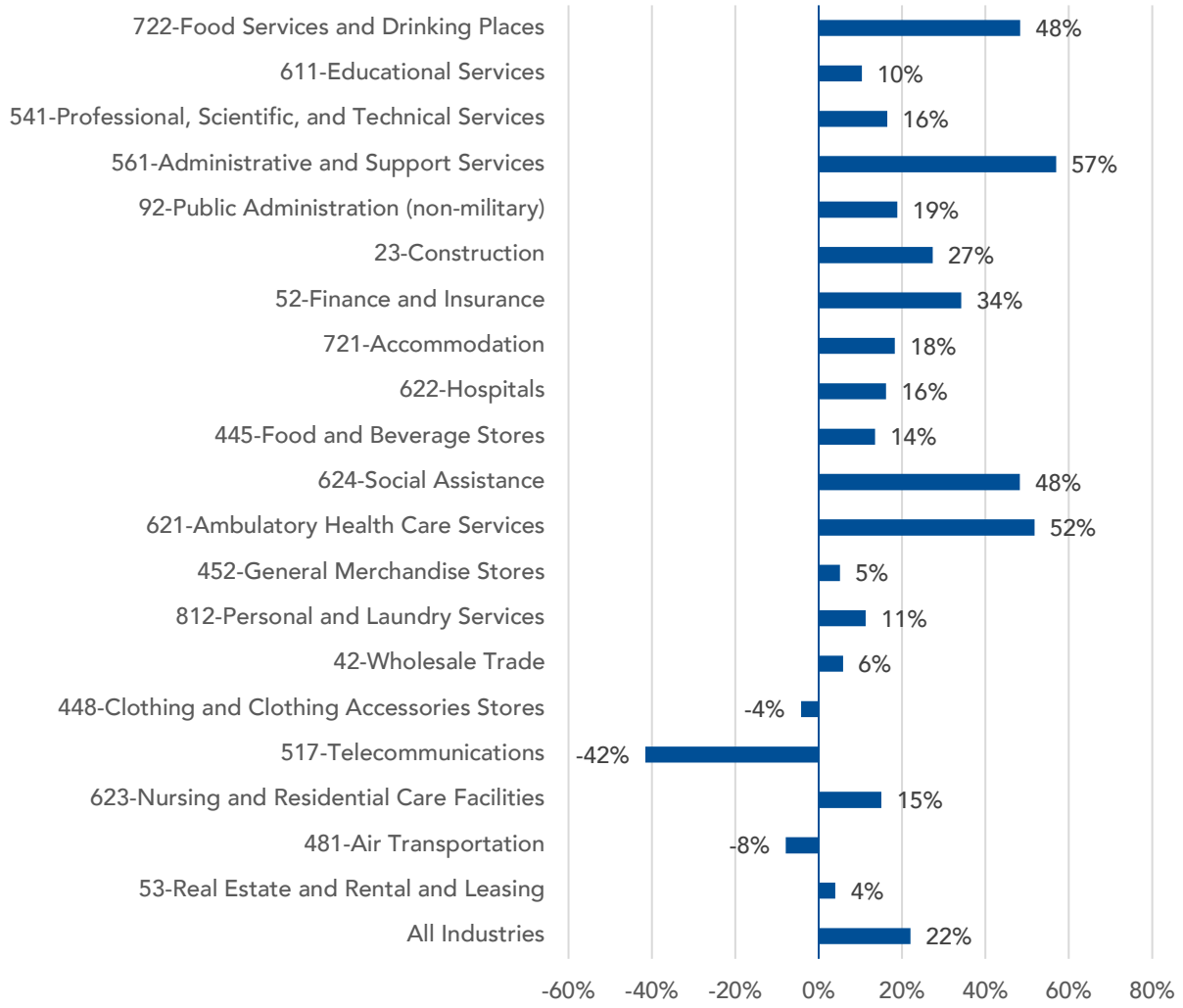
Figure 52: Transit commute mode share – Top 20 industries with the most transit commuters



Source: Research team analysis using 2013-2017 American Community Survey 5-Year Estimates, Public Use Microdata Sample.

Figure 53 examines projected employment growth from 2017 to 2040 in the industry sectors with the most transit commuters today. Overall, employment in the region is projected to grow approximately 22 percent across all industries. However, some of the service sectors that rely heavily on transit are projected to grow at an even faster rate.

Figure 53: Projected employment growth (2017–2040) – Top 20 industries with the most transit commuters



Source: Moody's Economy.com. Note: Forecast decreases in Telecommunications jobs reflect national and international trends in industry consolidation, automation, and outsourcing of work to contractors.

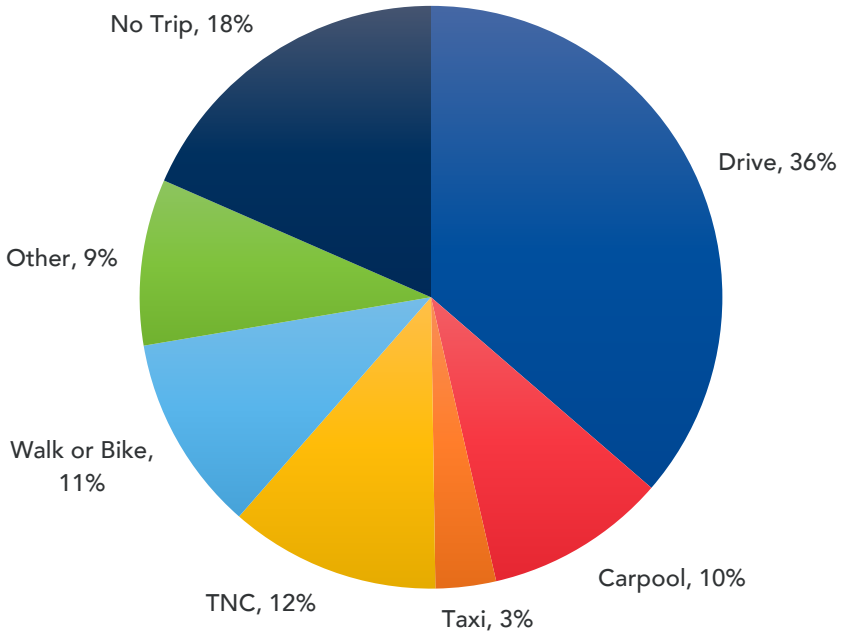
5.5 The Value of Choice: Transit and Alternative Modes

Transit also provides value to residents of the Atlanta region by offering them a cost-effective mode choice to meet their travel needs. One way of understanding this value is considering a hypothetical situation in which current fixed route service is unavailable and examining the other options on which people would be forced to rely. In FY 2019, transit in the Atlanta region facilitated the completion of nearly 123 million bus, commuter bus, heavy rail, and streetcar trips (unlinked). Because some trips between a given origin and destination require transfers and therefore multiple

unlinked trips, this corresponds to approximately 76 million door-to-door (linked) trips involving transit.[73]

Thirty-six percent of transit riders in the Atlanta region report that they both have a car in their household and would have been able to use it in the absence of transit.[74] The remainder would be forced to rely on a range of other more costly or less convenient alternatives or would not have been able to make the trip at all. **Figure 54** summarizes the alternative modal options for Atlanta transit users, based on a combination of survey data from the Atlanta region and data from other transit surveys across the United States.

Figure 54: Alternatives modes to transit



Source: Research team analysis using ARC survey[75]; APTA report[76]; and select analysis of regions with survey data on TNCs as an alternative to transit.

[73] Estimated using the distribution of number of transfers per trip from Atlanta Regional Commission, Regional On-Board Transit Survey, 2009-2010.
[74] Atlanta Regional Commission, Regional On-Board Transit Survey, 2009-2010.
[75] Atlanta Regional Commission, Regional On-Board Transit Survey, 2009-2010.
[76] American Public Transportation Association, Who Rides Public Transportation, 2017.

If bus and rail service were unavailable in FY 2019…

- **14 MILLION** trips would not be made (linked)
- **369 MILLION** more vehicle miles on the road (1% increase)

An estimated 18 percent of all trips in FY 2019, or 14 million origin-to-destination linked trips, would not be made if bus and rail service were unavailable. Another 39 million trips would shift to driving or the use of a taxi or TNCs like Uber or Lyft. Based on an average transit trip length of 9.4 miles,[77] this would result in 369 million more vehicle miles burdening the already congested regional road network. In other words, without transit, the region's roadways would experience a 1 percent increase in vehicle miles on the road.[78] Moreover, additional vehicular traffic would be concentrated in denser urban areas where transit currently plays a significant role in supporting non-SOV travel and managing congestion. The estimated 369 million vehicle miles avoided is in fact *conservative* because it does not include any additional mileage for those who switch to carpooling and does not account for any dead-head travel of Taxis/TNCs as they drive to pick up customers. In larger cities, by some estimates, TNC drivers can spend as much as half of the time they are on the road deadheading.[79]

Transit also enables its users to avoid out-of-pocket travel expenses. **Table 15** summarizes per trip and overall user costs avoided because of the availability of transit. The figures include two sets of estimates for driving. The low estimate reflects operating costs (gasoline, maintenance, tires, and depreciation), while the high estimate includes additional typical ownership costs such as insurance, fees, and financing costs. Neither of these cost estimates include parking costs which vary significantly across the region but can be significant, particularly near major employment centers. A 2018 survey of parking rates found average daily rates in Downtown, Midtown, and Buckhead of between $15-$16.[80] By comparison, a single MARTA fare is $2.50.

