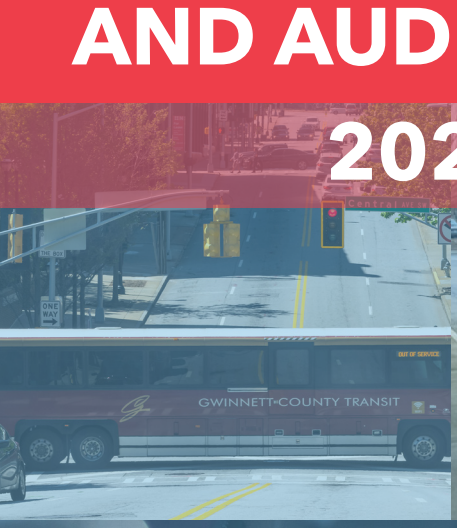
ANNUAL REPORT AND AUDIT

2020



ATLANTA-REGION TRANSIT LINK AUTHORITY

From the Chairman and Executive Director

We are pleased to present the Atlanta-Region Transit Link Authority's (ATL) 2020 Annual Report and Audit, a 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 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. 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 within the Atlanta region. This report would not be possible without the help of transit operators and partners throughout the region, and we are proud to share the resulting report with you. We are confident that it will serve as a valuable resource to policymakers, researchers, and the public.

The Annual Report and Audit covers the ATL and the State of Georgia's 2020 fiscal year, meaning that activity and operations reported are those that occurred between July 1, 2019, and June 30, 2020, regardless of the varying fiscal years of each operator. It is impossible to ignore that this year's report includes the first four months of the coronavirus (COVID-19) pandemic. While this report covers some of the darkest moments of the pandemic, it also highlights just how vital transit is to the Atlanta region. Transit is the lifeline for frontline workers who stock shelves, keep schools safe and sanitized, and prepare food for the residents of our region. You will read how transit operators across the region responded promptly by instituting safety measures to keep riders and drivers safe and kept an open line of communication with their customers.

In order for us to continue to move forward through and out of the COVID-19 pandemic, the data are clear: transit is a critical component of that effort. A robust, coordinated, regional transit system is key to the sustained economic growth of the Atlanta region and the State of Georgia. At the ATL, we are hopeful for the future and look forward to continuing to provide State and regional leaders with the type of data-driven, objective information contained in this report.

Sincerely,

Charlie Sutlive
Chair, ATL Board of Directors

Christopher S. Tomlinson
Executive Director, ATL

Acknowledgements

The ATL would like to thank the following partner organizations, who provided the data used to develop this Annual Report and Audit.

In addition to these partners, the ATL Board provided critical insight into the development of the Annual Report and Audit.

The ATL would also like to thank the transit workers and customers who provided content for this report as well as recognize the contributions of the region's transit workers for providing customers with critical access to destinations and services.

EXECUTIVE SUMMARY

INTRODUCTION

The Atlanta-Region Transit Link Authority (ATL) Annual Report and Audit (ARA) provides an overview of transit planning, funding, and operations in the Atlanta region, as required by the ATL's enabling legislation. Covering the period from July 1, 2019, through June 30, 2020 (Fiscal Year 2020), as well as historical trends, the ARA uses performance indicators and analyses to evaluate the performance of the region's transit network.

The ARA highlights not only the performance of the transit network across nine operators, but also evaluates the contributions of public transportation to economic competitiveness and its role in enhancing equity in access to jobs, services, and opportunities in the Atlanta region. The ARA:

- Heightens the region's understanding of the strengths and weaknesses of its transit network
- Informs decision-making regarding investments in public transportation
- Enhances transparency and holds the region accountable for effectively meeting people's mobility needs

The 2020 Annual Report and Audit can be found online at:
atltransit.ga.gov/2020ARA

The ARA covers the performance of the Atlanta region's transit network in Fiscal Year 2020 in depth. It also includes discussions and examples of how public transportation has been, and will continue to be, a lifeline for people throughout the Atlanta region.

The ATL's Governing Principles

- Economic Development and Land Use
- Environmental Sustainability
- Equity
- Innovation
- Mobility and Access
- Return on Investment

ABOUT THE ATL

The ATL was established in 2018 as the regional transit governance agency for the 13-county region of Atlanta. The creation of the ATL enables a more unified regional transit system by improving coordination, integration, and efficiency of transit in the Atlanta region. The ATL has five key functions:

Coordinate Regional Partners

The ATL brings a unified, regional focus to transit by coordinating service providers and stakeholders across jurisdictions to better serve the 13-county region.

Strengthen Regional Transit Planning and Performance

The ATL establishes a regional transit plan for future investment. The ATL also tracks performance of the existing transit network and provides technical planning and funding administration assistance to our transit partners.

Advance Strategic Transit Investments

The ATL closes gaps in priority project costs by leveraging sustainable funding sources, enabling partners to establish local sales tax referenda, and advancing priority projects to a short-term regional implementation plan.

Enhance Customer Experience

The ATL centers the customer experience, enhancing the convenience, safety, and reliability of every trip across the region regardless of transit operator.

Deliver Innovative and Best Practice Technology

The ATL implements best practices that unify mobility options across the region and explores applications of cutting-edge technologies that limit impacts on the environment and improve the transit experience for everyone.

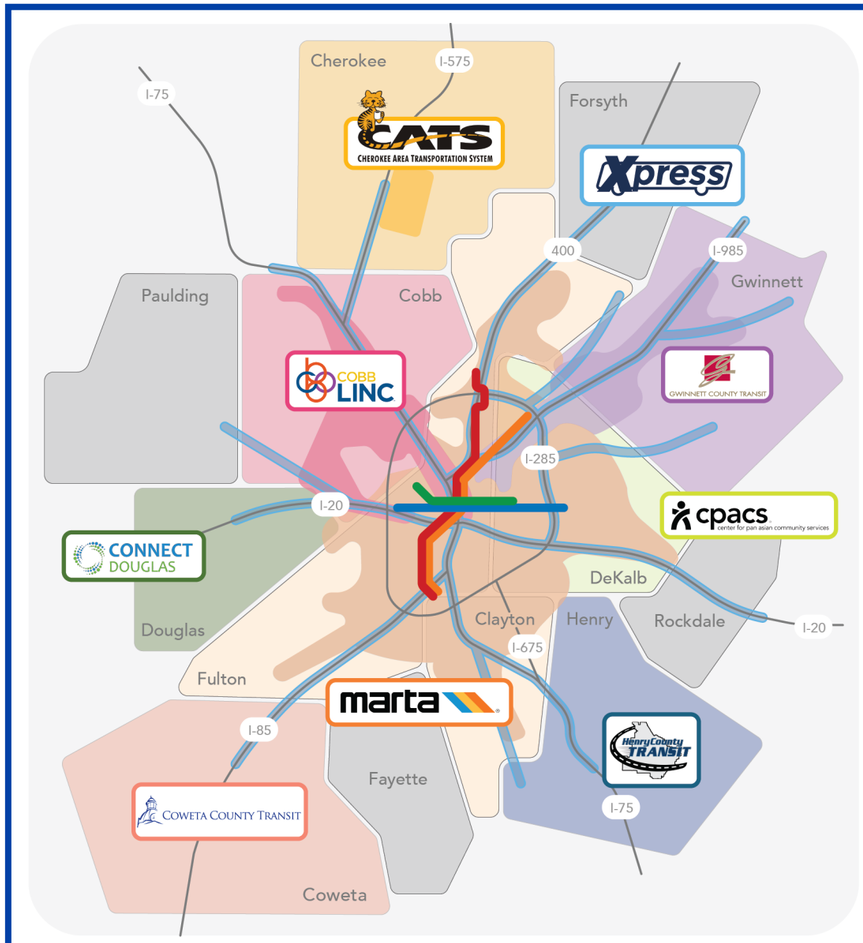
ABOUT THE OPERATORS

The region's nine largest transit operators create a multi-modal transit network that offers fixed-route bus, heavy rail, commuter bus, demand response transit, vanpool, and a streetcar.

Together, these nine agencies provided over

100 million

transit trips in 2020



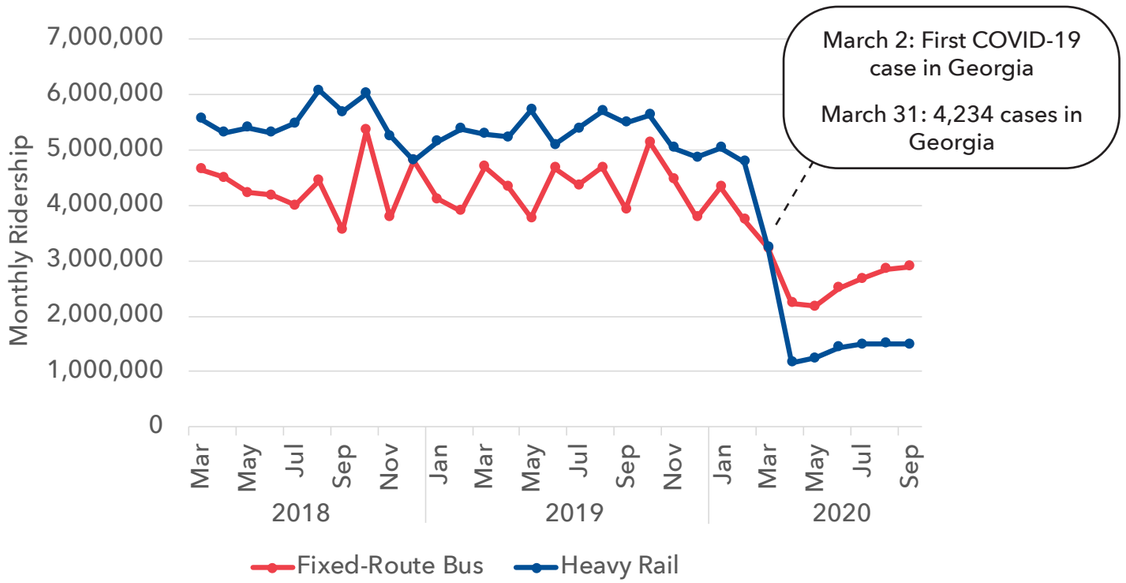
Modes of Transit	ATL FY 2020 Ridership
Commuter Bus	CATS 57,194 trips
Demand Response	CobbLinc 2,064,708 trips
Fixed-Route Bus	Connect Douglas 95,526 trips
Heavy Rail	Coweta 26,231 trips
Streetcar	CPACS 27,340 trips
Vanpool	GCT 1,290,087 trips
	Henry 51,051 trips
	MARTA 94,556,168 trips
	Xpress 1,953,112 trips

COVID-19'S IMPACT ON TRANSIT

The COVID-19 global pandemic, which began in the U.S. in March 2020, led Governor Brian Kemp to declare a state of emergency in Georgia. As schools and businesses closed and many of the region's residents limited their travel to only the most essential trips, transit ridership across the region declined. As shown below, both MARTA's bus and rail services experienced ridership declines as a result of the pandemic.

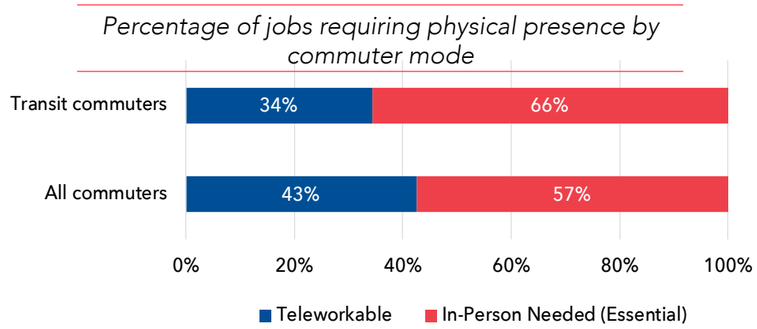
Compared to rail, MARTA's bus ridership has been consistently higher and has experienced more modest declines during the pandemic, indicating its high importance to frontline workers.

MARTA ridership (bus and rail) from March 2018 to September 2020



TRANSIT AS A LIFELINE FOR ESSENTIAL WORKERS

Compared to all commuters, those traveling by transit are more likely to be essential, or frontline, workers.



More detailed analyses of essential workers and transit indicate that:

- **Transit provides access for many workers who must be physically present to perform their jobs**
- **Two-thirds of transit commuters perform essential functions that keep the economy and society going**
  - During the pandemic, transit has continued to provide access so these workers can reach their jobs safely, benefitting the public at large
  - Examples include people who prepare food, work at grocery stores, clean buildings, handle freight or drive trucks, or serve as health care workers
- While telecommuting may become more widespread even after the pandemic ends, **transit must continue to serve frontline workers**
- Providing **affordable access to safe transit is a matter of equity and racial justice, as frontline workers are likely to be African Americans and people of Hispanic or Latino origin—groups of the population that have been hit hardest by the pandemic**

Interviews

with the nine operators covered in the ARA reveal how they have adapted to the pandemic.

The Coronavirus Aid Relief and Economic Security (CARES) Act provided over

$370 million

in financial support for transit in the region.

The CARES Act was critical in the spring and summer of 2020. For example, for Gwinnett County Transit, it meant the ability to **focus on maintaining passenger and driver safety** without as much concern for the financial implications of measures like temporary fare suspension.

Additional funding support for transit operations, like the CARES Act, is needed as the pandemic persists—not only to allow transit to continue to function but to support and stimulate the economic recovery of the region as well.

COVID-19 protocols implemented by all nine agencies

Extra Cleaning

PPE for Workers

Social Distancing Aboard Vehicles

> COVID-19 has brought us through uncharted waters… with continued support from Henry County's leaders, we have been committed to providing transit to residents. We will continue to find a way to provide uninterrupted and safe service to all residents.
>
> *– Taleim Salters, Director, Henry County Transit*

OPERATOR ADAPTATIONS TO THE PANDEMIC

All the region's transit operators implemented extra cleaning protocols, provided personal protective equipment to their workers, and required social distancing aboard vehicles. In addition, they used temporary strategies such as fare collection suspension, rear-door boarding, special services to enable social distancing, and new communications strategies to meet the needs of their customers during the initial months of the pandemic.

Safety measures taken by agencies in addition to extra cleaning, PPE provision, and social distancing

Agency	Transporting Goods/ Deliveries	Rear-Door Boarding	Fare Collection Suspension
CobbLinc		X	X
Connect Douglas	X		
CPACS	X		X
GCT		X	X
Henry	X		X
MARTA		X	X
Xpress			X

Operators **found creative solutions to pandemic-related challenges.** For example, GCT worked with a local vendor to custom build barriers. MARTA partnered with Delta Airlines to obtain electrostatic sprayers to make vehicle cleaning faster and more effective.

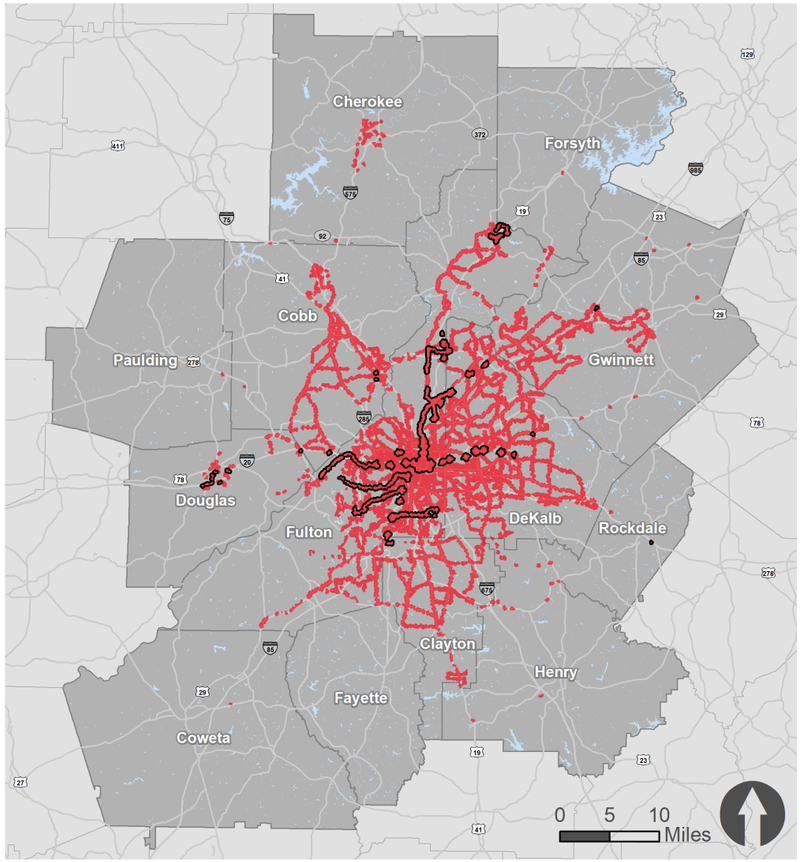
In addition, CPACS worked with the Atlanta Regional Commission, the ATL, and the Federal Transit Administration to convert its vehicles from serving passengers to **rapid-response transport of food and critical supplies.** MARTA's drivers-in-training operated a shuttle service for two food banks, and Connect Douglas and Henry County Transit **delivered meals to those in need.**

ACCESS TO FIXED-ROUTE TRANSIT

Less than 25 percent of the region's residents have fixed-route transit services within walking distance, and only **3 percent have walking-distance access to frequent transit service.**

These figures are slightly higher for low-income and minority residents, but enhancing access to transit and, by extension, opportunities, remains a critical need in the region.

Areas with access to fixed-route transit and high frequency fixed-route transit



Walking distance is defined as one quarter-mile to bus stops or one half-mile to rail stations.

Providing Equitable Business Opportunities

The region's operators set goals for working with Disadvantaged and Minority-Owned Businesses to create business opportunities for historically disadvantaged populations.

MARTA and CobbLinc **exceeded** their DBE/MBE targets in **every year from 2016 through 2019, often by over 5 percent.**

Between 2016 and 2020, **tens of millions** of dollars from contracts have been awarded to Disadvantaged and Minority-Owned Businesses.

Defining Equity

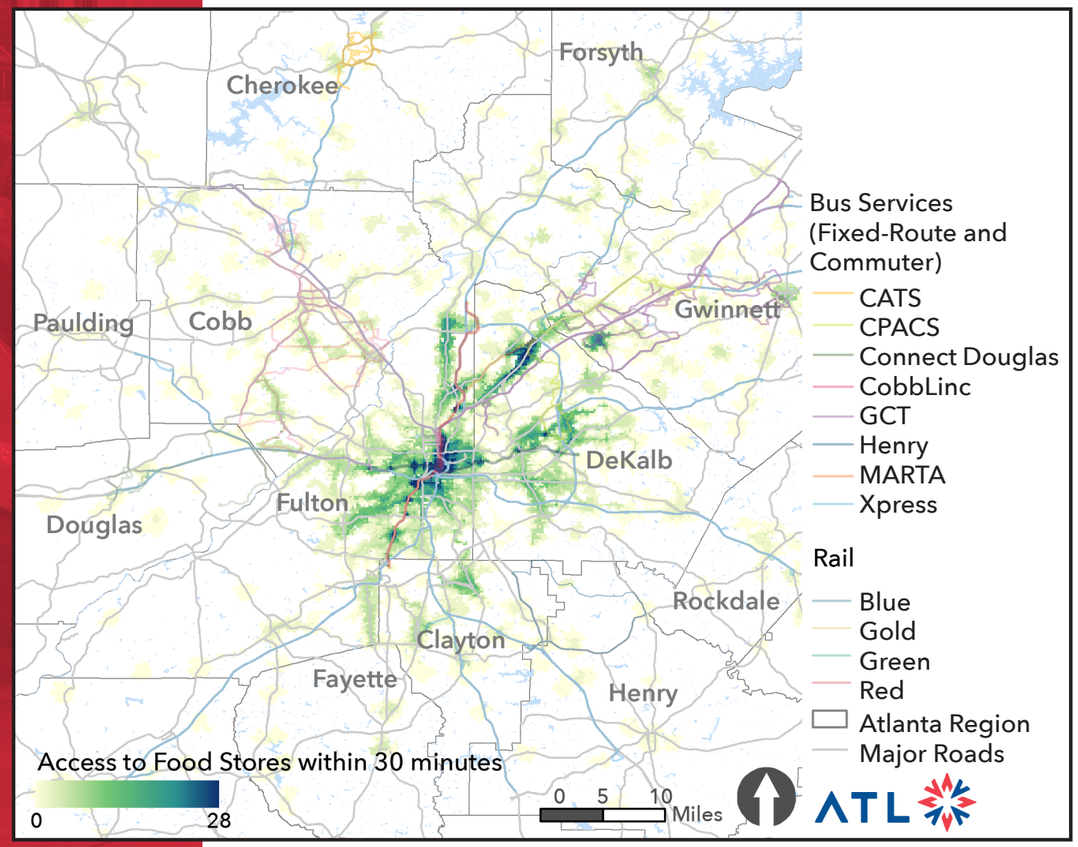
The ARA includes analyses of **how well the region's transit network serves residents who are racial minorities or live in low-income households**, ("Environmental Justice," or EJ, populations), by connecting them to healthcare and food sources.

EQUITY IN ACCESS TO HEALTHCARE SERVICES AND GROCERY STORES

People in the Atlanta region use transit to access essential destinations like jobs, food, and healthcare. However, access to these destinations varies significantly. For the region at large, **access is better for EJ communities** compared to the general population. In the region:

- About **60 percent** of residents **cannot access any grocery store or convenience store within 30 minutes by transit.**
- Over **70 percent cannot access a single healthcare facility within 30 minutes by transit.**
- About **75 percent of residents can only access fewer than 10,000 jobs within 45 minutes by transit.**

Grocery and convenience stores accessible by transit within 30 minutes



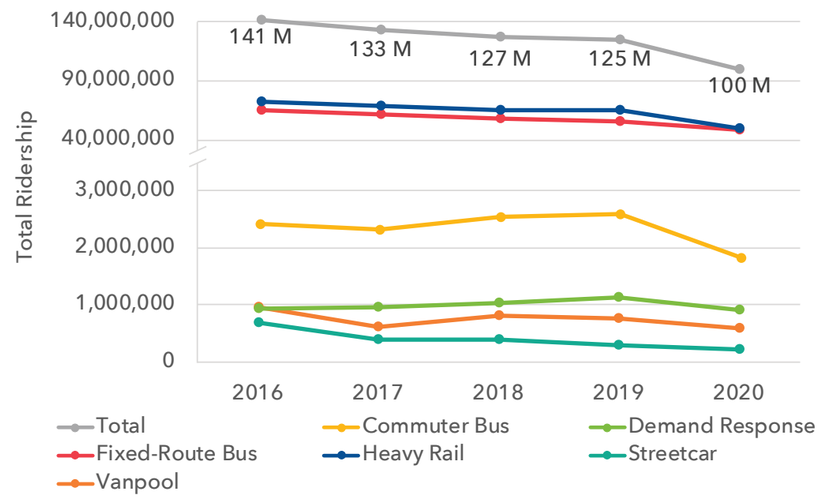
The ARA evaluates the performance of the region's transit system with respect to Key Performance Indicators (KPIs). This evaluation enables tracking of trends over time and leads to more informed decision-making about transit investments.

RIDERSHIP

In 2020, the region's transit network provided over 100 million trips to residents and visitors. While declines in total transit ridership were lower between 2018 and 2019 than between previous years, 2020 saw a sharper decline. This was largely a result of the COVID-19 pandemic, which covered about a third of the timeline for this report.

Due to the ongoing nature of the pandemic, many people in the region continue to telework to avoid using transit, so ridership is expected to continue its downard trend in FY 2021. Lower ridership, while not an ideal outcome from the perspective of traffic congestion and air quality, reduces the risk of virus transmission both for non-riders and riders, who are more likely to be transit-dependent.

Ridership by mode



What topics do the Key Performance Indicators in the ARA evaluate?

- Ridership
- Level of transit investment
- On-time performance
- Equity
- Level of service
- Operational productivity
- Customer satisfaction
- Financial productivity
- State of good repair
- Safety

Regional Investment in Operating Transit

Transit operating expenditures per capita is a KPI that reflects the region's level of investment in transit service. Although this KPI increased steadily between 2017 and 2020, overall growth for the five-year period has been below the rate of inflation, which is around 2 percent per year.

Transit Operating Expenditures Per Capita in the ATL Region

2016	$96.66
2017	$86.28
2018	$90.84
2019	$93.08
2020	$95.28

Capital expenditures per capita, however, have been steadily climbing since 2017, creating positive employment and income impacts for the region.

LEVEL OF TRANSIT INVESTMENT

Operating expenditures for transit in the region in 2019 were almost

$560 million

Capital expenditures for transit in the region in 2019 totaled over

$312 million

Compared to national averages, the Atlanta region relies more heavily on sales tax revenues to operate transit.

For MARTA, the region's largest transit operator, nearly 82 percent of capital revenues were from sales taxes.

State funding makes up a significantly smaller portion of transit expenditures in the Atlanta region compared to national averages.

TRANSIT EXPENDITURES' STIMULUS IMPACTS ON THE REGIONAL ECONOMY

Spending by transit agencies stimulates the regional economy by creating jobs and wages, and generating sales. There are three types of impacts:

Activity Directly Supported

Transit agencies employ workers, pay them wages, and invest in equipment and supplies

Supplier Activity (Indirect)

Transit agencies purchase goods and services from companies who in turn employ and pay workers

Spending of Worker Income (Induced)

Transit agency and supplier employees spend their income, generating additional activity within the regional economy

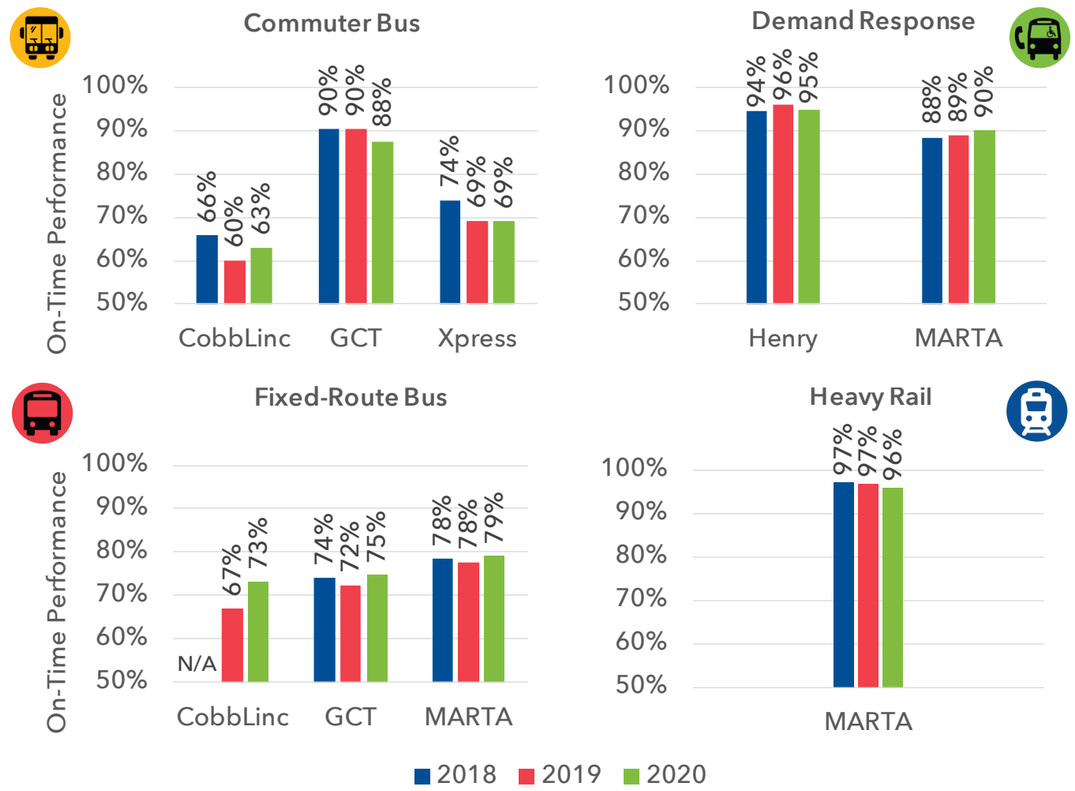
Expenditures by transit agencies generated nearly 15,000 jobs and added $1.25 billion to the Gross Regional Product in 2019.

ON-TIME PERFORMANCE

On-time performance (OTP) is one of the most critical metrics from a customer perspective: if transit cannot be relied upon to arrive on time, then travelers will look to other modes of transportation to get to their destinations.

Between 2019 and 2020, most agencies' on-time performance, defined for fixed-route transit as arriving between the scheduled time and five minutes after the schedule time, was similar or improved.

On-time performance by mode



CUSTOMER SATISFACTION

COVID-19 gave operators a renewed focus on customer needs. Many of the operators regularly evaluate customer satisfaction. The full ARA contains details about, and key findings from, the operators' customer satisfaction survey efforts.

85%
of riders were satisfied with MARTA in 2020, up from 76 percent the year before.

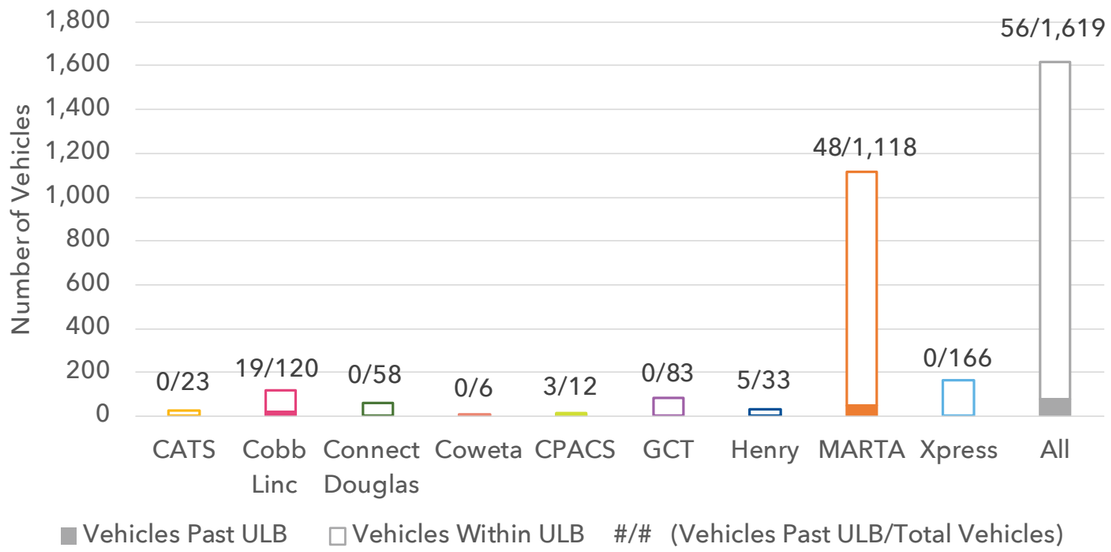
STATE OF GOOD REPAIR

State of good repair (SGR) measures the condition of an agency's fleet and other assets. There is a strong correlation between the state of an agency's vehicle fleet and the reliability and quality of service.

One SGR KPI is the share of a fleet past its useful life benchmark (ULB), the life cycle of a transit asset. ULBs set by ATL operators range from five to 10 years for a cutaway bus to 30 years for a heavy rail car. In the ATL region, 3 percent of active revenue vehicles exceed their ULB–a significant improvement from 8 percent in 2019. Five agencies—CATS, Connect Douglas, Coweta, GCT, and Xpress—do not operate any vehicles past their useful life.

Investments in new vehicles in the region have significantly cut the share of the region's demand-response fleet that is past the ULB.

Vehicles past useful life benchmark



In the ATL region, only 3 percent of active revenue vehicles exceeded their ULB in FY 2020, down from 8 percent in 2019.

AIR QUALITY AND AVOIDED EMISSIONS

In 2020, transit helped the Atlanta region avoid

272 million additional vehicle miles

traveled on the roadways, saving the region more than

$10 million

in social costs of emissions, based on avoided greenhouse gases and other hazardous pollutants.

REDUCING COST AND EMISSIONS THROUGH ELECTRIFICATION

Investment in electric transit vehicles would provide opportunities for the region to improve air quality and reduce energy consumption. It would also achieve operational efficiencies and monetary savings.

If the region replaced all 657 transit buses that will pass their ULB by 2030 with battery-electric buses, it could save $197 million over the lifecycle of the fleet.*

*Additional analysis is required to understand the costs and requirements of fueling and charging infrastructure.

> **A lack of transit can be so detrimental, not only to someone's physical health and all their activities and daily living, but their mental health as well.**
>
> *– Jordan Hall, Mobility Coordinator, Statewide Independent Living Council*

WHAT THE ATL IS DOING

The ATL is engaged in numerous projects and activities to advance transit in the Atlanta region. These efforts will increase mobility options for the region's residents. The ATL's activities, as laid out in its strategic plan fall under the following five initiatives:

Be a Trusted Adviser

- Assist county governments that are seeking to understand the unique transit needs of their communities
- Support the transition of ATL counties from a "rural" US Census designation to an "urban" designation

Improve Regional Planning and Service Delivery

- Coordinate with transportation partners in the region to develop regional mode definitions and standards that are more understandable to the public
- Partner with operators to create a regional ATL branding architecture
- Develop a project database that will support the annual update of the ARTP

Advocate for Sustained Sources of Transit Funding

- Advance to the governor a list of transit projects from the ARTP recommended for state investment
- Work with GDOT to determine how revenues from the new rideshare, taxi, and limousine services tax could benefit the region
- Support counties that hold a referendum on funding transit service via a sales tax of up to 1 percent

Encourage Use of Multi-Modal Options

- Work on projects that bring technological innovation to the forefront of transit in the region
- Lead a regional fare policy study to simplify the fare payment process for transit riders across the region

Enhance Customer Experience

- Develop an open-source, multi-modal trip planning application with integrated mobile payment options and a backend-connected data environment
- Lead the dialogue with transit operators and key regional stakeholders on measures to engender confidence among people who stopped riding transit during the pandemic

OPPORTUNITIES FOR TRANSIT IN THE REGION

Technology Implementation

Every operator in the region uses technology that aids in its service delivery. This includes dispatch and scheduling, asset management, transit signal priority (TSP), automatic passenger counter (APC), automatic vehicle location (AVL), and camera system software. However, there are opportunities to better coordinate and leverage technology to improve transit service across the region, and there may be opportunities for agencies to consider sharing or using interoperable technologies.

In 2019-2020, Xpress invested heavily in technology. In addition to implementing a new Computer-Aided Dispatch (CAD) and AVL system, the agency began a contactless mobile fare payment pilot program (Token Transit) in response to the COVID-19 pandemic. For the pilot, Xpress installed mobile fare validators on all of its buses. Through the Token mobile app, Xpress passengers can purchase digital fare passes and pay by scanning their phones when boarding.

COMMUNICATING THE SAFETY OF TRANSIT

Evidence from Japan and France suggests that if certain safety protocols are followed—mask usage, adequate space between passengers, minimal talking—public transit is not as large a risk as many people believe. Moreover, better air quality, which is achieved by transit usage reducing driving trips, is a public health benefit, especially for those who become sick with COVID-19.

Strong, clear communication between the region's transit operators and the public is essential for the future of transit in the region. While it is important that operators enforce safety protocols onboard, it is equally as important that they communicate the message that riding transit is a safe, healthy choice.

> **A challenge and strength is our public engagement forums so that the community knows our buses continue to operate, they are sanitized, safe, and able to get customers where they need to go in a timely manner. ... Building up ridership is key.**
>
> *– Jemal Sheppard, Connect Douglas Transit Services Coordinator*

This ARA and the ARTP were developed in close coordination with the region's operators and ATL's other partner organizations.

The ATL wishes to express its gratitude particularly to the operators, who invested significant resources in providing the data that are the foundation for the analyses in the ARA.

LOOKING AHEAD: TRANSIT INVESTMENTS IN THE REGION

The ATL's Regional Transit Plan (ARTP) and the Annual Report and Audit are the two primary work products of the ATL that provide state and regional leadership with critical information to inform policy and funding decisions on transit. The ARTP serves as the foundation for transit planning in the region for the next twenty years, ensuring transit projects work together to create a seamless network and customer experience regardless of transit operator.

The 2020 ARTP includes 245 proposed projects that either expand, maintain, or create new transit service opportunities across the 13-county ATL service area. ARTP projects are anticipated to:

- **Increase transit trips in Greater Atlanta by 39 percent**
- **Grow access to regional employment centers by 31 percent**
- Offer **33 percent greater access to high capacity transit options for low-income households** within a half mile of proposed service.
- **Save over 99,000 gallons of gasoline** used by the region's residnts annually
- Result in a **return of investment of over $140 billion**, equaling a $5 return on every dollar spent on transit, if fully funded

CONCLUSION

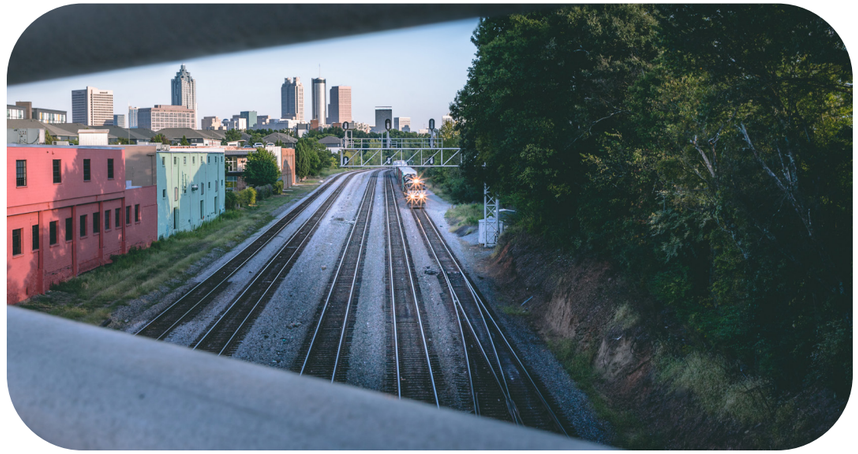
It is difficult to separate the story of transit in the Atlanta region in 2020 from the COVID-19 pandemic. Transit was not spared from the negative impacts that the pandemic has had on the region. **However, transit has been and will continue to be a lifeline for people throughout the region, both during the pandemic and beyond.** The region's transit operators adapted quickly in the spring of 2020 to be able to keep serving riders safely. Perhaps most importantly, agency staff, particularly those on the front lines, have risked their own safety to meet the needs of the public.

The next few years represent a unique opportunity for transit agencies to innovate by continuing to ask important questions such as:

- How can transit services be more attractive to riders?
- What new services can transit agencies provide?
- What technologies will help transit agencies achieve their goals?

The region's operators are already taking steps to answer these questions. There are examples of operators partnering with the private and nonprofit sectors to innovate, improve safety, and meet the most urgent needs of the region's residents.

Support for transit at all levels of government will have enormous implications for whether, and how well, the industry and economy can recover. In the long term, the pandemic won't change the need for high-quality transit, which is essential for making the region livable and maintaining a competitive economy. But operators' next steps post-pandemic, and the resources they have to implement them, will determine just how high-quality transit in the region can be.



> "Transit will continue to innovate and serve as an integral component of the Atlanta region's mobility network in the future, just as it provided a critical lifeline to many essential workers during the challenges of 2020."
>
> *– State Rep. Kevin Tanner, sponsor of ATL-enabling legislation*

Table of Contents

List of Figures

List of Tables

Acronyms

American Community Survey ..... ACS
Americans with Disabilities Act ..... ADA
Annual Report and Audit ..... ARA
Atlanta-Region Transit Link Authority ..... ATL
Atlanta Regional Commission ..... ARC
ATL Regional Transit Plan ..... ARTP
Automatic Passenger Counters ..... APC
Automatic Vehicle Location ..... AVL
Battery-electric bus ..... BEB
Battery-electric vehicle ..... BEV
Bus rapid transit ..... BRT
Carbon dioxide ..... CO_2
Carbon dioxide equivalents ..... CO_2e
Carbon monoxide ..... CO
Center for Pan Asian Community Services ..... CPACS
Centers for Disease Control and Prevention ..... CDC
Cherokee Area Transportation System ..... CATS
Community Improvement District ..... CID
Commuter bus ..... CB
Commuter-Aided Dispatch ..... CAD
Coronavirus Aid Relief and Economic Security ..... CARES
Coweta County Transit ..... Coweta or Coweta Transit
Demand response ..... DR
Disadvantaged Business Enterprise ..... DBE
Environmental Justice ..... EJ
Environmental Protection Agency (U.S.) ..... EPA
Federal Transit Administration ..... FTA
Fiscal year ..... FY
Fixed-route bus ..... FRB
Georgia Department of Transportation ..... GDOT
Greenhouse gases ..... GHGs

Gwinnett County Transit ..... GCT
Henry County Transit ..... Henry or Henry Transit
Key performance indicator ..... KPI
Longitudinal Employer-Household Dynamics ..... LEHD
Metropolitan Atlanta Rapid Transit Authority ..... MARTA
Metropolitan Statistical Area ..... MSA
Minority-Owned Business Enterprise ..... MBE
Motor Vehicle Emissions Simulator ..... MOVES
National Ambient Air Quality Standards ..... NAAQS
National Transit Database ..... NTD
Nitrogen oxides ..... NOx
On-time performance ..... OTP
Personal protective equipment ..... PPE
State Road and Tollway Authority ..... SRTA
Transportation Network Company ..... TNC
United States Department of Transportation ..... USDOT
Useful life benchmark ..... ULB
Vanpool ..... VP
Vehicle miles traveled ..... VMT
Vehicle revenue miles ..... VRM
Volatile organic compounds ..... VOCs

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About the Atlanta-Region Transit Link Authority

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The ATL is governed by a 16-member board. This board consists of 10 members elected by state legislators and local government leaders to represent each of the 10 ATL transit districts; five appointed members (two by the Georgia House Speaker, two by the Lieutenant Governor, and one by the Governor); and one non-voting member (the Georgia Department of Transportation, or GDOT, Commissioner). The current Board makeup covers a wide range of perspectives,

Figure 1: The ATL's Five Key Functions

Coordinate Regional Partners

The ATL brings a unified, regional focus to transit by coordinating service providers and stakeholders across jurisdictions to better serve the 13-county region.