[77] Estimated using the distribution of transit trips by straight-line trip distance from Atlanta Regional Commission, Regional On-Board Transit Survey, 2009-2010.

[78] Annualization of daily regional VMT from Georgia Department of Transportation Office of Transportation Data, Mileage by Route and Road System Report 445 for 2018.

[79] Laura Bliss, "Uber and Lyft Could Do a Lot More for the Planet," *CityLab*, April 30, 2018.

[80] Colliers International, 2018 Atlanta Parking Survey: Urban Submarkets.

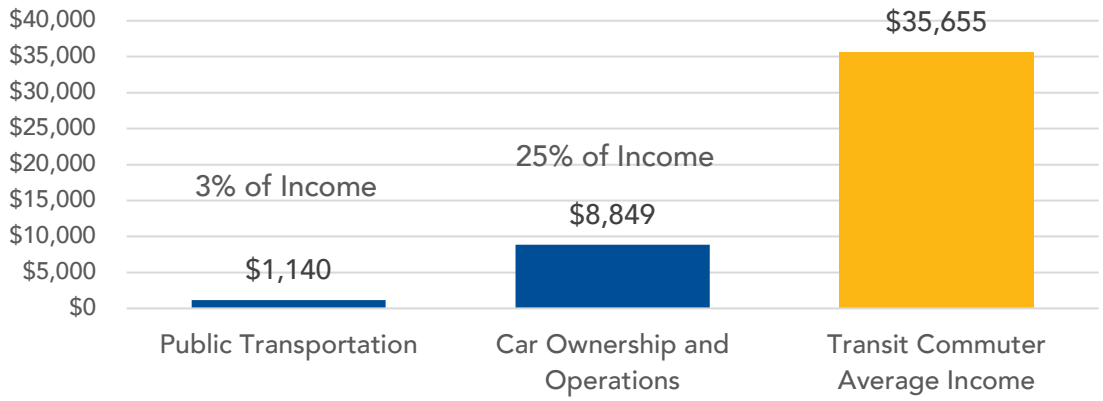
Table 15: Avoided trip costs

Diverted Mode	Per Trip Cost	Trips Diverted (Linked)	Total Cost to Users
Drive (low – operating)	$3.67	27.7 M	$101.8 M
Drive (high – ownership)	$5.55	27.7 M	$153.9M
Taxi	$21.31	2.6 M	$54.5 M
TNC	$12.78	8.9 M	$113.9 M

*Source: Research team analysis using FY19 ridership; trip length based on 2009-2010 ARC Regional On-Board Transit Survey; transit modal alternatives from **Figure 54**; Low driving costs from USDOT[81]; High driving costs from AAA[82]; Taxi costs from Taxi Fare Finder[83]; TNC costs from Taxis-Fare.com.[84]*

Transit's affordability relative to other available options is particularly relevant for lower-income workers who may not be able to afford car ownership. **Figure 55** compares the annual cost of transit use (12 months of MARTA monthly passes) and car ownership to the average income earned by people in the region who used transit to get to and from work. The chart shows that transit commands just 3 percent of a transit commuter's average income, while car ownership and operations costs would claim 25 percent. Research shows that 15 percent of income is a rule-of-thumb for transportation affordability.[85] Therefore, in the absence of transit, many lower-income residents of the region would face the prospect of taking on unaffordable car ownership costs.

Figure 55: Comparison of annual transit and car ownerships costs to transit commuter income



[81] U.S. Department of Transportation, Benefit-Cost Analysis Guidance for Discretionary Grant Programs, 2018.
[82] American Automobile Association, "Your Driving Costs: How Much Are You Really Paying to Drive?", 2018.
[83] Taxi Fare Finder, TaxiFareFinder: US Taxi Cab Rate Ranking Chart - Sample Fares.
[84] Taxis-Fare, Uber Fare Atlanta.
[85] CNT, "H + T Index Methods," 2017.

Source: Public transportation costs calculated as twelve 30-day MARTA passes ($95 each)[86]; Car ownership and operations from AAA at 15,000 miles per year.[87] Transit commuter average income from research team analysis using 2013-2017 American Community Survey 5-Year Estimates, Public Use Microdata Sample.

Finally, transit enables the Atlanta region to avoid emissions associated with the 369 million in avoided vehicle miles on the road network. This includes volatile organic compounds (VOC), nitrogen oxides (NO_x), particulate matter (PM), and Carbon Dioxide (CO_2), as shown in **Table 16**. Each of these harmful emissions[88] can also be valued based on monetary estimates of the health and other damage to society they cause, as shown in **Table 17**.

Table 16: Estimated avoided vehicular emissions (US Tons) associated with 369 million in avoided automobile VMT

VOC	NO_X	PM	CO_2
125	58	13	166,589

Source: Calculated using the TREDIS® transportation economics suite[89] using per mile emission rates applied to the avoided automobile VMT and to bus revenue miles. Emissions rates in TREDIS® are based on the U.S. Department of Energy's (DOE) AFLEET 2018 model. MARTA rail emissions not included as these are dependent on emissions from the electrical generation process which vary based on fuel mix and geography.

Table 17: Estimated societal value of avoided vehicular emissions associated with 369 million in avoided automobile VMT

Societal Value of Avoided Emissions	Societal Benefit ($Millions)
Mobile Source Pollutants	$5.4
Carbon Dioxide	$5.7

Source: Calculated using the TREDIS® transportation economics suite. Emissions Costs for the criterial pollutants are based U.S. DOT Guidance.[90] For the cost of carbon dioxide, TREDIS uses the World Bank's 2017 Guidance Note on the Shadow Price of Carbon in Economic Analysis.

[86] MARTA, Fare Programs.
[87] American Automobile Association, Your Driving Costs: How Much Are You Really Paying to Drive? 2018 Edition.
[88] US. Environmental Protection Agency (EPA), About Smog, Soot, and Other Air Pollution from Transportation; Overview of Greenhouse Gases.
[89] TREDIS, How TREDIS Can Help.
[90] U.S. Department of Transportation. Benefit-Cost Analysis Guidance for Discretionary Grant Programs, December 2018.

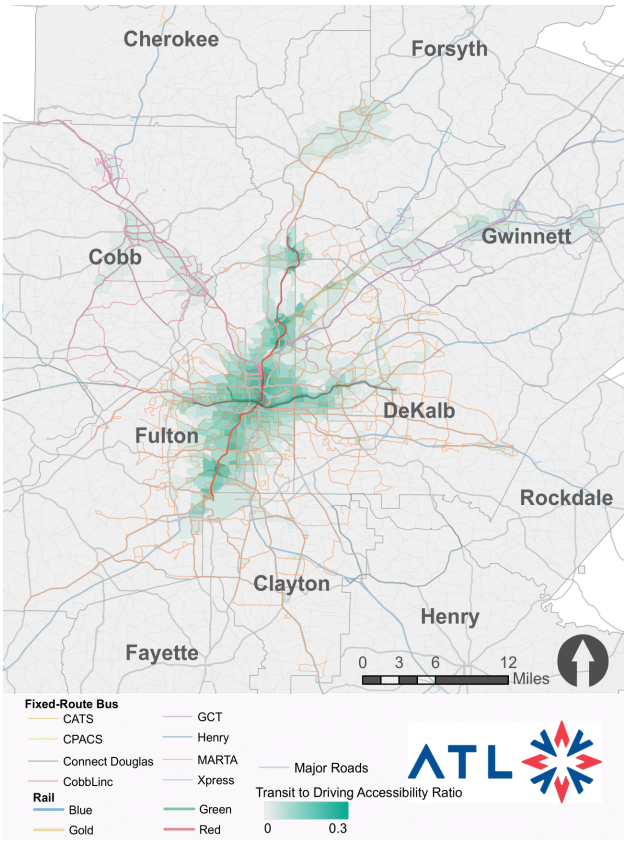
5.6 Transit Accessibility

The ATL seeks to provide benefit to the Atlanta region by helping "to accelerate opportunities for economic growth by making it easier for our talented workforce to access jobs across the region and attract new business."[91] This section provides a snapshot of the access currently provided by transit in the region, as well as a discussion of trends driving future needs.

5.6.1 Regional Access to Jobs

This analysis measures job access as the number of jobs that can be reached within 45 minutes of travel time during the morning peak period. In order to understand the degree to which transit provides a competitive alternative to driving, **Figure 56** maps the ratio of transit access to drive access for each zone in the region. As can be seen from the maps, transit is most competitive in the core of the region but is not a viable option in the periphery beyond the boundaries of the rail and bus network. Moreover, even in the most accessible core, the job accessibility by transit peaks at about 30 percent of that by car (or 0.3), meaning that only 30 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 true modal alternative for regional residents.

Figure 56: Comparison of access to jobs within 45 minutes by driving and transit



Source: Research team analysis using fixed route transit service information in Conveyal and driving travel times and job counts from the ARC regional travel demand model. Travel times are for 7:00 - 9:00 a.m. Areas outside the map extent do not have meaningful access by transit compared to that by car.

5.6.2 Labor Market Acces for Major Employment Centers

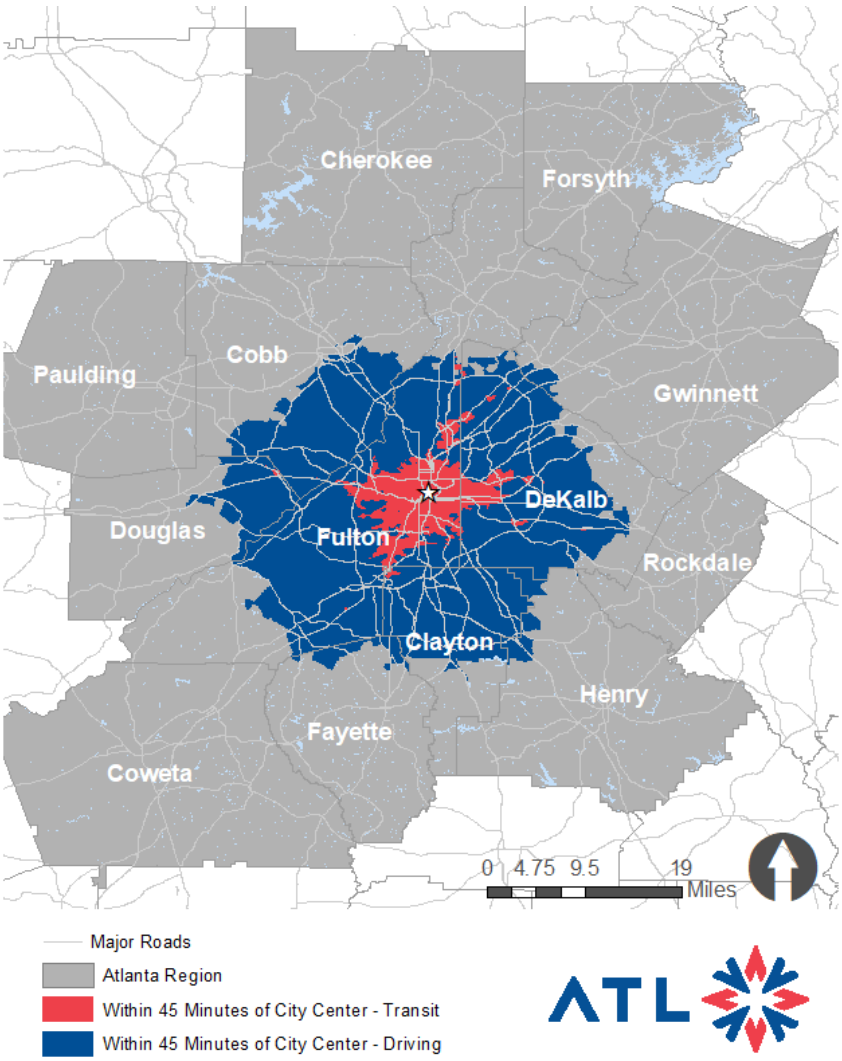
As illustrated above, levels of accessibility provided by transit vary significantly across the region. Therefore, another way to understand the role of transit within the broader economy is to examine how transit supports labor market access for major employment centers. The following figures illustrate the labor market reach of three selected employment nodes in the region: City Center, Perimeter, and Hartsfield-

[91] ATL Transit. Atlanta-Region Transit Link Authority.

Jackson Atlanta International Airport. These three nodes are among the regional centers defined in The Atlanta Region's Plan and each have at least 10,000 jobs in a four-square-mile area.[92]

Access to City Center by transit is fairly symmetric, because of its central location. However, as shown in **Figure 57**, there are notable gaps in transit access to labor north of City Center. The ratio of transit access to drive access is 0.17, which is relatively high for the Atlanta region.

Figure 57: Labor market access – City center



Population within a 45-minute commute:

- Driving: 1,771,570
- Transit: 307,219

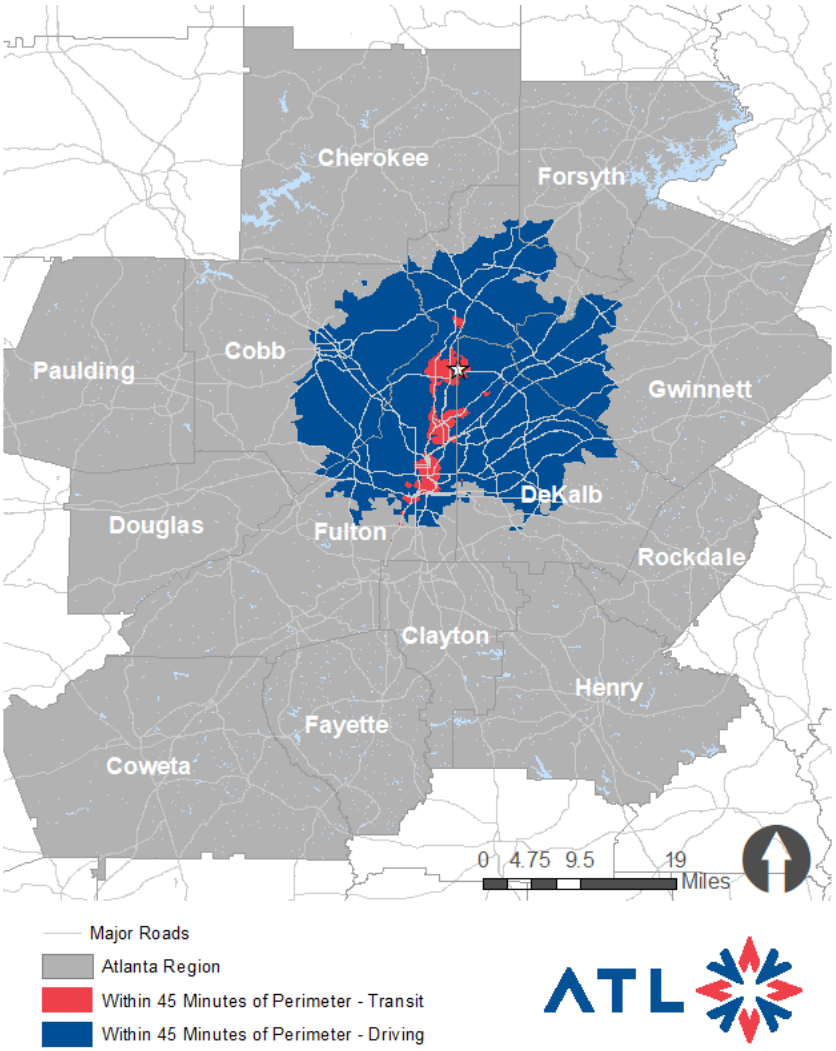
Ratio of Transit Access to Drive Access: 0.17

Source: Research team analysis using fixed route transit service information in Conveyal and driving travel times and population counts from the ARC regional travel demand model. Travel times reflect peak period congestion and transit service levels.

[92] Atlanta Regional Commission, A Guidebook to The Atlanta's Region Plan: Regional Development Guide-Centers and Places.

Perimeter, located about 15 miles north of downtown Atlanta, has limited access to labor markets via transit. As shown in **Figure 58**, transit access within 45 minutes is limited primarily to a few discontinuous zones along the MARTA Red Line. While the relatively high speed of MARTA rail grants access to areas at a significant distance from Perimeter, this access is limited to locations relatively close to each station that are reachable by walking or local bus service. Even areas very close to Perimeter to the east and north are not accessible within 45 minutes by transit. The ratio of transit access to drive access is 0.09.