Strengthen Regional Transit Planning and Performance

The ATL establishes a regional transit plan for future investment. The ATL also tracks performance of the existing transit network and provides technical planning and funding administration assistance to our transit partners.

Advance Strategic Transit Investments

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Deliver Innovative and Best Practice Technology

The ATL implements best practices that unify mobility options across the region and explores applications of cutting-edge technologies that limit impacts on the environment and improve the transit experience for everyone.

geographies, and professional backgrounds, with members demonstrating experience in both the public and private sectors.

All board members serve on one or more ATL committees: the Administrative Committee, the Regional Technology Committee, the Legislative Committee, the Regional Transit Planning Committee, the Marketing and Communications Committee, and the Xpress Operations Committee.

The ATL Board is unified around a common goal of increasing mobility options for metro Atlantans through increased coordination of existing services and strategic investments in future transit service, utilizing technology and innovation to maximize return. The ATL's governing principles are shown in **Figure 2.**

Since the ATL's establishment, additional funding for the region's transit has been identified through various bonds and general funds in the state budget. The establishment of the ATL enabled $100 million in bonds in Georgia's Fiscal Year (FY) 2019 budget for transit projects. In addition, under the agency's enabling 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. In addition to the transit funding options made available through the ATL's enabling legislation, in August 2020, Governor Brian Kemp signed House Bill 105, which levies a user fee on ground transportation, such as taxis, shared rides provided by transportation network companies (TNCs), limousines, and transportation referral services. This fee is expected to provide up to $45 million a year to transit agencies for transit infrastructure projects.[1]

1 Georgia House of Representatives, 2019-2020 Regular Session, Georgia House Bill 105.

Figure 2: The ATL's Governing Principles

Economic Development and Land Use

Create or enhance connectivity and access to job centers, activity centers, and economic centers in line with regional development and growth objectives.

Environmental Sustainability

Offer new or enhanced services as alternatives to personal vehicles, 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.

Innovation

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

Mobility and Access

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

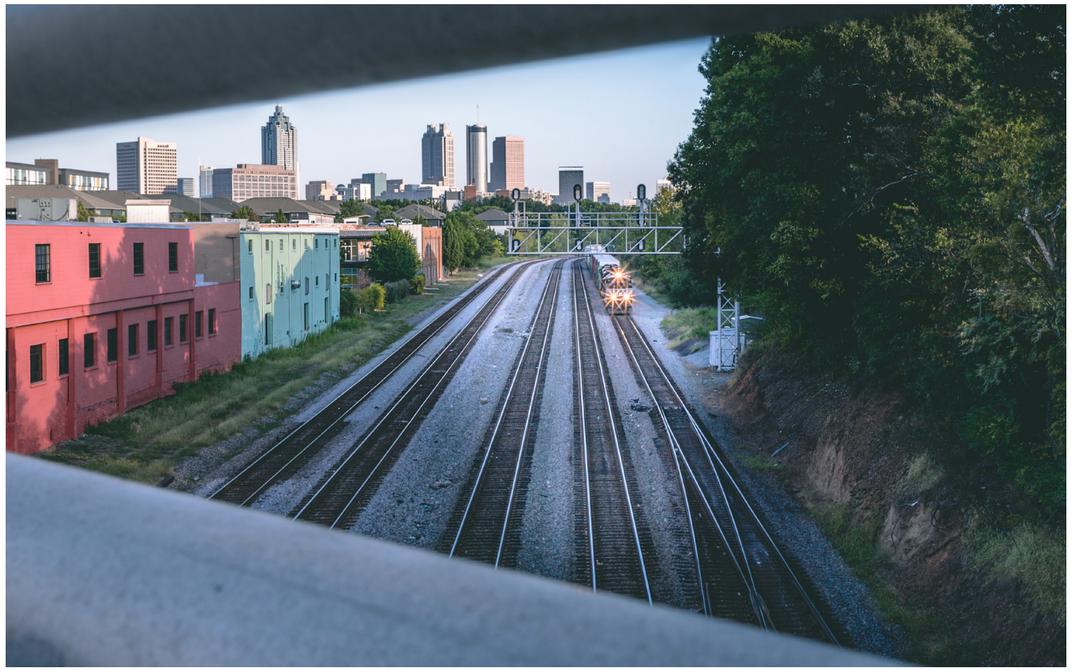
Return on Investment

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

About the Region

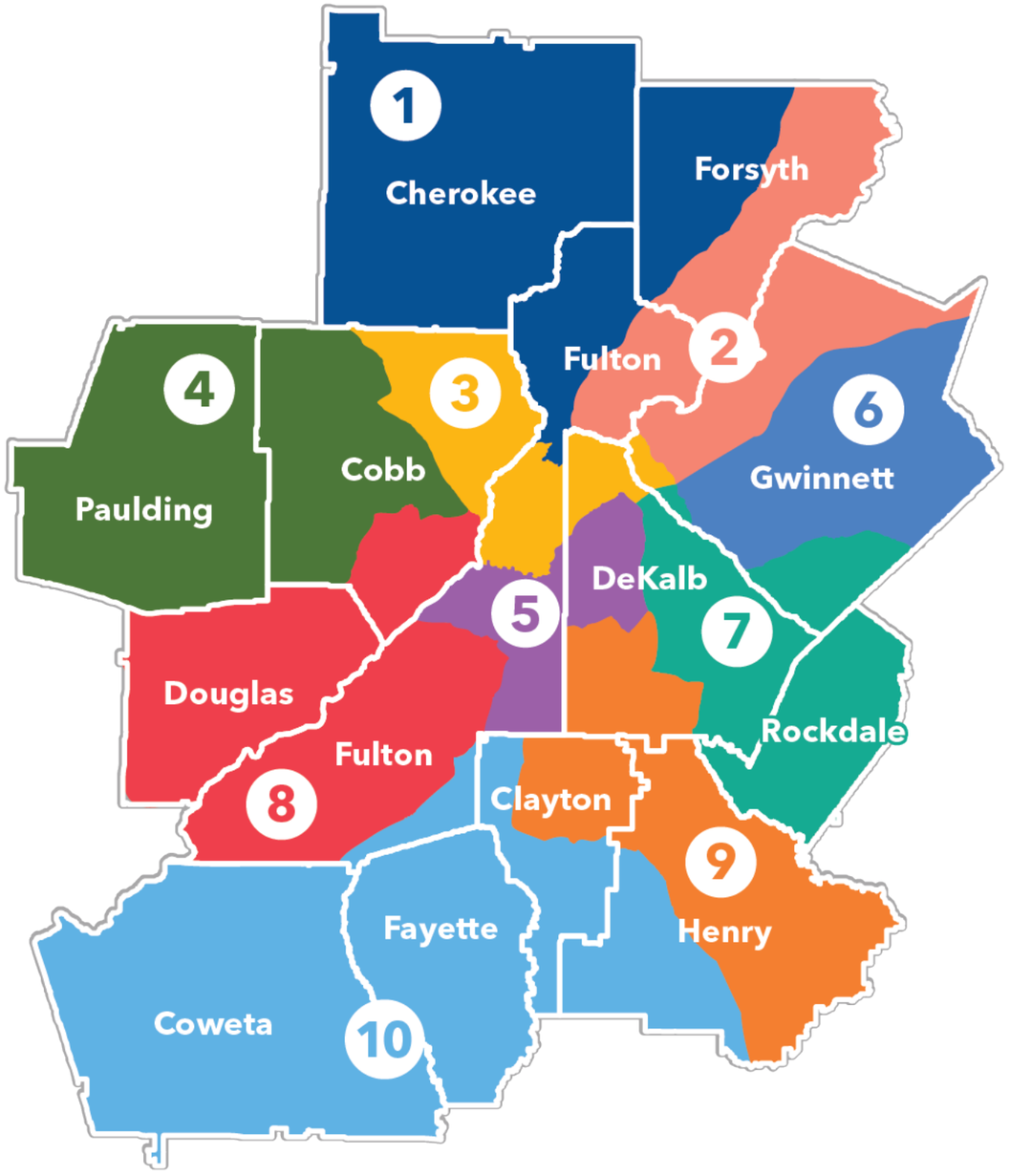
The 13-county ATL region includes Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties, which have a combined total population of over 5 million residents.[2] The U.S. Census-defined Metropolitan Statistical Area (MSA) of Atlanta-Sandy Springs-Roswell is the most populous metropolitan area in Georgia and the ninth most populous MSA in the country.[3]

Figure 3 shows the 13 counties that make up the ATL region. They are divided into 10 transit districts, each of which has a representative on the ATL board. District boundaries were intentionally drawn to extend across county boundaries to foster proactive transit planning and coordination activities that advance a more seamless, regional transit network.



2 American Community Survey (ACS) 5-year estimates, 2014-2018.
3 U.S. Census, United States Population Estimates: Vintage 2019.

Figure 3: Map of ATL Transit Districts



About the Region's Transit Operators

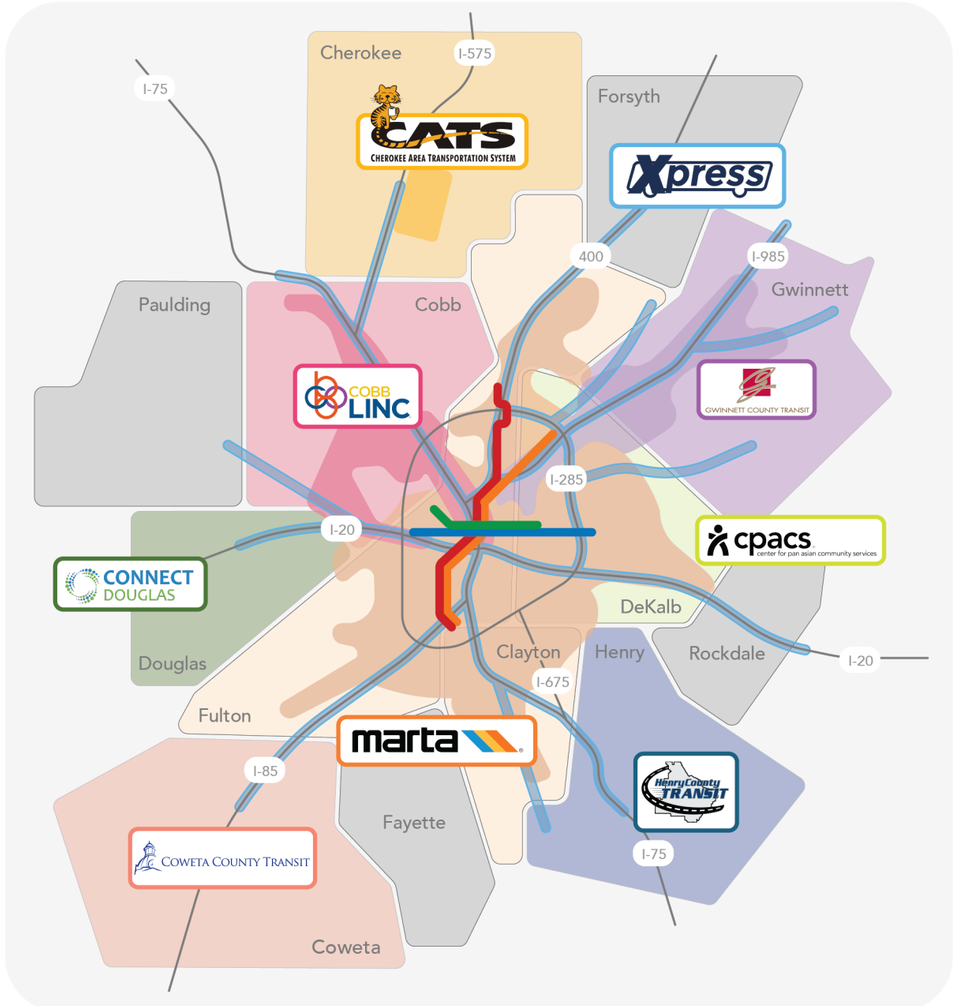
The ATL's transit operator partner agencies covered in this report include Cherokee Area Transportation System (CATS), CobbLinc, Connect Douglas, Coweta County Transit (Coweta or Coweta Transit), Gwinnett County Transit (GCT), Henry County Transit (Henry or Henry Transit), the Metropolitan Atlanta Rapid Transit Authority (MARTA), and Xpress (governed by the ATL).[4] The Center for Pan Asian Community Services (CPACS) is also a transit provider and partner in the region that receives federal funding through the Section 5307 program for its services.[5] These agencies are shown in **Figure 4**. Forsyth County Dial-a-Ride and Paulding Transit are also ATL partners and operators whose services may be covered in future ARAs.

Throughout this report, agencies and modes will be represented in charts and graphics by the colors used in the two legends in ***Figure 4****.*

4 Atlanta-Region Transit Link Authority, About the ATL.

5 The Federal Transit Administration's (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 4: Illustrative Map of the Region's Transit Operators



ATL FY 2020 Ridership by Agency	CATS	CobbLinc	Connect Douglas	Coweta
	57,194 trips	2,064,708 trips	95,526 trips	26,231 trips
	CPACS	**GCT**	**Henry**	**MARTA**	**Xpress**
	27,340 trips	1,290,087 trips	51,051 trips	94,556,168 trips	1,953,112 trips

CHAPTER 1

INTRODUCTION

1.1 About the Annual Report and Audit

As a requirement of its enabling legislation, 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. The ARA provides a comprehensive picture of transit in the region, illustrating the performance and benefits of the region's transit services.

This ARA evaluates system performance, finances, and planning activities during the ATL and the State of Georgia's FY 2020, which runs from July 1, 2019, through June 30, 2020.[6] Data showing transit system trends for the past five years are offered to enable trend analysis in many cases.

6 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 ARA.

In general, data shown in the 2020 ARA for FY 2016 through FY 2019 reflect what was reported to the National Transit Database (NTD). Agencies report data to the NTD on the basis of their fiscal years, not the ATL's. Data for FY 2020, unless otherwise noted (with financial data being a key exception), are according to the ATL's fiscal year.

FY 2020 data are also preliminary in the sense that they have not yet undergone the rigorous review of the Federal Transit Administration (FTA). For this reason, in a few cases, data for FY 2019 shown in the 2020 ARA differ from the figures shown in the 2019 ARA.

1.2 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 an analysis of the economic and societal benefits of transit. The foremost purpose of performance tracking is to understand better whether transit agencies are providing a high-quality, reliable, efficient, equitable, and safe service to their customers. By evaluating performance over time, agencies can identify trends, as well as areas for improvement and/or strategic investment. Performance tracking also enables the operators and the region to remain accountable for effectively meeting the region's mobility needs with the public resources afforded them.

This ARA, along with the ATL's Regional Transit Plan (ARTP), will together guide investments in Greater Atlanta's transit system to promote innovative and regional solutions to improve mobility for all ATL residents.

Fiscal Years by Operator

The ATL and the operators do not all follow the same fiscal year. Most data for FY 2020 are reported on the ATL's fiscal year (July to June). Data for prior years are generally reported on the agencies' own fiscal years:

January	Connect Douglas GCT
April	CPACS (through FY 18)
July	CPACS (FY 19 and on) Henry MARTA Xpress
October	CATS CobbLinc Coweta

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 safety, level of service, ridership, finances, vehicle state of good repair (among others), as well as their relationships to one another. Agencies can also use them to identify operational issues, capital needs, and key areas for investment. Customer satisfaction data can help operators understand and better meet the needs of their passengers. In addition, tracking KPIs related to equity helps assess whether transit is serving those who need it most. Past performance data inform future transit plans, and tracked data are used, over time, to evaluate the success of service improvements and other investments in transit throughout the region.

1.3 How the Annual Report and Audit Was Developed

This ARA was developed between May and November of 2020. ATL partner agencies and operators in the region provided crucial support in the ARA development process by providing the data used to conduct the KPI and spending analyses in **Chapter 4** and **Chapter 5** and providing review and feedback on draft KPI analyses to confirm the accuracy and, in some cases, explain performance trends. The operators and the ATL Board also provided input regarding the ARA's contents through meetings with the project team in early October 2020.

1.4 Organization of the Annual Report and Audit

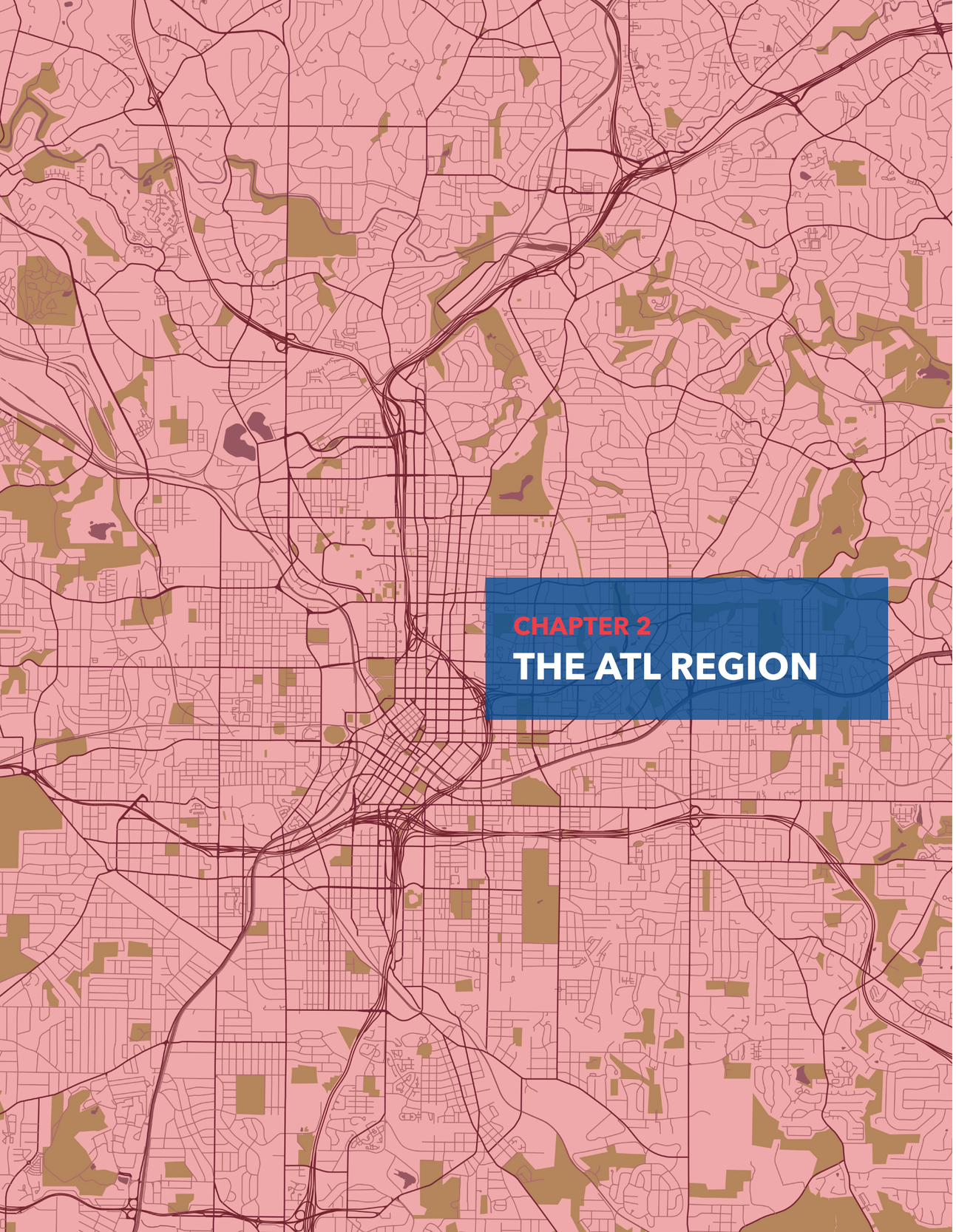
This ARA is organized into the following sections.

- **Chapter 2: The ATL Region** provides more information about the region, highlighting the transportation network.
- **Chapter 3: Agency Profiles** highlights key features about the transit operators included in this report.
- **Chapter 4: Transit Performance and Trends** presents performance trends for the transit services in the region. This year, this chapter includes special performance indicators related to the COVID-19 pandemic.
- **Chapter 5: Moving Transit in the Region Forward** analyzes the role of transit investment in economic recovery, including the importance of affordable mobility options, lessons from the Great Recession, and future transit funding opportunities.

- **Chapter 6: Conclusion** summarizes the ARA contents and highlights key issues for the region to address in order to enhance the value transit brings to the region's residents.

1.5 Impact of COVID-19 on Transit in the Region and the ARA

The COVID-19 pandemic has had a profound impact on the nation, including the Atlanta region. The pandemic reduced travel in the spring of 2020 as many businesses and schools transitioned to remote operations. The region's economy has suffered as a result of the pandemic, and the future, at the time of this ARA's publication, holds significant uncertainty. As a result of these unprecedented times, this ARA includes analyses and discussions specific to the pandemic, particularly in **Chapters 4** through **6**.



CHAPTER 2

THE ATL REGION

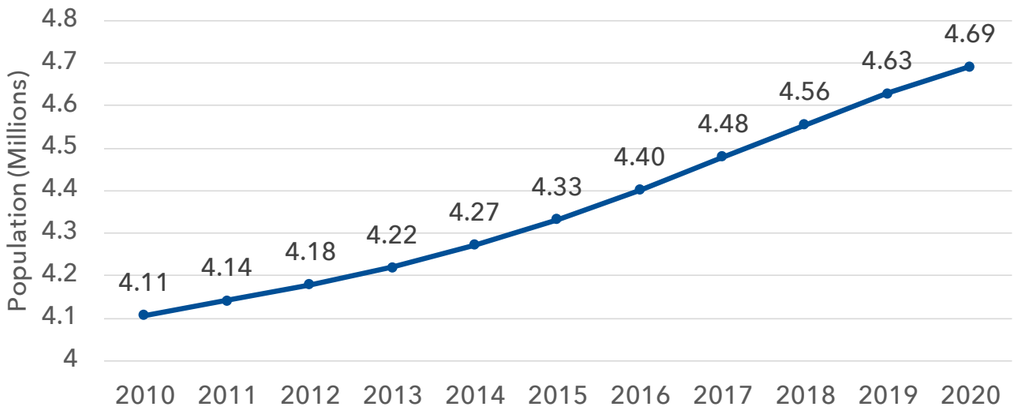
2.1 About the Region

The region's population has grown rapidly in recent years, as shown in **Figure 5** on the following page. The population has steadily increased since 2010, growing to an estimated nearly 4.7 million people by 2020.[7]

The consistent growth that the region has experienced over the past decade is expected to continue over the next 30 years, with nearly 3 million additional residents by 2050.[8]

7 Figures cited are for the 10 counties that are member jurisdictions of the Atlanta Regional Commission (ARC). The source for these figures is ARC, Atlanta Region Population Estimates.
8 ARC, About the Atlanta Region.

Figure 5: Atlanta Region Population, 2010-20



Source: ARC, Atlanta Region Population Estimates.

Seniors make up 11 percent of the region's total population, and youth represent an additional 25 percent. The region is also racially diverse; 40 percent of the population identify as Black, and 40 percent of the population identify as white (non-Hispanic).[9] By 2050, the region is expected to diversify even more, with the white (non-Hispanic) share of the population decreasing to less than 35 percent and the Hispanic population growing to over 20 percent.[10]

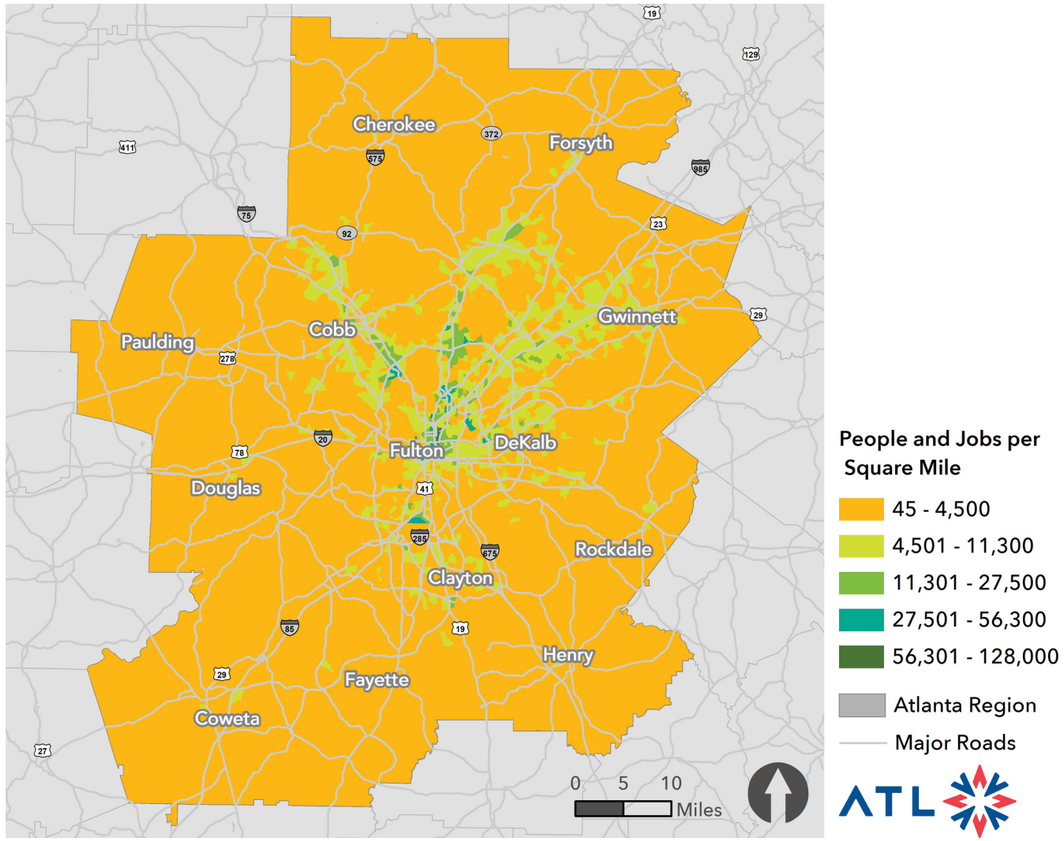
The region's median household income is $63,642. Approximately 15 percent of households earn less than $25,000 per year, 37 percent earn between $25,000 and $75,000, 30 percent earn between $75,000 and $150,000, and 21 percent earn more than $150,000 annually.[11]

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 (CDC) and CNN are also headquartered in the region. The top employment sectors in the region are education, retail, and health care.[12]

The U.S. Centers for Disease Control's Roybal campus in Atlanta.

9 ACS 5-year estimates, 2014-2018 for the 10-county region.
10 ARC, Population and Employment Forecasts.
11 ACS 5-year estimates, 2014-2018.
12 U.S. Census, Longitudinal Employer-Household Dynamics.

Figure 6: Population and Job Density in the Atlanta Region



While the region's unemployment rate rose during the Great Recession and recovery (approximately 2008 to 2011), unemployment was under 5 percent until the first months of the COVID-19 pandemic, when it rose to about 10 percent. The Atlanta Regional Commission (ARC) projects that the region will add over 1 million jobs over the next 20 years, with continued growth in the health care, retail, education, and professional and scientific sectors.[13]

Both population and job density vary significantly across the ATL's 13 counties, as shown in **Figure 6**. Population and jobs are concentrated heavily in Clayton, Cobb, DeKalb, Fulton, and Gwinnett Counties, with smaller areas of higher density in the other counties. The highest job density areas (of over 25,000 people and jobs per square mile) are concentrated in downtown Atlanta; the next largest employment centers include Buckhead, Perimeter Center, midtown Atlanta, the Hartsfield-Jackson Atlanta

13 ARC, About the Atlanta Region.

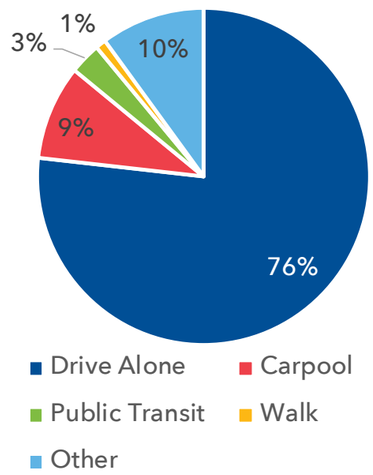
International Airport, Cumberland, and Emory University/CDC. In general, there are major areas of density along the region's highways.

2.1.1 Transportation in the Atlanta Region

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; a stop on Amtrak's Crescent Line, which travels between New Orleans and New York City; and several intercity bus and van lines, including Megabus, Greyhound, and Groome. The region's transit operators provide a mixture of rail, fixed-route bus, demand response, commuter bus, streetcar, and vanpool (VP) services. These operating agencies are profiled in detail in **Chapter 3.**

The Amtrak Crescent Line headed north to Atlanta's Peachtree Station.

Figure 7: Commute Mode Share in the Atlanta Region



While the region has numerous travel options, personal vehicles remain the dominant mode of travel, as in many other U.S. cities. In 2018 in the 13-county ATL region, about 76 percent of commuters drove alone to work, 9 percent carpooled, 3 percent used public transit, 1 percent walked, and 10 percent used other modes or teleworked (**Figure 7**).[14]

Of households with individuals that participate in the workforce, 97 percent have at least one vehicle available.[15] However, mode share in some areas of the region differs significantly from regional averages. For example, for those living in downtown Atlanta, only half of commuters drove alone to work, 5 percent carpooled, 12 percent used public transit, 19 percent walked, and 14 percent used other modes or teleworked.[16]

14 ACS 5-year estimates, 2014-2018.
15 ACS 5-year estimates, 2014-2018.
16 ARC, Commuting (by Neighborhood Statistical Areas) 2018.

2.2 Transit in the Atlanta Region Today

2.2.1 The Network

The Atlanta region has a multi-modal transit network with a wide variety of service types and operators. 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, which was operated by the City of Atlanta until July 2018, when MARTA took over its operation. The region has six fixed-route bus systems and an extensive network of commuter bus routes, with many taking advantage of express lanes on interstates. The region is also served by demand response and vanpool services.

By the Numbers

The Atlanta region's transit network includes:

- A heavy rail network of 46 miles and 38 stations
- 6 fixed-route bus systems with nearly 700 buses carrying almost 215,000 riders daily
- At least 13 demand response providers
- 35 commuter bus routes
- 65 miles of express lanes
- 3 vanpool programs
- A streetcar with 12 stops

2.2.2 Major ATL Projects

In addition to this Annual Report and Audit, the ATL is engaged in several other projects and work efforts meant to increase mobility options in the Atlanta region. These are described below under each of the five elements of the ATL's "Route Map," or strategic planning document, for the next four years.

1. Be a Trusted Adviser

The ATL is well situated to provide technical expertise in a number of areas related to transit in the region, with its professional staff and resources that may not be readily available to local governments, particularly those with little to no current transit operations. Some of the ongoing work in this area includes:

- Assisting county governments that are seeking to understand the unique transit needs of their communities, such as ATL's program management of Transit Master Plan study efforts for Forsyth and Henry Counties
- Supporting the transition of ATL counties moving from a "rural" US Census designation to an "urban" one, which impacts the amount and allowable uses of federal transit funds those counties receive
- Assisting entities with projects designed to enhance transportation and traffic flows in key geographic areas, such as ATL's support of the Atlanta Downtown Improvement District in its Transportation Demand Management (TDM) Plan for the Grady Memorial Hospital area. This effort seeks to improve mobility options for essential workers and increase access to a critical health care facility at a time of increased demand.

2. *Improve Regional Planning and Service Delivery*

The ATL has a unique role as a state authority serving a regional constituency and geography, and thus coordinates with many transportation partners in the region, such as the ARC, GDOT, and many county and city governments and community improvement districts (CIDs). For example, the ATL is actively involved in a coalition of cities along the "Top End" of I-285 advocating for new high capacity transit to be included as part of GDOT's planned construction of managed lanes along the same corridor.

In the same vein, the ATL is working with partners, particularly transit operators, in developing regional mode definitions and standards that are universally recognized and thus more understandable to the public, as well as partnering with operators to create a regional ATL branding architecture, which was mandated by a new state law passed in 2020.

Finally, the ATL is developing a "project database" that will support the regular update of the ARTP. This planning and tracking database will help maintain ARTP information through integrated mapping capabilities and a web-based user interface. The database system will be user-friendly with both a public-facing online interface for viewing project information, and a secure portal for project sponsors to update project information.

3. *Advocate for Sustained Sources of Transit Funding*

The ATL is enabled by the state law that created it to engage in certain activities related to funding for transit. For example, the ATL is required to advance to the Governor and General Assembly a list of transit projects from the ARTP suitable for state investment in the annual bond program, which the ATL Board did for the first time in September 2020. The list advanced by the ATL included nine projects that scored highly using a number of ATL evaluation criteria.

In addition, the General Assembly in 2020 created a new revenue source for transit statewide in the form of fees levied on ride share, taxi, and limousine services, and designated the ATL (along with GDOT) as the recipient of such revenue to be used for transit projects. The ATL will be actively engaged in dialogue around how these new revenues could be used to benefit the Atlanta region, as well as in discussions on federal transportation reauthorization in 2021.

Finally, the state law that created the ATL in 2018 also created a mechanism for county governments to put a referendum before their voters on funding transit services through a sales tax of up to 1 percent for a period of up to 30 years.

4. *Encourage Use of Multi-Modal Options*

The ATL is actively engaged in projects that bring technological innovation to the forefront of transit in the region. For example, in response to COVID-19, the state's Xpress commuter bus system implemented a contactless mobile fare payment pilot with Token Transit, in which mobile fare payment validators were installed on every bus. Riders can now download the Token app on their phones, purchase a digital fare pass, and conveniently scan their phone as they board. Additionally, the ATL is leading a regional fare policy study through next year intended to simplify the fare payment process for transit riders across the region and enhance the connectivity of the region's transit network.

5. *Enhance Customer Experience*

The ATL works with its regional partners to find ways to enhance the transit customer experience. A primary illustration of this goal is the ATL's management of a project to develop an open source, multi-modal trip planning application with integrated mobile payment options and a backend-connected data environment. This trip planning app will make it easier and more convenient to plan transit trips throughout the 13-county region. The connected data environment that powers the app will also benefit regional operators and inform service improvements by compiling information on the trip planning and making behavior of app users.

Additionally, the ATL has been leading a dialogue with transit operators and key regional stakeholders on potential measures to engender confidence among transit riders who stopped riding during the COVID-19 pandemic. The ATL's role as a regional convener that can facilitate this type of conversation increases the possibility that decisions may be made on a regional basis, resulting in a benefit to every transit customer.

CHAPTER 3

AGENCY PROFILES

The following agency profiles introduce the operators whose services are profiled in this ARA.

The profiles describe the operators' services and missions and offer a glance at their 2019 expenditures and 2020 service data. They also share a new project, policy, program, or other agency highlight and detail a key benefit that transit brings to the communities they serve.

CATS
CHEROKEE AREA TRANSPORTATION SYSTEM

The Cherokee Area Transportation System is a small agency focused on providing critical transportation for Cherokee County's residents, including elderly populations.

Service Area: Cherokee County

ATL District: 1

MISSION

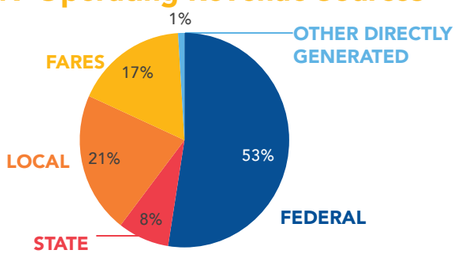
Our mission at CATS is to provide excellence in all areas of service that we provide to the citizens of Cherokee County.

BY THE NUMBERS

2019 Operating Expenditures
$1.3 million

2019 Capital Expenditures
$102,000

2019 Operating Revenue Sources



Number of Staff
20

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

"In the last year, we have implemented a training program that includes a full day of training on various topics and hands-on experience. It provides the ability to recognize each driver for years of being incident-free. This gives a great foundation to keep improving our agency and making our employees highly safety-conscious."

–Kristy Johnson, CATS Office Manager

Benefits That Transit Brings to the Community

"'Team' describes our people and organization at CATS. We have pulled together during the pandemic and served the community with very few complaints. People have known the risks and have done their jobs seamlessly and with a smile on their face. CATS continues to meet the needs of our elderly population to ensure they have a way to access critical health care services."

–Greg Powell, Cherokee County Director of Transportation

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

Service Area: Cobb County (and commuter bus to Downtown/Midtown Atlanta)

ATL Districts: 3, 4, 5, 8

MISSION

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.

BY THE NUMBERS

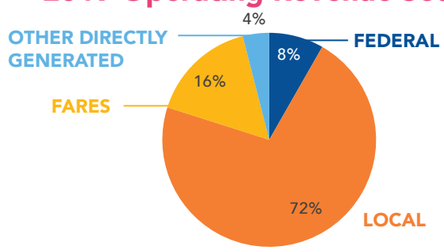
2019 Operating Expenditures

$22.9 million

2019 Capital Expenditures

$5.1 million

2019 Operating Revenue Sources



Number of Staff

296

2020 Service Data

	Commuter Bus	Demand Response	Fixed-Route Bus
Ridership	99,575	66,057	1,899,076
Revenue Miles	219,409	552,361	2,984,033
Fleet Size	35	29	71

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

In 2019, CobbLinc implemented Phase 1 of *CobbLinc Forward*, a series of service changes that improves service to customers by expanding service hours, increasing travel options and providing faster, more reliable trips. As a part of these changes, CobbLinc began Sunday service for the first time, implemented the agency's first Rapid route, and streamlined several routes, eliminating lengthy, unproductive segments.

Benefits That Transit Brings to the Community

CobbLinc has continued to provide service to area hospitals, health care facilities, grocery stores, food-processing plants, and other essential businesses throughout the County during the pandemic. CobbLinc continues to collaborate with regional partners (ATL, MARTA, Gwinnett County Transit, etc.) on regional initiatives such as fare policy, trip planning, mobile ticketing, and return to ridership during and post-pandemic.

CONNECT DOUGLAS

ConnectDouglas is a midsize agency providing fixed-route, demand response, and vanpool service throughout Douglas County.

Service Area: Douglas County

ATL Districts: 4, 8

MISSION

"Our mission with Connect Douglas is to connect our residents and visitors with the people, places, and events that are important to them."

–Dr. Romona Jackson-Jones, Douglas County Commission Chair

BY THE NUMBERS

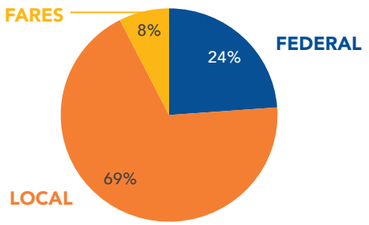
2019 Operating Expenditures

$2.7 million

2019 Capital Expenditures

$1.2 million

2019 Operating Revenue Sources



Number of Staff

7*

* Number of full-time staff

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

"We showed our commitment to transit by constructing a 6,400 square foot addition to our Transportation Center to improve efficiency of our operations."

–Gary Watson, Connect Douglas Director

Benefits That Transit Brings to the Community

"During the COVID pandemic, we had a solid core of daily riders. This showed how important our service is as a transportation option for some people."

–Jemal Sheppard, Connect Douglas Transit Services Coordinator

Coweta County Transit

Coweta County Transit is designed to assist in obtaining and retaining employment, receiving regular medical attention, providing access to job training, providing access to commercial zones and quality of life enhancement purposes.

Service Area: Coweta County

ATL District: 10

MISSION

To provide affordable access to citizens for education, employment, medical, retail, and recreation purposes throughout Coweta.

BY THE NUMBERS

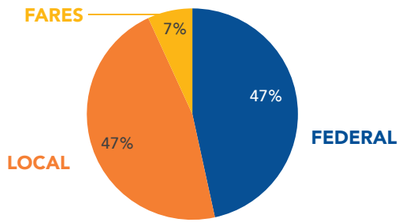
2019 Operating Expenditures

$355,000

2019 Capital Expenditures

$0

2019 Operating Revenue Sources



Number of Staff

10

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

"Coweta County Transit is the only means of affordable transportation available to some of our citizens. It has become a vital part in making sure those who no longer travel independently can still lead productive lives. The service also provides a way to enhance lifestyles of all citizens. It is one of the best things we have been able to provide our community."

–Paul Poole, Chariman, Coweta County Commission

Benefits That Transit Brings to the Community

"Everyone involved with Coweta County Transit has been friendly, and I have enjoyed using the service. The vans are always on time and are always clean. The drivers are kind. I have used the service for about a year now and have really enjoyed the convenience it provides. It has truly been a blessing to me."

–Patricia Outland, customer

cpacs
center for pan asian community services

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

Service Area: DeKalb County, Gwinnett County

ATL Districts: 2, 3, 5, 6, 7

MISSION

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

BY THE NUMBERS

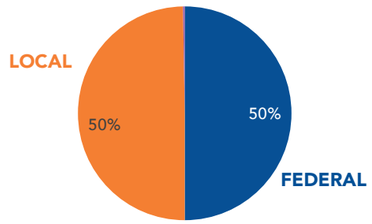
2019 Operating Expenditures

$834,000

2019 Capital Expenditures

$257,000

2019 Operating Revenue Sources



Number of Staff

19

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

"During the pandemic, CPACS has dedicated some of its transportation resources to delivering critically needed resources like food and medicine to residents living in low-income households. CPACS is proud to be a nonprofit in the transit space and would like to further expand its vital services like transportation to support the community."

–Victoria Huynh, Vice President of CPACS

Benefits That Transit Brings to the Community

"I was using Uber to go back and forth from Lilburn to Gwinnett Technical College, and it was about $50 in expenses every time. When I started to ride with CPACS Transportation, I gained real peace of mind. They come to my door, speak [my language of] Nepali, and provide a great service with a really cheap price. I strongly recommend CPACS Transportation to younger people who are looking for job opportunities and don't have their own car."

–Aman Sharma, customer

GWINNETT COUNTY TRANSIT

Gwinnett County Transit is mid-sized agency providing transit and commuter service around the county.

Service Area: Gwinnett County, commuter service to Atlanta

ATL Districts: 2, 3, 5, 6, 7

MISSION

To enhance quality of life by facilitating the mobility of people and goods safely and efficiently. This is accomplished by planning, constructing, operating, and maintaining aviation, transit, and surface transportation.

BY THE NUMBERS

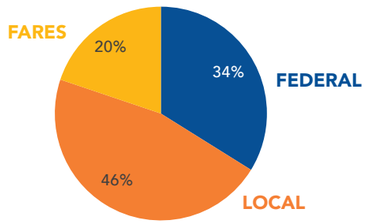
2019 Operating Expenditures

$18.3 million

2019 Capital Expenditures

$1.6 million

2019 Operating Revenue Sources



Number of Staff

7

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

GCT was awarded an FTA Human Trafficking Awareness & Public Safety Initiative Grant to install a router that will allow us to access our security cameras on the buses for live monitoring. We will also coordinate connection of the cameras to the County's new Situational Awareness Crime Prevention Center. GCT looks forward to increasing its contribution to the safety of the community."

–Karen Winger, Transit Director

Benefits That Transit Brings to the Community

During the COVID-19 pandemic, GCT's service has been "essential to the community," according to Transit Director Karen Winger, and ridership on some local routes has remained steady. GCT's commuter service has continued providing residents with access to the CDC in Atlanta.

Henry County Transit is a small agency providing demand-response service throughout the county.

Service Area: Henry County

ATL Districts: 9, 10

MISSION

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

BY THE NUMBERS

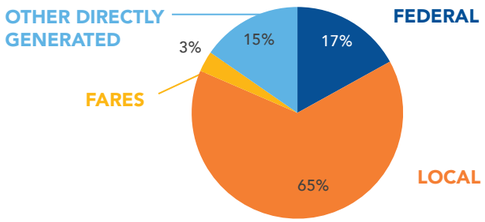
2019 Operating Expenditures

$2.1 million

2019 Capital Expenditures

$535,000

2019 Operating Revenue Sources



Number of Staff

30

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

"In partnership with the ATL, we have just started a project to complete a Transit Master Plan. The purpose of this plan is to assist Henry County with recommendations and guidance on the future direction for transit in Henry County. This project should take about a year to complete."

–Tye Salters, Director, Henry County Transit

Benefits That Transit Brings to the Community

"COVID-19 has brought us through uncharted waters. Throughout these unprecedented times, with continued support from Henry County's leaders, we have been committed to providing transit to residents throughout the County. We will continue to find ways to provide uninterrupted and safe service to all residents."

–Tye Salters, Director, Henry County Transit

marta

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

Service Area: Fulton, Clayton, DeKalb counties

ATL Districts: 1, 3, 5, 7, 8, 9, 10

MISSION

To advocate and provide safe, multi-modal transit services that advance prosperity, connectivity and equity for a more livable region.

BY THE NUMBERS

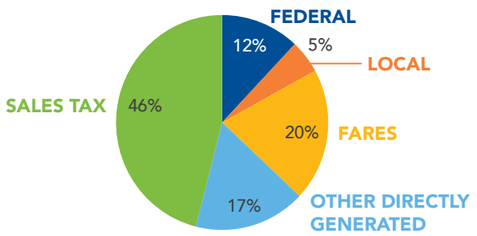
2019 Operating Expenditures

$488.6 million

2019 Capital Expenditures

$298.9 million

2019 Operating Revenue Sources



Number of Staff

4,504

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

"MARTA Heroes" is a video series about the employees that are working to keep metro Atlanta moving. From operators, station agents, and station maintainers, to everyone in between, the videos show how they work to serve passengers every day.

"The MARTA Heroes series instilled pride in frontline workers," said Colleen Kiernan, Senior Director of Government & Community Affairs.

Benefits That Transit Brings to the Community

When clients of Malachi's Storehouse, a community food pantry, could no longer reach the facility on Routes 103 or 132, which were suspended due to the pandemic, MARTA worked with DeKalb Human Services to fill the gap. When that funding ran out, MARTA creatively deployed bus operators in training on Route 132 to connect people with critically needed food resources.

Xpress operates a 12-county commuter bus service and a vanpool service.

Service Area: Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale Counties

ATL Districts: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

MISSION

Xpress gives commuters throughout the metro Atlanta region a valuable transportation option and also improves the capacity of Georgia's most congested highways.

BY THE NUMBERS

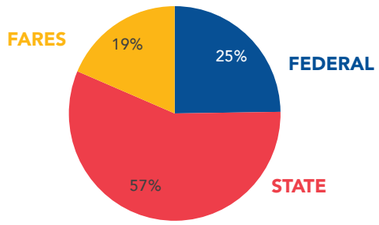
2019 Operating Expenditures

$26.2 million

2019 Capital Expenditures

$4.6 million

2019 Operating Revenue Sources



Number of Staff

16*

* Number of staff does not include contractors

2020 Service Data

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

IN THEIR OWN WORDS

New Project, Policy, Program or Other Agency Highlight

Xpress has made many investments in improving its service in recent years, including an extensive overhaul of its coach bus fleet and a new Computer-Aided Dispatch (CAD) and Automatic Vehicle Location (AVL) technology system, enabling the use of real-time information about travel conditions to improve the quality of service and communicate more quickly and effectively with customers.

Benefits That Transit Brings to the Community

In response to COVID-19, Xpress implemented a contactless mobile fare payment pilot program with Token Transit in September 2020. Xpress installed mobile fare validators on all of its buses, and through the Token app on their phones, Xpress passengers can purchase digital fare passes and scan their phones as they board. This new fare program reduces the need to exchange physical money or touch surfaces while boarding or reloading a Breeze card, thus helping to reduce the risk of spreading COVID-19.

CHAPTER 4

TRANSIT PERFORMANCE AND TRENDS

Photo credits:
Bob Andres / The Atlanta Journal-Constitution
David Wickert / The Atlanta Journal-Constitution

4.1 Introduction

The Key Performance Indicators used in this ARA, together, provide a comprehensive view of the region's transit services and their performance. The KPIs highlighted in this chapter, which were selected primarily based on data availability, cover many aspects of transit service, including ridership, finances, operations, quality, productivity, equity, customer satisfaction, state of good repair, and safety.

As data are available, trends are shown by mode, by agency, and at the regional level. Data are shown for 2016 to 2020 to allow for a better understanding of trends over the past five years.[17] These results reveal how the residents of the ATL region use transit and the role of each agency in enhancing mobility in the region.

17 Unless otherwise noted, data for FY 2020 in **Chapter 4** are for the ATL's fiscal year, which runs from July to June. Data for FY 2016 through FY 2019 are according to the individual agency's fiscal year. For more on data limitations due to differing fiscal years, see the **Appendix**.

Not all operators 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 the **Appendix.**

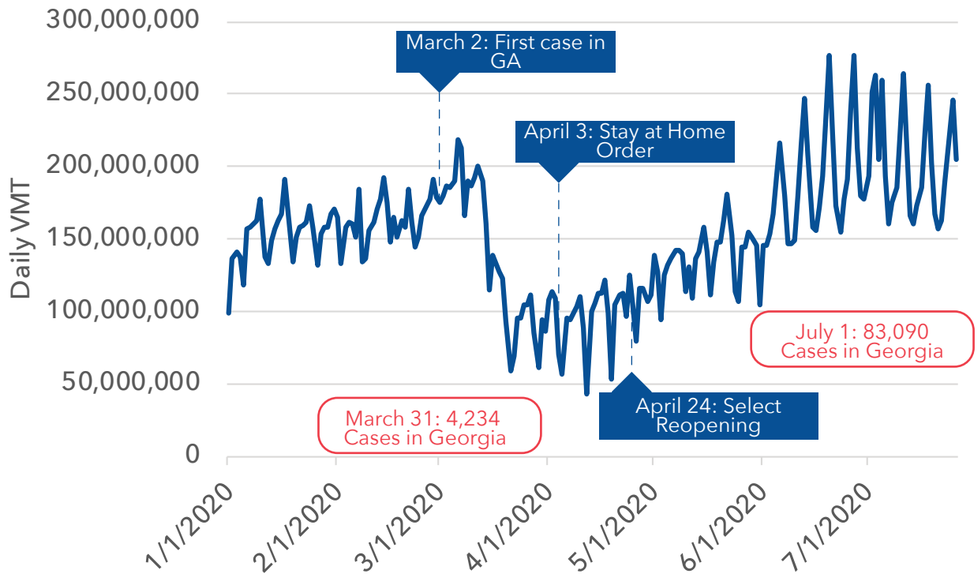
4.2 Special Key Performance Indicators for the COVID-19 Pandemic

On March 11, 2020, the World Health Organization declared COVID-19 a global pandemic. Two days later, President Trump declared a national state of emergency in the United States, and the day after that, Governor Brian Kemp declared a public health state of emergency for the State of Georgia. Shortly after, the Governor closed schools in the state, and on April 2, 2020, the Governor issued a statewide shelter-in-place order.

As schools and businesses closed and as people across the region limited their travel to only the most essential trips, travel patterns in the Atlanta region transformed. **Figure 8** shows daily vehicle miles traveled (VMT) in the region from January 1, 2020 through July 26, 2020, illustrating how travel patterns in the region shifted due to the pandemic.

As a result of COVID-19, travel declined across the region in the spring of 2020.[18]

Figure 8: Vehicle Miles Traveled in Metro Atlanta



Streetlight Data, COVID-19 VMT Monitor.

18 In a normal year, the Bureau of Travel Statistics notes that VMT typically reaches its low for the calendar year in February, rises sharply in March, and reaches a peak in August. Thus, it would appear that some of the VMT increases in June and July may be the result of expected seasonal trends. For more information, see: https://www.bts.gov/explore-topics-and-geography/topics/seasonally-adjusting-vehicle-miles-traveled.

Daily VMT declined from over 200 million during the early stages of the pandemic to less than 40 million when the State's stay at home order was in place. Despite a surge in cases in Georgia over the summer, daily VMT in the region began increasing when select reopening began on April 24, 2020.

By the end of June 2020, daily VMT levels reached over 240 million, higher than when the pandemic started.[19] **This increase in VMT could be a result of individuals choosing to drive a private vehicle rather than a shared mode to protect themselves and others from COVID-19.** Nationally, VMT in June 2020 totaled approximately 244.7 billion miles, a decline of 13 percent compared to June 2019.[20]

Table 1 shows mode shift data in the Atlanta Region, using data from ARC's COVID-19 Follow Up to the 2019 Regional Commuter Survey.[21] The COVID-19 follow-up survey was conducted in May 2020 and had 1,007 respondents.

According to the survey results, 84 percent of respondents were still working at their same job in May, but 11 percent were furloughed or laid off, and 2 percent stopped working to care for children or other dependents. Over two-thirds of those surveyed started teleworking or increased the frequency at which they teleworked, and 5 percent of those surveyed started or increased the frequency in which they drove alone. Conversely, over 60 percent reported stopping or decreasing the frequency of driving, likely shifting to telework. In addition, over a quarter of those surveyed reported stopping or reducing their use of public transit. Nevertheless, nearly three-quarters (74 percent) of surveyed transit commuters from before the pandemic reported no change to their usage of transit due to COVID-19. **These data indicate a**

Table 1: Mode Shift Due to the Pandemic

Mode	No Change	Stopped or Decreased Use of	Started or Increased Use of
Drive Alone	35%	60%	5%
Taxi and/or Uber, Lyft	80%	19%	1%
Carpool or Vanpool	84%	14%	2%
Public Transit	74%	26%	0%
Walk or Bike	87%	10%	3%
Telework or Work from Home	31%	2%	67%

Source: ARC Regional Commuter Survey COVID-19 Follow Up.

19 Streetlight Data, COVID-19 VMT Monitor.
20 Federal Highway Administration, June 2020 Traffic Volume Trends.
21 ARC, Regional Commuter Survey, COVID-19 Follow Up 2020. Respondents to the 2019 Regional Commuter Survey who agreed to participate in future surveys by ARC were invited to participate in a short web-based survey; 1,007 of the respondents participated in the survey, leading to a 33 percent response rate. The survey was conducted from May 7, 2020, to May 21, 2020.

relative inelasticity of transit commuting compared to driving, and likely reflects the fact that many jobs held by transit commuters require in-person presence (see **Section 4.2.2** for more information).

Looking forward, those who commuted using transit, carpool, or vanpool prior to the pandemic reported mixed attitudes about their intended mobility choices post-pandemic: 39 percent said they expect to continue or resume their previous commute levels on those modes once the pandemic ends, while 28 percent reported that they do not intend to use those modes at all for traveling to work. The remainder expected to either use them less often or were unsure.

4.2.1 Operator Responses to COVID-19

While travel patterns have changed, operators have adapted and continued to provide essential transit service to the region, providing a means for front-line workers to get to work. While ridership and level of service have declined across the region, transit service remains a lifeline for essential workers.

The Coronavirus Aid Relief and Economic Security (CARES) Act provided essential financial support that allowed operators to provide a high level of service while prioritizing the safety of frontline workers. The CARES Act provided over $370 million to operators in the Atlanta region.[22] Funding from the CARES Act provided a financial relief to enable continuation of operations and allowed the operators to purchase

Operators in the Atlanta region found unique solutions to supply challenges during the pandemic. For example, GCT worked with a local vendor to custom-build driver barriers. MARTA received assistance from Delta Air Lines in acquiring electrostatic sprayers to make vehicle cleaning faster and more effective.

personal protective equipment (PPE) and sanitization materials. Representatives from CATS noted that the CARES Act funding meant the agency has not needed to downsize, and representatives from GCT noted that they never had to worry about the financial implications of difficult decisions like temporary fare suspension because of the funding CARES Act provided.

Table 2 presents the measures each agency in the region took at one point in time to address COVID-19. These measures, ranging from extra cleaning of vehicles based on CDC guidelines to suspending fare collection, helped ensure that passengers and operators remain safe and healthy on transit.[23] The information presented in **Table 2** is not static. As the pandemic continues and the operators continue to adapt, their responses will change. Many agencies, for example, had reinstated fare collection and implemented measures to protect their operators and passengers by the summer or fall of 2020.

Every operator in the region required extra cleaning on their vehicles and provided their operators with PPE supplies, such as masks. MARTA implemented a policy that

22 GDOT and ATL, "Georgia Receives More than $522 Million in Federal Funds to Address Impact of Corona Virus," April 13, 2020.

23 Transporting goods/deliveries refers to transit agencies shifting their service from movement of passengers to movement of goods. This includes, for example, delivering meals and transporting food and other supplies from a foodbank to other locations.

Table 2: COVID-19 Adaptation Measures by Agency

Agency	Extra Cleaning	Providing PPE	Transporting Goods/ Deliveries	Rear-Door Boarding	Fare Collection Suspension	Social Distancing Practices
CATS	X	X				X
CobbLinc	X	X		X	X	X
Connect Douglas	X	X	X			X
Coweta	X	X				X
CPACS	X	X	X		X	X
GCT	X	X		X	X	X
Henry	X	X	X		X	X
MARTA	X	X		X	X	X
Xpress	X	X			X	X

requires passengers to wear masks or other face coverings in order to board its transit vehicles. To protect operators on its buses, GCT worked with a local vendor to develop custom barriers that would fit the model of bus they operate, while CobbLinc and Coweta also installed barriers between drivers and passengers.

CobbLinc and MARTA implemented a policy of rear-door boarding to help protect the health of their transit operators. Six agencies—CobbLinc, CPACS, GCT, Henry, MARTA, and Xpress—suspended fare collection temporarily, which also reduced the cost burden for passengers during uncertain economic times. Finally, Connect Douglas, CPACS, and Henry County all transported goods and made deliveries to in-need residents in their service areas. CPACS, for example, worked with ARC, ATL, and the FTA to convert their vehicles from serving passengers to rapid-response transport for food and other supplies.

As a COVID-19 safety precaution, Coweta installed "sneeze guards" between seats.

MARTA's drivers-in-training operated a shuttle service for two food banks in DeKalb County, and Connect Douglas worked with the county's senior services program to coordinate meal delivery.

In addition to the measures highlighted in **Table 2**, agencies have used other innovative approaches to communicate

with customers and provide services. **All of the operators in the region are using their websites, social media outlets, and/or cell phone applications to communicate service and COVID-19 safety information to their passengers.** Xpress held a virtual "Chat with the Chief" with customers in May that included service updates. This type of virtual engagement allowed for a more personal interaction between the agency and its customers. MARTA's General Manager also conducted town halls with the public. Most operators' vehicles are also equipped with signage and information about COVID-19 and transit service.

In order to enable social distancing and prevent too many riders from being on a transit vehicle at any given time, some operators, including CATS and CobbLinc, operated "shadow buses" that provided supplemental service on popular routes. Shadow services allowed agencies to safely accommodate all customers in need of service while also keeping their drivers safe and employed. In addition, Henry and MARTA implemented temporary "Hero Pay" for those employees working in the field.

4.2.2 Transit as a Lifeline to Maintain Essential Services

Throughout the COVID-19 pandemic, transit has remained a lifeline by continuing to connect people to jobs and essential services. In particular, while the region saw ridership decreases across modes, many transit commuters are essential workers who continued to rely on transit to get to their in-person jobs. One way of understanding the importance of transit during the pandemic is to examine the occupations held by transit commuters and whether they can or cannot be performed remotely.

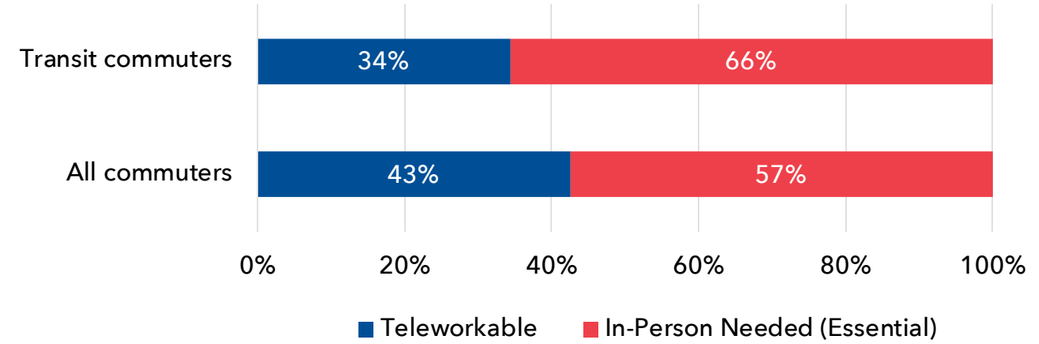
Transit in the Atlanta region has continued to serve as a lifeline, maintaining access to jobs and supporting essential services. Examples include: Xpress service to Emory Midtown Hospital, CobbLinc service to the Tip Top Poultry plant, and Gwinnett County Transit's service to the CDC Emergency Operations Center at Emory University.

In a recent National Bureau of Economic Research paper entitled "How many jobs can be done at home?", occupations were scored according to their telecommuting potential based on the nature and habits of work in that occupation as reported by workers in national survey data.[24] Examples of criteria that resulted in the coding of an occupation as one that cannot be performed at home include: whether people spent the majority of their time walking or running; whether they wore protective equipment; and whether handling and moving objects or operating vehicles, mechanized devices, or equipment is very important to their work. The following analysis combines this research with data on commuters by occupation from the American Community Survey (ACS) for the Atlanta region.[25]

24 Dingel, J. I., & Neiman, B. (2020). *How many jobs can be done at home?* (No. w26948). National Bureau of Economic Research. Survey data from the Occupational Information Network Program (O*NET), sponsored by the U.S. Department of Labor.

25 Research team analysis using data from the following: Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek, IPUMS USA: Version 8.0 [2013-2017 ACS 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.

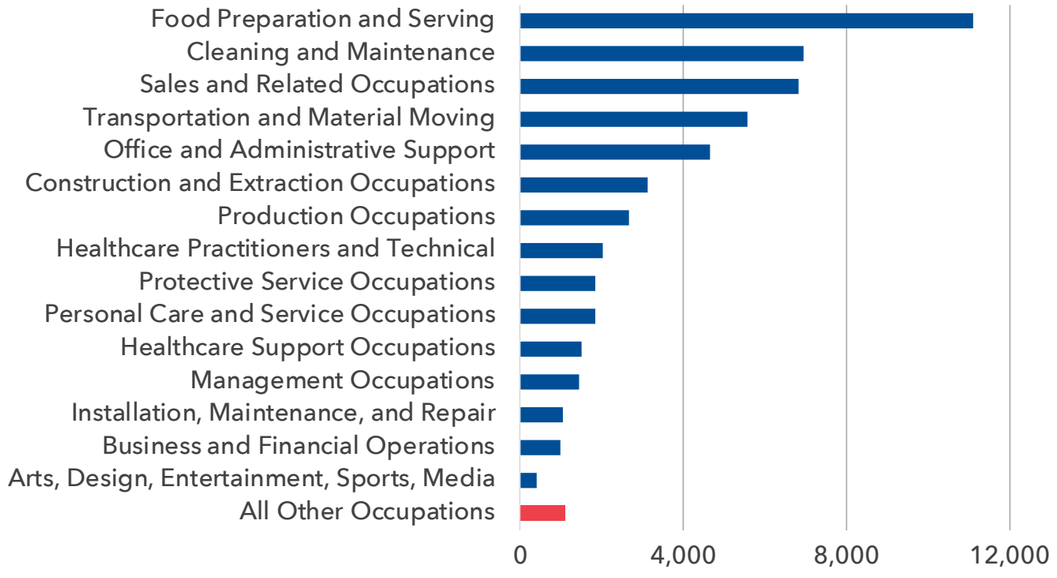
Figure 9: Commuters by Telework Potential, Based on Detailed Occupational Mix



Approximately 66 percent of people who typically commute using transit in the Atlanta region cannot do their job remotely, based on their occupation (Figure 9), compared to 57 percent of all commuters. Transit, therefore, serves a relatively higher share of frontline/essential workers.

While a portion of the transit commuters who cannot telework may have either lost their jobs or seen cutbacks in hours during the peak of the COVID-19 economic shutdown, many others work in occupations that are essential. **Figure 10** shows the number of people who were using transit to commute to work before the pandemic

Figure 10: Transit Commuters Who Cannot Telework, by Major Occupational Group



and who work in occupations that do not allow for telework. These are summarized by major occupational group, as defined in the Standard Occupational Classification system. For example, sales and related occupations refers to workers such as cashiers and retail salespeople.[26]

Table 3 provides a more detailed look at the top 20 occupations with transit commuters who cannot telework in the Atlanta region. It also shows, for each occupation, the relative importance of transit compared to all modes, the average wages earned by transit commuters, and the representation of African Americans and people of Hispanic or Latino origin (across all modes of commuting). **As can be seen in the results (blue shading in Table 3), many of the occupations that require in-person presence and have high numbers of transit commuters also have a higher share of African Americans and people of Hispanic or Latino origin compared to regional averages (34.2 percent and 10.6 percent, respectively) across all commuters.**

Table 3: Occupations That Require In-Person Presence: Top 20 by Number of Transit Commuters in the Atlanta Region

Detailed Occupation	Transit Commuters Who Cannot Telework	% of All Commuters in Occupation Using Transit	Average Wage for Transit Commuters in Occupation	For the Occupation, Across All Modes	
				% African American[A]	% Hispanic[B]
Cooks	3,782	10.2%	$17,851	42.4%	26.2%
Cashiers	3,662	6.9%	$10,847	47.7%	10.7%
Maids and Housekeeping Cleaners	3,211	14.9%	$14,720	29.6%	48.1%
Building Cleaning Workers	3,180	9.8%	$14,390	45.7%	23.2%
Waiters and Waitresses	1,804	4.6%	$22,516	27.1%	13.3%
Laborers and Freight, Stock, and Material Movers, Hand	1,740	5.2%	$16,340	54.5%	11.5%
Retail Salespersons	1,595	3.0%	$18,286	35.8%	8.5%
Stock Clerks and Order Fillers	1,556	6.5%	$23,260	53.4%	7.9%
Security Guards and Gaming Surveillance Officers	1,388	9.0%	$22,324	71.1%	2.8%
Food Preparation Workers	1,337	11.0%	$13,432	32.6%	24.6%
First-Line Supervisors of Retail Sales Workers	1,086	2.0%	$38,586	35.3%	6.9%
Nursing, Psychiatric, and Home Health Aides	958	5.4%	$18,709	77.1%	2.9%
Chefs and Head Cooks	957	10.6%	$21,747	42.1%	12.5%
Customer Service Representatives	936	4.5%	$25,339	48.1%	7.8%
Driver/Sales Workers and Truck Drivers	858	1.7%	$37,250	57.5%	6.9%
Registered Nurses	829	2.0%	$51,508	37.7%	3.3%
First-Line Supervisors of Food Preparation and Serving Workers	812	9.0%	$23,021	46.5%	11.6%
Construction Laborers	705	2.8%	$20,587	14.1%	58.5%
Combined Food Preparation and Serving Workers, Including Fast Food	644	10.5%	$13,913	43.7%	12.4%
Other Management Occupations	626	2.3%	$83,379	24.4%	5.2%
Subtotal, top 20 occupations	**32,290**				
Total transit commuters who cannot telework, across all occupations	**53,008**				

[A]African American, non-Hispanic.
[B]Hispanic, any race.
Blue shading indicates occupations with higher shares than the regional average across all commuters of any occupation. The share of non-Hispanic African Americans is 34.2 percent regionwide across all commuters; this figure is 10.6 percent for Hispanics or Latinos of any race.

26 Additional detail on occupational definitions can be found in the Bureau of Labor Statistics' 2010 SOC Definitions.

From these data, the following conclusions regarding the importance of transit in the Atlanta region are apparent:

- **Transit provides access for many workers that must be physically present to perform their jobs,** when compared to other modes or the workforce in general.
- **Many transit commuters perform essential functions that keep the economy and society going.** Examples include people who prepare food, work as cashiers at grocery stores, clean buildings, handle freight or drive trucks, or serve as nurses and other health care workers. During the pandemic, transit has continued to provide access to these workers to make sure they can reach their jobs safely, benefitting the public at large.
- **Looking forward to the recovery, many people are uncertain regarding the long-term implications of increased telecommuting spurred by the pandemic.** Regardless of how telecommuting plays out in the recovery, transit must continue to serve frontline workers who need to be physically present to perform their jobs.
- **Providing safe and affordable access to frontline workers is also a matter of equity and racial justice.** Many frontline occupations served by transit have a higher share of African Americans and people of Hispanic or Latino origin compared to regional averages across all commuters.

Unlinked Passenger Trips

The total boardings on transit vehicles, 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 transit ridership.

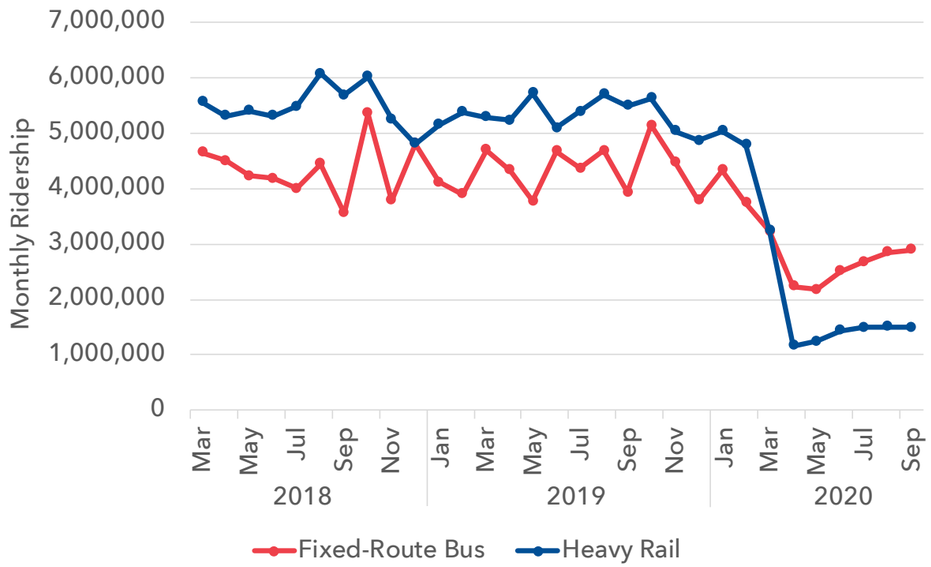
4.3 Ridership

This section shows trends in transit ridership, measured in unlinked trips, at the regional, agency, and model levels.

Transit ridership across the region declined sharply beginning in March 2020 as a result of the COVID-19 pandemic. **Figure 11** shows MARTA's heavy rail and fixed-route bus ridership between March 2018 and June 2020. Because MARTA is the largest transit agency operating in the region, its ridership trends generally mirror those for the entire region.

Between March 2018 and March 2020, ridership on MARTA's heavy rail experienced modest declines, although there were also year-over-year increases in some months. MARTA's fixed-route bus experienced more significant month-to-month fluctuations over the same period but without much change in the overall trend. Beginning in March 2020, both modes experienced declines largely due to the COVID-19 pandemic. Heavy rail's ridership declined by 32 percent between February and March 2020 and then by 64 percent between March and April 2020. Ridership on heavy rail has remained low since that time, rebounding slightly in June 2020. Fixed-route bus ridership

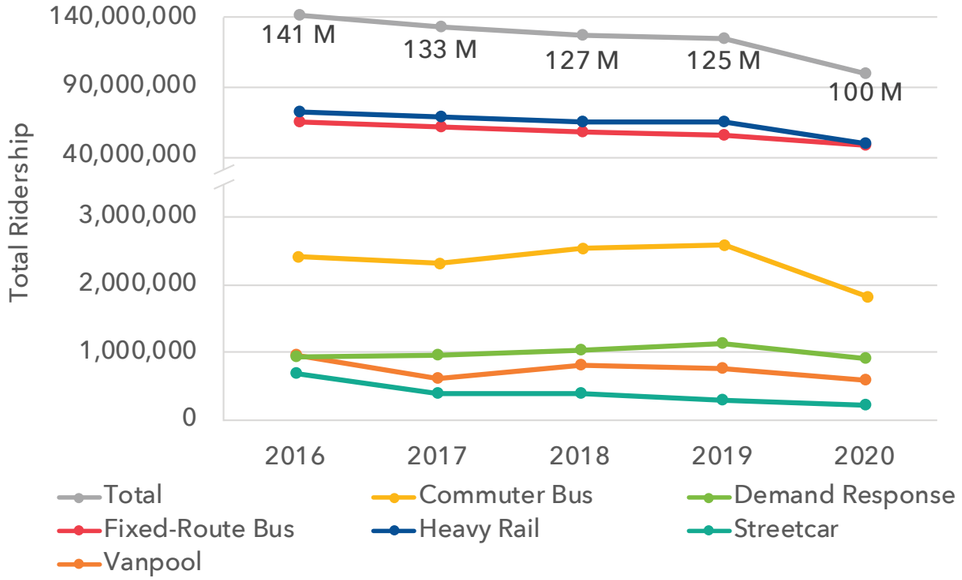
Figure 11: Impact of COVID-19 on MARTA Ridership



declined by about 14 percent between February and March 2020 and then by 44 percent between March and April 2020. Like rail, fixed-route bus has rebounded some since June 2020. While both modes experienced a decline, the decline was significantly more pronounced for heavy rail, indicating the relatively higher importance of fixed-route bus for the region's frontline workers.

While both MARTA's bus and rail services experienced ridership declines as a result of the pandemic, the decline was significantly more pronounced for rail. This indicates a relatively higher importance of fixed-route bus service for the region's frontline workers.

Figure 12: Transit Ridership by Mode

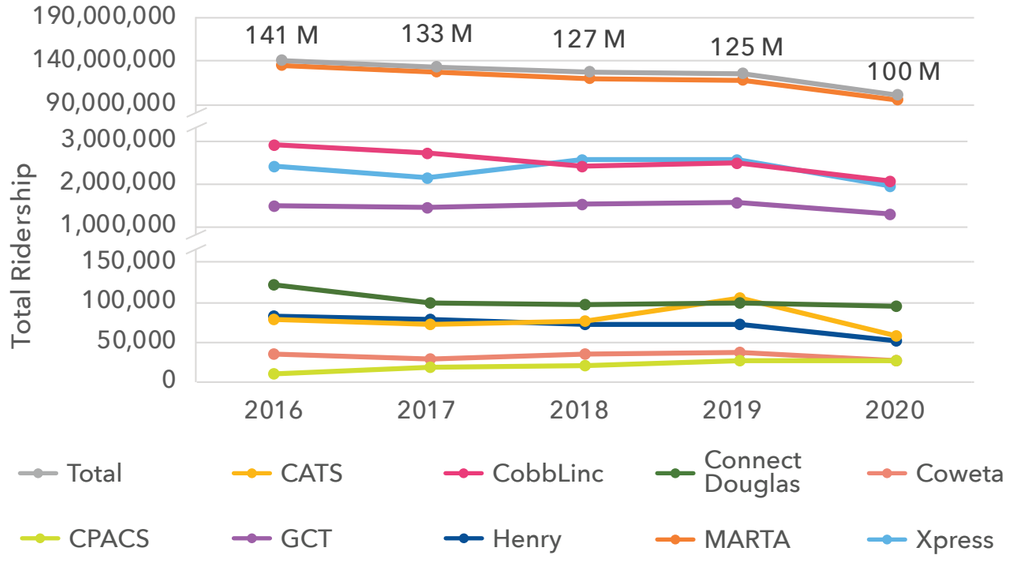


4.3.1 Ridership by Mode

Figure 12 shows total ridership by mode in the region, illustrating the variation in ridership among the six modes operated.

Between 2016 and 2020, total transit ridership in the Atlanta region declined from 141 million passenger trips to 100 million passenger trips (29 percent). Largely due to the COVID-19 pandemic, ridership on all modes in the region declined between 2019 and 2020, despite upward trends in ridership on commuter bus and demand response between 2016 and 2019 and steady ridership on MARTA heavy rail between 2018 and 2019. The pandemic impacted every mode as operators in the region adjusted their service and implemented new protocols to ensure the safety of transit operators and passengers, while many passengers reduced their travel or shifted to other modes. Some modes experienced greater declines than others. Ridership on fixed-route bus was the steadiest, with a decline of only about 13 percent regionally between 2019 and 2020. Ridership on rail, commuter bus, demand response, and vanpool (VP) services experienced greater ridership declines (in percentage) between 2019 and 2020 than fixed-route bus. Ridership on these modes declined by between 20 and 25 percent.

Figure 13: Transit Ridership by Agency



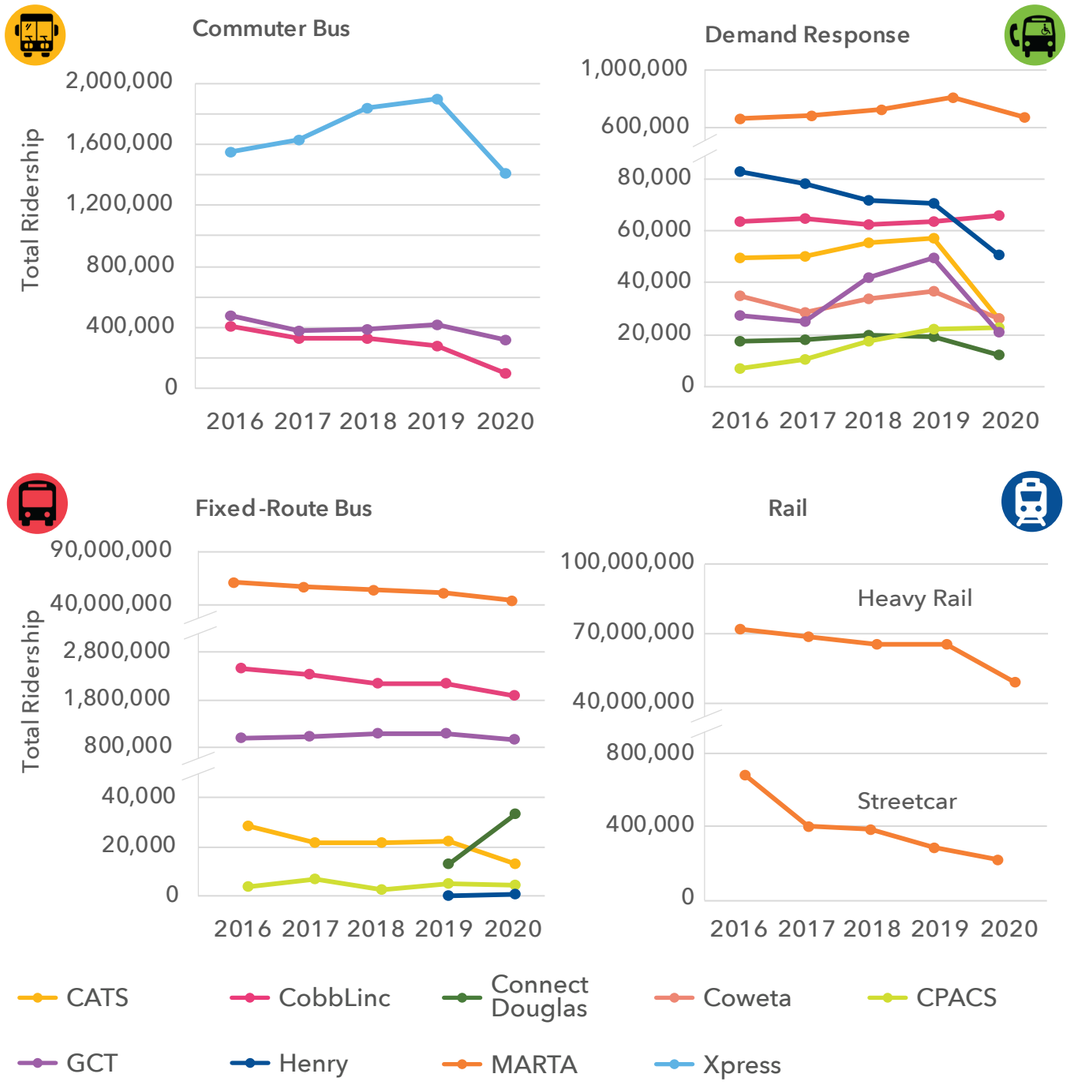
4.3.2 Ridership by Agency

Figure 13 shows total transit ridership by agency. Trips taken on MARTA represent close to 95 percent of all transit trips in the region, so total trends ridership are very heavily influenced by MARTA's trends.

While the pandemic negatively impacted transit ridership for all agencies, some agencies experienced smaller declines than others. For example, Connect Douglas' ridership declined by just 4 percent between 2019 and 2020. Connect Douglas implemented a new fixed-route bus service in 2019; however, the agency experienced only minimal ridership gains for the year due to declines in vanpool and demand response ridership. CPACS' ridership declined by less than 1 percent between 2019 and 2020, indicating the agency was on track to increase its ridership in 2020 before the pandemic. CATS, Coweta County, Henry County, and Xpress experienced the greatest declines between 2019 and 2020. CATS, Coweta, and Henry are all smaller transit agencies, whose ridership is either entirely or primarily on demand-response service, which experienced more significant ridership declines. Xpress provides commuter bus and vanpool service—two of the modes that experienced the most significant declines.