Figure 58: Labor market access – Perimeter



Population within a 45-minute commute:

- Driving: 1,570,776
- Transit: 136,563

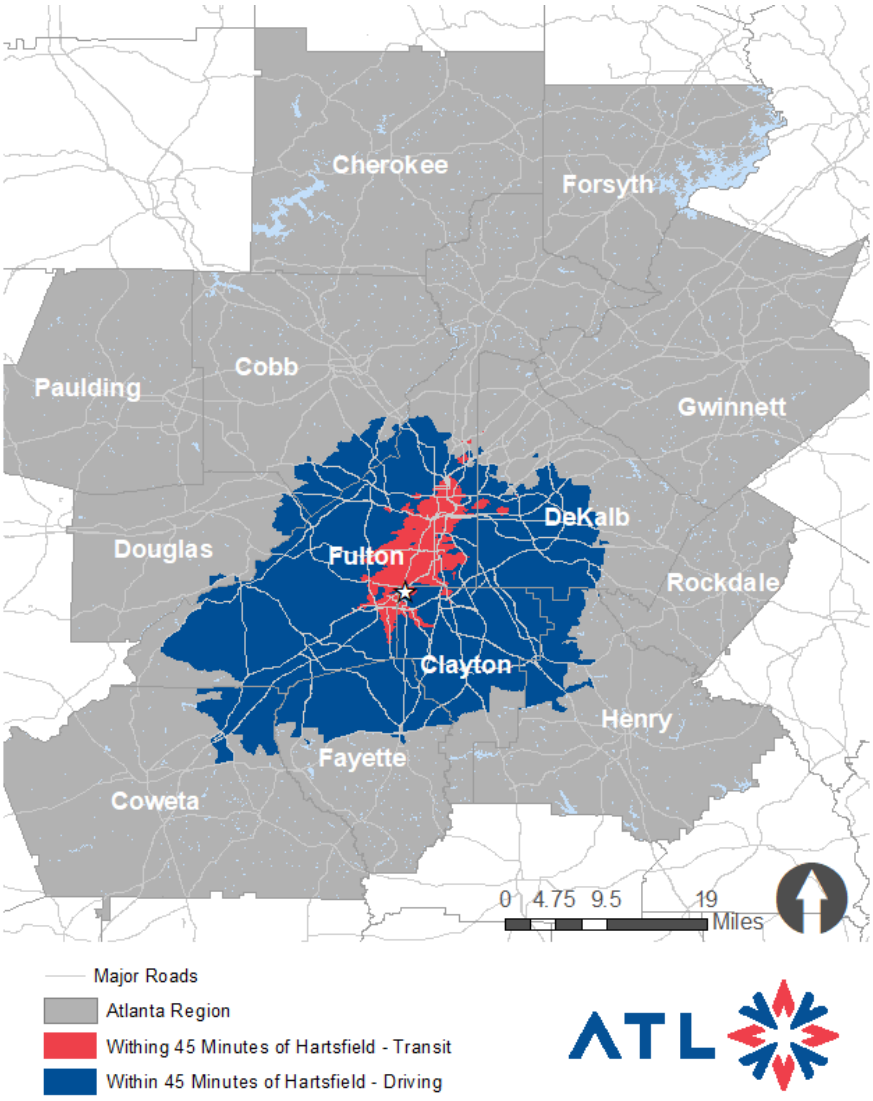
Ratio of Transit Access to Drive Access: 0.09

Source: Research team analysis using fixed route transit service information in Conveyal and driving travel times and population counts from the ARC regional travel demand model. Travel times reflect peak period congestion and transit service levels.

Hartsfield-Jackson Atlanta International Airport is a major employer in the Atlanta region. By transit, it is well-connected to downtown. However, as shown in **Figure 59**, most of Clayton County, immediately to the east of the airport cannot be reached by

transit within the 45-minute threshold and transit access to the south and west is also limited. Overall the ratio of transit access to drive access from Hartsfield Airport is 0.17.

Figure 59: Labor market access – Hartsfield-Jackson Atlanta International Airport



Population within a 45-minute commute:

- Driving: 1,235,321
- Transit: 213,925

Ratio of Transit Access to Drive Access: 0.17

Source: Research team analysis using fixed route transit service information in Conveyal and driving travel times and population counts from the ARC regional travel demand model. Travel times reflect peak period congestion and transit service levels.

5.6.3 Transit Access by County and Regional Growth Trends

Table 18 presents county-level accessibility, transit commute mode share, and forecast population growth statistics. As can be seen visually from **Figure 60**, the counties with the greatest modal parity between transit and driving access, DeKalb and Fulton, also have the highest share of transit commuters. On the other hand, regional population growth projections from the ARC travel demand model show the

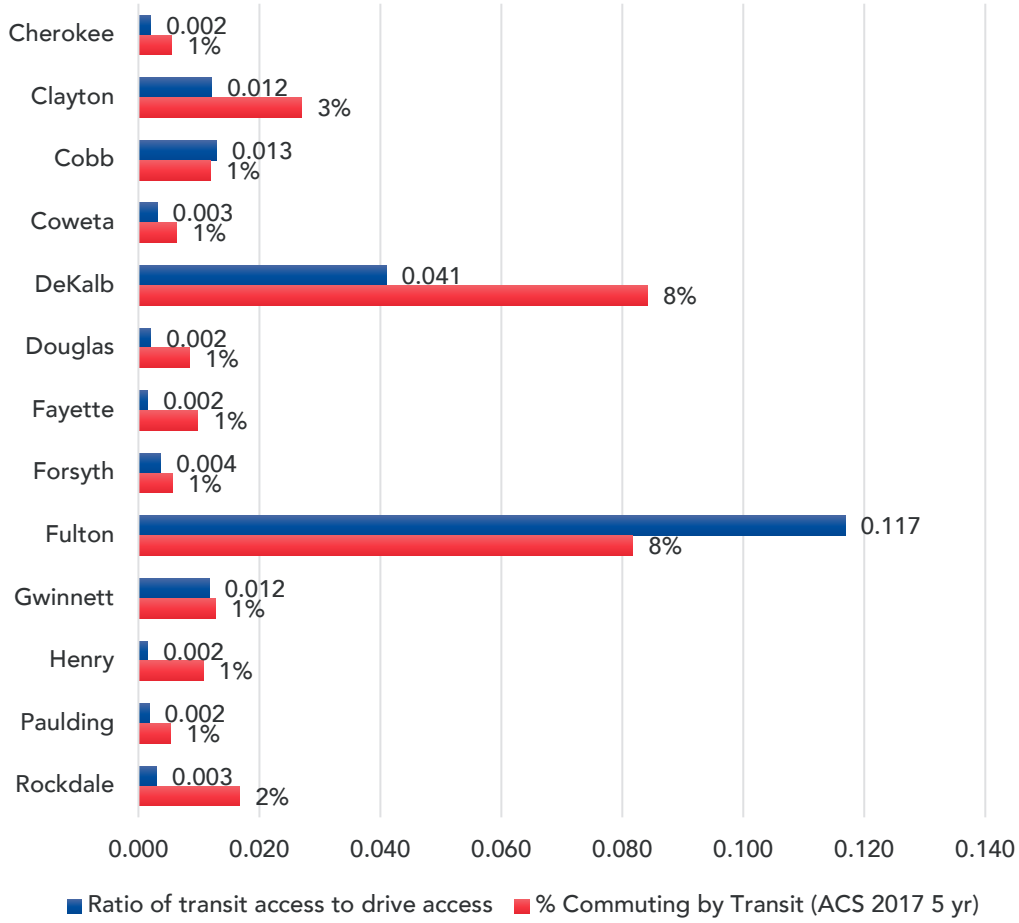
most significant growth in the northeastern part of the Atlanta region, particularly in Gwinnett and Forsyth counties, which is less accessible by transit. As is evident in **Figure 61**, these counties have some fixed-route bus service but are not served by rail. Going forward, proactively managing growth through strategic transit investments will be a key consideration for sustaining and supporting Atlanta's regional economic development.

Table 18: Modal access parity and population growth forecasts by county

County	Average jobs accessible by transit within 45 minutes	Average jobs accessible by driving within 45 minutes	Ratio of transit access to drive access	% Commuting by Transit	2017 Population	Net Population Increase by 2040
Cherokee	691	335,252	0.002	1%	245,595	144,590
Clayton	9,845	811,513	0.012	3%	267,343	54,569
Cobb	12,336	953,700	0.013	1%	721,804	148,775
Coweta	583	186,179	0.003	1%	149,719	89,003
DeKalb	58,870	1,437,004	0.041	8%	705,481	145,941
Douglas	792	383,116	0.002	1%	140,182	59,288
Fayette	555	356,779	0.002	1%	109,991	31,592
Forsyth	1,212	326,712	0.004	1%	224,781	204,755
Fulton	158,168	1,353,782	0.117	8%	954,932	259,783
Gwinnett	7,982	682,001	0.012	1%	889,351	451,600
Henry	566	360,745	0.002	1%	230,422	119,908
Paulding	406	225,360	0.002	1%	155,805	102,926
Rockdale	864	284,794	0.003	2%	91,879	35,843

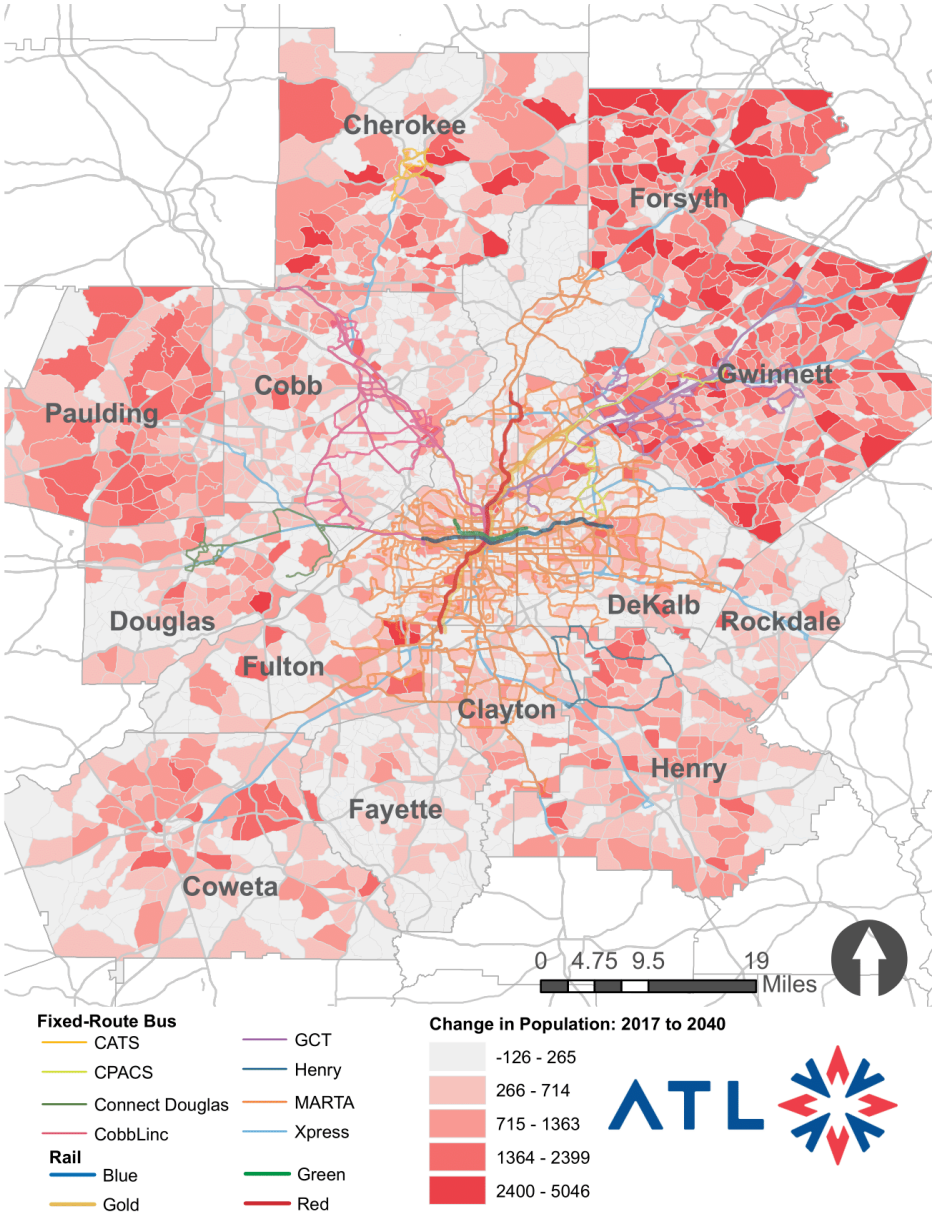
Source: Research team analysis using fixed route transit service information in Conveyal and driving travel times and population counts from the ARC regional travel demand model. Transit commute mode share from the American Community Survey, 2017 five-year estimates.

Figure 60: Transit accessibility and transit mode share by county



Source: Research team analysis using fixed route transit service information in Conveyal and driving travel times and population counts from the ARC regional travel demand model. Transit commute mode share from the American Community Survey, 2017 five-year estimates.

Figure 61: Forecast regional population growth 2017-2040 and the regional fixed-route transit network



Source: Baseline and projected population from the ARC regional travel demand model.

5.6.4 Peer Region Comparison

One final way to understand transit access in Atlanta is to contextualize it alongside other regions that are considered to be either comparable or aspirational peers. **Table 19** presents a series of statistics for the Atlanta Metropolitan Statistical Area (MSA) in comparison to the Miami, Minneapolis, and Seattle MSAs. Demographic information from the American Community Survey shows that Atlanta is the second largest of these regions and has grown at a similar pace in the last five years to Miami and Seattle. However, in the same period Atlanta has lagged slightly in the pace of

younger adult (age 20–39) population growth relative to these peers. Atlanta has a higher proportion of its residents living below the poverty line than Minneapolis and Seattle. In terms of mode share, Seattle is a clear outlier, successfully capturing 11 percent of the overall commuter market.

The Access Across America project publishes multimodal job access rankings for 49 of the largest (by population) metropolitan areas in the United States, as shown in **Table 19**.[93] Atlanta has significantly lower transit access than its peers. Atlanta also does not score as well on auto access—a likely reflection of both land use patterns and congestion. The congestion impact ranking shows that Atlanta is the metro area with the 7th highest loss in job accessibility due to congestion. Constraints on access pose challenges for individuals as well as the competitiveness of regional businesses. Future mobility investments in the region should seek to better connect people to jobs as well as other services and amenities.

Table 19: Peer regions comparison – Socioeconomic and transit access conditions

	Population					National Rank (out of 49)		
MSA	Total (2017)	% Growth ('13-'17)	% Growth ('13-'17), Age 20-39	Poverty Rate	Transit Commute Mode Share	Transit Access	Auto Access	Congestion Impact on Access
Atlanta	5.7 M	6.0%	3.2%	13.9%	3%*	32	29	7
Miami	6.0 M	6.1%	6.1%	16.1%	3%	16	19	10
Minnea-polis	3.5 M	4.0%	4.5%	9.4%	5%	13	7	28
Seattle	3.7 M	6.6%	8.4%	10.4%	11%	8	23	11

*Source: Population and mode share from the American Community Survey. Transit access, auto access, and congestion impact on access data from Access Across America. *Note: This statistic is slightly different than the 4-percent mode share reported earlier in the report as it encompasses a larger geography than the 13-county ATL region.*

[93] Access Across America, Auto 2017; Transit 2017.

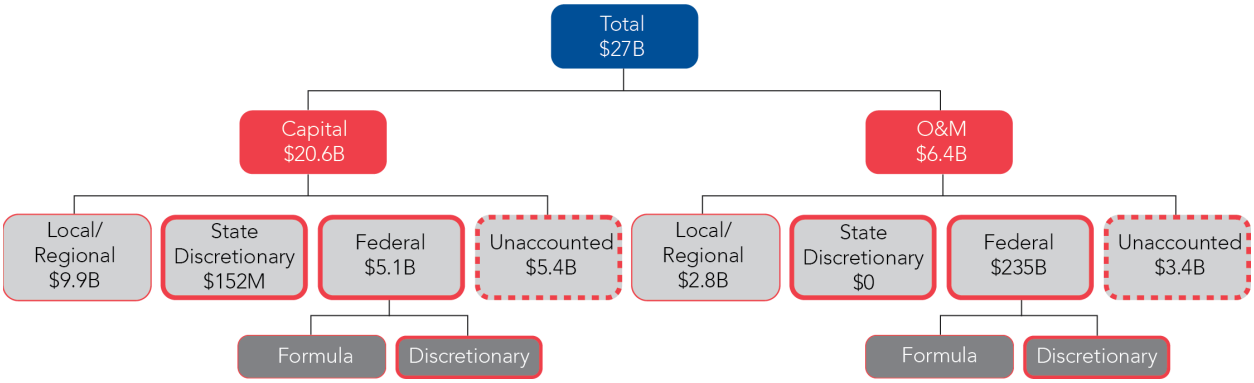
6 TRANSIT NEEDS AND PLANNED INVESTMENTS

The Atlanta region is projected to have a population of over 8.6 million and employment of over 4.7 million by 2050.[94] The Atlanta Regional Commission forecasts that a significant portion of this growth is expected to occur in areas outside the central part of the region. This highlights the need for transportation solutions that give residents alternatives to traveling in SOVs, to avoid worsening the region's already significant level of traffic congestion and poor roadway reliability.

In 2019, through the development of the ATL Regional Transit Plan (ARTP), the ATL has undertaken a significant effort with the participation of the region's transit service providers to estimate the region's transit needs over the next three decades. Through this process, the ATL found that the region's transit needs are estimated at $27 billion, or nearly $1 billion *per year*. Of these needs, about one-third (nearly $9 billion) are currently unfunded. For the remaining $18 billion many of the funding sources are contingent upon continuation of past funding trends; meaning that the unfunded portion could increase if current funding trends are not realized.

In particular, the region has a significant need for high capacity transit infrastructure; in some cases, specific solutions—such as bus rapid transit, light rail transit, heavy rail transit, and express lanes and express commuter service—have been preliminarily proposed as a result of a study; in others, the need for high capacity transit is known but the solution has not yet been determined. In addition, the region has needs related to maintenance and rehabilitation of current assets, to ensure they are maintained in a state of good repair.

Figure 62: Transit Funding Needs for the Atlanta Region (2020–2050)



Meeting the region's transit needs will be critical to ensuring the Atlanta region remains economically competitive and continues to attract and retain the nation's and world's talent.