Figure 14 shows ridership by mode for each operator in the region. While the region experienced a decline in transit ridership over the five-year period, not all modes followed the same ridership patterns.

Figure 14: Transit Ridership by Mode and Agency



For instance, while commuter bus experienced a decline in ridership between 2016 and 2020, Xpress experienced ridership increases up until the COVID-19 pandemic, when many commuter bus passengers likely shifted to telework and the level of service on commuter bus decreased. GCT and Xpress experienced ridership declines of about 25 percent, while CobbLinc experienced a ridership decline of about 64 percent. GCT maintained commuter bus service to the Centers for Disease Control and Prevention offices during the first months of the pandemic, helping provide transit access to frontline workers and medical researchers.

Demand response ridership was on a steady upward trend between 2016 and 2019, prior to the pandemic. Due to the pandemic, demand response ridership decreased by 5 percent overall between 2016 and 2020, and by 21 percent between 2019 and 2020. However, both CobbLinc and CPACS experienced modest growth in demand response ridership during the five-year period (despite the pandemic). An aging population in the nation, as well as in the Atlanta region, is likely contributing to this general (pre-pandemic) trend.

Fixed-route bus also experienced varied results across the agencies, accelerating the previous years' trend of slowly declining ridership. Despite the pandemic, most agencies' fixed-route ridership declined by less than 15 percent between 2019 and 2020. Connect Douglas experienced growth during the period due to its implementation of new fixed-route service in 2019. GCT's fixed-route bus ridership increased by 9 percent between 2016 and 2019 before declining 12 percent as a result of the pandemic.

Both MARTA's heavy rail and streetcar services experienced overall ridership declines between 2016 and 2020, with both modes declining by nearly 25 percent between 2019 and 2020. However, after a decline in ridership in 2017 and 2018, heavy rail ridership increased slightly in 2019 from the previous year.

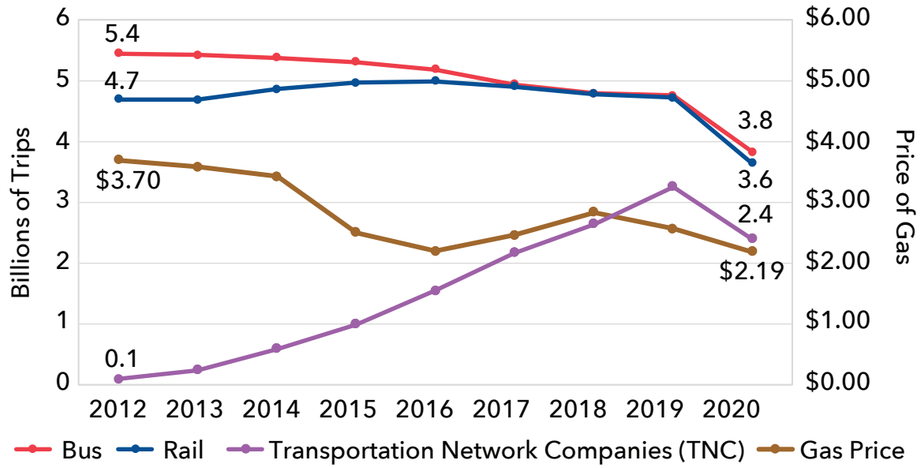
4.3.3 Transportation Network Companies and New Mobility

The decline in public transportation ridership, accentuated by the pandemic, is not unique to the Atlanta region. Nationally, bus ridership had been declining since 2012, and rail ridership, which was rising until 2015, had been on a slight downward trend since 2016. Gas prices, which have remained relatively low since 2015, and the overall strength of the economy are two significant factors often related to the decrease in transit ridership. **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, likely also influenced the decrease in public transportation ridership over the last several years.**[27]

Figure 15 on the next page shows the decline in transit ridership in the country and its temporal coincidence with other changes that may be influencing these trends.

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

Figure 15: Bus, Rail, and Estimated TNC Ridership in the U.S., and Gas Prices, 2012-2020



Sources: American Public Transportation Association,[28] Schaller Consulting,[29] Uber,[30] Lyft,[31] American Automobility Association.[32]

The impacts of TNCs and micromobility options on transit ridership likely vary by mode. A recent study found that TNC usage is correlated with more significant decreases in bus ridership relative to rail ridership.[33] The same research highlights that introducing a bikeshare system can increase light and heavy rail ridership while also contributing to a decrease in bus ridership. **Figure 16** shows the Atlanta region's transit ridership and TNC and micromobility milestones over the past eight years. During this period, TNCs have made the for-hire sector a major provider of urban transportation services and the micromobility sector has seen several companies and services enter and leave the market.

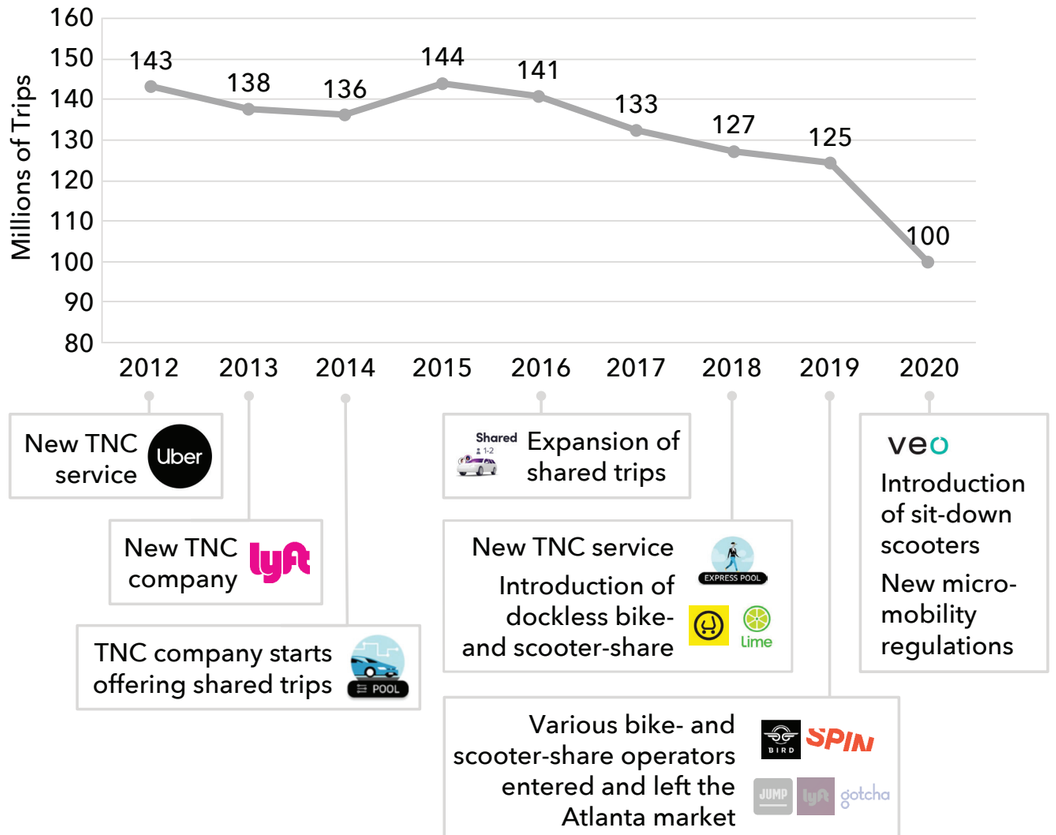
As shown in **Figure 16**, transit ridership in the region increased between 2014 and 2015, despite the presence of TNC companies and the introduction of shared trip options. However, it has been decreasing since then, while TNC companies have begun to offer shared services that are more affordable than their initial service offerings, and micromobility options have expanded. In

28 American Public Transportation Association, Ridership Report, 2020.
29 Using the methodology defined by Schaller Consulting, the annual number of TNC trips since 2018 was estimated based on the total number of trips provided by Uber and Lyft. Schaller Consulting, "The New Automobility: Lyft, Uber, and the Future of American Cities," 2018.
30 Uber Technologies, Inc., "2019 Annual Report," and "Q2 2020 Earnings Supplemental Data."
31 Lyft, "2019 Annual Report," and "Q2 2020 Earnings Supplemental Data."
32 American Automobility Association, Gas Prices. U.S. Inflation Calculator, Gasoline Prices Adjusted for Inflation.
33 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.

2019, the region saw a rapid rise in the number of shared scooters, forcing cities to regulate services. Amid regulations, safety issues, and public critics, several micromobility companies left the region in the second half of 2019 and early 2020.

In March 2020, the Atlanta City Council limited the number of permits issued to dockless device companies, and the Atlanta Department of Transportation launched the 2020 Shareable Dockless Mobility Devices Program. This program permits four operators—Bird, Veo, Spin, and Helbiz—to deploy 500 devices each, with fleet sizes to increase in stages. Regulations and expansion plans are essential tools in understanding the role of these travel options in urban mobility and highlighting the potential of these devices to complement transit networks and reduce car trips.

Figure 16: ATL Transit Ridership and New Mobility Milestones in the Region



While new travel options are likely contributing to some decline in transit ridership, it is difficult to generalize about these impacts, and it is 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 were leading people to make more trips overall. The drop in the number of TNC trips in the country in 2020, shown in **Figure 15**, is also very likely to have happened in the Atlanta region. Micromobility trips in the region decreased significantly in 2020, with services interrupted between the months of March and July.

Local travel preferences are quickly changing in response to the COVID-19 pandemic, and the impacts of these changes are not yet fully understood. Shelter-at-home orders resulted in fewer micromobility trips for commuting and leisure activities, while hygiene laws resulted in short-term shutdowns. With some perceiving public transportation as a health risk, micromobility is seen as an alternative with fewer points of contact and ease of maintaining physical distancing. Research suggests cities are also experiencing a shift in consumer use cases, with more trips to the pharmacy and restaurants to pick up food.[34] Similarly, TNC companies that offer meal delivery services have seen an increase in those types of trips.[35] In coming years, the strength of the economy as well as perceptions of the safety of transit are likely to influence ridership trends.

The rise of TNCs, like Lyft and Uber, and micromobility options, like scooters (above, pictured on the Atlanta BeltLine), has likely influenced the decrease in public transportation ridership.

34 McKinsey & Company, "The future of micromobility: Ridership and revenue after a crisis," 2020.
35 Uber Technologies, Inc., "Q2 2020 Earnings Supplemental Data."

4.4 Level of Transit Investment

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

4.4.1 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 insurance. The region's operating expenditures for transit from 2016 to 2019 are shown in **Table 4** and **Figure 17**. Figures for 2020 in **Table 4** (shown in the blue cells) and in **Figure 17** (shown with dashed lines) refer to budgeted figures, as actual expenditures were not available at the time of publication. It is important to note that the operating budgets for FY 2020 shown in this section were developed prior to the pandemic and thus do not take CARES Act funding into account.

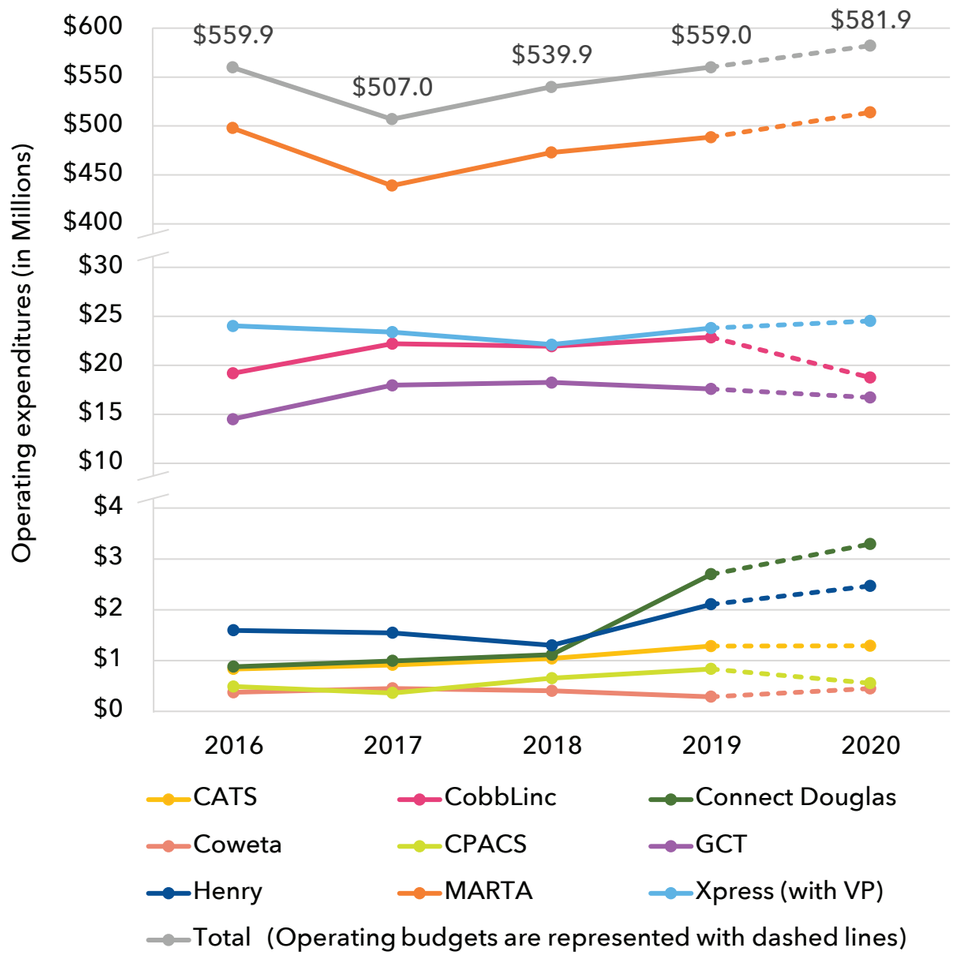
The region's operating expenditures in 2019 were slightly higher than in 2016, showing a recovery from the five-year low in 2017. The 2020 operating budgets totaled over $580 million, indicating a significant increase in the operating funds anticipated to be expended. The operating expenditures trends vary significantly across agencies, however. Fluctuations in operating expenditures in the region are closely related to MARTA's spending, which comprise about 90 percent of the region's total operating expenditures. In 2020, MARTA accounted for 88 percent of the region's operating budget while accounting for 95 percent of the ridership.

Table 4: Operating Expenditures by Agency (in Millions)

Agency	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
CATS	$0.8	$0.9	$1.0	$1.3	$1.3
CobbLinc	$19.2	$22.2	$22.0	$21.8	$18.7
Connect Douglas	$0.9	$1.0	$1.1	$2.7	$3.3
Coweta	$0.4	$0.4	$0.4	$0.3	$0.4
CPACS	$0.5	$0.4	$0.7	$0.8	$0.6
GCT	$14.5	$18.0	$18.3	$17.6	$16.7
Henry	$1.6	$1.5	$1.3	$2.1	$2.5
MARTA	$498.0	$439.2	$473.0	$488.6	$513.9
Xpress	$24.0	$23.4	$22.1	$23.8	$24.5
Total	$559.9	$507.0	$539.9	$559.0	$581.9

Blue cells refer to budgeted figures, as actual expenditures were not available.
Note: The reported expenditures are the sums of the total expenses by mode from published reports for transit operations, as indicated in NTD submissions. Funds applied to other costs such as interest expenses, operating lease expenses, and other reconciling items have been excluded.

Figure 17: Operating Expenditures by Agency



Dotted lines reflect budgeted amounts and not expenditures.

After MARTA, CobbLinc, GCT, and Xpress are the next three largest agencies, with annual operating expenditures of between $15 million and $25 million. CATS, Connect Douglas, Coweta, CPACS, and Henry have operating expenditures of around $3 million or less.

Operating expenditures in 2019 were slightly above those in 2016, with operating expenditures trending upwards since 2017. According to its operating budget, MARTA's 2020 anticipated expenditures are expected to be the five-year highest. Among the three mid-size agencies, Xpress, CobbLinc, and

GCT, 2020 operating budgets are higher than expenditures in 2016 for GCT and Xpress. CobbLinc's and GCT's expenditures have fluctuated similarly since 2016; they increased from 2016 to 2017 and remained relatively stable between 2017 and 2019. Based on Xpress's 2020 operating budget with vanpool, expenditures are expected to be slightly higher than in 2016, showing a recovery from the five-year low in 2018. Among the smaller agencies, Connect Douglas and Henry, and CATS show clear upward trends in operating expenditures in the last five years. The overall trend in operating expenditures indicates the region's effort in increasing service delivered and better serving the public.

4.4.2 Operating Revenues

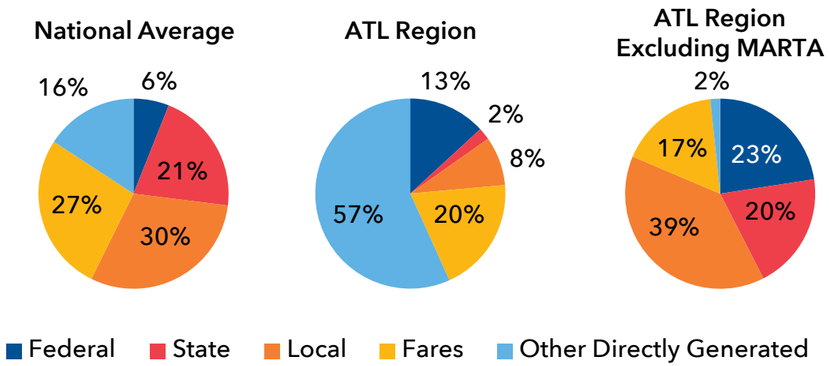
Operating revenues can be grouped into four main sources: federal, state, local, and directly generated. The first three sources refer to the level of government from which the funding originates. Fares generally represent a substantial share of

Relative to national averages, directly generated operating revenues make up a significantly larger portion of all operating revenues for transit in the Atlanta region. The majority of these revenues come from sales taxes.

the directly generated revenues applied to operations and are defined as all income directly earned from carrying passengers. Other directly generated funds are any revenues generated by or donated directly to the transit agency, including advertising revenues, donations, bond proceeds, and taxes imposed by the transit agency. It is worth noting that there are legal limitations on expense eligibility by funding source. **Figure 18** shows the 2019 operating revenue sources in the region, as well as for all operators covered by this ARA combined except for MARTA, and compares those to the latest available national averages.[36]

Relative to national averages, directly generated operating revenues make up a

Figure 18: Operating Revenues by Source



36 National averages indicated as reported to NTD in 2018 (the latest available year) for all agencies in Metropolitan Statistical Areas (MSAs) with population estimate greater than 2,000,000 excluding New York-Newark-Jersey City, NY-NJ-PA and Los Angeles-Long Beach-Anaheim, CA.

significantly larger portion of all operating revenues in the Atlanta region. Directly generated revenues are primarily sales taxes levied to fund MARTA, which provided 45 percent of MARTA's 2019 operating revenues. **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 region relies more heavily on federal and local funding sources compared to national averages and less on fares. In most years, no state funding is provided for operating MARTA's services.

4.4.3 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 5** and **Figure 19** show capital expenditures for each agency since 2016. Figures for 2020 in **Table 5** (shown in the blue cells) and in **Figure 19** (shown with dashed lines) refer to budgeted figures, as actual expenditures were not available.

Capital expenditures in the Atlanta region show a clear upward trend between 2016 and 2019, and the 2020 capital budgets reinforce this trend with anticipated expenditures increasing significantly.[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. However, regional totals are still heavily tied to MARTA's figures. MARTA accounted for 95 percent of the region's capital expenditures in 2019, but this proportion is anticipated to decrease in 2020, with MARTA's capital budget representing slightly less than 90 percent of the region's total.

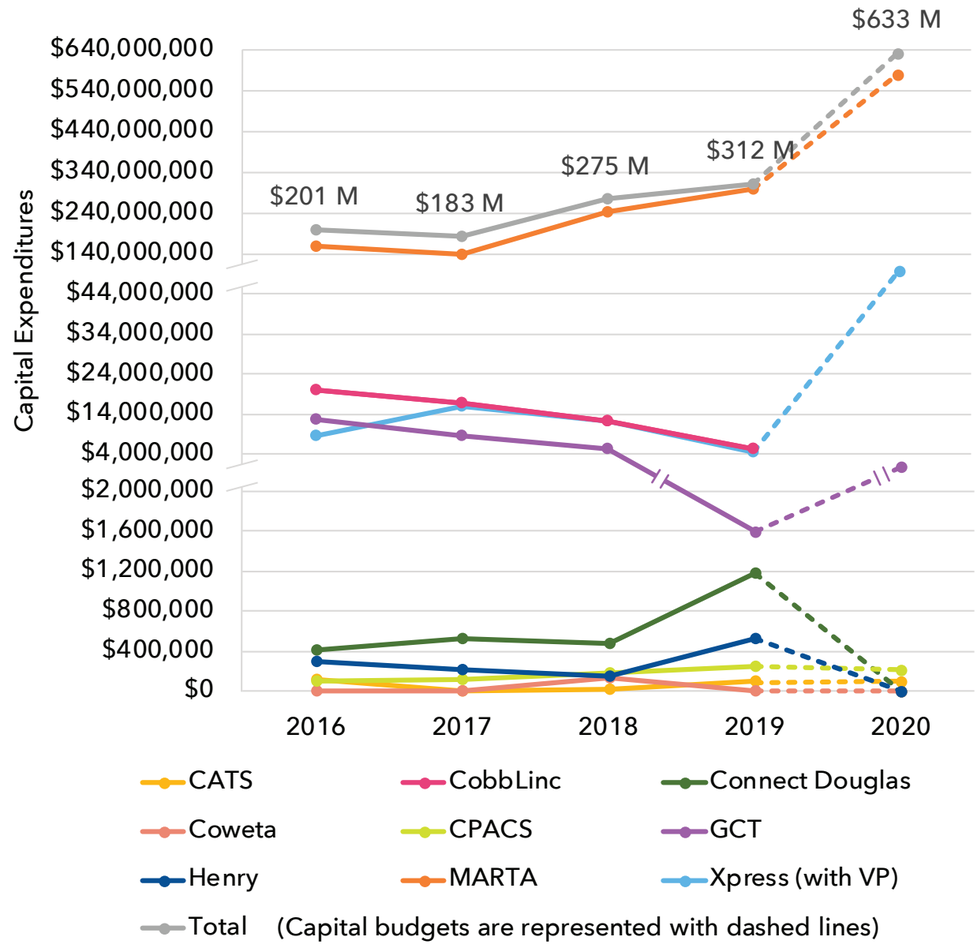
Table 5: Capital Expenditures by Agency

Agency	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
CATS	$122,076	$0	$24,754	$102,080	$103,006
CobbLinc	$20,192,816	$16,675,040	$12,076,758	$5,095,613	N/A
Connect Douglas	$413,275	$520,043	$483,666	$1,176,013	$0
Coweta	$0	$1,416	$135,866	$0	$0
CPACS	$109,953	$120,528	$189,600	$257,495	$214,500
GCT	$12,674,087	$8,700,430	$5,206,500	$1,598,530	$3,693,926
Henry	$306,738	$221,805	$146,706	$535,443	$0
MARTA	$158,687,878	$141,480,048	$244,424,367	$298,912,284	$579,700,000
Xpress	$8,416,016	$15,770,545	$12,305,762	$4,635,624	$49,915,296
Total	$200,922,839	$183,489,855	$274,993,979	$312,313,082	$633,626,728

Blue cells refer to budgeted figures, as actual expenditures were not available. CobbLinc's FY 2020 capital budget was not available.

37 However, none of the figures shown in this section consider potential pandemic-related project or procurement delays that could alter the budgeted amounts shown for FY 2020.

Figure 19: Capital Expenditures by Agency



Despite a small dip in 2017, capital expenditures in the region have increased from 2016 to 2019 and are expected to double between 2019 and 2020, as shown in **Figure 19**. MARTA's 2020 capital budget anticipates over $130 million in expenses related to maintenance and upgrade of systems, almost $100 million for vehicles, and another $93 million for facilities. Bond

debt service and other bond-related costs represent a significant portion of MARTA's 2020 capital budget, totaling almost $150 million. GCT and Xpress also anticipated a large increase in capital expenses in 2020. Of GCT's $22 million capital budget, over $10 million was expected to be directed to commuter buses' midlife overhaul. GCT's 2020 adopted capital improvement plan budget also anticipated over $2.7 million in a park and ride expansion and $1.2 million for the Bus Rapid Transit (BRT) South I-85 Corridor. Over three-quarters of Xpress's $50 million capital budget in 2020 is anticipated to cover vehicle purchases. These fleet investments are likely to improve Xpress service quality.

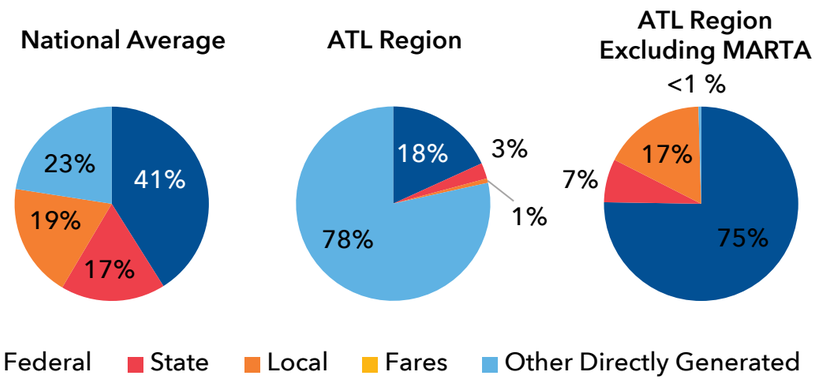
In contrast to MARTA, GCT, and Xpress, which are all anticipated to increase their capital expenditures in 2020, the other operators are anticipated to either maintain similar levels of investment or to invest less. CATS, Coweta, and CPACS were expected to maintain a relatively stable trend of capital expenditures in 2020. Connect Douglas and Henry's capital expenditures peaked in 2019, and their 2020 capital budgets indicate a reversal of the upward trend from previous years. CobbLinc shows a downward trend in capital expenditures between 2016 and 2019.

4.4.4 Capital Revenues

Figure 20 shows the 2019 capital revenue sources in the region and for all agencies combined except for MARTA compared to the latest available national average.[38]

Sales taxes and fees levied by MARTA covered the majority of the agency's (and region's) capital expenditures in 2019. Relative to national averages, across the ATL region, federal funding also makes up a smaller proportion of capital revenues, and local operators, however, federal funding made up 75 percent of all capital revenues compared to 41 percent among national peers. The state share of funding was very modest, and local contributions were on par with national averages.

Figure 20: Capital Revenues by Source



38 National averages indicated as reported to NTD in 2018 (the latest available year) for all agencies in MSAs with population estimate greater than 2,000,000 excluding New York-Newark-Jersey City, NY-NJ-PA and Los Angeles-Long Beach-Anaheim, CA.

Table 6: Total Operating Expenditures per Capita by Fiscal Year

2016	2017	2018	2019	2020*
$96.66	$86.28	$90.84	$93.08	$95.28

**2020 operating budget per capita, as actual expenditures were not available.*

4.4.5 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. Despite recovering from a five-year low in 2017, operating expenditures per capita in 2019 were still lower than in 2016 (**Table 6**). Considering the 2020 operating budgets, the anticipated operating expenditures per capita in 2020 would still be slightly below the figure for 2016. Despite fluctuations and recent recovery, operating expenditures have failed to follow the Atlanta region population growth since 2016 or to keep pace with inflation (of around 2 percent per year). **On a per-capita basis, the Atlanta region expends significantly less on providing transit service relative to other metropolitan regions of comparable size, which expended on average about $175 per capita in 2018.**[39]

4.4.6 Regional Economic Impact of Expenditures

Understanding Direct and Multiplier Impacts

In addition to supporting invaluable services, transit agency expenditures also create jobs and generate business sales throughout the Atlanta region. The total economic impacts of operations, maintenance, and capital expenditures by operating agencies are comprised of three distinct categories—direct, indirect, and induced impacts—as illustrated in **Figure 21** and defined on the next page. The latter two categories are sometimes referred to as "multiplier" or "spinoff" effects, as they show how the economic impact of spending on transit extends beyond transit operators themselves to other businesses in the region.

39 This analysis used national averages as reported to NTD in 2018 (the latest available year) for all agencies in MSAs with population estimate greater than 2,000,000 excluding New York-Newark-Jersey City, NY-NJ-PA and Los Angeles-Long Beach-Anaheim, CA. The analysis is based on comparing the population of urbanized areas and all of the operators assigned to the urbanized area. Therefore, the geography does not align completely with the ATL's jurisdiction.

Figure 21: Direct, Indirect, and Induced Impacts Generated by Transit Agency Expenditures

The following section summarizes the regional economic impacts of transit expenditures for FY 2019 across all nine operators.[40]

- **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 the 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 quantified using the measures of jobs, income, value added, and output, defined as follows:

- **Jobs**, which includes both part- and full-time positions.
- **Income**, which covers total compensation for work, including gross wages, salaries, proprietor income, employer-provided benefits, and taxes paid to governments on behalf of employees.

40 The analysis is based on FY 2019 data rather than FY 2020 data in order to incorporate more complete information on actual rather than planned expenditures.

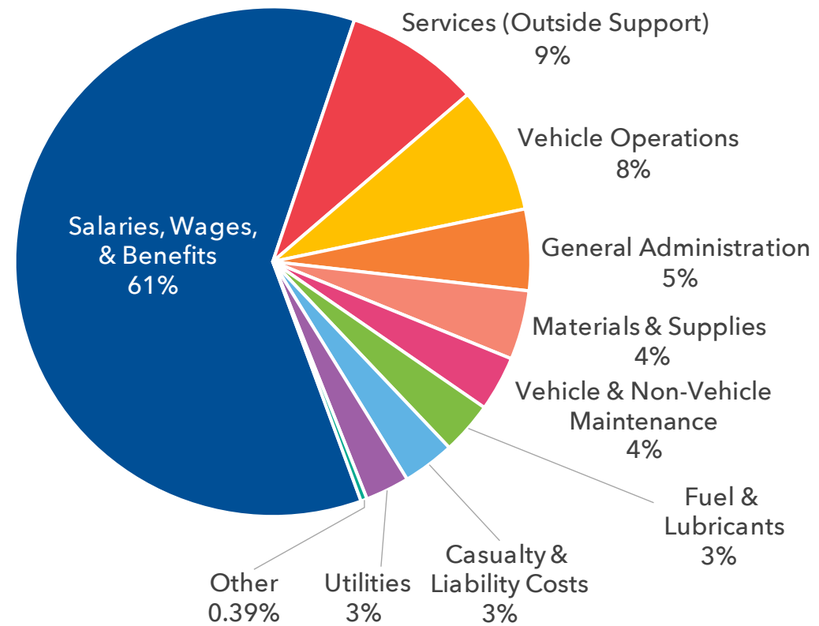
- **Value added** consists of compensation of employees, taxes paid on production and imports, and gross operating surplus. Value added equals the difference between an industry's gross business output and the cost of purchased goods and services. Value added for companies across industries and across 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.

Direct Impacts

In FY 2019, transit agencies within the ATL region invested a total of $873 million in operating, maintaining, and improving the regional transit network. **Figure 22** summarizes transit agency operations and maintenance expenditures from FY 2019, by type of expenditure.

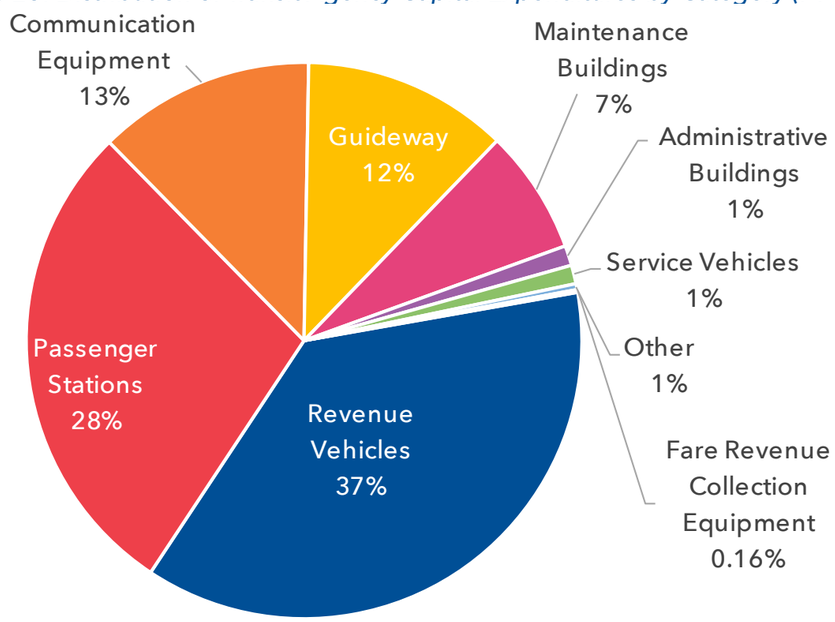
Transit agencies are first and foremost service providers and therefore rely significantly on their workforce to deliver safe and effective service. This is reflected in the approximately 61 percent of operating costs allocated to worker salaries, wages, and benefits.

Figure 22: Distribution of Transit Agency Operations and Maintenance Expenditures by Category (FY 2019)



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

Figure 23: Distribution of Transit Agency Capital Expenditures by Category (FY 2019)



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

Figure 23 similarly summarizes transit agency capital expenditures from FY 2019 by type. **In the case of capital expenditures, the majority of expenditures are made towards vehicles and stations, with significant additional investment in transit communications equipment and guideway infrastructure.**

4.4.7 Total Stimulus Impacts on the Regional Economy

Tables 7 and **8** summarize the annual economic impact of transit agency expenditures. With multiplier impacts, the total impact of ongoing agency operations and maintenance expenditures reaches upwards of 13,000 jobs in the Atlanta region, contributing $1 billion in value added to the Gross Regional Product and over $1.8 billion in output to the economy. Similarly, capital expenditures in FY 2019 supported a total of over 1,800 jobs, earning $112 million in income, and supporting $269 million in regional business sales.

Transit agency expenditures supported nearly 15,000 jobs and contributed more than $1.25 billion to the region's gross regional product in 2019.

Table 7: Economic Impact of Transit Agency Operations and Maintenance Expenditures (FY 2019)

Impact Type	Jobs	Income ($M)	Value Added ($M)	Output ($M)
Direct Impacts	4,389	$340	$340	$560
Supplier Purchases (Indirect)	3,156	$188	$265	$491
Employee Respending (Induced)	5,538	$292	$474	$768
Total Impacts	**13,083**	**$820**	**$1,079**	**$1,819**

Table 8: Economic Impact of Transit Agency Capital Expenditures (FY 2019)

Impact Type	Jobs	Income ($M)	Value Added ($M)	Output ($M)
Direct Impacts	1,100	$71	$101	$153
Supplier Purchases (Indirect)	229	$16	$29	$49
Employee Respending (Induced)	481	$25	$41	$67
Total Impacts	**1,810**	**$112**	**$171**	**$269**

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.

Figures 24 and **25** 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 sectors supported by consumer spending, such as education and health services.

Figure 24: Total Jobs by Sector – 2019 Annual Transit Agency Operations and Maintenance

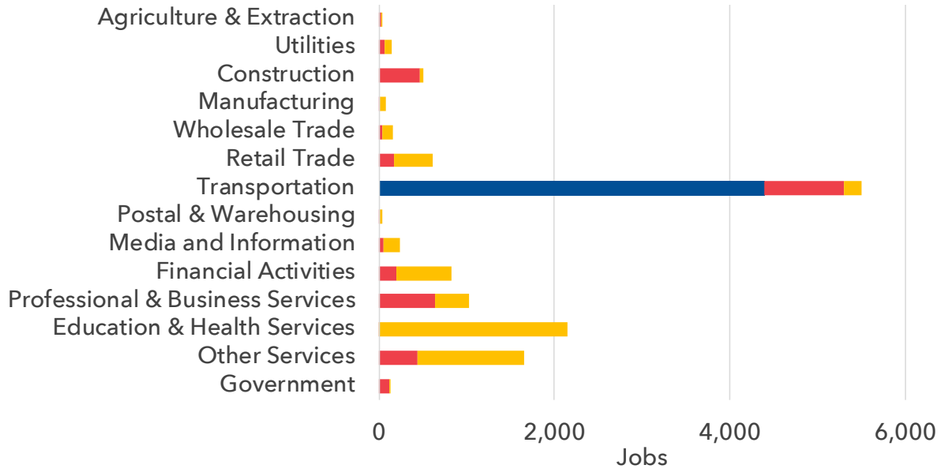
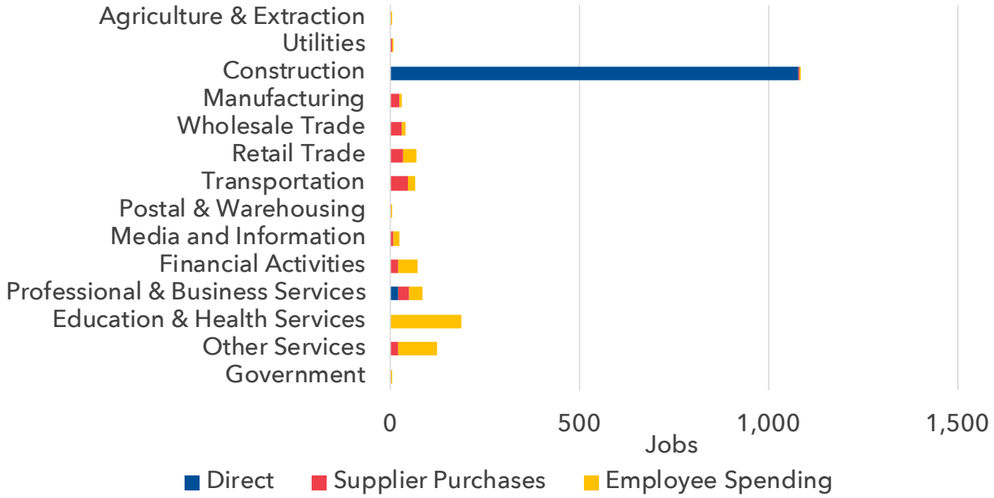


Figure 25: Total Jobs by Sector – 2019 Transit Capital Expenditures



Source: Research team analysis using TREDTransit™.

4.5 Level of Service

Level of service is defined as the amount of transit service provided, typically measured in terms of vehicle revenue hours (also referred to herein as "revenue hours" or VRH) and vehicle revenue miles (also referred to as "revenue miles" or VRM). Despite declines in ridership, the region's level of service overall continued to grow until 2020, when it declined only slightly, largely due to COVID-19. **As an essential service, most transit services in the region have operated throughout the pandemic despite lower ridership, albeit sometimes at lower service levels (e.g., some bus routes began operating according to weekend instead of weekday schedules).**

4.5.1 Level of Service by Mode

Figures 26 and **27** show revenue hours and revenue miles of service by mode over the past five years.

Figure 26: Revenue Hours of Service by Mode

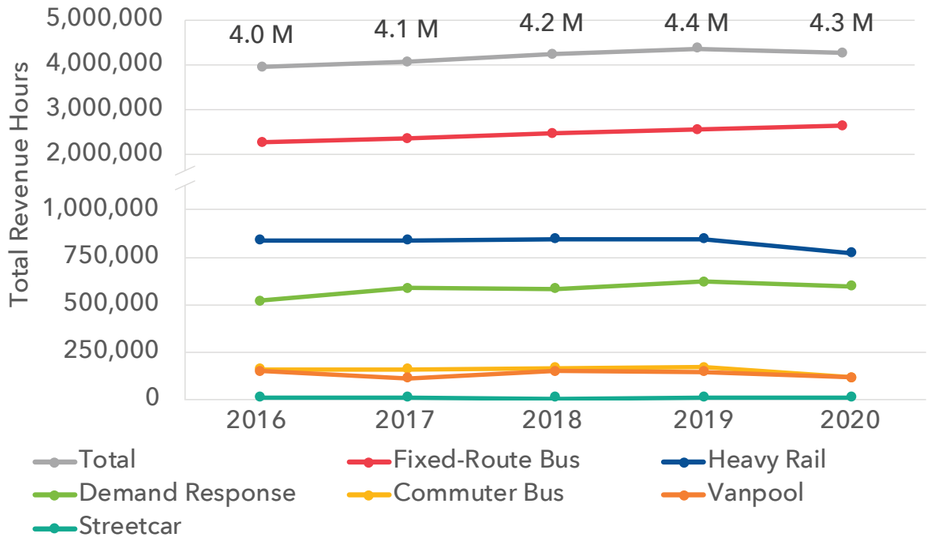
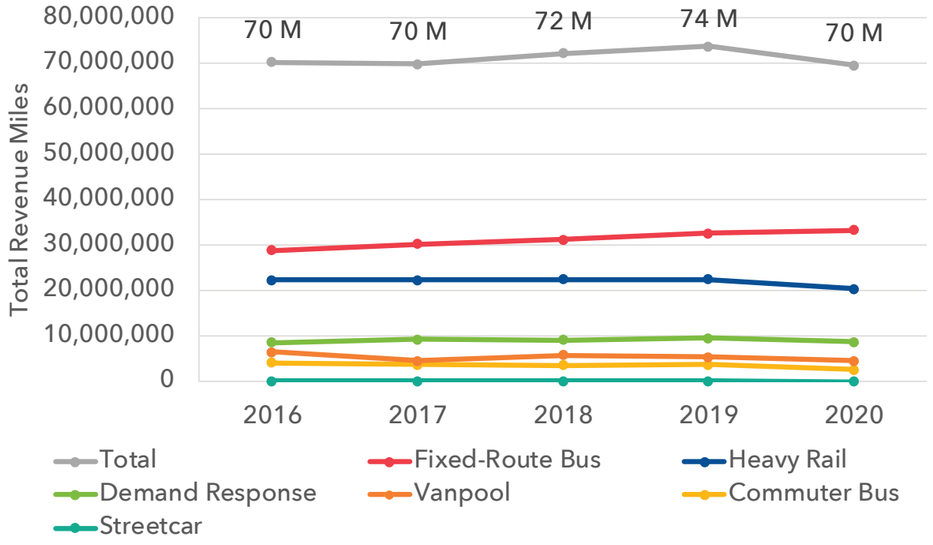


Figure 27: Revenue Miles of Service by Mode



The level of transit service grew between 2016 and 2019 and declined slightly between 2019 and 2020. Despite a 2 percent decline in revenue hours between 2019 and 2020, primarily due to the pandemic, revenue hours for the region across all modes increased by 8 percent over the five-year period. Revenue hours for fixed-route bus and demand response increased during the entire five-year period, likely a result of new services in the region. Commuter bus, vanpool, heavy rail, and the streetcar all experienced an overall decline in revenue hours between 2016 and 2020.

Overall, revenue miles of service declined slightly in 2020, largely due to the pandemic, after gains in revenue miles from the previous year in 2018 and 2019. However, both fixed-route bus and demand-response service had more revenue miles in 2020 than they did in 2016.

4.5.2 Level of Service by Agency

Figures 28 and **29** show revenue hours and revenue miles of service by agency.

Figure 28: Revenue Hours of Service by Agency

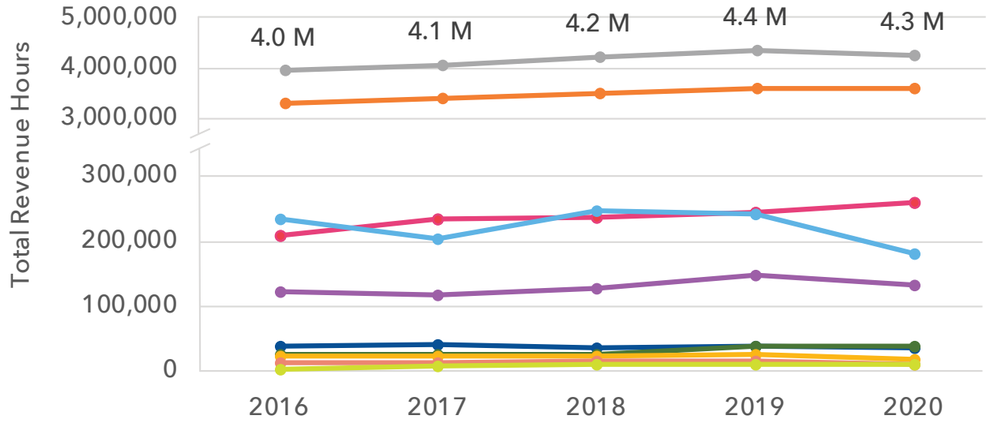
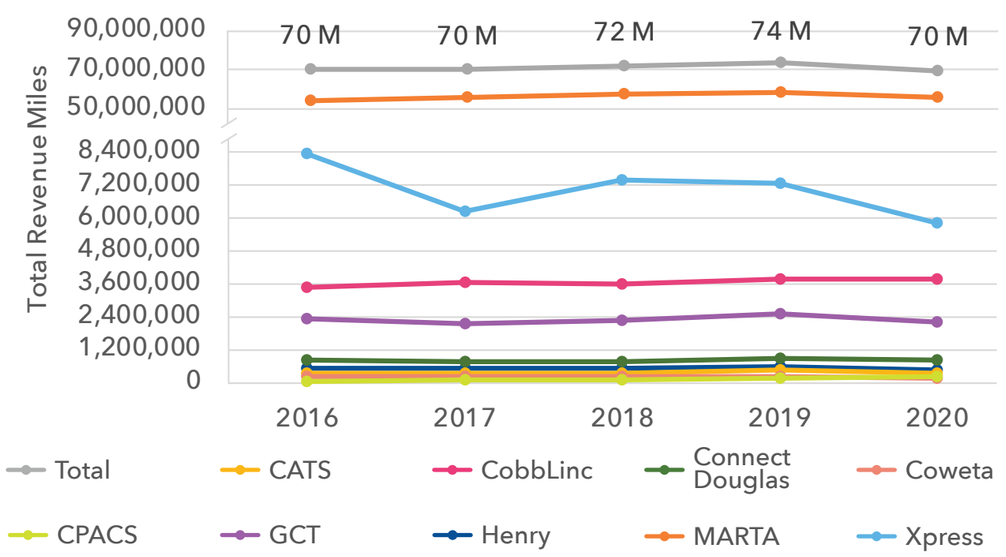


Figure 29: Revenue Miles of Service by Agency



During the five-year period, most agencies in the region had modest increases in both revenue hours and revenue miles through 2019, prior to pandemic-related service reductions. Xpress experienced the largest decline in revenue hours and revenue miles during the period, and also experienced fluctuations between 2016 and 2019, though its service was generally on an upward trajectory before the pandemic. Xpress was hit harder by the pandemic than other agencies, likely because its two modes—commuter bus and vanpool—are overwhelmingly aimed at commuters, who may have shifted to telework or driving to work alone. CPACS is the only agency whose revenue miles and revenue hours did not decrease between 2019 and 2020. CobbLinc and Connect Douglas also experienced increases in revenue hours through 2020. Connect Douglas' higher level of service toward the end of the five-year period is partially attributable to the agency's new fixed-route bus service.

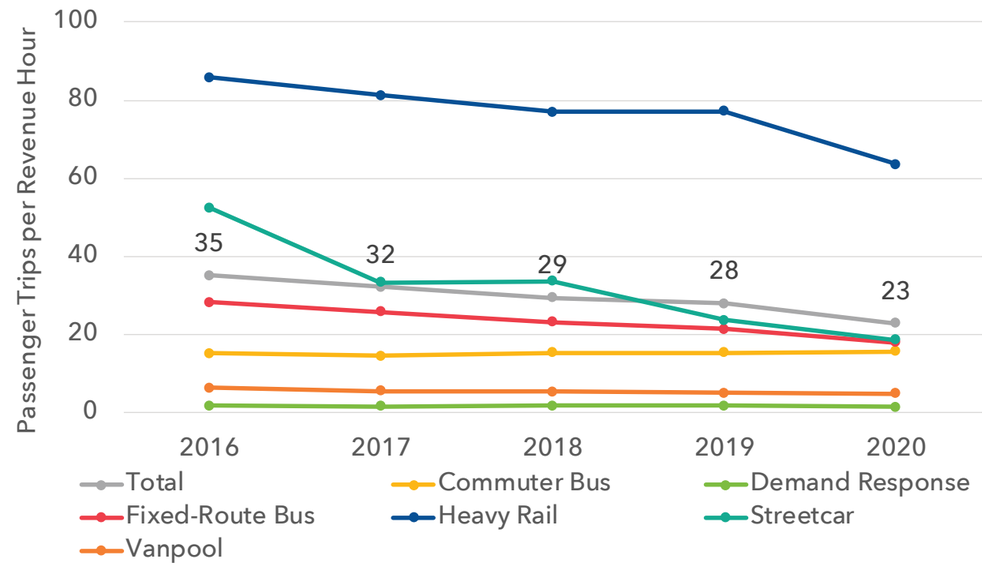
4.6 Operational Productivity

Operational productivity measures how many passenger trips are being served relative to the amount of service provided. Passenger trips per revenue hour and passenger trips per revenue mile of service are two key measures of operational productivity. Transit agencies that maximize operational productivity can serve more passengers with a given amount of resources. In maximizing operational productivity, transit agencies are using their resources efficiently and helping reduce the number of vehicles on the road, which, in turn, helps mitigate congestion and improve air quality. 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 Passenger Trips per Revenue Hour

Figure 30 shows passenger trips per revenue hour by mode. The regional total represents total passenger trips for all modes divided by the total revenue hours for all modes in the region.

Figure 30: Passenger Trips per Revenue Hour by Mode

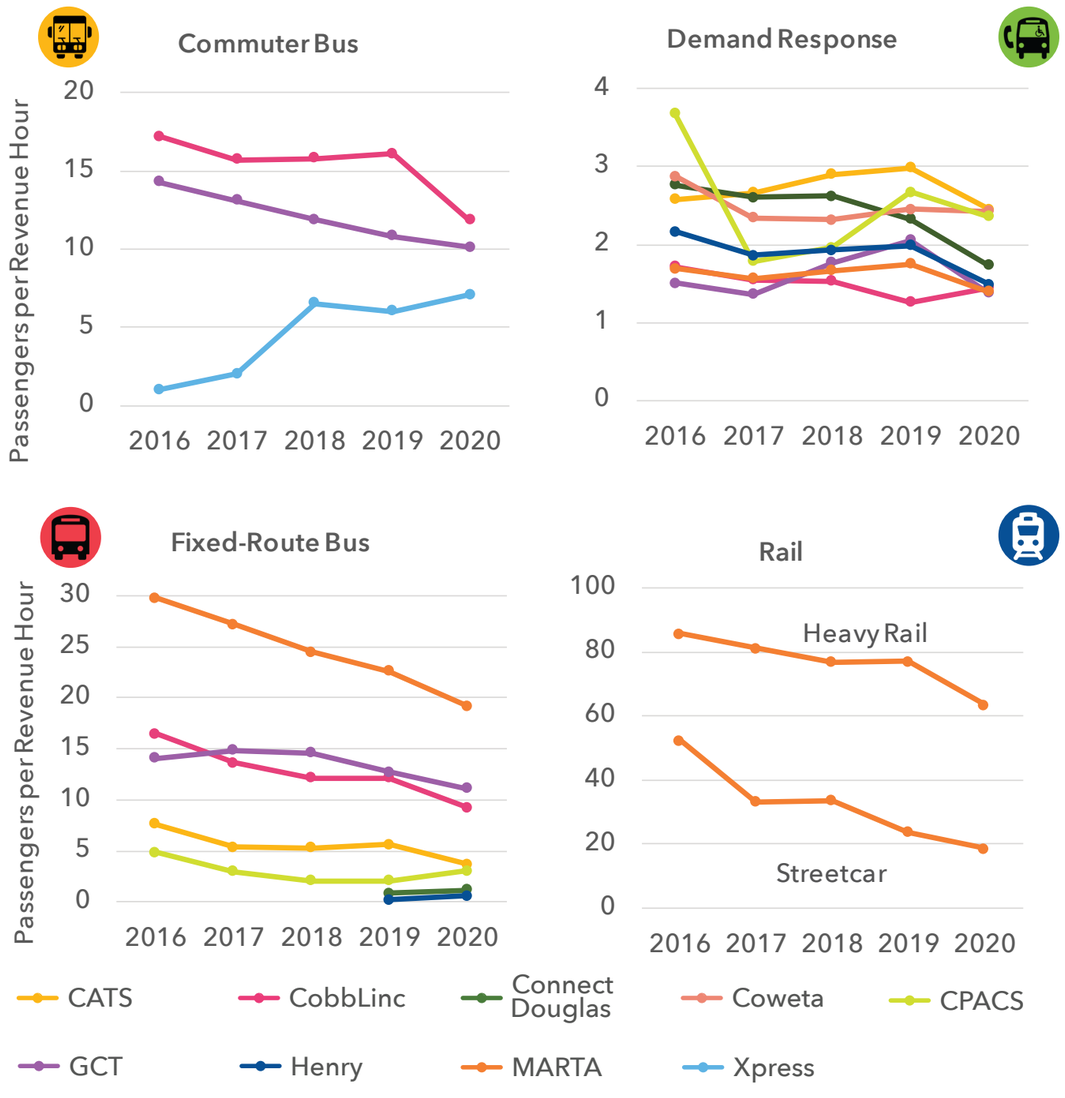


Across all modes, operational productivity declined over the five-year period from 35 passengers per revenue hour in 2016 to 23 in 2020. **This downward trend is expected, as even while ridership decreased between 2016 and 2020, operators across the region generally maintained or increased their level of service.** The decline between 2019 and 2020 was equivalent to the total decline between 2016 and 2019, indicating a significant acceleration of the trend due to the COVID-19 pandemic.

When the pandemic hit, most operators in the region limited the number of passengers allowed on transit vehicles for a given trip to help ensure the safety of drivers and passengers. While these measures were necessary from a safety perspective, they negatively impacted operational productivity. Commuter bus is the only mode to experience an increase in passenger trips per revenue hour throughout the entire five-year period, indicating that, despite losses due to the pandemic, overall ridership level increases outpaced service hour increases. (In 2020, it appears to have been the reverse: ridership may have stayed relatively higher even after pandemic-related service cuts.)

Figure 31 shows passenger trips per revenue hour for each transit service in the region.

Figure 31: Passenger Trips per Revenue Hour by Service



The number of passenger transit trips per revenue hour of service in the region declined between 2016 and 2020 for all modes except commuter bus. Declines between 2019 and 2020 were sharper in most cases, however, largely due to the pandemic.

The number of passenger trips per revenue hour on commuter bus services varied. Xpress' passenger trips per revenue hour increased overall, while CobbLinc and GCT experienced declines in the number of passenger trips per revenue hour.

All demand-response services except for Connect Douglas experienced a decline in the number of passenger trips per revenue hour between 2016 and 2020. Connect Douglas' operational productivity more than doubled from 2019 to 2020. However, CATS's operational productivity increased from 2016 through 2019, and CPACS, GCT, Henry, and MARTA all experienced gains in at least two of the five years. Coweta's productivity has remained consistent for the last three years. Passenger trips per revenue hour on CobbLinc's demand-response service declined over the five-year period but increased between 2019 and 2020.

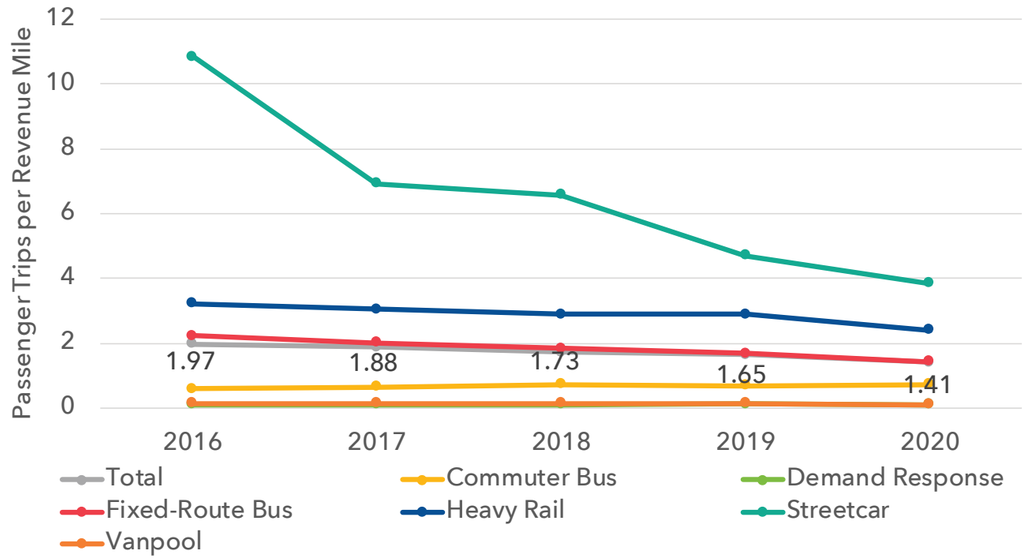
For fixed-route bus, Connect Douglas and Henry had more passenger trips per revenue hour in 2020 than they did in 2019. Connect Douglas began operating fixed-route bus service in July 2019, and its service gained traction throughout the year. CPACS's passenger trips per revenue hour decreased overall during the period, but the organization did have an increase in passenger trips per revenue hour between 2019 and 2020.

MARTA's heavy rail and streetcar experienced declines in passenger trips per revenue hour between 2016 and 2020; however, heavy rail had a slight increase in passenger trips per revenue hour in 2019 from the previous year.

4.6.2 Passenger Trips per Revenue Mile

Operational productivity can also be measured in terms of passenger trips per revenue mile. **Figure 32** shows passenger trips per revenue mile by mode. Like passenger trips per revenue hour, factors influencing ridership directly influence performance with respect to this metric. The regional total represents total passenger trips for all modes divided by the total revenue miles for all modes in the region.

Figure 32: Passenger Trips per Revenue Mile by Mode

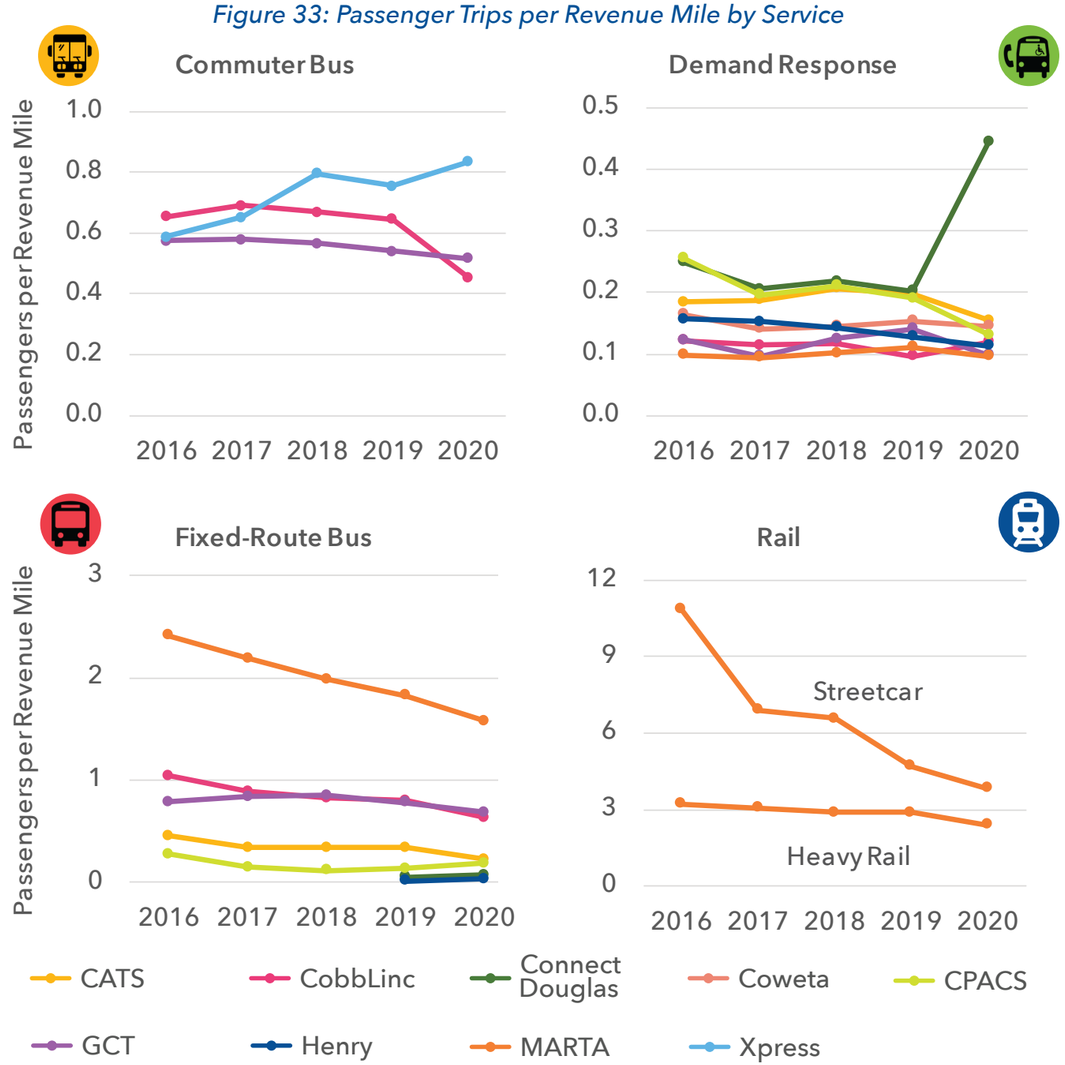


Across all modes, passenger trips per revenue mile declined over the five-year period from 1.97 in 2016 to 1.41 in 2020. While ridership decreased between 2016 and 2020, agencies across the region generally maintained or increased their level of service. Further declines in operational productivity between 2019 and 2020 were expected due to the COVID-19 pandemic.

Transit operators in the region continued to provide service, even when the pandemic severely limited the number of passengers on transit. Commuter bus, however, experienced a gain in passenger trips per revenue mile across the five-year period.

Passenger trips per revenue mile are shown by mode for each agency in **Figure 33**.

Figure 33: Passenger Trips per Revenue Mile by Service



On commuter bus, trends in passenger trips per revenue mile were mixed during the five-year period. Xpress' passenger trips per revenue mile increased from 0.59 in 2016 to 0.83 in 2020. CobbLinc's passenger trips per revenue mile were generally stable between 2016 and 2019 but experienced a decline from 0.65 in 2016 to 0.45 in 2020. GCT's passenger trips per revenue mile decreased but were also more stable, declining from 0.57 in 2016 to 0.52 in 2020.

For most agencies' demand-response services, passenger trips per revenue mile remained more stable than other modes, with one exception. Connect Douglas' passenger trips per revenue mile increased significantly between 2019 and 2020. Between 2019 and 2020, ridership on Connect Douglas' demand-response service decreased 36 percent, while VRM on the service decreased 70 percent. As a result, passenger trips per revenue hour increased substantially in 2020. New demand-response service was implemented with the agency's fixed-route service, which may have led to increases in ridership that outpaced increases in VRM.

Passenger trips per revenue mile on fixed-route bus decreased for all agencies in the region between 2016 and 2020 except Connect Douglas and Henry County. Both Connect Douglas and Henry County implemented new service in 2019, which helps account for increases in passengers per revenue mile during the time period. While it experienced a slight decline in passenger trips per revenue mile across the five-year period, CPACS' fixed-route bus service increased to 0.19 passenger trips per revenue hour in 2020, compared to 0.14 in 2019.

Passenger trips per revenue hour on MARTA's heavy rail service was on a slight downward trend between 2016 and 2019 but experienced a 17 percent decline in 2020 compared to 2019, likely due to the pandemic. Passenger trips per revenue mile on the Atlanta Streetcar declined from 2016 through 2020, experiencing the sharpest decline in 2017, after fares for the service were implemented.

4.6.3 Average Travel Speeds

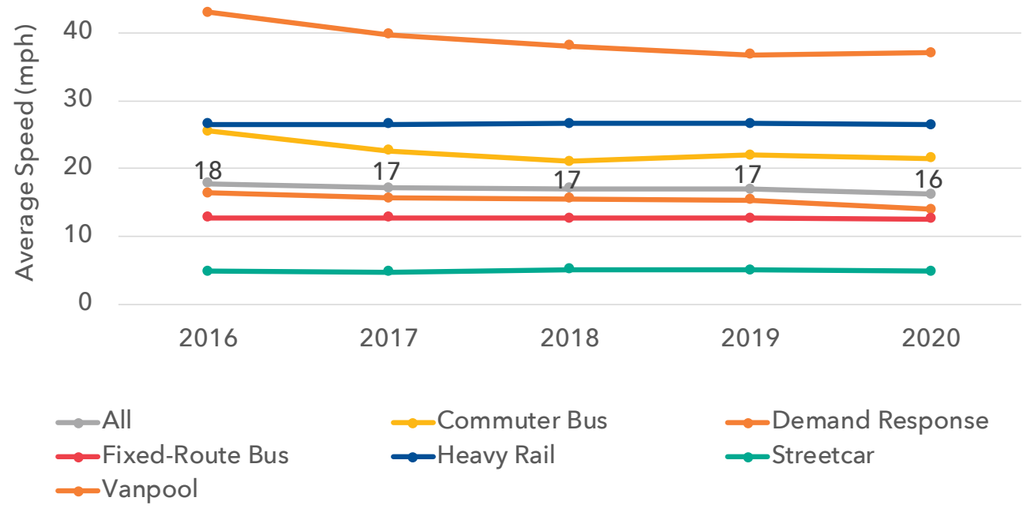
Travel speeds illustrate how quickly transit service carries passengers. Operational speed is impacted by numerous factors, including the frequency of stops and the presence of traffic congestion. Roadway priority or separated right-of-way infrastructure, such as below or above-grade tracks, as well as transit signal priority, can significantly improve transit travel speeds, leading to more competitive travel times and more reliable operations. In this context, travel speeds can be an important factor for understanding the customer experience, as slow travel speeds can disincentivize some passengers from taking transit.

While it is difficult to calculate average travel speeds across the Atlanta region, they can be roughly estimated by dividing total VRM by total vehicle revenue hours, as shown in **Figure 34.**

Charging to Drive Solo

Since 2011, the Atlanta region has been implementing a system of toll-managed lanes called "Express Lanes" consisting of High Occupancy Toll (HOT) lanes and Express Toll Lanes (ETLs). Currently, the region has 65 miles of lanes dedicated 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 the State Road and Tollway Authority's Peach Pass toll system.

Figure 34: Revenue Miles per Revenue Hour



Across all modes, the average number of revenue miles per revenue hour declined slightly from 18 revenue miles per revenue hour in 2016 to 16 revenue miles per revenue hour in 2020. Travel speeds were not severely negatively impacted by the pandemic, nor did they increase substantially. While the pandemic temporarily reduced traffic congestion, transit vehicles must still adhere to a schedule, which impacts how quickly they can travel.

Estimated travel speed varied significantly across the six modes operating in the region, ranging from a five-year average of 39 mph for vanpool to an average of just five miles per hour for the Atlanta Streetcar. Modes like commuter bus and vanpool, which have few to no stops and often travel on highways (sometimes in express lanes), operate at much higher average speeds than other modes like demand response and fixed-route bus, which make more regular stops and operate on lower-speed, local roads.

Improvements to transit travel speeds can be achieved through the use of measures that speed up on the boarding and alighting process, such as all-door boarding and payment options that do not require buses to hold at each stop while passengers pay their fares one at a time.

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 can offer more service to more people relative to each dollar spent. As with most transit productivity metrics, a strong market for transit service, both in terms of population and land use, has a significant and positive impact on financial productivity. This section presents trends in financial productivity between FY 2016 and FY 2019 in most cases, as final operating expenditures were not yet available for most agencies for FY 2020.

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 operating expenses, including fuel and administration. **Figure 35** shows the trends in financial productivity per revenue hour by service for each operator.

Trends for operating cost per vehicle revenue hour for commuter bus varied by agency. Both Xpress and GCT services experienced decreases (i.e., improvements) in 2018 and 2019. CobbLinc's commuter bus service has shown relatively constant operating cost per revenue hour, with a slight increase since 2016. Financial productivity trends for demand response between 2018 and 2019 varied by agencies, with some (CobbLinc, Coweta, GCT, and MARTA) experiencing operating cost per revenue hour reductions and all of the others experiencing increases.

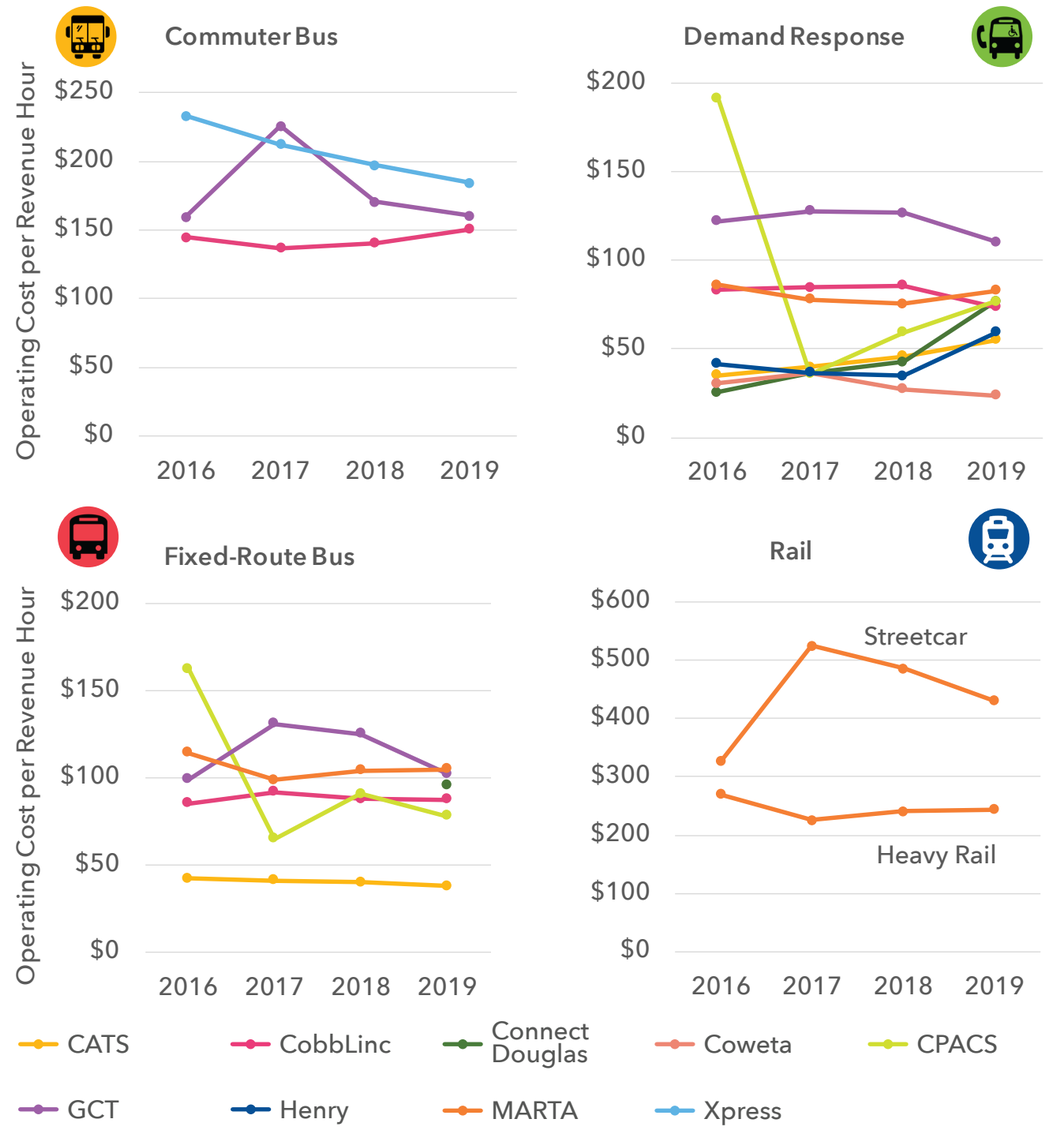
Xpress successfully piloted mobile ticketing and contactless payment during the COVID-19 pandemic as an additional solution for customers and to limit interaction with transit operators.

For fixed-route bus, most agencies' operating cost per revenue hour remained steady or decreased slightly between 2018 and 2019. CPACS experienced significant fluctuations during the 2016 through 2019 period in its operating cost per revenue hour; this could be in part due to the high level of "start-up" costs associated with initiating operations in 2016.

Between 2016 and 2019, MARTA's operating cost per revenue hour was fairly steady across modes, except for notable decreases (i.e., improvements) between 2018 and 2019 for demand response and streetcar.

Xpress' vanpool services have the lowest operating cost per revenue hour, with CATS and Xpress operating both at about $23 per revenue hour and Connect Douglas at $44 per revenue hour in 2019. Financial productivity for the vanpool services have remained relatively constant since 2016. Vanpool services are low-cost compared to other transit services due largely to a lack of operator wages. Instead, agencies offer financial incentives for vanpool drivers and riders.

Figure 35: Operating Cost per Revenue Hour by Service

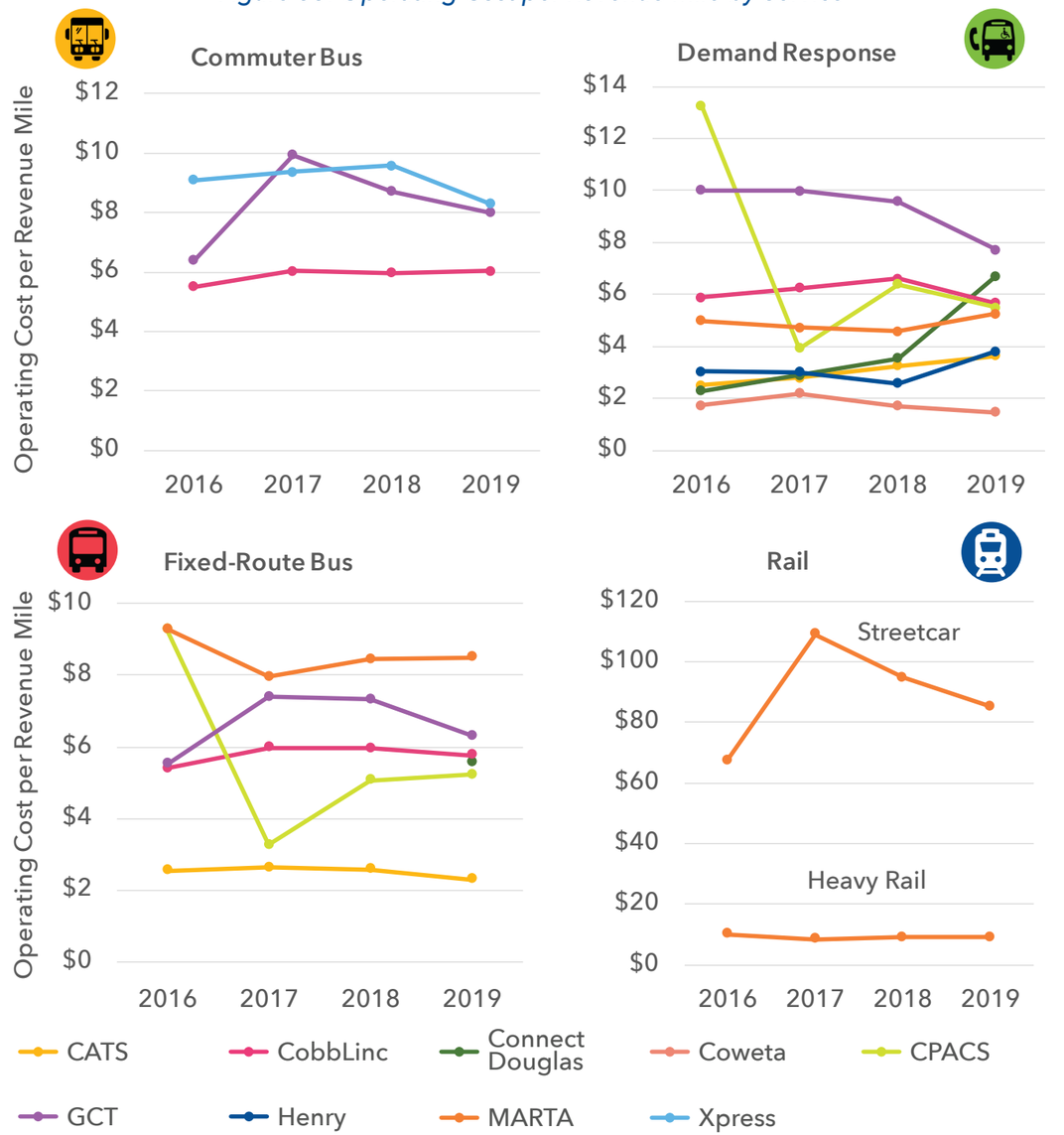


4.7.2 Operating Cost per Revenue Mile

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 36** shows the trends in operating cost per revenue mile for each transit service under the ATL's jurisdiction.

The trends for this metric are similar to those for operating cost per revenue hour, as revenue miles and revenue hours are correlated. Between 2016 and 2019, operating costs per revenue mile have remained relatively constant across most modes and agencies, with the exception of CPACS, for the reasons discussed above. Agencies such as CATS, CobbLinc, Coweta, GCT, and Xpress experienced some year-to-year fluctuations but saw decreases in operating cost per revenue mile on one or more modes in 2019. **In the case of demand-response transit, the size of agencies' service areas is a significant driver of operating cost per revenue mile.** Vanpool services have the lowest cost per revenue mile of any mode, at less than $2 per revenue mile. Like other modes, vanpool services also experienced relatively constant cost per revenue mile since 2016. Gas prices experiencing moderate declines across this time period likely had an influence on this outcome.

Figure 36: Operating Cost per Revenue Mile by Service



4.7.3 Operating Cost per Passenger Trip

Another indicator of financial productivity is the operating cost per passenger trip, shown in **Figure 37.** 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.

In general, fixed-route bus and heavy rail had the lowest average operating cost per passenger trip, in most cases between $3 and $9 per passenger trip, with commuter bus and the streetcar costing a bit more on average—between $8 and $18 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. In 2019, MARTA heavy rail's operating cost per passenger trip of $3.16 was slightly lower than the national average of $3.46 for comparable heavy rail systems,[41] and its operating cost for fixed-route bus of $4.65 was lower than the national average for peer regions of $5.13.[42]

For commuter bus, operating cost per passenger trip was higher in 2019 than in 2016 for CobbLinc and GCT, but it experienced modest but steady declines across that period for Xpress service.

The most significant increases in operating cost per passenger trip for demand service were experienced by Connect Douglas and Henry, with most other agencies maintaining or decreasing their cost per passenger trip in that mode. Demand response operating costs and ridership are particularly impacted by factors such as the length of trips and service area changes, which can lead to wider variations in financial productivity.

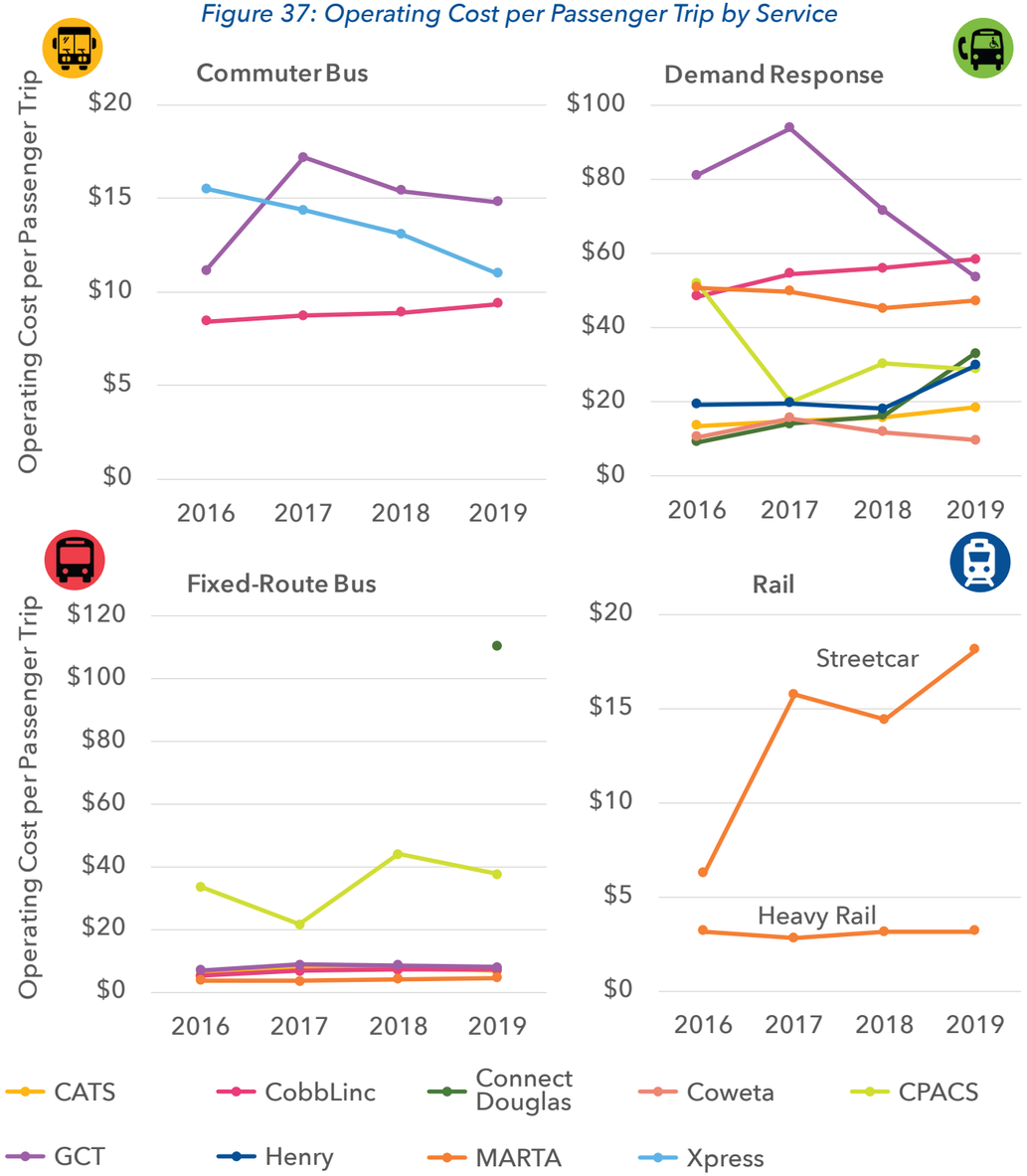
Vanpool operating costs per passenger trip were the lowest of any mode, at $3 to $10. Financial productivity for vanpool services remained relatively constant between 2016 and 2019.