[94] Atlanta Regional Commission and ATL Planning Committee, "How Changing Demographics Will Impact Metro Atlanta."

7 MOVING TRANSIT IN THE REGION FORWARD

A comprehensive look at the performance and benefits of the Atlanta region's transit systems is simply a first step in a longer and broader process. This process will be challenging but ultimately very valuable as the region determines how best to invest to improve transportation for users of all transportation modes. These investments will have wide-ranging implications and will fundamentally increase the economic and societal benefits of the transit network for the region.

Representative Kevin Tanner and Senator Brandon Beach, the authors of the bill that formed the ATL, have stated that a goal for the ATL is "to position the Atlanta region as a prime location for business development and expansion." In the same message, they declared that "a more efficient and unified transit system will help drive economic growth and provide better access to jobs for people across the region."[95] To achieve that goal, the region as a whole will need to come together in a coordinated and collaborative manner to improve transit. The following subsections describe potential strategies to improve transit and address issues of performance that were reported in **Chapter 4**. Additional recommendations are provided related to transit performance monitoring in general, and future efforts on this ARA.

7.1 Investing in Transit

As described in **Chapter 6**, the ATL is studying transit investment needs throughout the region and developing project selection methodologies to ensure that the federal, state, and local funding directed to the investments will result in the greatest positive impact to the transportation system for the region's residents.

In June 2019, the ATL asked local governments, transit operators, community improvement districts, and other project sponsors to submit information about their transit projects to the ATL in order to develop the ARTP. The process is currently in the outreach and engagement phase, with plan finalization and Board adoption scheduled for December 2019. The list of 192 projects includes:

- 50 system/area-wide investments
- 129 route/asset-specific investments
- 13 projects not yet associated with specific geographic area, route, or asset type (very early in development).

Of those projects, 30 are related to state of good repair, 58 to enhancement, and 104 to expansion. These projects are being evaluated in terms of their market potential, deliverability, and anticipated performance impacts. The results of the evaluation will assist the region in prioritizing the projects moving forward. The formation of the ATL, the submission and evaluation of projects, and adoption of the ARTP is a landmark in the history of transit in this region. But like this first Annual Report and

[95] Kevin Tanner and Brandon Beach, "A vision for the Atlanta Region," Atlanta-Region Transit Link Authority.

Audit, the Regional Transit Plan is part of a longer and broader process to improve transportation across the region in both the near and long term.

Many of the Atlanta region's peers have undertaken similar planning efforts in recent years and are currently reaping the benefits of investing in improving transit. The Seattle region, backed by voter-approved dedicated funding, has expanded commuter rail, is building a 50-mile light-rail system by 2023, has redesigned its bus system, and has invested heavily in bus-rapid transit (known as RapidRide).

Figure 63: The Seattle RapidRide system has reduced travel time, improved on-time performance, and increased ridership.

On average, the RapidRide routes have seen an 87 percent ridership increase since launching and carry more than 64,500 riders per weekday. Each line has sped up travel time during the busiest commute hours by an average of 11 percent and the number of trips coming on time has improved to 84 percent.[96] As a result, Seattle has been able to realize steady growth of jobs without a corresponding growth in person vehicle trips.[97] The region's successes are not born simply from investing in transit but also from a commitment to integrated planning with land use, bicycle and pedestrian infrastructure, and the application of travel demand management strategies to encourage travel by modes other than personal vehicles.

Minneapolis–St. Paul has also achieved great success through a wide variety of strategies for bus-on-shoulder commuter service (improvements in reliability, travel time, and customer satisfaction), arterial bus rapid transit (a service that started in 2016, has already seen ridership increase by 30 percent, and has just opened a second line), and light rail (Blue and Green Line ridership increased 9 percent

[96] King County Metro, "Seattle RapidRide Expansion Program Report," 2017.
[97] Mike Lindblom, "Transit Ridership Continues to Grow in Central Seattle, while Solo Car Commutes Decline," Seattle Times, February 15, 2018.

Figure 64: All three of the Twin Cities rail lines recorded record ridership in 2017, and their Arterial Rapid Transit A-line continues to experience year-over-year ridership gains.

between 2018 and 2019).[98] The Green Line was so immediately successful that, three months after it opened in 2014, ridership was just 1 percent shy of 2030 ridership projections.[99]

The Twin Cities' economy has experienced steady growth, and the population is growing faster than any other major city in the North, Midwest, or Rust Belt. The success of transit investments is in part due to the fact that transit serves a wide variety of communities and trip purposes, not just commuting trips. The investment in light rail, which serves many different neighborhood types and demographics has increased business sales, resulted in new housing developments (including affordable housing) and new employment sites, investment in green energy, and revitalization of neighborhoods, all while providing new mobility options in the region. Past development that has occurred along transit corridors is valued at around $12 billion. An additional $8.2 billion in development, including 29,000 new housing units, is expected to occur along high frequency transit in the future.[100]

The key takeaways from these examples are that investments in transit go beyond simply giving people more options to get around the region. They have very real implications to the locations they serve in terms of community vitality, economic competitiveness, and access to employment. They also have a higher return on investment and more impact when they are planned for in an integrated fashion and coupled with supporting programs and policies related to parking, transit-oriented development, zoning, and bicycle and pedestrian infrastructure.

The following bullets highlight key areas for consideration in making strategic transit investments in the Atlanta region:

- **Investing in high-capacity transit to meet the region's demand for transit.** All forecasts point to continued and rapid population and job growth in the Atlanta region over the next several decades. Positioning the region for this growth means strategically investing in high capacity transit that will enable to region to accommodate the growth while maintaining livability and accessibility. Examples

[98] University of Texas at Austin Center for Transportation Research, Peak Period Bus Use of Freeway Shoulders, 2015. Metro Transit, "Rail Lines on Pace for Another Year of Record Ridership," July 19, 2018.
[99] Marion Renault, "Green Line already nears 2030 ridership goal," MPRNews, September 19, 2014.
[100] Metro Transit, "TOD: Developments Succeed near High Frequency Transit," August 30, 2019.

include new or expanding rail service in addition to bus rapid transit with priority treatments to ensure travel time and reliability meet expected targets.

- **Investing in express lanes as well as dedicated right-of-way for transit to improve on-time performance and travel speeds.** The analysis of transit versus driving accessibility in the Atlanta region in **Chapter 5** demonstrates that, despite investments to date, transit lags behind driving considerably as a way to travel around the region, even in more transit-accessible locations. Furthermore, in some areas of the region, average transit speeds are as low as five miles per hour. For this reason, the region should consider building upon recent investments in tolled express lanes and other preferential or dedicated transit facilities to make transit not only quicker but also a more attractive travel option. Preferential/Dedicated right-of-way can take many different forms, from rail to bus guideways, bus lanes, Toll lanes, and bus on shoulder. These investments speed up transit, reduce travel time, and improve reliability, three of the most important elements to surveyed transit riders.[101]
- **Ensuring the region's transit network works in a coordinated and seamless way, including across multiple systems and service providers.** A regional transit system works best when riders can connect seamlessly between routes of various modes, sometimes provided by more than one provider. This requires coordination between multiple agencies at multiple levels on a wide variety of topics, including: fares; schedule coordination; rider information; signage and wayfinding at transfer points; joint facilities; and rider amenities at stops, stations, hubs, and transit centers.[102]
- **Advising on incentives to encourage various non-SOV travel options and data-sharing to enhance the quality of decision-making.** The ATL has a significant role to play in informing decisions in the Atlanta region about what types of travel should be incentivized based on the impact to the region's transportation network. For example, bikeshare and TNC trips may directly contribute to a portion of transit ridership declines; on the other hand, if these modes lead people to own fewer vehicles, they could have long-term benefits for the use of transit in the region, particularly if the quality of transit options available to travelers increases through strategic investments.[103] In addition, TNC trips contribute more to VMT and GHG emissions than bikeshare trips. All of these differences in impacts, by mode, should be taken into account in considering appropriate incentives to encourage positive travel behavior. Better data-sharing (such as by requiring private providers to share certain data regarding travel patterns) can also improve the quality of decisions that are made to make transit a more competitive travel option in the region.

[101] TransitCenter, "Who's On Board 2016: What Today's Riders Teach Us About Transit That Works," 2016.
[102] Metropolitan Washington Council of Governments, "Many Bus Providers, One Regional System," January 22, 2019.
[103] TransitCenter, "Who's On Board 2019: How to Win Back America's Transit Riders," 2019.