Despite fixed-route bus and rail ridership decreasing between 2016 and 2019, operating costs per passenger trip held fairly steady for most agencies, with the exceptions of CPACS and the Atlanta Streetcar. Connect Douglas, which introduced fixed-route bus service in 2019, had a much higher operating cost per passenger trip that year, likely due to low ridership in the early months of its new service.

41 NTD 2018 weighted averages (total operating expenses across regions divided by total unlinked trips across regions) for peer regions operating heavy rail (Baltimore, Boston, Chicago, Cleveland, Miami, Philadelphia, San Francisco, and Washington, DC). Data for peer regions used are from 2018, as this is the most recent year for which data were available.

42 NTD 2018 weighted averages for all regions with a population of at least 2 million.

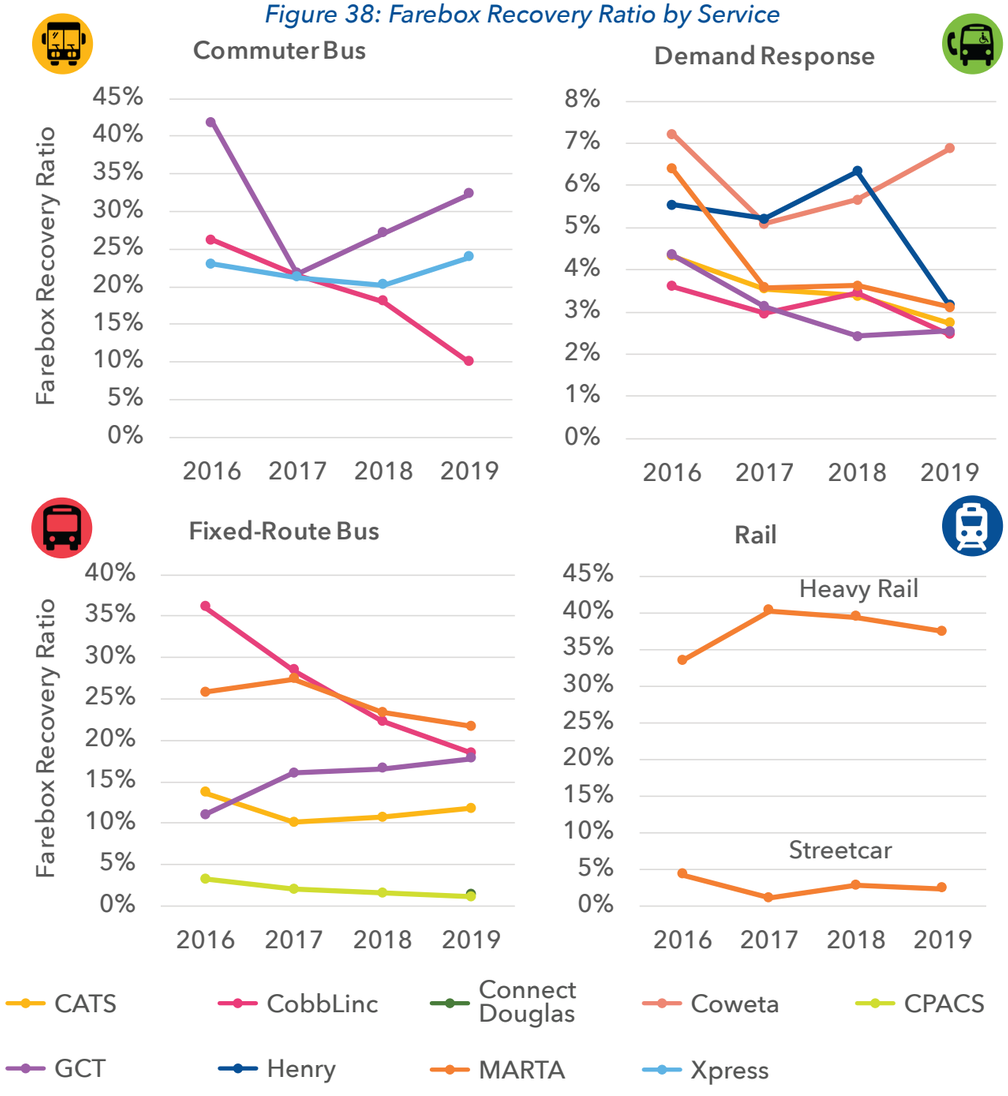
Figure 37: Operating Cost per Passenger Trip by Service



4.7.4 Farebox Recovery

Farebox recovery measures how much of the total operating cost of a service is offset by passenger fare revenues (**Figure 38**). 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 when reflecting on transit performance. One reason for this is that fares can significantly influence results with respect to other productivity metrics, particularly ridership, which also heavily influences fare revenues. In addition, an agency may decide to keep fares low to ensure its services are accessible to low-income residents. For these reasons, evaluating financial productivity is most effective when considering results for more than one indicator.

Figure 38: Farebox Recovery Ratio by Service



Farebox recovery in the ATL region ranged from around 20 to 40 percent for commuter bus, 2 to 8 percent for demand response (except for Connect Douglas and CPACS, which do not charge fares for this service), 10 to 35 percent for fixed-route bus (less for CPACS, and Henry County, which charge minimal or no fares to their riders), and 30 to 40 percent for heavy rail. Between 2016 and 2019, farebox recovery most often reflected modest decreases in ridership, which directly impacted fare revenue.[43] As a metric, farebox recovery can be heavily influenced by fare changes, which likely explain some of the fluctuations shown in **Figure 38**.

Farebox recovery decreased for all three commuter bus services between 2016 and 2017, although each service has experienced an increase between 2018 and 2019.

Demand response farebox recovery fell overall between 2016 and 2019 for all services except Coweta. 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.

Fixed-route bus providers CobbLinc and MARTA experienced decreases in farebox recovery, reflecting decreasing ridership and steady or increasing operating costs. Meanwhile, GCT's farebox recovery for fixed-route bus increased between 2017 and 2019, a period over which it experienced ridership increases. CATS and CPACS had fairly stable farebox recovery over the four-year period.

MARTA's heavy rail service has a consistently high farebox recovery ratio relative to other transit services in the ATL region, with fare revenues covering 37 percent of operating costs in 2019.

Farebox recovery for vanpool services was near or above 100 percent for all years between 2016 and 2019. Passengers pay for almost all costs, typically including fuel, maintenance, insurance, administration, and other operational needs. Incentives and other subsidies may be provided by agencies. Farebox recovery exceeded 100 percent for Xpress' vanpool program every year, indicating that all fare revenue exceeded the operating expenses.

43 Connect Douglas demand response, CPACS demand response, and Henry County fixed-route services are not shown in **Figure 38** because they are free services.

4.8 On-Time Performance

On-time performance (OTP) 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 OTP rates is a function of traffic conditions, operations planning including scheduling realistic arrival times or windows, and accurately estimating dwell time.

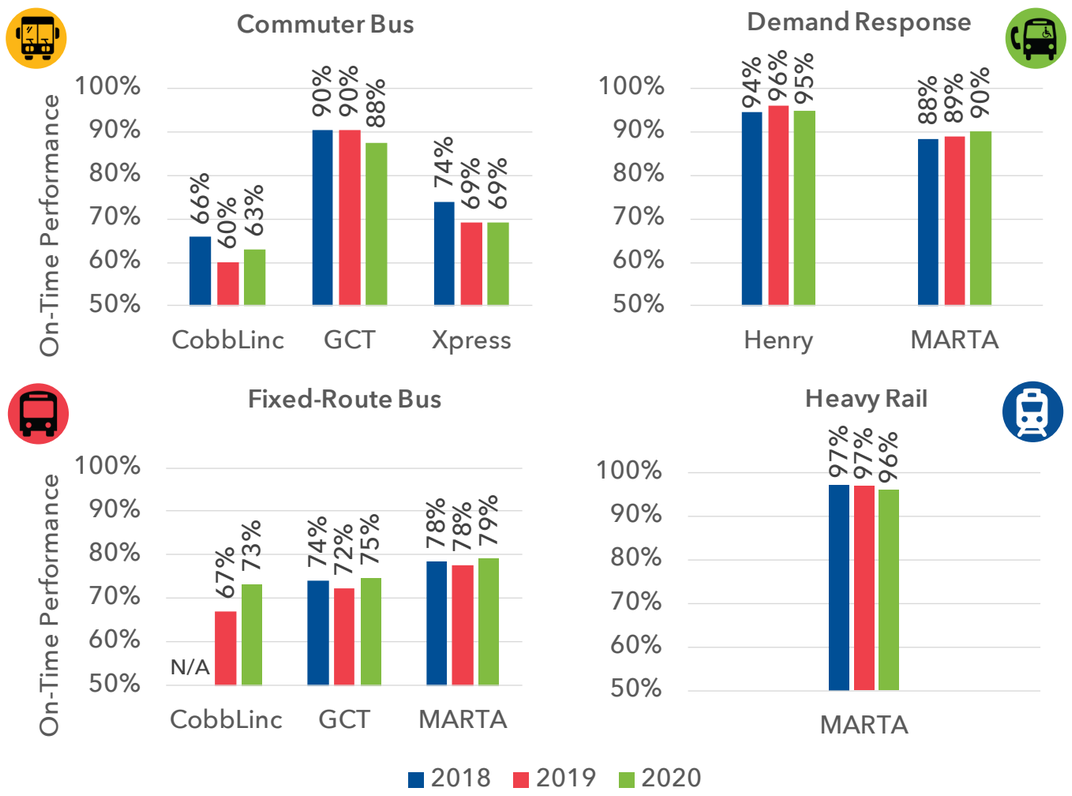
For fixed-route bus, commuter bus, and rail, most agencies in the ATL region define "on time" as between zero minutes early and five minutes late of a scheduled departure. For demand-response service, agencies said they define "on time" as within either a 30- or 35-minute window relative to the scheduled pick-up time. These definitions are listed in **Table 9** by agency and by mode (for services that were able to provide OTP data).

Table 9: 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

OTP is shown, by mode, in **Figure 39**.

Figure 39: On-Time Performance by Mode



There are no consistent trends in OTP, although most agencies improved or stayed about the same from 2019 to 2020. CobbLinc's fixed-route bus had the biggest improvement in OTP since the previous year, increasing from 67 to 73 percent. Commuter bus has the widest range of OTP percentages, with GCT consistently performing very highly with respect to OTP. This could be a function of GCT's commuter routes operating primarily in express/ priority lanes (along I-85), traffic conditions where the routes are operated, or possibly more conservative scheduling. In general, OTP is heavily influenced by the level of traffic congestion, particularly non-recurring congestion; the lack of influence of traffic congestion helps to explain why MARTA heavy rail has the highest reliability among all modes in the region, at 97 percent.

One challenge associated with comparing OTP across agencies is that there can be variations in terms of how missed runs are accounted for in OTP, as well as the methods used to monitor OTP.

4.9 Equity

4.9.1 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 opportunities like jobs and education, as well as services like health care, for their residents. This access is even more critical for those who do not have alternative transportation options like a personal vehicle. **Figure 40** shows walking access to fixed-route transit in the Atlanta region.[44]

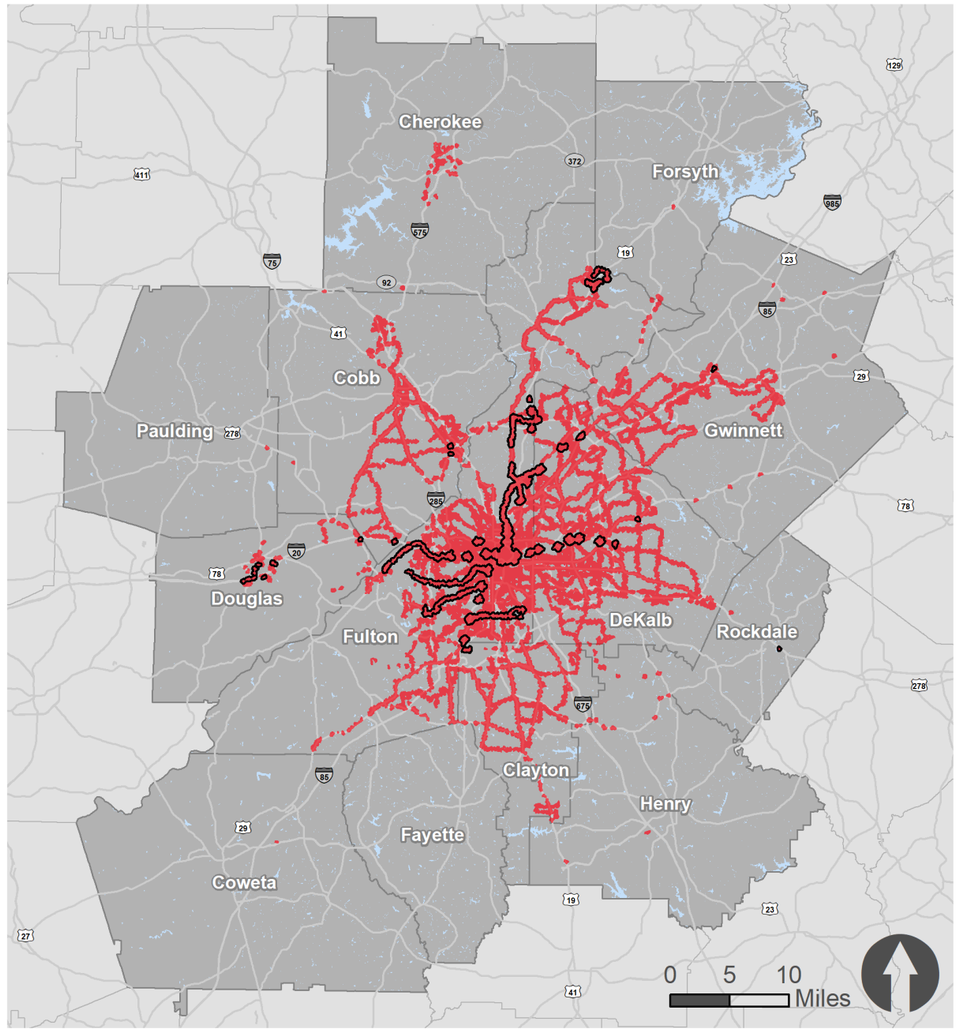
The red areas shown are those within walking distance to fixed-route transit stops as of September 2019. The red areas outlined in black are areas that have access not only to fixed-route transit but also to *high-frequency* fixed-route transit, which is defined by the presence of 15-minute average service frequency or better throughout the day.

> **A lack of transit can be so detrimental, not only to someone's physical health and all their activities and daily living, but their mental health as well.**
>
> **Transit is the biggest barrier for aging and disability communities—this is often the first necessity for other things. If people don't have accessible transportation, it's nearly impossible to access those other resources.**
>
> *—Jordan Hall, Mobility Coordinator, Statewide Independent Living Council*

Dr. Romona Jackson-Jones, the Douglas County Commission Chair, and Commissioner Tarenia Carthan unveil a plaque commemorating the launch of Connect Douglas's fixed-route bus service in June 2019. (Photo credit: The Marietta Daily Journal)

44 Walking access to transit was defined as a quarter-mile walking distance from bus stops and a half-mile walking distance from rail stations.

Figure 40: Fixed-Route and Frequent Transit Access Area



Note: Some isolated red areas in outlying parts of the region represent park-and-ride lots, which are served by commuter bus routes during peak periods only.

Table 10 shows the total number and percentage of different population groups with access to fixed-route transit and high-frequency fixed-route transit.[45]

Table 10: 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	519,209	180,022	34.7%	27,322	5.2%
Minority Population	2,798,120	821,177	29.3%	99,486	3.5%
Total Population (2018)	**5,012,783**	**1,165,559**	**23.3%**	**164,310**	**3.2%**

Twenty-three 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 35 and 29 percent of residents, respectively, but only 3.2 percent of the ATL region's population has access to frequent fixed-route transit. However, among low-income and minority groups, this figure rises to approximately 5.2 percent and 3.5 percent, respectively.

Less than 25 percent of the region's residents have access to fixed-route transit. Low-income and minority populations are better served, with 33 percent having fixed-route access, but only 5 percent have access to high-frequency transit (with service every 15 or fewer minutes through the day).

This demonstrates both that current services are more likely to be available to low-income and minority households relative to the population overall, but also that only 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 although this analysis is based on the presence of a pedestrian network, it does not take the quality of that network into account.

45 ACS 5-year estimates for 2014-2018. This analysis used 2018 population data, as this is the most recent year for which data at the required level of detail were available. However, the analysis reflects services available as of September 2019. In addition, the analysis for this ARA was conducted using the pedestrian network around each station, compared to a simpler buffer analysis conducted for the 2019 ARA. This explains some of the variation in results.

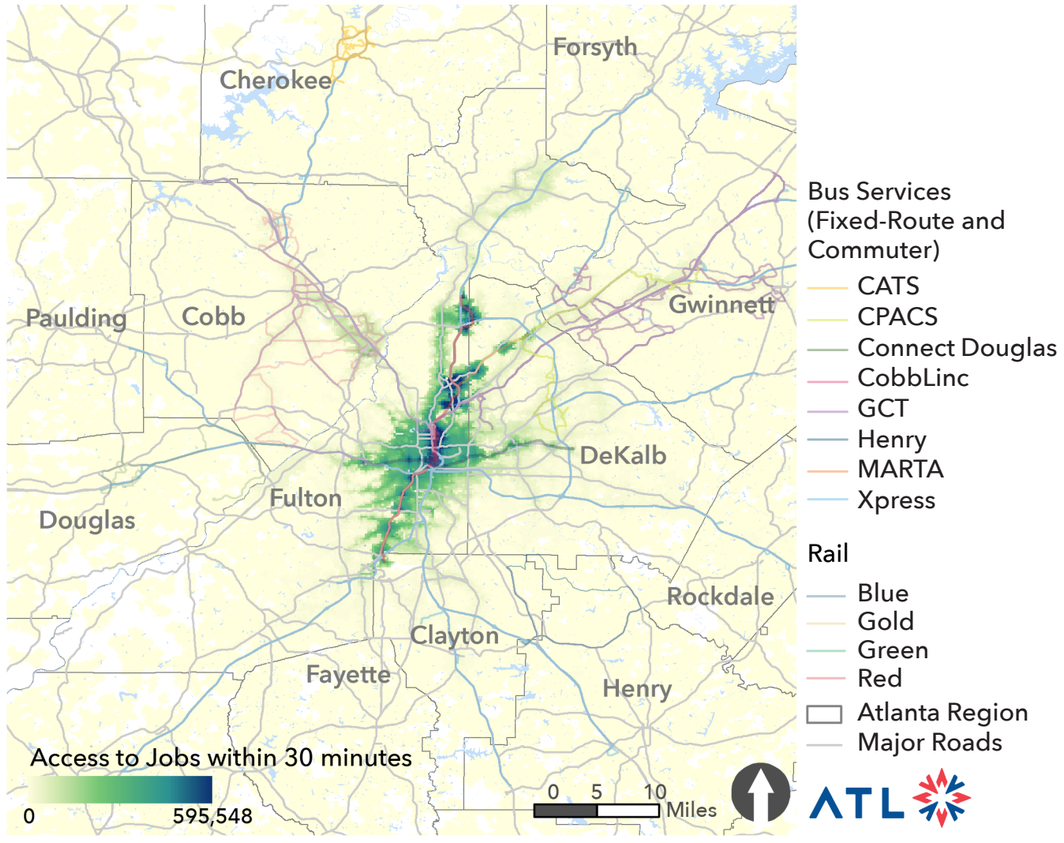
4.9.2 Access to Essential Destinations by Transit

People in the Atlanta region use transit to access essential destinations, including jobs, food, and healthcare. Access to these essential destinations by transit varies significantly across the region.

Access to Jobs

On average, people in the Atlanta region can reach 23,885 jobs within a 45-minute public transit commute (**Figure 41**). This is approximately 1 percent of all jobs in the region.

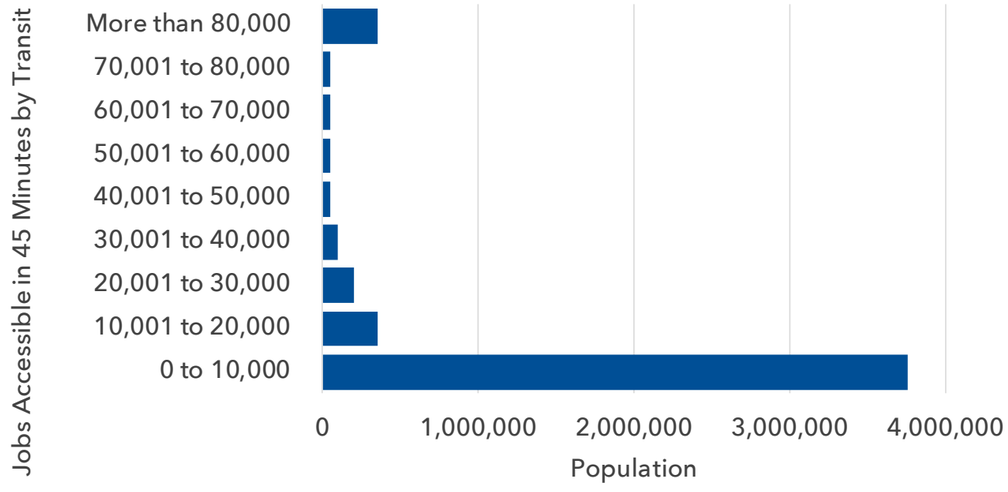
Figure 41: Jobs Accessible Within 45 Minutes



People who live in downtown Atlanta and along the major rail lines can access many more jobs, upwards of 100,000, in a 45-minute period. In contrast, people who live farther from the center of the region can access fewer jobs by public transit. In fact, about 30 percent of people in the region can access fewer than 100 jobs by public transit within a 45-minute period.

Figure 42 highlights the skewed distribution.

Figure 42: Distribution of Jobs Accessible in 45 Minutes by Transit



About 75 percent of the population can access fewer than 10,000 jobs. For the remaining 25 percent, access to jobs by transit is significantly better. Seven percent of the population in the region can reach 100,000 jobs or more by transit in 45 minutes. These people can reach more than 4 percent of the region's jobs.

Access to jobs also varies by demographic group. To assess this, the following analysis considers two demographic indicators based on the ARC's equity analysis tool.[46] The scores are as follows:

- The **Environmental Justice (EJ)** indicator reflects the prevalence of racial minority, ethnic minority, and low-income communities.[47]
- The **EJ Plus** indicator reflects the prevalence of youth (under 18), older adults (65 or older), people with disabilities, and foreign-born people, in addition to racial minority, ethnic minority, and low-income communities.

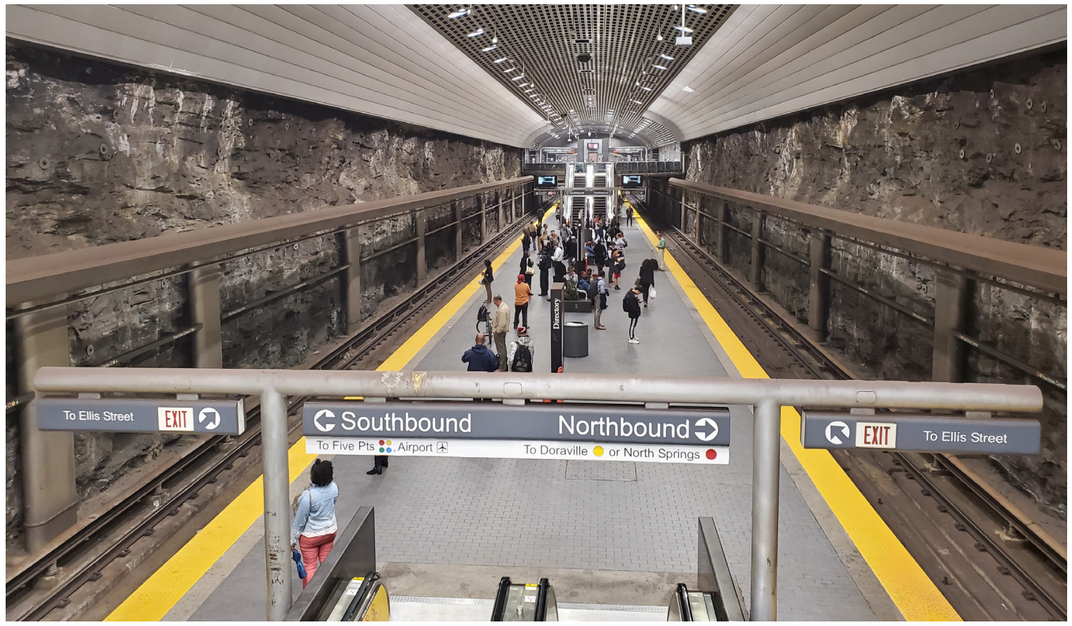
Weighting accessibility by EJ and EJ Plus indicators compares access for people in these groups to access for the general population (**Table 11**).

46 ARC, Interactive Equity Analysis Tool and Data.
47 "Low-income" is defined as incomes below 200 percent of the poverty line.

Table 11: Access to Jobs by Equity Grouping

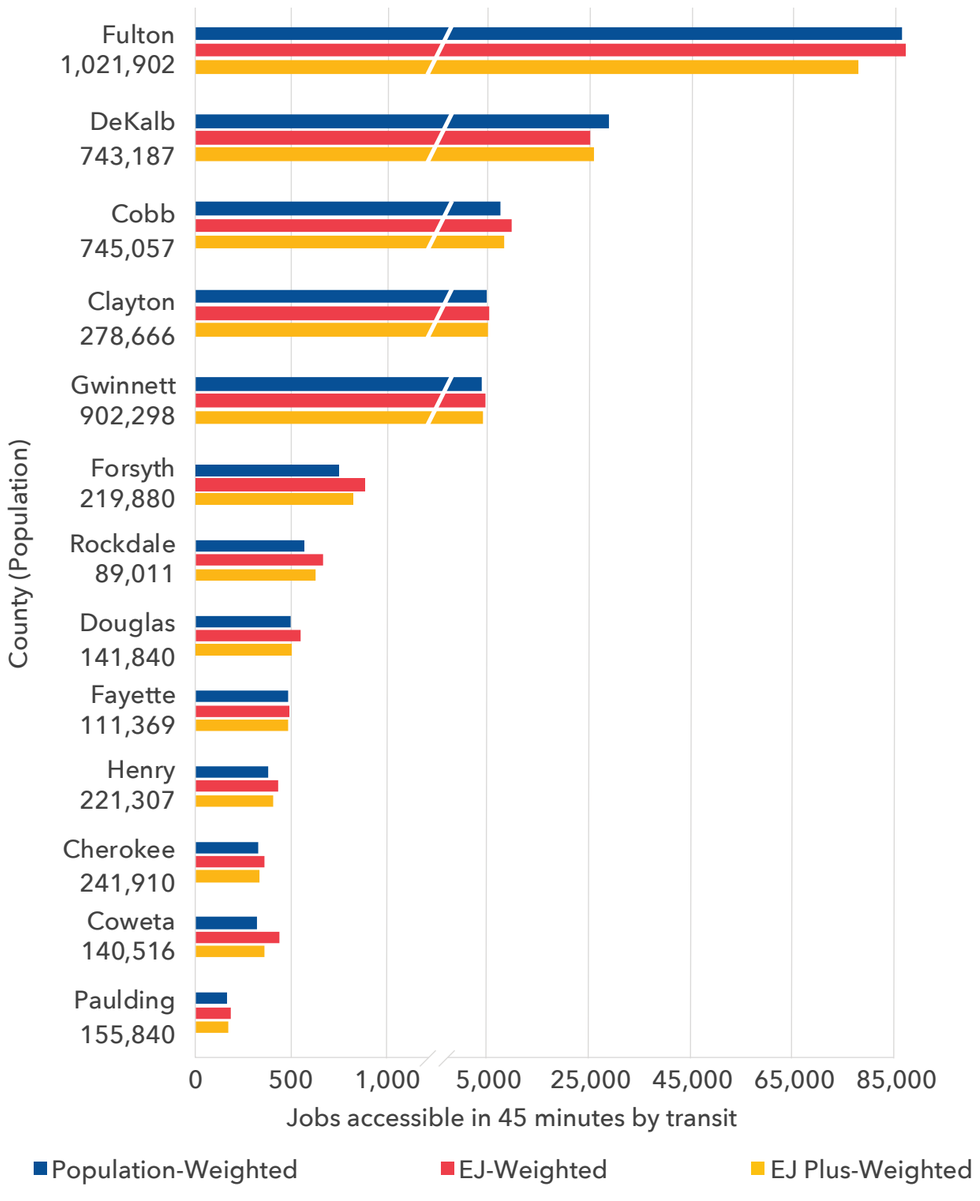
	Average Jobs Accessible by Transit Within 45 Minutes	Percent of All Jobs in the Region Accessible by Transit Within 45 Minutes
Population-wide average	23,885	1.0%
EJ-weighted average	24,355	1.0%
EJ Plus-weighted average	21,590	0.9%

This table shows that when weighting by the EJ indicator, the average number of accessible jobs within 45 minutes increases from 23,885 for the general population to 24,355. This means that places with a high prevalence of racial minority, ethnic minority, and low-income people have better access to jobs via transit compared to the region as a whole. In contrast, the EJ-Plus-weighted job accessibility is worse than the population-wide average. This implies that some of the population groups included in the EJ Plus score, such as youth, older adults, or people with disabilities do not have the same transit accessibility as the rest of the population. These are all groups that may be unable to drive or less likely to have access to a car, meaning that lack of public transit access to jobs can come at a social and economic cost.



At the county level, variation in access to jobs is clear, as shown in **Figure 43**. Note that the axis breaks for the five most populous counties.

Figure 43: Jobs Accessible by Transit within 45 Minutes – County Detail



In Fulton County, people can reach 85,994 jobs by transit, on average. By contrast, outer counties that are more suburban and rural, such as Cherokee, Coweta, Henry, and Paulding, have lower levels of transit access. People living in these areas can reach fewer than 400 jobs in 45 minutes by transit, on average. These suburban and rural counties are home to a relatively small share of the regional population. Cherokee, Coweta, Henry, and Paulding Counties combined make up about 15 percent of the region's population. In contrast, Fulton and DeKalb Counties, the two counties with the best access to jobs in the region, are home to 35 percent of the region's population.

In Fulton County, people can reach 85,994 jobs by transit, on average. By contrast, outer counties that are more suburban and rural, such as Cherokee, Coweta, Henry, and Paulding, have lower levels of transit access. People living in these areas can reach fewer than 400 jobs in 45 minutes by transit, on average.

Figure 43 also shows the impact of weighting using the EJ and EJ Plus indicators. In most counties, access to jobs in places with a high prevalence of EJ and EJ Plus populations is about the same or slightly better than access in the county overall. For example, in Cobb County, the average person can reach 7,391 jobs in 45 minutes by transit. When weighting by the EJ indicator, this number increases to 9,397, and weighted by the EJ Plus indicator, the number is 7,908, slightly better than overall access.

There are two exceptions to this pattern. In Fulton County, the EJ Plus-weighted access to jobs is significantly lower than overall access (77,561 jobs compared to 85,994). This implies that at least some of the EJ Plus communities are less likely to live near transit routes that can help them reach jobs. While people included in these groups, such as youths and older adults, may not participate in the labor force, jobs are also a proxy for other economic activities that can be relevant to all residents. In DeKalb County, both of the equity-weighted estimates are lower than the overall average. That is, while the average person can reach 28,663 jobs by transit in 45 minutes, people in areas with higher prevalence of EJ communities can reach just 24,867 jobs in the same time frame, and in places with a higher prevalence of EJ Plus populations, people can reach 25,549 jobs.

Access to Food

Like access to jobs, access to grocery and convenience stores by transit varies significantly by location within the region. In areas close to the center, as well as in smaller city centers and neighborhoods along rail lines, people can access as many as 28 grocery and convenience stores by transit within 30 minutes (**Figure 44**).

About 60 percent of the region's residents cannot access any grocery or convenience stores within 30 minutes by transit.

Figure 44: Grocery and Convenience Stores Accessible by Transit Within 30 Minutes

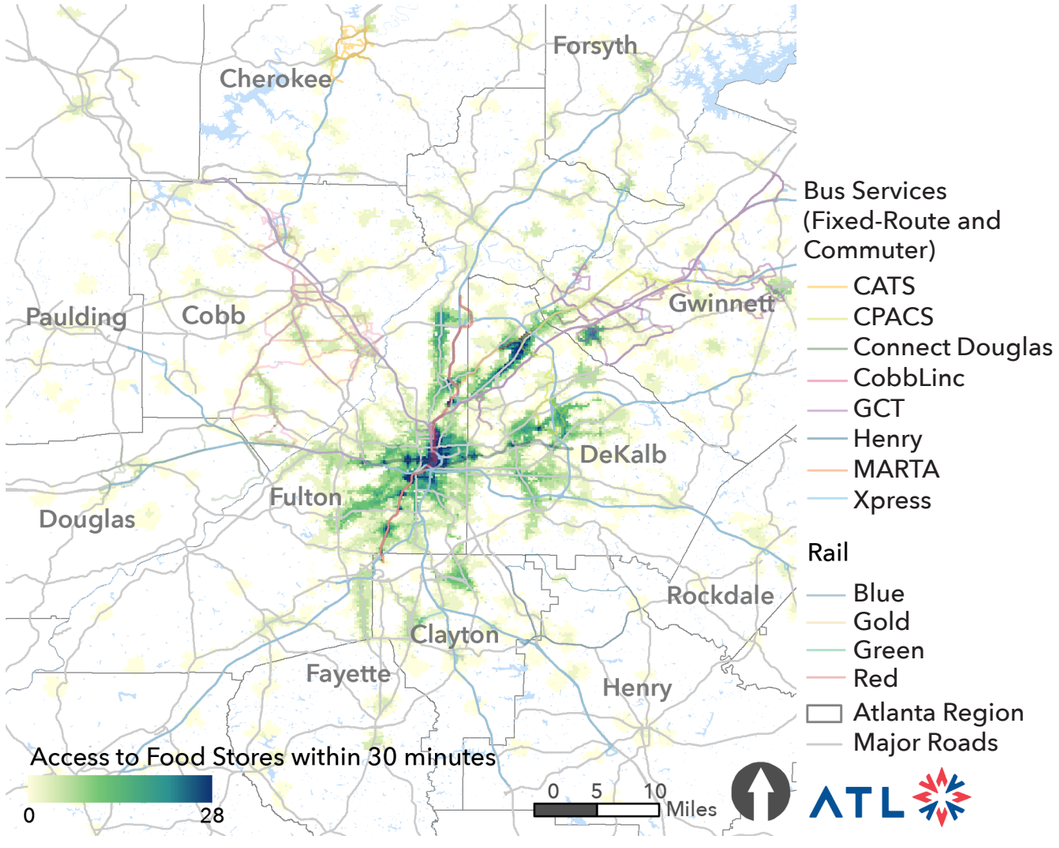
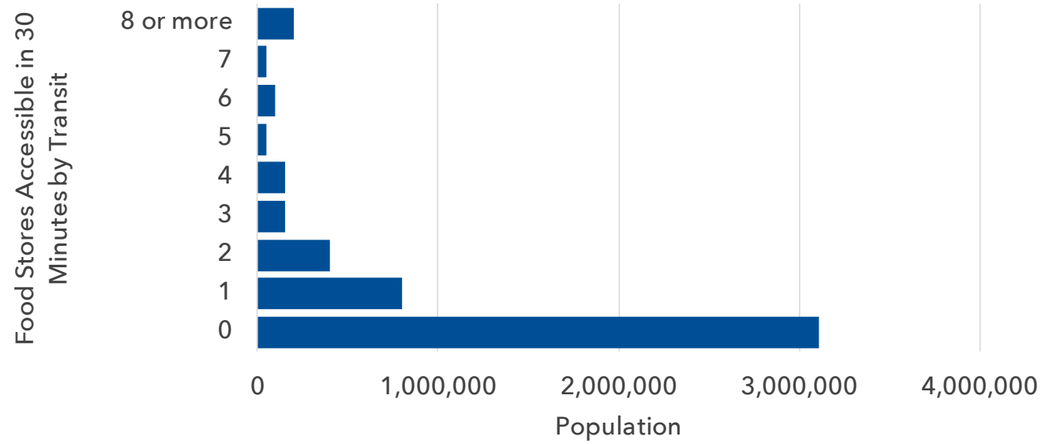


Figure 45 shows the skewed distribution of transit access to food. As the figure shows, some people can access many stores. Seven percent of the region's population can reach five or more food stores within a 30-minute transit trip. In contrast, about 60 percent of the population in the 13-county region cannot access any grocery and convenience stores within 30 minutes by public transit. When these divergent statistics are averaged, residents, on average, can access approximately one grocery store or convenience store within a 30-minute public transit trip.

Figure 45: Distribution of Food Stores Accessible in 30 Minutes by Transit



As with access to jobs, access to food by transit varies somewhat across demographic groups (**Table 12**).

Table 12: Access to Food Stores by Equity Grouping

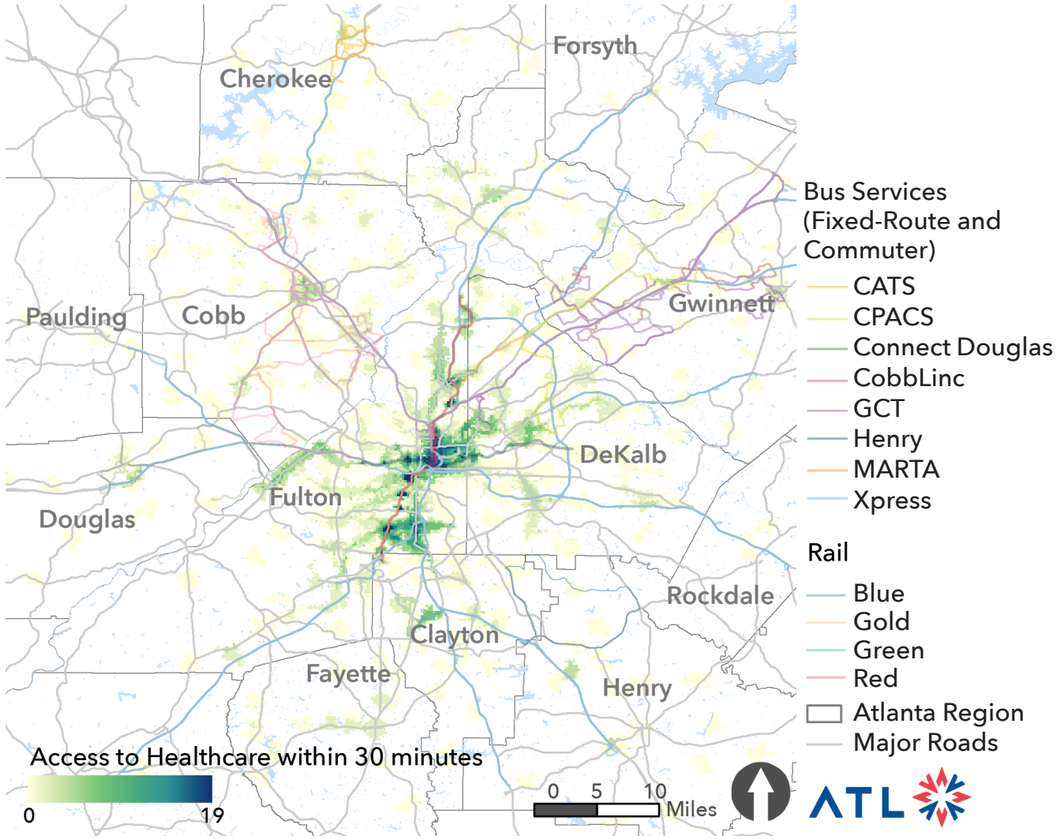
	Average Food Stores Accessible by Transit Within 30 Minutes
Population-wide average	1.20
EJ-weighted average	1.36
EJ Plus-weighted average	1.22

The table shows that while, on average, people can access between one and two grocery stores by transit regardless of weighting, access for EJ populations is somewhat better than access for the population at large. Access using the EJ Plus weighting is almost identical, but slightly better than access to food stores for the general population.

Access to Healthcare

Access to healthcare follows a similar pattern (**Figure 46**).

Figure 46: Hospitals, Urgent Care, and Emergency Services Accessible by Transit Within 30 Minutes



Access is best in the city center, and locations around rail stations, as well as in a few other locations, such as Marietta and Panthersville, where many people can access more than five hospitals, urgent care centers, or emergency services within 30 minutes. In areas with limited or no public transit service, most people cannot access any hospital, urgent care, or emergency services within a 30-minute public transit trip.

In the 13-county region overall, over 70 percent of people cannot reach any of these healthcare services within a 30-minute public transit trip.

Figure 47: Distribution of Access to Healthcare in 30 Minutes by Transit

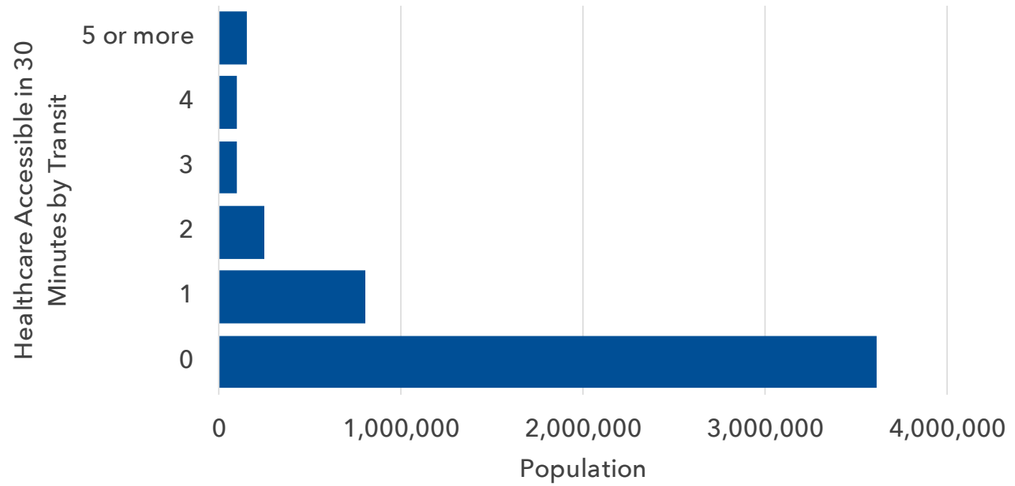


Figure 47 shows the distribution of access to healthcare by transit. In the 13-county region overall, over 70 percent of people cannot reach any of these healthcare services within a 30-minute public transit trip. At the other end of the spectrum, about 20 percent of the population can access one or two healthcare locations, and the remaining 10 percent can reach three or more healthcare locations by transit in 30 minutes. From some locations, people can access 19 healthcare facilities in 30 minutes by transit.

Averaging across the region, which has such diversity of access, shows that the average resident has access to less than one healthcare facility within a 30-minute public transit trip.

When weighting by equity, access to healthcare follows a similar pattern to access to jobs and food stores (**Table 13**). Access using the EJ score weighted average is somewhat better than the population-wide average.

Table 13: Access to Healthcare Locations by Equity Grouping

	Average Healthcare Locations Accessible by Transit Within 30 Minutes
Population-wide average	0.60
EJ-weighted average	0.65
EJ Plus-weighted average	0.58

The EJ Plus weighting produces a weighted average of 0.58 locations reachable in 30 minutes, slightly below the overall average of 0.6.

Overall, access to jobs, food, and healthcare by public transit varies widely across the region. In general, access for EJ communities is slightly better than for the general population. However, if a wider definition of transit-dependent populations is used, as defined by the EJ Plus categorization, access to these critical services is sometimes worse than for the population at large. In addition, these findings vary within the region, as is the case for job access in DeKalb county, where access for both EJ and EJ Plus communities is worse than for the population of the county overall. This section provides a big picture view of access to jobs, food, and healthcare by transit in the region, which can be complemented by more detailed local analyses.

In general, access to opportunities via transit for EJ (low-income and racial minority) communities is slightly better than for the general population. However, if a wider definition of transit-dependent populations—including youth, older adults, people with disabilities, and foreign-born individuals—is used, access to these critical services by transit is sometimes worse than for the population at large.

4.9.3 Fare Structure/Discounted Fares

As Greater Atlanta looks to have a more seamless and integrated transit network across multiple providers, fare policies will have to be considered at a regional level. **Tables 14** through **17** list fare structure by mode.

Table 14: Fare Structure for Fixed-Route Bus, Heavy Rail, and Streetcar

Operator/Service	Base	Seniors	People with Disabilities	Students/ Children
CATS	$1.25	$0.60	$0.60	Free
CobbLinc	$2.50	$1.00	Free to $1.00	Free to $1.50
Connect Douglas	$2.50	$1.00	$1.00	$1.00
CPACS*	$2.00	$2.00	$2.00	$2.00
GCT	$2.50	$1.25	$1.25	Free
Henry	Free	Free	Free	Free
MARTA (Bus, Heavy Rail)	$2.50	$1.00	$1.00	$1.00
MARTA (Streetcar)	$1.00	$1.00	$1.00	Free

**CPACS waives fares for qualifying riders.*

The most common base fare for fixed-route services in the region is $2.50. CATS riders, who currently pay $1.25 per trip, would be most adversely impacted by a single region-wide base fare of closer to $2.50. Most providers offer a discount to seniors and people with disabilities, except for CPACS and the Atlanta Streetcar. Most providers also offer free or discount fares to students and/or children, but with varying restrictions: for instance, some have a maximum age, and others have a maximum height.

Table 15: Fare Structure for Commuter Bus

Operator	Base	Children
CobbLinc	$5.00	$5.00
GCT	$3.75 to $5.00	Free if in the lap of a parent/guardian
Xpress	One-way: $3.00 to $4.00 Round-trip: $5.00 to $7.00	Free if in the lap of a parent/guardian (and other restrictions)

Commuter bus fares vary across the three providers offering this service; they also vary based on the distance of the trip. Xpress offers a discount for purchasing a round-trip ticket. CobbLinc does not offer any discount on commuter bus service, while GCT and Xpress offer free rides to children if they sit in the lap of a fare-paying adult.

Table 16: Fare Structure for Demand-Response Service

Operator	Base	Other Fare Types
CATS	$2.50	N/A
CobbLinc	$2.50	Children: Free
Connect Douglas	$1.00	N/A
Coweta	$3.00	N/A
CPACS	Free	Personal care attendant: Free Travel companion: $2.00
GCT	$4.00	Personal care attendant: Free Travel companion: $4.00
Henry	$4.00	Seniors: $2.00
MARTA	$4.00	N/A

The fare for demand-response service varies in part because some of the region's demand-response services are ADA[48] paratransit and others are open to all customers. Still, with a range of fares from free to $4.00, there is considerable variation across the region. In a region with more unified fare policies, an equitable approach would be to allow personal care attendants to ride ADA paratransit for free and travel companions to ride for the same price as the base fare. The region could also consider adopting discounts for those who demonstrate very low incomes, to prevent negative impacts to those who currently receive service for free.

48 Americans with Disabilities Act. ADA paratransit refers to services available for individuals with disabilities who undergo an eligibility certification process.

Table 17: Fare Structure for Vanpool Service

Operator	Fare
CATS	CATS pays 50 percent of the lease and fuel expenses; vanpool riders share the other 50 percent.
Connect Douglas	One-way: $6.00 Roundtrip: $8.00 Monthly pass: $82.00 to $195.00
Xpress vanpool	The Xpress vanpool program provides a monthly subsidy of $375.00; vanpool riders share the remaining expenses.

Each vanpool service has a different fare structure: CATS provides a fixed share of the costs, with passengers paying the remainder; the Xpress vanpool program provides a fixed dollar amount, with passengers paying the remainder; and Connect Douglas passengers pay a fixed price per trip or per month. This means Connect Douglas' fare structure functions more like a standard fixed-route system with single-trip and monthly prices. Both CATS's and Xpress's fare structures incentivize riders to maximize vehicle occupancy: the more passengers, the lower per-passenger cost.

There are many nuances to fare structure not encapsulated by these tables, with discounts available by purchasing a daily pass, monthly pass, 10-trip pass, and transfer rules.

A single card that can be used at all the region's transit providers is a staple of a unified regional fare policy. **The ATL is actively engaged in developing a regional fare policy intended to simplify the fare.** The ATL is actively engaged in developing a regional fare policy intended to simplify the fare payment process and improve customer experience, enhancing connectivity of the region's transit network.

Above, the Stockbridge Commuter Park & Ride, which is served by Xpress. Below, the faregates at the entrance to the GWCC/CNN Center MARTA station.

4.9.4 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 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.[49]

Table 18 summarizes the DBE/MBE goals and actual performance for six agencies for the past five years, with years exceeding the goal in green and years falling short of the goal in red.

Table 18: DBE/MBE Participation Goals and Performance (as Percent of Work)

FY	CATS		CobbLinc		Connect Douglas		GCT		MARTA		Xpress (with VP)	
	G	A	G	A	G	A	G	A	G	A	G	A
2016	-	-	5	16	19	2	5	4	30	31	11	15
2017	-	-	5	7	19	4	5	2	30	31	11	5
2018	-	-	7	17	15	0	5	4	16	24	8	16
2019	-	-	7	12	15	9	6	3	25	30	8	4
2020	11	100	7	4	15	TBD	6	TBD	25	TBD	8	6

G = Goal. A = Actual.

DBE/MBE goal attainment were varied for the agencies between 2016 and 2020. Four agencies exceeded their goal in at least one year. MARTA, the largest service provider in the region, exceeded its DBE/MBE goal in all four years for which data were available for the agency; in 2018 and 2019, by 5 percent or more. CobbLinc exceeded its goal every year, often significantly, except in 2020. Xpress exceeded its goal in 2016 and 2018. CATS significantly exceeded its goal in 2020, awarding 100 percent of contracts to DBE/MBE businesses. Connect Douglas and GCT did not meet their DBE/MBE goals in any year in this period; however, GCT came within 1 percent in 2016 and 2018.

49 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: USDOT, "What's New in the New DOT DBE Rule?" 2016.

4.10 Customer Satisfaction

COVID-19 gave operators a renewed focus on customer needs. CobbLinc innovated in response, making its paratransit application fillable online and posting an online customer complaint form.

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 19** shows each agency's current practices with respect to measuring customer satisfaction, as well as a description of the highest-level finding of the most recently available survey. Six agencies conducted some type of customer satisfaction survey between 2016 and 2020.

Table 19: Customer Satisfaction Tracking Measures by Agency

Agency	Survey Availability (Within Last Five Years)	Methodology for Evaluating Customer Satisfaction	Observations from Survey
CATS	2019, 2020	Satisfaction survey asks about booking experience, quality of service, bus cleanliness, experience, driver safety, driver courtesy, and driver efficiency. Complaints are logged separately.	In 2020, CATS asked customers to rank their overall experience on CATS on a scale from 1-5, with 5 being the best; 88 percent of respondents rated CATS 4 or 5.
CobbLinc	2020	Tracks customer complaints via customer satisfaction surveys.	*Sample size too small.*
Connect Douglas		Tracks complaints and how each was addressed. Includes comments asking for expanded service.	

Agency	Survey Availability (Within Last Five Years)	Methodology for Evaluating Customer Satisfaction	Observations from Survey
Coweta		Written complaints are addressed as they arise and documented. Informal customer complaints (verbal) are handled by the operator or staff.	
CPACS	2016, 2018	Survey asks about satisfaction in 11 different areas. Overall satisfaction found by averaging rates.	In 2018, CPACS asked customers if they were satisfied, neutral, or dissatisfied with CPACS Mobility in various categories; on average, 98 percent of respondents were satisfied across the 10 categories.
GCT	2017	Maintains log of all complaints, comments, and compliments.	
Henry		Quarterly report card reflects the number of complaints and how quickly they were addressed.	
MARTA	2016, 2017, 2018, 2019, 2020	Conducts customer satisfaction survey and reports on the number of complaints, by topic, from each year per 1000 boardings.	In 2020, 85 percent of riders were satisfied with MARTA, up from 76 percent the year before.
Xpress	2018	Includes complaints by topic and route. Also conducts on-board survey asking about satisfaction, including by route and provider.	In 2018, 79 percent of riders reported that they either "loved" or "liked" Xpress.

The sample sizes for surveys are as follows: CATS: 92 respondents; CPACS: 200 respondents; Xpress: 3,042 respondents. MARTA did not provide a sample size for the latest survey, but the survey has been conducted for over 20 years and in previous years has included at least 2,000 responses.

The surveys found that customers are generally satisfied with the services they receive. The increase in MARTA customer satisfaction by nine points between 2019 and 2020 is especially noteworthy.

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. Particularly if new services or features 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 tools that can allow agencies to administer surveys to at least a portion of their riders with modest effort. Agencies using third-party contractors could also consider adding requirements to their contracts for the providers to conduct a customer satisfaction evaluation and/or require transparency in sharing comments and complaints with the public agency.

4.11 State of Good Repair

There is a strong correlation between the state of an agency's vehicle fleet and the reliability of its service. Vehicles that break down more often lead to less dependable service, which in turn negatively impacts OTP and, ultimately, 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 disruptions to service.

Useful Life Benchmark (ULB)

Per the FTA, ULB 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."

4.11.1 Share of Fleet Past Useful Life Benchmark

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. The differing guidelines are summarized in **Table 20**.

Table 20: ULB Guidelines

Agencies	Bus*	Cutaway bus**	Rail passenger cars	Automobile/ Van
CATS, CobbLinc, Connect Douglas, CPACS (FTA Default)	14 years	10 years	N/A	8 years
Coweta, GCT	12 years	5 years	N/A	6 years
MARTA	12 years or 500,000 miles (whichever comes first)	5 years or 150,000 miles (whichever comes first)	HR 310- and 311-Series: 40 years; HR 312-Series: 22; LR: 30 years	N/A
Xpress	12 years or 500,000 miles (whichever comes first)	N/A	N/A	

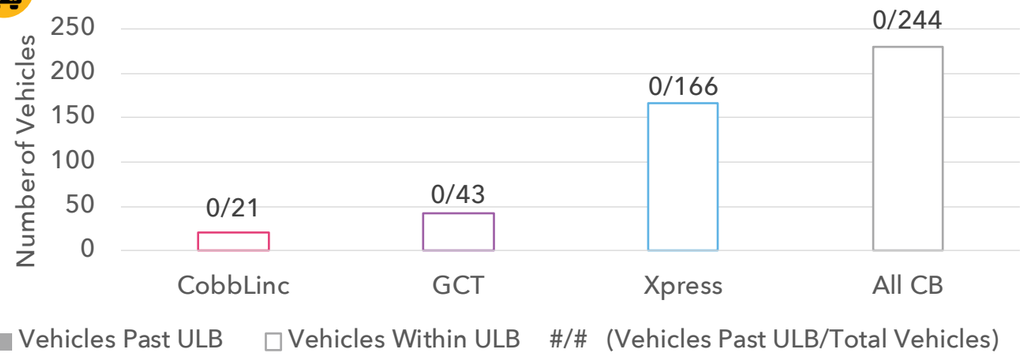
**Includes standard, articulated, and over-the-road buses. These buses are operated on commuter and fixed-route bus services.*
***Cutaway buses are operated mostly on demand-response services, as well as CPACS and Henry fixed-route service.*

The share of fleets past ULB is illustrated by mode in **Figures 48** through **53**.[50] In these charts, the bar height represents the total number of vehicles for that mode. The shaded portion of the bar represents vehicles that are past ULB. The unshaded portion represents the remaining vehicles, which are within ULB. The fraction above the bar shows the number of vehicles past ULB out of the total number of vehicles.

Investments in new vehicles in the region have cut the share of the region's demand-response fleet that is past the ULB in half.

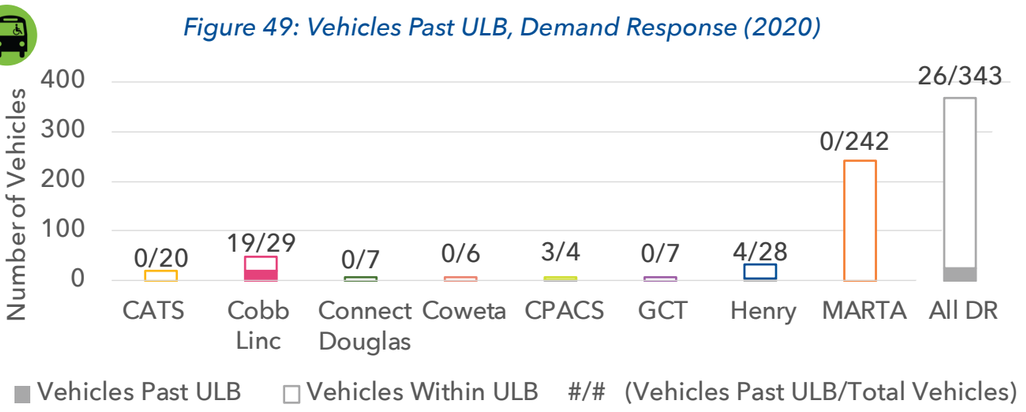
50 All agencies provided fleet rosters for analysis. A vehicle manufactured in 2020 was considered to be zero years old.

Figure 48: Vehicles Past ULB, Commuter Bus (2020)



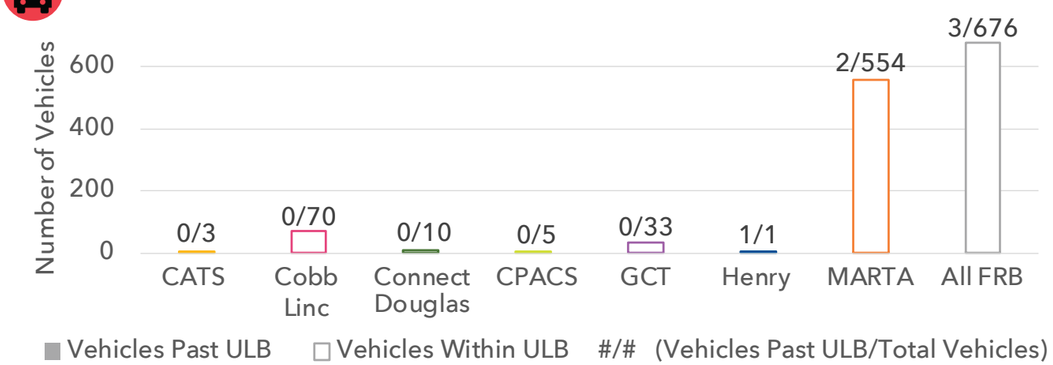
Every commuter bus operating in the region is within its ULB, although all of CobbLinc's commuter buses will reach the end of their ULB at the end of 2020. In 2017 and 2018, Xpress performed a midlife overhaul on all of its commuter buses that were reaching their ULB within the next two years, which extended ULBs for these buses by six years. When a fleet is in excellent condition, like the region's commuter buses, there is a lower correlation between reliability issues (such as OTP or missed trips) and other factors (such as scheduling, congestion, incidents, etc.).

Figure 49: Vehicles Past ULB, Demand Response (2020)



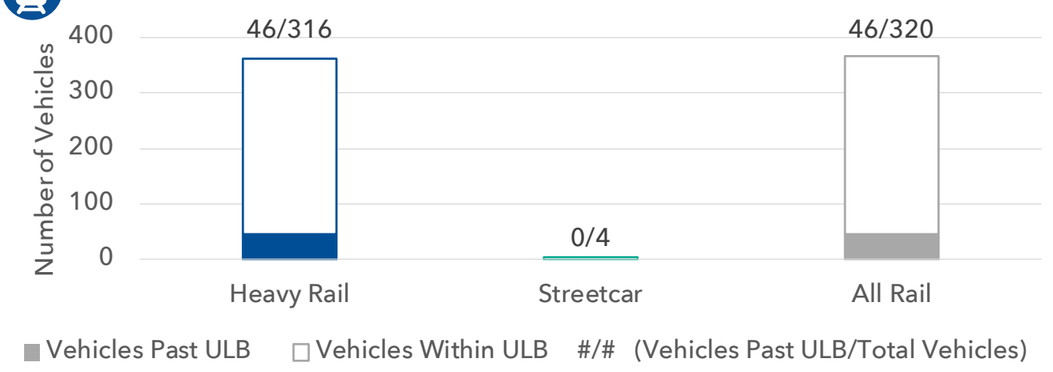
Five of the eight agencies that operate demand response have 100 percent of vehicles within their ULB. The three that do not are CobbLinc, CPACS, and Henry, with 19, three, and four vehicles past ULB, respectively. For CobbLinc, this means that nearly two-thirds of its demand-response fleet is past its ULB. In 2019, CATS, CPACS, and Henry all had more vehicles exceeding ULB than they do this year, which made demand response the mode with the highest share of vehicles exceeding ULB (15 percent). Investment in new vehicles has cut that share in half to 8 percent of the region's demand-response fleet.

Figure 50: Vehicles Past ULB, Fixed-Route Bus (2020)



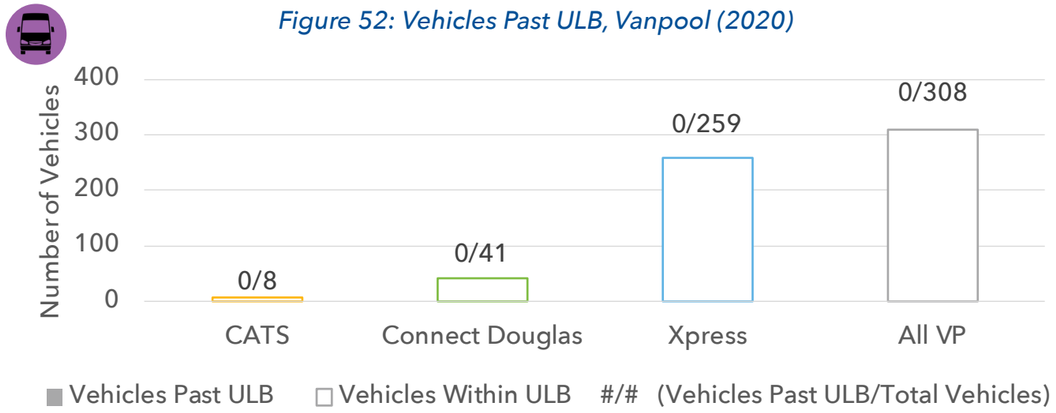
All seven agencies that operate fixed-route bus have 100 percent of vehicles within their ULB, except for Henry and MARTA, with one and two vehicles past ULB, respectively. In 2019, MARTA had 76 vehicles past ULB, which led to 12 percent of the region's fixed-route bus fleet to exceed ULB. MARTA's investment in new buses has brought that share down to just 0.4 percent of the region's fixed-route bus fleet.

Figure 51: Vehicles Past ULB, Rail (2020)



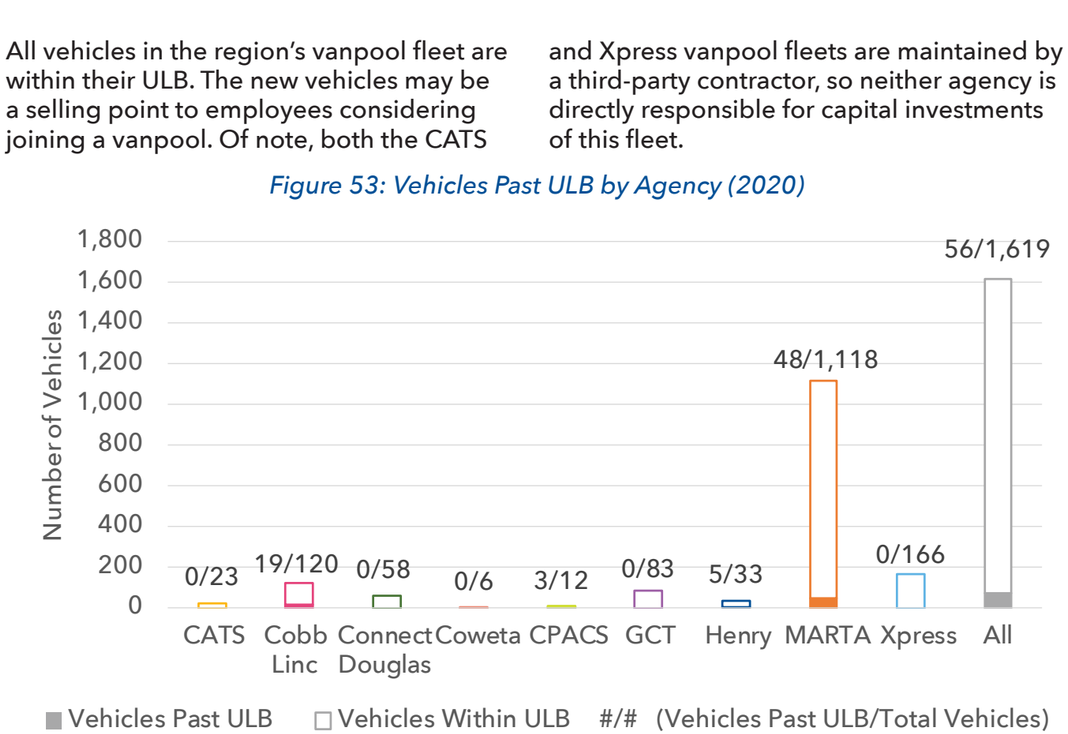
All four streetcar vehicles are within their ULB. There are 46 heavy rail cars in the region that exceed their ULB, all of which reached that benchmark at the end of 2019, and another 34 are due to reach the end of their ULB by the end of calendar year 2020. MARTA is the only agency to operate rail, and it has an extensive fleet management plan, with plans to procure, test, and deploy approximately 350 new rail cars over the course of the decade from 2019 to 2029. It is anticipated that the first round of new rail cars will go into service in 2023. The speed at which MARTA can replace these cars is dependent on capital funding availability.

Figure 52: Vehicles Past ULB, Vanpool (2020)



All vehicles in the region's vanpool fleet are within their ULB. The new vehicles may be a selling point to employees considering joining a vanpool. Of note, both the CATS and Xpress vanpool fleets are maintained by a third-party contractor, so neither agency is directly responsible for capital investments of this fleet.

Figure 53: Vehicles Past ULB by Agency (2020)



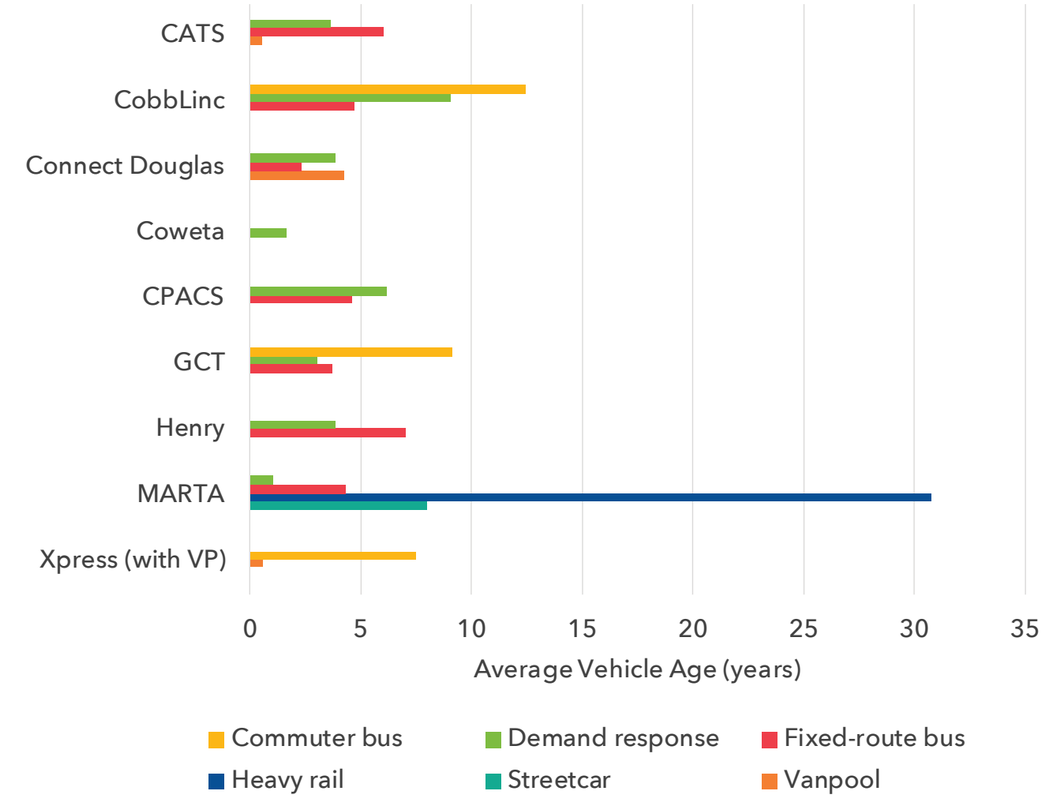
In the ATL region overall, 3 percent of active revenue vehicles exceed their ULB in 2020—a significant improvement from 8 percent in 2019. Five of the agencies in the region do not operate any vehicles that exceed their ULB: CATS, Connect Douglas, Coweta, GCT, and Xpress. CATS began operating newer vehicles in 2020, bringing down its ULB rates from 2019. Although CPACS and Henry have several vehicles past ULB, they also brought down the share of their fleet exceeding ULB. Impressively, only 4 percent of MARTA's large fleet (1,118 vehicles) exceeds 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). The region has clearly made significant capital investments in its fleet from 2019 to 2020 to achieve such gains on this KPI.

4.11.2 Average Fleet Age

Figure 54 summarizes the average fleet age by agency and by mode as of 2020. All agencies provided fleet rosters for analysis. A vehicle manufactured in 2020 was considered to be zero years old.

Coweta has the youngest fleet, with each of its demand-response buses an average of 1.7 years old. MARTA has the oldest fleet, at an average of 11.1 years; however, this is expected, given that it is the only agency that operates rail service, and rail cars

Figure 54: Average Vehicle Age



have a significantly longer ULB than buses. MARTA's investment in new vehicles has brought the average age of its fleet down from 13.3 years in 2019.

The average fleet age across all transit agencies in the U.S. between 1991 and 2015 ranged from 7.0 to 8.8 years.[51] (However, most U.S. transit agencies do not operate rail, and rail vehicles typically raise the average fleet age.) In Atlanta, no agency besides MARTA has an average fleet age of older than eight years, so most of the region has fleets with an average age better than the national average.

4.11.3 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. In this analysis, MDBF is calculated by dividing the total number of vehicle revenue miles (VRM) by the total number of failures. A high MDBF indicates that vehicles are well-maintained and are breaking down less frequently, thus providing more reliable service.

Figure 55 summarizes the MDBF by agency and by mode for the region from 2016 to 2020. Due to differing reporting requirements, data on MDBF exist only for CobbLinc, Connect Douglas, GCT, MARTA, and Xpress.[52]

Commuter buses have the lowest MDBF of any mode in 2020, at more than 4,600 miles. While every commuter bus in the region is currently within its ULB, it is still an old fleet—18 of CobbLinc's 21 commuter buses are at their ULB and will exceed it next year.

Vehicle failure rates for fixed-route bus services declined significantly in 2020—a trend largely driven by improvements in MARTA's service.

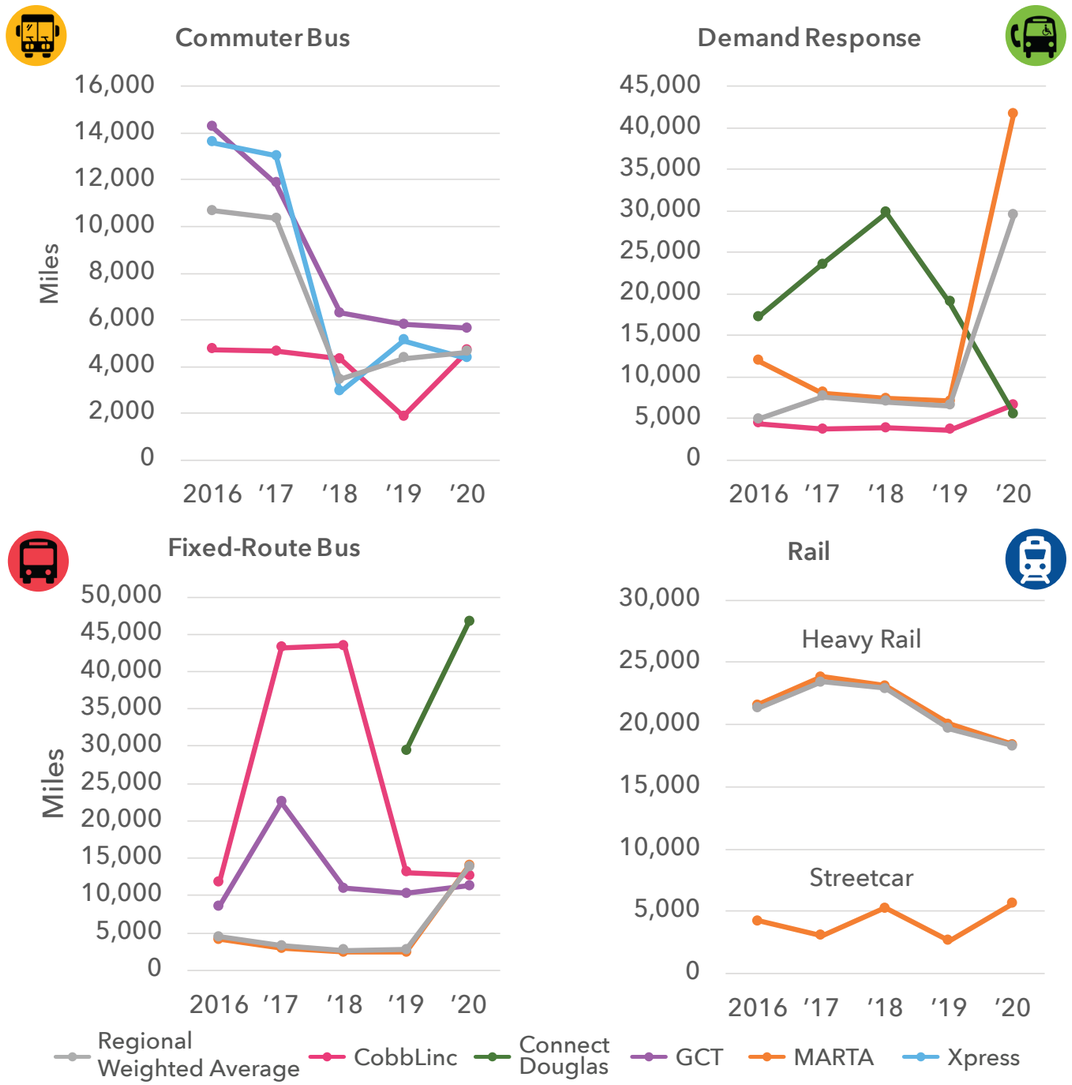
In 2020, demand response overtook rail as the mode with the highest MDBF across the region, at nearly 29,500 miles. This increase—from 6,500 miles in 2019—was largely driven by a drop in failures among MARTA vehicles and, to a lesser extent, CobbLinc vehicles. Connect Douglas's demand-response vehicles have experienced a decline in MDBF over the last two years—from about 30,000 to 5,000. Connect Douglas offers much less demand-response service than the other agencies; when there is less service, a few additional breakdowns cause a more noticeable disruption to riders.

Fixed-route bus also saw an increase in MDBF from 2019 to 2020, again driven largely by a drop in failures among MARTA vehicles. CobbLinc had a higher MDBF in 2017 and 2018, more than three times what it was in the other years in this period, so this could be an area of additional attention for the agency.

Heavy rail continued a four-year decline in MDBF, hitting about 18,000 miles in 2020. Rail cars travel on a fixed guideway, which minimizes wear and tear and explains why it is the mode with the highest five-year average in the region. Still, MARTA's rail fleet is aging, with 46 rail cars surpassing their ULB at the end of 2019 and another 34 due to expire at the end of 2020. MARTA has a robust plan to procure, test, and deploy approximately 350 new rail cars over the course of the decade from 2019 to 2029. MARTA's four streetcar vehicles have maintained a consistent average of about 4,000 miles between failures over the last five years. Although this is one of the lowest MDBF of any mode, streetcar also has the lowest VRM of any mode.

51 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.
52 See **Appendix** for more on how some agencies may calculate failures differently or not at all.

Figure 55: Mean Distance Between Failures



4.12 Safety

The safety of passengers, operators, and other members of the public is a top priority for all operators in the ATL region. This section addresses safety incidents that occur on transit right-of-way, in a transit revenue facility, in a transit maintenance facility, or involving a transit revenue vehicle. Incident types shown in the figures below include collisions, derailments, and evacuations due to unsafe conditions. This section does not address passenger or operator safety as it relates to COVID-19; this is addressed in **Section 4.2**.

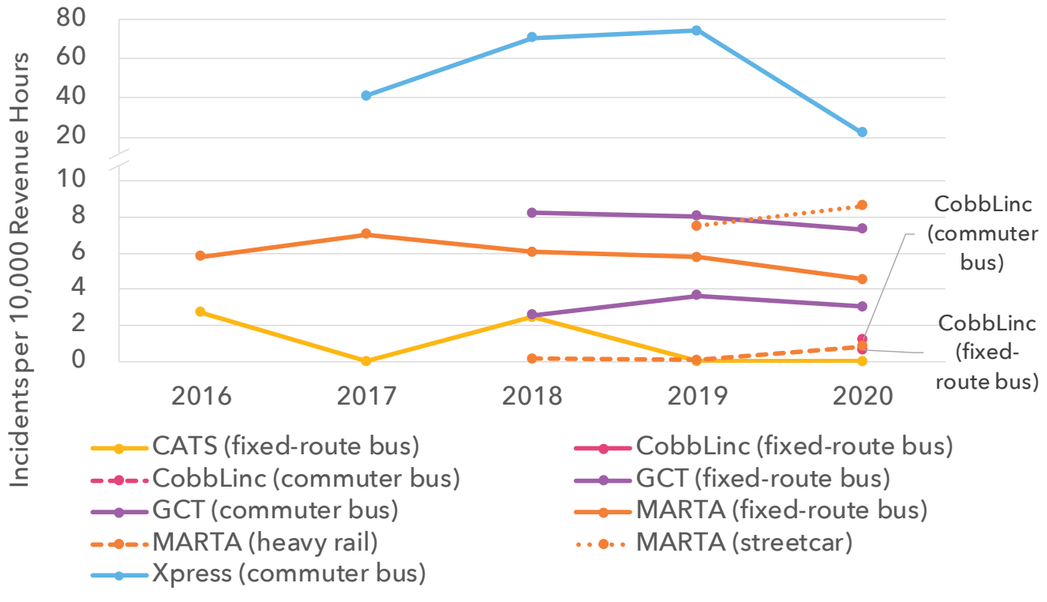
4.12.1 Safety Incidents per Revenue Hour

In 2020, ATL agencies provided nearly 4.3 million vehicle revenue hours of service and experienced over 1,700 safety incidents. **Figure 56** shows how the number of safety incidents per 10,000 revenue hours on fixed-route modes (bus and rail) has changed since 2016. (Note: not all agencies provided data at the mode level for all years.)

Since 2017, MARTA's fixed-route bus service has reduced safety incidents relative to service levels. In 2020, MARTA's fixed-route bus service provided 54 percent of the region's revenue hours and had 60 percent of the safety incidents, or about five incidents for every 10,000 revenue hours of service. Meanwhile, the heavy rail service had only 0.8 incidents per 10,000 revenue hours.

CATS, which provided less than 10,000 revenue hours of fixed-route service each year, had only one fixed route safety incident each in 2016 and 2018. Between 2019 and

Figure 56: Fixed-Route Bus, Commuter Bus, and Rail Safety Incidents per 10,000 Revenue Hours



2020, GCT experienced a decrease in incident rates on its commuter bus and fixed-route bus services. After a relatively high rate of incidents in 2018 and 2019, Xpress' safety rates improved significantly in 2020, from 69 per 10,000 revenue hours in 2019 to 22 per 10,000 revenue hours.