- **Ensuring that the existing service the region delivers is high-quality, including delivering reliable and frequent service (measured by on-time performance and headways) that is comfortable, clean, safe, and respects the riders.** Mineta Transportation Institute researchers found that quality of service was the strongest determinant of bus ridership.[104] In the Atlanta region, on-time performance of buses ranges from 60.1 percent to 77.7 percent for the three largest providers (CobbLinc, GCT, MARTA); however, all three experienced a decrease in performance from 2018 to 2019 (see **Figure 16**).
- **Evaluating the need for a bus network redesign.**[105] Many of the country's major transit agencies have undertaken a network redesign in the last decade with the primary goals of simplifying the system for ease of public use, increasing ridership, and improving operational efficiency, effectiveness, and reliability. ***Austin, Columbus, and Houston are three such cities that enacted cost-neutral redesigns, and all three cities saw ridership increase after redesign implementation.*** A network redesign can have other benefits beyond those realized by customers (see box at right).
- **Enhancing state of good repair for the region's transit fleets.** Maintaining transit vehicle fleets in a state of good repair is critical to ensuring the reliability of transit service, as vehicle breakdowns can quickly lead to unreliable service. In general, thanks to consistent investment over time, the region's transit vehicle fleets are in a state of good repair. However, a significant percentage of both the demand-response and fixed-route bus fleets exceed their ULB, at 15 percent for demand response and 12 percent for fixed-route bus (see **Section 4.9.1**). These fleets will need attention to avoid reliability issues and impacts to riders.
- **Understanding the impact of fare policy on ridership.** The farebox recovery ratio for nearly all agencies in the region, for nearly all service types, has been steadily

Bus network redesigns have benefits beyond those realized by customers:

- **Data and Efficiency:** Most agencies that undertake a redesign gather extensive data, which can be utilized, independent of the redesign, to tighten up service, focus on performance, and keep operating costs in check.
- **Opportunities:** Undergoing a redesign is a collaborative process that improves intra-agency communications and opens the door to introduce new policies, service philosophies, performance standards, or design standards.
- **Technology and Performance:** Measurement and quantification of anticipated and actual improvements from bus network redesigns can be a key tool in obtaining buy-in for new vehicles types and technologies.

[104] Mineta Transportation Institute, "Investigating the Determining Factors for Transit Travel Demand by Bus Mode in US Metropolitan Statistical Areas," 2015.
[105] Transportation Research Board, "TCRP Synthesis 140: Comprehensive Bus Network Redesigns," 2019.

dropping for the past several years. For several agencies, the ratio for fixed-route and commuter service is below 20 percent. The national average in 2017 for fixed-route bus was 23 percent and for commuter bus, 53 percent.[106] Agencies should evaluate the impact of fare changes (increases or decreases), new fare products (passes, discounts), and technology that could improve ridership and stabilize farebox recovery ratios. In some cases, the cost to process fares and enforce fares may be higher than the actual fares recovered.

- **Integrated land use and multi-modal transportation planning is another best practice and important step to help ensure that investments in transit benefit the greatest number of residents, particularly those who are more inclined to use transit services.** The ARC is cooperatively and actively pursuing several initiatives to integrate planning, coordinate decision-making, and improve the environment in which transit operates, including:
  - The **"Walk. Bike. Thrive!"** plan, which envisions improvements to bicycle, pedestrian, and multiuse trails throughout the region to improve connectivity, promote health, and increase regional competitiveness.[107] Increasing walking and bicycling in metro Atlanta means offering residents safe, comfortable, and convenient places to walk and bike. ARC's regional bike and pedestrian plan establishes a regional vision and uses data-driven strategies to support local initiatives and decision making throughout the region. The plan includes a regional active transportation strategy, as well as a toolkit to help local communities across metro Atlanta become more walk-and bike-friendly.
  - The **Atlanta Regional Transportation Demand Management (TDM) Plan**, a long-range plan that will define a strategic framework for developing and integrating TDM strategies into planning, project development, and system operations investment decision-making.[108] It is intended to build off the Atlanta Region's Plan and provide input into the update of future regional plans and programs.
  - The **Atlanta Region's Plan**, which focuses on a threefold vision of providing world-class infrastructure, building a competitive economy, and ensuring the region is comprised of healthy and livable communities.[109] This vision is supported by six key goals, two of which directly impact transit in the region. They are:
    - Ensuring a comprehensive transportation network, incorporating regional transit and 21st-century technology
    - Developing additional walkable, vibrant centers that support people of all ages and abilities.

[106] National Transit Database, "2017 National Transit Summaries and Trends (NTST)," 2018.
[107] Atlanta Regional Commission, "Bike-Pedestrian Plan – Walk, Bike, Thrive!," May 25, 2016.
[108] Atlanta Regional Commission, "Regional Transportation Demand Management Plan," 2013.
[109] Atlanta Regional Commission, "The Atlanta Region's Plan."

7.2 Performance Monitoring

Tracking transit system performance is critical to understanding how a system is working for riders and where there is room for improvement of the service. The Atlanta region's transit providers currently track data in a systematic way for most key performance areas; however, there may be opportunities for developing some standards and capacity across agencies. For example:

- **On-time performance:** CobbLinc, GCT, Xpress, and MARTA all define on-time performance exactly the same. For fixed-route bus, commuter bus, and rail, all four define "on time" as between zero minutes early and five minutes late of a scheduled departure. While this relatively tight window (compared to many peers) and consistency across the region is commendable, many other regional agencies are not currently tracking and reporting on-time performance. This metric is crucial to understanding the reliability of the service the region is delivering, and reliability is one of the most important elements of transit service to riders.[110]
- **Customer satisfaction:** Most of the region's transit service providers use at least one method of tracking customer satisfaction, and do measure performance in this area over time. There may be additional opportunities, however, to implement a few standardized questions across customer satisfaction surveys in order to gain some comparable data. Additionally, many of the agencies do not survey their riders on satisfaction (and elements contributing to satisfaction) on an annual basis. More frequent surveying of riders can assist agencies with identifying issues and improving service in a more timely manner.
- **Safety:** Not all agencies were able to provide safety incident data for this year's ARA. In future years, some agencies may benefit from technical assistance to collect and report on safety data using regionally and/or nationally defined standards.
- **Implementation of ATL branding:** As the region moves toward the 2023 deadline for MARTA's implementation of "ATL" branding on all vehicles providing transit service, it will be valuable for the ATL to track progress toward meeting this target. Further, additional legislative clarification as to whether the intent of the 2023 deadline was meant to apply to all transit operators within the region should be considered, since HB 930 expressly states that the ATL's Regional Transit Plan must, "include the creation of a unified brand to encompass all transit service providers within the jurisdiction of the authority."[111] Ideally the branding will penetrate to vehicles, online resources, maps, brochures, uniforms, and the like, so that the region is presenting a truly unified service to its customers.

7.3 Improving the Annual Report and Audit Development Process

Development of this ARA involved an intensive effort to collect data from 10 transportation and planning agencies throughout the Atlanta region on a wide variety

[110] Note: Henry Transit also collects on-time performance data for its demand-response service.

[111] Georgia House of Representatives, Georgia House Bill 930; Official Code of Georgia Annotated (O.C.G.A.) Section 50-39-12(d).

of topics and performance areas. This process required significant effort on behalf of all of the agencies, for which the ATL is very appreciative.

7.3.1 Opportunities

In future years, as more data becomes available, the ATL is interested in tracking trends that influence the performance of the region's transit system in more depth. These trends include:

- The **usage of TNCs and other micro-mobility solutions**, including bikeshare (both docked and dockless) and scooters, and trying to estimate the impacts of these mobility options on the use of transit in the region. In some cases, it is likely that these emerging modes support the use of transit by providing critical first- and last-mile connections; in other cases, it is likely that they reduce transit ridership and serve as a substitute travel mode. More research in this area is needed, both nationally as well as for the Atlanta region.
- The **impacts that major transit investments have on ridership, as well as on the economy**, both in the Atlanta region as well as from investments made by peer agencies around the country.
- The relevance and **influence of bicycle and pedestrian infrastructure** in informing decisions about the usage of transit in the Atlanta region.
- The **deployment of low- and zero-emission transit propulsion technologies** to enhance environmental benefits of using transit.
- Tracking **implementation of other amenities** to improve the rider experience, such as mobile fare payment, on-board Wi-Fi, and enhanced trip planning tools.
- Tracking and reporting on the **advancement of integrated land use and transportation planning** efforts and transit-oriented development.

7.3.2 Challenges

Challenges associated with measuring performance for all transit agencies in the region included:

- A number of agencies operate on fiscal years that do not align with the ATL's fiscal year.
- Many agencies' fully audited FY 2019 financial data were not available in time for this year's report.
- There are differences in how data is collected and reported, as well as terminology used, among agencies.
- Some agencies that offer more than one transit mode do not conduct their accounting in a way that breaks out expenses by mode.
- Operation of a few services have been transferred between agencies over the past few years, making data collection more complicated and year-over-year comparisons less straightforward.
- Several agencies in the region operate with minimal staff; in some cases, just one or two people are responsible for the provision of transit. For these staff,

additional data collection and reporting can be difficult to prioritize while meeting the already demanding expectations of their positions.

7.3.3 Next Steps

For the development of subsequent ARAs, the ATL will be sharing with each agency detailed information about the data that will be requested and a timeline for data submissions. The ATL will continue to solicit input from the data-providing agencies as subsequent Annual Report and Audits are developed, seeking to streamline the process over time to minimize the burden on the agencies. To the greatest extent possible, the ATL will continue to rely on data reported to the National Transit Database.

APPENDIX A: DATA SOURCES AND METHODOLOGIES

This appendix provides an overview of data sources, data availability, analysis methodologies, and notes about assumptions that were made using data available to conduct analysis.

A.1 Transit Performance Data Sources

To show trend data for the KPI analyses in **Chapter 4**, for relevant metrics, data from the NTD for 2015 through 2017, the most recent year for which NTD data was available at the time of ARA development, were used. The NTD allows agencies to report data according to their own fiscal years, not the federal fiscal year. For 2018 data that is reported to NTD, FY 2018 NTD submission forms provided by the ATL transit agencies were used as the data source. For 2019, agencies provided current data directly from their tracking systems; in some cases, this data had not yet been audited of reviewed for adequacy for NTD submission. For a majority of agencies, financial data for FY 2019 had not been finalized and audited at the time of publication; for this reason, FY 2019 budgets were relied upon in some cases. In addition, other FY 2019 data may yet be reviewed and, in some cases, undergo slight adjustments prior to FY 2019 NTD submissions.

For agencies operating on a fiscal year different from the ATL's, including CobbLinc, Connect Douglas, and GCT, wherever possible, FY 2019 data was requested to be broken out by month so that the totals could be calculated for the ATL's fiscal year. For example, GCT provided ridership data on a monthly basis and the totals from each month between July 2018 and June 2019 were added to develop GCT's 2019 total. Because of these adjustments to data to fall within the ATL's fiscal year, the numbers may vary slightly from FY 2019 NTD submissions.

In addition, some agencies in the ATL region—including CATS, Coweta, CPACS, and Henry—are classified by the FTA as reduced reporters, meaning they operate fixed-route service but operate 30 or fewer vehicles across all modes and types of service and do not operate fixed guideway and/or high intensity busway. Reporting requirements of reduced reporters are less intensive; for example, they are required to report data annually, not monthly, and they do not have to report some metrics, like vehicular failures.

Some data collected for the ARA, such as data on customer satisfaction, technologies used, and on-time performance, is not required for reporting to the NTD by any agency. For these data, additional information regarding methods for collecting data and definitions (e.g., of on-time performance) was also collected to enable assessment of whether comparing data across agencies was appropriate.

Reporting Change Note

CobbLinc has operated two Xpress-branded commuter routes for the past several years. Until FY 2018, CobbLinc reported data (e.g., ridership, vehicle revenue hours,

vehicle revenue miles, etc.) on the service of these two routes to NTD, while SRTA omitted this service data from its reporting to NTD on the Xpress system. Beginning in FY 2019, SRTA will be reporting data on these two routes to NTD and CobbLinc will no longer report the data. This may explain some of the variations in service levels for both agencies, both for this ARA as well as those in subsequent years that show trend data going back at least to FY 2018.

A.2 Data Availability

In some cases, data availability for a particular topic or KPI was limited for some agencies because they do not collect the data; in other cases, data were available but were not tracked in a way, at least for FY 2018 and 2019, that they could be broken out by mode. Specific examples of data availability limitations, organized by topic, are shown below.

Level of Transit Investment

- For FY 2019, some amounts shown are from approved budgets rather than spending actuals (as in 2015 through 2018), as agencies' financials are either undergoing audit and/or their fiscal years have not yet ended as of this report's publication.

Financial Productivity

- Operating costs for 2019 were not available by mode for some agencies; therefore, financial productivity could not be evaluated for that year.
- Farebox recovery: Data were not available for CPACS in 2015, or by mode in 2018 and 2019. CATS data were not available by mode in 2018 and 2019.
- Fare revenues and operating costs for 2019 were not available by mode for agencies that operate more than one type of transit service; therefore, mode-specific farebox recovery ratios could not be calculated.

State of Good Repair

- For mean distance between failures, data provided by Connect Douglas did not match data in the agency's prior NTD submissions. Thus, data for Connect Douglas for 2015-17 was taken from NTD, while data for 2018 was taken from provided data.
  - This discrepancy revealed that there are inconsistencies between agencies in how failures are identified and incorporated into reporting. The level of detail that agencies keep in their maintenance logs, such as whether a vehicular malfunction led to service impacts, can affect the way they calculate failures.
- Connect Douglas does not calculate failures until the end of the calendar year, so no 2019 data was available. Data was not available for GCT demand response in 2018 or 2019.
- In addition to average fleet age, percentage of vehicles past their ULB, and mean distance between failure, there are other measures of the state of good repair that are not reported in this ARA, including annual road calls and vehicle condition rating. These were both excluded because too few agencies were able to provide

data. Additionally, agencies are allowed track road calls differently internally than what they report to NTD; the inconsistency of the data across agencies made it less useful as a regional metric for the FY 2015 to FY 2019 period.

A.3 Interviews

A.3.1 Economic and Regional Impact Analysis

State of Good Repair

Interviews were conducted with individuals from the following organizations to provide input on the economic and regional impact analysis:

- Atlantic Capital Bank
- Georgia Chamber of Commerce
- Georgia Regional Transportation Authority
- Goodwill of North Georgia
- Gwinnett County Board of Commissioners
- Henry County Board of Commissioners
- MARTA
- Northside Hospital
- Southern Environmental Law Center
- Union City

A.4 Methodologies

A.4.1 Access to Jobs and Labor Market Access Analysis

The accessibility analysis relies on three data sources:

- GTFS route and schedule for all fixed route services that are part of the Atlanta Transit Link Authority. Henry County and CATS routes in Cherokee County GTFS was generated manually by the research team based on posted route and schedule information.
- Driving travel times from the ARC travel demand model
- Job and population by Traffic Analysis Zone (TAZ) from the ARC travel demand model

Regional Access to Jobs

The regional access to jobs via transit analysis uses point estimates of jobs accessible by transit within 45-minutes generated using Conveyal software.[112] These estimates were averaged within each TAZ (TAZs defined by the ARC travel demand model). AM peak TAZ-to-TAZ travel times and job counts from the ARC travel demand model were used to estimate how many jobs are accessible from each TAZ within 45 minutes of driving. These TAZ-level transit and driving access to jobs estimates were used to estimate the TAZ-level access ratios shown in **Figure 57**, **Figure 58**, and **Figure 59**.

[112] Conveyal, Conveyal.

Labor Market Access

The job center access to labor markets analysis uses isochrons generated in Conveyal showing the portion of the region accessible via transit within 45 minutes during the PM peak period (4:00 p.m. to 6:00 p.m.) to reflect labor commuting from work to home. Conveyal also generated the estimates of population within the transit-accessible isochron based on population estimates from the ARC travel demand model. The driving isochrons were generated by the research team based on AM peak TAZ-to-TAZ travel times and reflect all TAZs for which travel time to the job center TAZ is less than 45 minutes. The driving accessible population estimates are based on the ARC travel demand model estimates of population in these accessible TAZs.

A.4.2 Access to Fixed-Route Transit Analysis

The access to fixed-route transit analysis uses data from the American Community Survey 2013-2017 5-year averages, the most recent year for which block group level data is available, to estimate access to transit for the population overall, minorities (all non-white individuals), and low-income households (households earning 50 percent or less of the region's 2019 median family income of $79,000)[113] to estimate the number of people within walking distance to transit. Walking distance was defined as a quarter-mile radius around bus stops and a half-mile radius around rail stations for all fixed-route service available during the study period, including fixed-route bus, commuter bus, and rail service. High frequency service was defined as that with 15-minute or more frequent average headways from 7:00 a.m. to 7:00 p.m. on weekdays. It is important to note that this analysis does not take into account pedestrian barriers, such as highways, that may make walking to transit more difficult.

A.5 Assumptions

Specific assumptions that were made in order to use the data provided by the agencies are described below. In some cases, staff turnover led to some uncertainty about the accuracy of data and/or causes of significant year-over-year fluctuations.

Financial Data

- For CPACS, the service levels by mode in the second half of FY 2018 were used to distribute level of service between modes in the first half of FY 2018. In addition, as some of the budget periods reported by CPACS varied and/or did not cover a full year, an even distribution of expenses across months was assumed in order to develop annual totals.

On-Time-Performance

- For demand response on-time performance, the 30- and 35-minute windows in which a vehicle is considered on-time do not include the five-minute period beyond those windows that drivers are instructed to wait for late passengers.

[113] U.S. Department of Housing and Urban Development. Income Limits.

Customer Satisfaction

- In the CPACS customer satisfaction survey, the total satisfaction rating is the average of satisfaction rating across six categories.
- The CATS customer satisfaction rating was calculated by adding up rankings (from one to five) and assigning scores to yes/no questions (one and zero). Then, the total score from each survey was added and divided by the maximum possible score (23). These quotients were averaged to calculate the final satisfaction percentage.
- In **Table 9**, customer satisfaction was compared by assigning positive and negative values to survey answers where appropriate since not all surveys included a question asking about overall satisfaction and questions that were asked sometimes varied significantly.