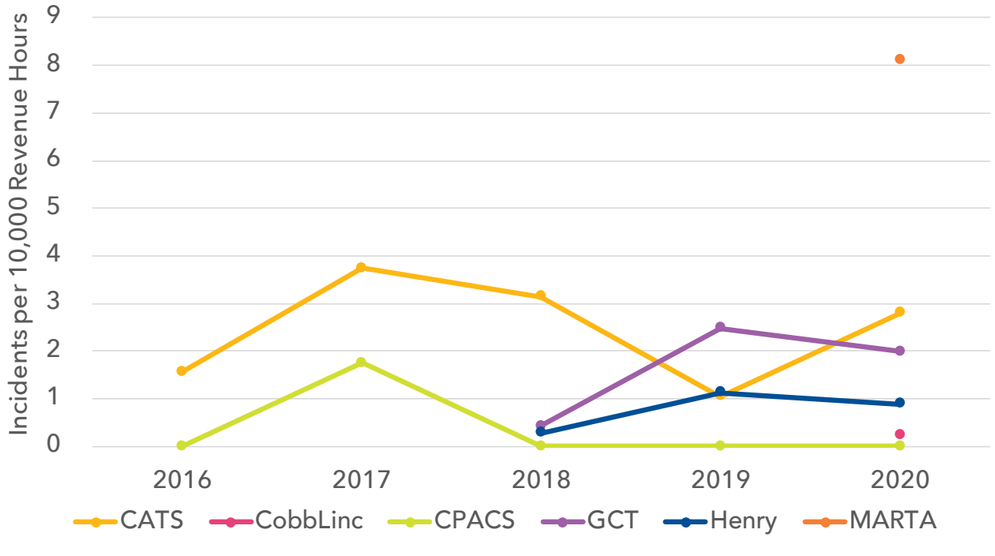
Figure 57 shows the number of safety incidents per 10,000 revenue hours on demand-response services, as data were available. Since 2016, CATS demand-response service has experienced between two and seven safety incidents per year, or between one and four incidents per 10,000 revenue hours. CPACS has been nearly incident-free since 2016, with only one safety incident in 2017. Meanwhile, GCT and Henry's incident rates both decreased between 2019 and 2020.

Ensuring Safety and Security on the MARTA System

MARTA Police Department units patrol all MARTA's buses, trains, stations, and parking lots. To keep response times for bus-related calls down, MARTA Police dispatches the local jurisdiction and MARTA Police whenever a call is received. If the local jurisdiction arrives first, its personnel take control of the situation and turn it over upon MARTA Police's arrival.

Aiming to improve the relationship between police and the local community, MARTA's Community Outreach program is the driving force behind MARTA Police's role in the Atlanta community. It includes several initiatives and related programs such as an Internship Program, Kids in Transit Summer Program, Seniors Law Enforcement Working Together Initiative, and the Diverse Community Outreach Liaison.

Figure 57: Demand Response Safety Incidents per 10,000 Revenue Hours



4.13 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), automatic vehicle location (AVL), and camera systems—vary significantly, as shown in **Table 21**. The date in parentheses is the date, where available, the agency implemented the software.

Table 21: 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 Infor-mation (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); Block-Buster (2018); Teledriver (2017); Transit-Master (2015)	Trapeze (2006)	Opticom	Transit-Master (2018)	Transit-Master (2018)	Apollo Systems
Xpress	Clever Devices	InFor (contractor)	N/A	Cubic (software), GenFare (hardware)	Clever Devices (2020)	Apollo Systems (2017)

Xpress' New CAD/AVL System

Xpress implemented a new Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system in 2020 that offers real-time benefits to riders, operation managers, operators, and planners. With the new system, Xpress was able to launch myXpress, a new mobile app where riders can see when their bus is arriving, the route's schedule, and find the nearest bus stop.

In addition to real-time arrival and alert information via the app, text, and web, the upgraded system includes:

- An onboard 29" monitor displaying real-time arrival information, alerts, closed-circuit TV footage, weather, and news
- ADA-compliant automated vehicle stop announcements
- A mobile app for field supervisors
- Real-time alerts of vehicle faults and performance issues, and remote access to vehicle system status.
- Web-based business intelligence solution for data storage and reporting

The use of up-to-date technologies by the providers can improve their ability to meet the ATL's Innovation governing principle, which emphasizes using innovative and best practice solutions to improve the rider experience, fare collection, cost savings, integration, and more.

There is a significant variation in the technologies used for various purposes by the operators across the ATL region. QRyde and Trapeze are the most commonly used scheduling and dispatch software programs. The following programs are used by at least two agencies for the same function: InFor (asset management), Clever Devices (AVL), and AngelTrax, Apollo Systems, and Seons (camera systems).

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, integrated 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 GDOT, 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.

4.14 Air Quality and Sustainability

4.14.1 Avoided Emissions

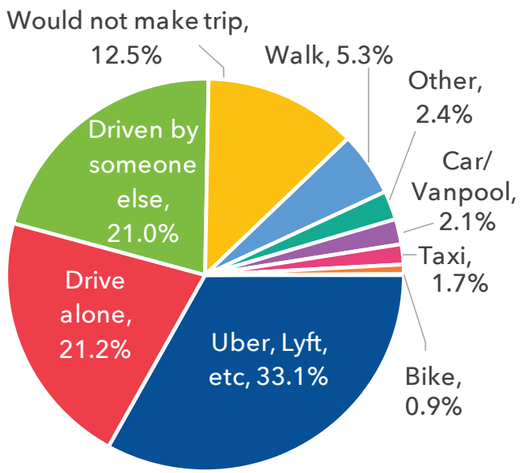
One of the ATL's governing principles is Environmental Sustainability. The ATL works with its partners to provide transit alternatives to single occupancy vehicle travel and to provide more environmentally sustainable transportation options for the region. To understand how transit helps the region advance environmental sustainability, it is worth considering the counterfactual: What would have happened if transit riders had driven vehicles instead? Based on responses to ARC's most recent rider survey, it is possible to estimate an answer to this question.

Figure 58 summarizes the alternative modal options for Atlanta transit users, as reported by survey respondents.[53] Notably, the three largest alternative options—TNCs like Uber and Lyft, driving alone, and being driven by someone else—would all result in increased passenger vehicle miles on the road network. Using data on average transit trip length and ridership on rail and bus modes, **transit is estimated to have helped the region avoid 272 million additional vehicle miles traveled (VMT) on the roadways in FY 2020.**[54]

Table 22 compares the emissions profile of avoided passenger vehicular travel (272 million VMT) to the emissions profile of fixed-route transit in 2020. **Transit is estimated to save the region over $10.5 million in social costs of emissions, based on avoided greenhouse gases (GHGs) and other hazardous and smog-producing pollutants.** The fact that the total social cost of this foregone pollution exceeds the social cost of operating transit service itself (in terms of emissions) by more than double indicates a major savings in the region in terms of public health, environmental degradation, and general quality of life.

For more information on the methodology of this analysis, as well as details on each pollutant, see **Appendix Section A.4.3.**

Figure 58: Alternative Modes to Transit



Source: ARC 2019 on-board survey.

53 ARC, 2019 On-Board Survey.

54 Analysis based on a median boarding-to-alighting distance per the ARC On-Board survey. An additional quarter mile was added on each end of a trip to account for boarding and alighting. Driving trips were assumed to have the same length as replaced transit trips. For more information about the methodology of this analysis, see **Appendix Section A.4.3.**

Table 22: Emissions Avoided but for Transit (US Tons in 2020)

	Without Transit (Passenger Vehicle Travel)		With Fixed-Route Transit)		Avoided Emissions	
Criteria Pollutant	Emissions Inventory	Social Costs of Emissions	Emissions Inventory	Social Costs of Emissions	Emissions Reduction	Social Benefit (Cost Savings)
CO	3,000	-	130	-	2,870	-
PM2.5	4.6	$1,788,500	0.6	$247,300	4.0	$1,541,100
PM10	5.2	-	0.7	-	4.5	-
NOx	355	$ 3,056,300	53	$ 451,900	302	$2,604,400
VOC	200	$ 417,300	5	$ 11,400	195	$406,000
CO_2e	131,800	$10,277,900	54,300	$4,235,400	77,500	$6,042,400
Total		**$15,539,900**		**$4,946,000**		**$10,594,000**

Source: Research team analysis using EPA's Motor Vehicle Emissions Simulator (MOVES) model and valuation factors, where available, from the U.S. Department of Transportation (USDOT) and the World Bank. USDOT does not provide factors to monetize CO or PM10 emissions and so these are left out of the social cost calculations.

4.14.2 Air Quality in the Atlanta Region

Nationwide, transportation is the sector of the economy that generates the largest share of pollution/GHG emissions—a fact that illustrates why improving air quality is a priority for the ATL. Although emissions of GHGs that lead to poor air quality have been on a downward trend since 2011, the region still experiences dozens of days each year when poor air quality is a "moderate" health concern, and some when it is even considered "unhealthy," for sensitive groups. The region's federally required emissions reduction targets, developed by GDOT in coordination with ARC and other partners are:

- 205.7 kilograms (kg) per day of Volatile Organic Compound (VOC) emissions by 2020, with the reduction target increasing to 386.6 kg/day in 2022
- 563.3 kg per day of nitrogen oxides (NOx) emissions by 2020, with the reduction target increasing to 1,085.0 kg/day in 2022

Transit is a mode of transportation that produces significantly fewer emissions per vehicle mile traveled, so investing in transit can significantly benefit the region's air quality. It can also have even more significant localized air quality benefits for people living near transportation facilities. The ATL Regional Transit Plan, if fully implemented, would have the following benefits for the region annually:

- 969 kg of VOC reduction
- 1,272 kg of NOx reduction
- 2,046,370 kilograms of carbon dioxide (CO_2) from reduced VMT and vehicle idling (equivalent to usage of over 230,000 gallons of gasoline)
- 99,804 gallons of fuel saved annually

CHAPTER 5

MOVING TRANSIT IN THE REGION FORWARD

5.1 The Role of Transit Investments in Recovery

This year's Annual Report and Audit spans the ATL's fiscal year, from July 1 through June 30. However, this year's reality of transit in the region is anything but typical. The broad-ranging effects of the COVID-19 pandemic on travel are still being understood. Some changes are likely to be short-lived, with a return to previous trends in the long term. Other changes and trends seen today could persist, thereby structurally changing the nature of the economy and of travel.

The immediate financial impacts of the pandemic on transit agencies include fare revenue losses both from ridership declines and from temporary fare suspension—strategies that were used to safeguard the health of riders and operators. These have been partially offset by immediate relief from the CARES Act. **However, long-term risks remain to transit revenue sources that are tied to the health of the overall economy.**

The pandemic has also affected customer perspectives and concerns. To attract riders back, operators will need to continue to provide reassurances of safety by communicating the COVID-19 response measures they have implemented.

People who stopped commuting and reverted to working from home because of the pandemic may not be aware of these measures. Going forward, some transit markets and occupations are more susceptible than others to potential long-term increases in telecommuting spurred by the pandemic.

Impacts on real estate and land use, which closely relate to the success and planning of transit, are also still evolving. The region will need to monitor the situation on the ground to understand whether short-term responses such as increased pressures on suburban housing markets in some places and reductions in office occupancy will last over the longer term.

At the same time, the pandemic illustrates and even accentuates existing truths about the role of transit in supporting the region and its people and businesses. This includes the imperative to provide affordable mobility and the centrality of transit to achieving equitable access to jobs, healthcare, and essential services. Transit, by supporting these goals, has and will continue to make the region more economically inclusive and competitive.

Transit also plays a role in addressing broader regional mobility needs. From 2014 through 2019, transportation topped respondents' list of "biggest problems facing Metro Atlanta" on ARC's Metro Atlanta Speaks Survey.[55] The events of 2020 upended a lot of priorities, with public health taking over as the top concern.[56] Still, in 2019, about three-quarters (73 percent) of respondents in the region report that transit is very important and

> **The 21st century is all about partnerships. We're all in this thing together and we need to work together.**
>
> *–Joe Allen, Executive Director, Gwinnett Place Community Improvement District, on the role of public-private partnerships to support transit and economic development*

nearly half (48 percent) of respondents also said that "expanding public transit offers the best long-term solution to the region's traffic challenges."[57]

Given these unprecedented times, now is the time for the ATL and its operators to reflect on lessons learned from past recessions, and to look forward to strategic regional investments and funding opportunities. Going forward, the region will need to work together to monitor, understand, and evolve to meet a new reality. In interviews, staff from the region's transit operators shared that they believe the recovery is unlikely to be a simple return to a pre-pandemic normal. Some also shared the belief that this is an opportunity to reconsider strategies such as marketing and pricing creatively.

All of this will require close and ongoing coordination for both tactical management and response to immediate facts on the ground and to anticipate and strategize

55 ARC, "Metro Atlanta Speaks Survey."
56 ARC, "2020 Metro Atlanta Speaks Survey Results."
57 ARC, "Metro Atlanta Speaks Survey: 2019 Results Review."

regarding emerging long-term trends. In this context, the ATL remains committed to working with its partners to streamline transit planning, advance strategic investments, and improve the rider experience.

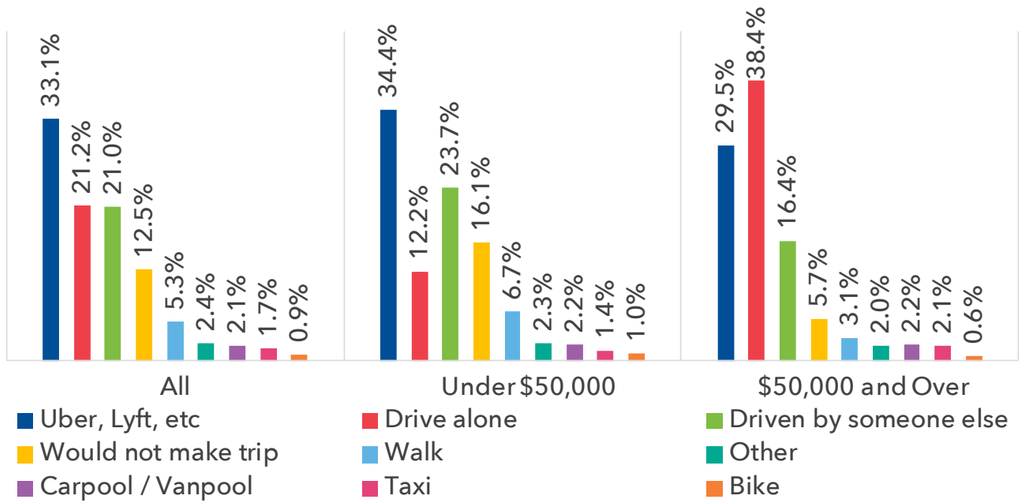
The following sections discuss specific issues that can inform planning for transit as the Atlanta region moves forward towards health and economic recovery.

5.2 The Imperative for Affordable Mobility

Transit provides value to residents of the Atlanta region by offering them a cost-effective mode to meet their travel needs. One way of understanding this value is by examining the other options on which people would be forced to rely were transit unavailable. In FY 2020, transit in the Atlanta region facilitated the completion of 98 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 69 million door-to-door (linked) trips involving transit.[58] About 13 percent of respondents to the ARC's 2019 on-board survey indicated they would not make their trip if transit service were not available. Applying this percentage to FY 2020 ridership yields an estimate of 8.6 million trips enabled by transit that otherwise would not be possible.

Transit's affordability relative to other available options is particularly relevant for lower-income residents who often cannot afford car ownership. **Figure 59** shows how people report they would make their trip if bus or rail were not available, comparing all respondents to those whose household income is either below or above $50,000.

Figure 59: Comparison of Alternative Modal Options by Annual Household Income



Source: Research team analysis of ARC's 2019 on-board survey.

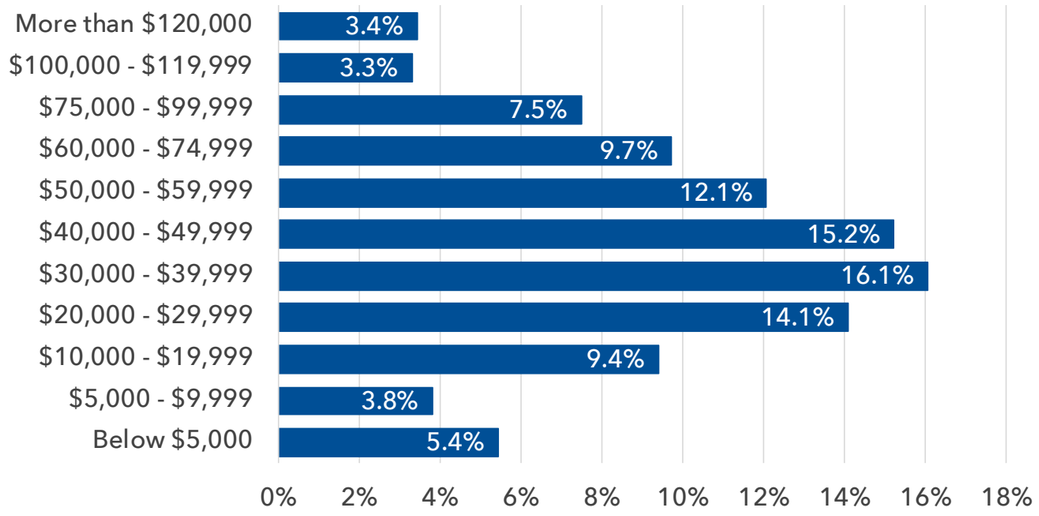
58 Estimated using the distribution of number of transfers per trip from ARC's 2019 On-Board Survey.

Transit users in the lower income brackets are less likely to have driving as a feasible alternative (12 percent), compared to those in the higher income bracket (38 percent). Transit riders with household incomes below $50,000 are instead more likely than those with income above that threshold to rely on alternatives such as Uber and Lyft or on others (family, friends) to drive them. Similarly, the likelihood of having to forgo a trip, absent transit, is significantly higher for those with household incomes under $50,000 (16 percent) than those above (6 percent).

Figure 60 shows the distribution of household income among survey respondents that were willing to provide that information.[59] About two-thirds (64 percent) of respondents had household incomes below $50,000.

Much remains uncertain about the COVID-19 pandemic, including the timing of necessary health advances and the exact pace and nature of public health and economic recovery. In the interim, recession-related constraints on household incomes may reduce the number of people who can afford cars, thus actually increasing the importance of transit as an affordable mobility option.

Figure 60: Household Income Distribution of Transit Riders



Source: Research team analysis of ARC's 2019 on-board survey. Data excludes question non-respondents.

59 Note: 17.9 percent of respondents elected not to answer this question.

5.3 Lessons from the Great Recession: Stimulus and Investments in the Future

There is a strong body of research showing how investment in transit can support the economy in both the short and long term. Moreover, the United States has a history of investing in transportation during economic recessions to stimulate the economy. Responding to the last major recession, the 2009 American Recovery and Reinvestment Act (also known as "the stimulus") provided over $48 billion to be administered by the U.S. Department of Transportation (USDOT) for grants to state and local governments for capital expenditures for roads, transit, airports, and passenger rail.

"Shovel-ready" capital projects have historically been the targets of infrastructure stimulus spending. The ATL, in its role as a coordinating body for transit planning and funding, is uniquely positioned to work with partners and operators to identify ready and worthwhile projects to fund when and if additional stimulus resources are made available.

At the same time, it is important to recognize that spending on transit operations and maintenance, while generally not receiving as much federal funding support, is a particularly effective way of supporting local jobs on a per-dollar basis. Because this type of spending involves more labor expenditures relative to purchases of materials that may be sourced from outside of the region, they tend to have greater impacts within a given local or regional economy. Ensuring that operators can continue to deliver service, despite revenue losses from pandemic-related ridership declines, should be a key goal.

A study commissioned by the American Public Transportation Association and published in May 2020 estimated that, based on ridership losses, unemployment, state

Findings Regarding Transportation Investments from the 2009 Stimulus

Assessing the effectiveness of the 2009 American Recovery and Reinvestment Act, Transportation Research Board Special Report 312, "Transportation Investments in Response to Economic Downturns," summarized arguments for including transportation in efforts to stimulate the economy.

- If projects are selected with proper consideration of the value of the transportation services they will provide, **the long-term benefits will offset the initial cost**, so the expenditure is justified regardless of the magnitude of the stimulus benefit.
- Transportation infrastructure improvements, by adding to the productive capacity of the economy, may **raise consumers' and investors' expectations for economic growth, providing an immediate stimulus effect** beyond that produced by equal expenditures for nonproductive purpose.

Text quoted from Transportation Research Board Special Report 312.

and local tax revenues, epidemiological virus infection patterns, and transit operating costs, transit agencies nationally could face an overall funding shortfall of nearly $49 billion between the second quarter of 2020 and the end of 2021 (calendar year). Even with the infusion of $25 billion provided by Congress in April 2020 through the CARES Act, the study found that transit agencies could still face a shortfall of nearly $24 billion through the end of 2021.[60]

Going forward, the region will need to work together to make the best use of all current and potential future funding opportunities.

5.4 Funding Opportunities

Some funding opportunities may be available in the region to support operations, capital projects, and expansion of the transit network. These funding sources include federal grants, state bonds, and local sales tax programs, either targeted directly at transit or intended for general transportation projects. **Table 23** outlines potential funding opportunities at the federal, state, and local level.

Table 23: Transit Funding Opportunities

Level	Program	Descriptor
Federal	Capital Investment Grants (CIG)	Highly competitive FTA program for bus rapid transit (BRT) and rail capital projects. Agencies must complete extensive project development and engineering design to earn funding.
	Low or No Emission Vehicle Grant	Competitive FTA program for the purchase or lease of zero-emission and low-emission transit buses. The program also funds the acquisition, construction, and leasing of required support facilities for these vehicles.
	Bus and Bus Facilities Grants	The FTA Grants for Buses and Bus Facilities program for the replacement, rehabilitation, and purchase of equipment, as well as the construction of bus-related facilities.
	Surface Transportation Program (STP)	The Surface Transportation Program provides flexible funds and can be used to fund several aspects of transit, including purchasing vehicles and constructing fixed guideway systems.
	Congestion Mitigation and Air Quality Improvement Program (CMAQ)	The Congestion Mitigation and Air Quality Improvement Program provides flexible funds with the purpose of improving the nation's air quality and managing traffic congestion. Eligible uses for these funds include transit system capital expansion and improvements expected to increase ridership and transit demand management including rideshare services.
	Transportation Alternatives Program (TA)	The Transportation Alternatives Program for smaller-scale and non-traditional transportation projects.
State	Bond List	As described in further detail below, nine transit projects were recommended by the ATL for funding via state-issued bonds in 2020. The projects include transit priority, new express bus and BRT services, and heavy rail improvements to be completed between FY 2023 and FY 2032.
	Rideshare Fees	A per trip fee on taxis, shared rides provided by TNCs, limousines, and transportation referral services was passed by the state government in 2020. This fee was expected to provide up to $45 million a year to transit agencies for transit infrastructure projects prior to the impact of COVID-19 (and is also described below).
Local	Transit Special Purpose Local Option Sales Tax (Transit-SPLOST) *and* Single County Transportation Special Purpose Local Option Sales Tax (T-SPLOST)	Counties in the ATL region have the option to levy a transit-specific sales tax of up to 1 percent for up to 30 years. Projects must be approved by the ATL. In November 2020, a referendum to establish a 1 percent sales tax in Gwinnett County, forecast to generate nearly $13 billion over 30 years, was very narrowly defeated. Cobb, DeKalb, Douglas, and Henry Counties have recently considered pursuing local sales taxes which partially direct funds toward transit projects. Such taxes currently exist in the City of Atlanta and Clayton, DeKalb, and Fulton Counties.

60 EBP, "The Impact of the COVID-19 Pandemic on Public Transit Funding Needs in the U.S.," May 2020.

5.4.1 About the Bond List Projects

The ATL is statutorily required to annually prepare and submit a list of projects of regional and state significance to the Governor's Office of Planning and Budget and General Assembly for potential inclusion in the state bond package. To be considered, eligible projects must be included in the ATL's adopted ARTP (2019) and have performed well in the project evaluation framework including alignment with the ATL's governing principles and meeting the definition of regional significance. Additionally, any bond funds designated to a project must be fully expended within five years, per state requirements.

Taking these requirements into account, the ATL analyzed the 2019 ARTP program of projects for eligible projects, and considered additional factors such as geographic equity, higher impact/lower cost projects, and SGR needs. Ultimately, a list of nine projects were identified and recommended by the Board for state bond funding. **Table 24** includes a list and description of these projects.

5.4.2 About the Rideshare Fees

During the 2020 Session, the Georgia General Assembly passed, and the Governor enacted, legislation (House Bill 105) imposing a per-trip fee on rideshare services from TNCs such as Uber and Lyft, and taxi and limo companies. The law levies a 50-cent fee on individual rides, or a 25-cent fee on pooled rides. Revenues generated by these rideshare fees are intended to be used for transit capital projects but are subject to the legislature's annual appropriations process.

In keeping with the legislative intent for creating the ATL, the Authority is committed to using any rideshare revenues appropriated to it by the Legislature in a manner that will address long-term regional coordination issues, promote areas of synergy across operators, and have a near-term substantial benefit for the customer experience. Some potential uses of the revenues could include the procurement and implementation of a fully integrated next-generation regional fare collection and mobile ticketing system for all operators, or regional and cross-jurisdictional TSP investments. The ATL will work collaboratively with its regional partners and elected leaders to identify projects that enhance coordination and provide significant benefits to riders across the region.

Table 24: Projects Recommended for State Bond Funding

Project Name	Sponsor	Description	Project Type
Capitol Ave/ Summerhill BRT	MARTA	BRT service from the Atlanta BeltLine on the south to the downtown core in the north.	Expansion
Clayton County Transit Initiative – BRT	MARTA	BRT along routes 191 and 196 connecting Hartsfield-Jackson Atlanta International Airport to Clayton County Justice Center.	Expansion
I-285 Transit in Express Lanes	Various	High-capacity transit from I-20 in DeKalb County, along the Top End of I-285 to I-20 in Cobb County with stations in Fulton County. Four segments correspond to the GDOT Express Lanes program.	Expansion
Transit Signal Priority	CobbLinc	Transit signal priority on routes from City of Marietta to Cumberland CID/Town Center CID.	Enhancement
State Route 316 Park-and-Rides and Commuter Express Service	GCT	Expansion of commuter service to SR 316, with two new park-and-rides and new route.	Expansion
Cumberland Transfer Center	CobbLinc	Development of new Cumberland Mall Transfer Center.	Enhancement
Track Renovation Phase IV	MARTA	Fourth phase of MARTA's rail restoration efforts in restoring heavy rail lines as part of the Authority's ongoing State of Good Repair work and systemwide upgrades.	State of Good Repair
Station Rehabilitation – Program Schedule	MARTA	Rehabilitation for all 38 stations, staged six or seven a year until complete.	State of Good Repair
ADA Compliant Sidewalks	CobbLinc	Sidewalks, curbs, ramps, and crosswalk in compliance with the ADA, along CobbLinc local bus routes within unincorporated Cobb County.	State of Good Repair

5.5 Opportunity to Invest in Electric Transit Vehicles

In addition to the opportunities described above, the ATL region could consider investing in electric transit vehicles over the coming years to achieve numerous benefits. These benefits include:

> **Improved air quality and reduced energy consumption.**

Electric vehicles do not burn fossil fuels to move from place to place like conventional vehicles. In the case of transit, battery-electric buses (BEBs) produce no tailpipe emissions, meaning they do not directly pollute the air around them. This improves the quality of life for people who live near bus lines, garages, or transfer stations and directly breathe bus exhaust, especially people who walk and bike.[61] The analysis in the following section models changes in tailpipe emissions as a result of two high-level transit vehicle electrification scenarios, using the MOVES model of the U.S. Environmental Protection Agency (EPA). These illustrative scenarios highlight potential public health and environmental benefits of fleet electrification.

More broadly, electrifying transit fleets can cut non-renewable energy consumption through enhanced energy efficiency of BEBs, and reduce transportation's contribution to the local and regional carbon footprint. The degree to which BEBs realize emissions benefits on a full "well-to-wheels" basis depends on the source of electric power used to charge them. Though BEBs do not emit pollutants at the tailpipe, an electrified fleet that sources its power from fossil fuels or other carbon-intensive sources shifts its emissions "upstream" to the power plants that generate the electricity. By contrast, nuclear, hydro, solar, and wind power plants generate no air pollution; BEBs powered this way would be truly zero-emission vehicles.[62]

While the following analysis does not capture upstream emissions, fueling transit systems with clean and renewable power sources would be part of an overall strategy to improve public health and environmental sustainability.[63] Nevertheless, research shows that even at current power generation mixes, electrification improves local air quality and can lower GHG emissions.[64]

> **Lifecycle cost effectiveness.**

Fleet conversion, while requiring up-front capital investment, can pay off over time. Argonne National Laboratory estimates that a single diesel transit bus ends up costing about $1.4 million over the course of its service life, including the purchasing, fueling, maintenance, and operating costs. Hybrid-electric buses cost even more: $1.5 million per bus. By contrast, a single BEB costs an estimated $1.1 million per bus.[65] In addition, recently rolled-out options for operators to lease the batteries in their BEBs from manufacturers are making BEB acquisition more accessible than before. **By 2030, 657 transit buses across the ATL's transit operators will exceed their ULB and need replacing. A full conversion of these buses, almost all of which use diesel fuel, to BEBs could save almost $197 million over the lifecycle of the fleet.** The cited lifecycle costs do not include fueling and charging infrastructure for any bus type. Implementation of BEBs would require careful planning of infrastructure requirements.

> **Infrastructural and operational efficiency.**

To effectively serve the community, transit operators must be able to efficiently fuel and maintain their vehicles. Operators often have difficulty siting garage facilities because of the nuisance they pose to the community. These facilities then end up being quite large (exacerbating the noise and pollution impacts on nearby residents) and located far away from many routes (increasing "deadhead"—i.e., non-revenue—miles, which increases expenses). The more difficult it is for agencies to overcome these infrastructural constraints, the less service they can effectively provide.

Electric vehicles require substantial physical and human infrastructure, including charging stations and mechanics who can service these machines that differ from existing fleets. However, the space that infrastructure occupies is significantly more compact and clean. Electric bus garages would also not require the same amount of space currently needed to store fuel. By reducing externalities and real estate needs, agencies could locate smaller bus garages closer to their routes. This would enable more convenient refueling, minimize deadheading, and, in turn, free up operator resources to provide more service.

> **Administrative efficiency and cost-savings from regional coordination.**

A regional strategy of fleet electrification would involve a transition over several years to acquire specialized infrastructure. The ATL, as the regional coordinator of federal and state transit funding, is uniquely positioned to facilitate this transformation. Specifically, regional cooperation would help avoid piecemeal purchases of vehicles and infrastructure that could lead individual operators' fleets to be incompatible with each other's charging infrastructure (e.g., charging speed), thereby reinventing the garaging limitations of the conventional fleet.

Moreover, capital and administrative costs drop when buying in bulk. The ATL's ability to support or coordinate joint procurements of vehicles, charging infrastructure, personnel, and training would likely yield time and money savings. Additionally, streamlining procurements would ensure technological and administrative interoperability.

If the region replaced all 657 transit buses that will pass their useful lives by 2030 with battery-electric buses, it could save $197 million over the lifecycle of the fleet. Additional analysis is required to understand the costs and requirements of fueling and charging infrastructure.

61 For more information, see, e.g., Brugge, Doug & Durant, John & Rioux, Christine. (2007). Near-Highway Pollutants in Motor Vehicle Exhaust: A Review of Epidemiologic Evidence of Cardiac and *Pulmonary Health Risks.* Environmental Health. 6 (23). 10.1186/1476-069X-6-23. See also: EPA, "Research on Health Effects, Exposure, & Risk from Mobile Source Pollution."

62 EPA, "Scope 3 Inventory Guidance."

63 The state of Georgia sources 92 percent of its power from non-renewable sources, including 65 percent from burning natural gas and coal. U.S. Energy Information Administration, "Georgia: Profile Overview."

64 Union of Concerned Scientists, "Electric vs. Diesel vs. Natural Gas: Which Bus is Best for the Climate?"

65 The Sierra Club, "A Vision for Climate Leadership in Washington DC: Seizing the Economic, Climate, and Public Health Benefits of Electrifying WMATA's Transit Bus Fleet," October 2020.

With these benefits in mind, further study is needed to understand the best approach to coordinated regional bus electrification, building on initiatives already in place, such as MARTA's successful Low-No grant to implement BEBs on high ridership routes in dense urban areas.

5.5.1 Fleet Electrification Scenarios

A scenario analysis illustrates the likely tailpipe emissions and social benefit of investing in electric transit vehicles (including buses, commuter buses, demand response, and vanpool vehicles) and associated required infrastructure between 2020-2030 in the Atlanta region. The analysis considers several[66] of the National Ambient Air Quality Standards (NAAQS) criteria pollutants and precursors: carbon monoxide (CO), coarse particulate matter (PM10), fine particulate matter (PM2.5), ozone precursors nitrogen oxides and volatile organic compounds (NOx and VOCs), and GHGs in carbon dioxide equivalents (CO_2e).[67] The social costs of pollutants are monetized where cost factors exist to capture the health and other damage to society they cause.[68] The scenarios are described below.

ELECTRIFICATION SCENARIOS

Status Quo (or Base Case) Scenario – Key features:

> The region's operators continue replacing vehicles with equivalents when those vehicles exceed their ULB. Replacement vehicles are otherwise identical to the vehicle they replace, including vehicle type, fuel type, and activity. There is no assumed expansion of service.
> Over the ten years, emissions increase for all pollutants and precursors. The vehicle replacement rates based on ULBs are adequate to maintain the safety of the fleet but are not enough to keep pace with declines in the environmental performance of aging combustion engines over time.
> More than 68,000 tons of GHGs emitted in 2030 as well as over one ton of PM10 and a combined 80 tons of ozone precursors NOx and VOCs.
> **The social cost of emissions in 2020 is $6.2 million, increasing to $6.4 million by 2030** (excluding CO and PM10, which are harmful but for which USDOT does not publish valuation factors) (**Table 25**).

66 The EPA sets and revises the NAAQS to implement the Clean Air Act. While the NAAQS includes other pollutants and precursors, the criteria pollutants selected for this report include those for transportation conformity specified in section 176(c) of the Clean Air Act. For more information please see: Federal Highway Administration, "Transportation Conformity: A Basic Guide for State & Local Officials."

67 CO_2e is a composite unit that includes atmospheric CO_2 as well as other GHGs, e.g., methane, normalizing them all in terms of the warming potential of an equivalent amount of CO_2. This provides a more comprehensive and standard measure of GHGs.

68 Social cost factors from USDOT and the World Bank (for the CO_2e).

"One-Shot" Replacement Scenario – Key features:

> Under this scenario, ATL agencies are only able to purchase battery-electric vehicles (BEVs) once due to budgetary reasons. For instance, an agency might receive federal or other grant funding for a one-shot replacement event and then revert to replacing vehicles per the status quo.
> The region replaces all transit vehicles that exceed their ULB within the next two years (on or before 2022) with BEVs. Operators replace candidate vehicles with fully electrified but otherwise equivalent vehicles (e.g., a gasoline van with an electric van) and replace vehicles that exceed their ULB after 2022 with conventional vehicles, as in the base case.
> A total of 1,316 of the 1,567 ATL combined fleet vehicles would be replaced in some fashion over the 10-year analysis period. Of those, 254 (16 percent) would reach their ULBs within the first two years and be converted to BEV, while 1,062 would simply be replaced with conventional vehicles.

Ongoing BEV Replacement Scenario – Key features:

> ATL operators replace all vehicles exceeding their ULB with BEVs going forward. If a vehicle exceeds its ULB between 2020-2030, operators replace it with a BEV equivalent.
> All 1,316 vehicles that would exceed their ULB over the 10-year period would be converted to BEV.
> Noting the lifecycle cost savings, this scenario may also be the most fiscally responsible as well environmentally sustainable.

Table 25: ATL Combined Fleet Emissions – Status Quo (US tons)

Criteria Pollutant	2020 Emissions Inventory	2020 Social Costs of Emissions	2030 Emissions Inventory	2030 Social Costs of Emissions	Percent Change 2020-2030
CO	142	-	179	-	+26%
PM2.5	0.9	$338,800	1.0	$393,200	+16%
PM10	0.9	-	1.2		+29%
NOx	63	$ 541,900	72	$617,800	+14%
VOC	6	$13,600	8	$16,500	+21%
CO_2e	67,400	$5,260,700	68,700	$5,360,500	+2%
Total	-	**$6,155,000**	-	**$6,388,000**	-

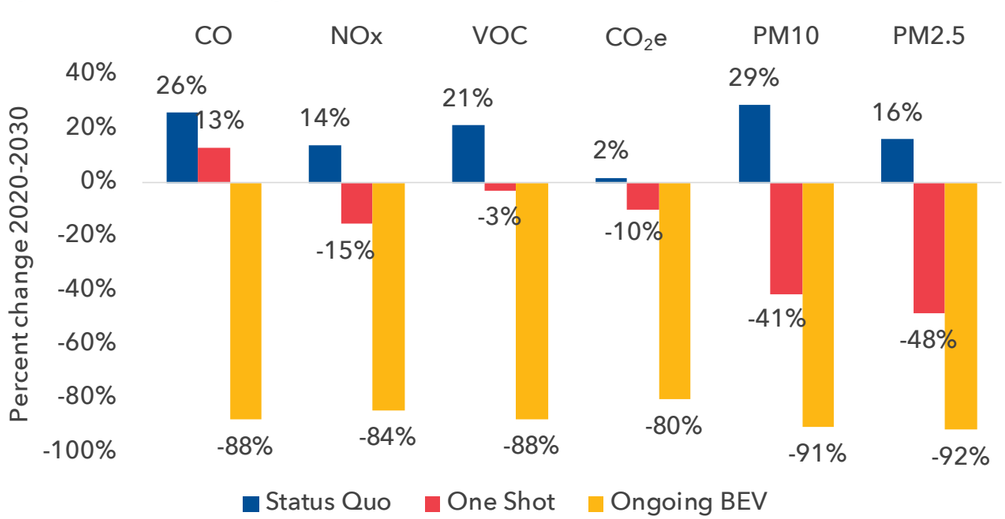
Source: Research team analysis using US EPA's MOVES model, transit vehicle fleet data, and valuation factors from USDOT and the World Bank.

Opportunity for the Region

Not surprisingly, more electrification results in greater net tailpipe emissions reductions over time (**Figure 61**). In 2020, ATL's combined fleet emitted over 67,000 tons of GHGs, as well as one ton of PM10 and a combined 70 tons of ozone precursors NOx and VOCs. These would increase over time as a result of vehicle aging. Under the "One-Shot" scenario, the region would meaningfully stem and in most cases even reverse the baseline forecasted increase in emissions from 2020 to 2030. Reductions in ozone precursors NOx and VOCs are particularly important, as the Atlanta region has an ozone Clean Air Act non-attainment area.[69] There would also be major reductions in PM10 and PM2.5, which have strong associations with respiratory disease as well as contributing to smog. In 2030, the social costs of emissions in the "One-shot" scenario would be just over $1 million less annually than in the status quo scenario.

Under the Ongoing BEV Replacement scenario, in which ATL operators replace all vehicles reaching their ULB with BEVs, the benefits would be significant: As most of the fleet (84 percent) would become BEV by 2030, the region would see commensurate decreases in emissions relative to today's conditions, and an even greater savings when compared to the projected increase from 2020 to 2030 under the status quo. In 2030, this more ambitious scenario would reduce the annual social cost of tailpipe emissions by $5.2 million relative to the status quo.

Figure 61: Percent Change in Emissions from Fleet Electrification Scenarios – 2020–2030



Source: US EPA's MOVES model and transit vehicle fleet data.

69 EPA, "Georgia Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants." September 30, 2020.

Replacing all conventional transit vehicles that exceed their ULB between now and 2030 with battery-electric vehicles would reduce tailpipe emissions by between 80 and 92 percent relative to current levels of emissions.

MARTA's Electrification Efforts

In July 2019, MARTA was awarded a $2.6 million grant by the U.S. Department of Transportation for the purchase of six zero-emission BEBs to replace six diesel models.

"Receiving the Low-No grant will help MARTA put technologically advanced buses with low-to-no emission in densely populated areas with high ridership routes," said MARTA General Manager and CEO Jeffrey Parker. "This welcomed first step toward making our bus fleet environmentally friendly will have community-wide impact."

CHAPTER 6

CONCLUSION

It is difficult to separate the story of transit in the Atlanta region in 2020 from the COVID-19 pandemic. Transit was not spared from some of the negative impacts that the pandemic had on the region.

In 2020, transit ridership decreased significantly, affecting many of the transit performance trends detailed in this ARA. For this reason, the results shown in this report carry a somewhat different meaning than they did in 2019.

The real story of transit in 2020—one that may not be apparent merely by looking at charts and graphs—is that transit has been and will continue to be a lifeline for people throughout the Atlanta region, during the pandemic and beyond. The region's transit operators adapted quickly in the spring of 2020 to be able to keep serving riders safely. Perhaps most important to note is that agency staff, particularly those on the front lines, risked their own safety to keep meeting the needs of the public and continue to do so.

The key challenge for the region's transit operators, as the recovery process begins and people gradually return to work, will be attracting riders back. Evidence from Japan and France suggests that as long as certain safety protocols are followed—mask usage, adequate space between passengers, minimal talking—public transit is not as large a risk as many people believe.[70] Moreover, better air quality, which is achieved by transit usage reducing driving trips, is a public health benefit, especially for those who become sick with COVID-19. **But while it is important that operators enforce safety protocols onboard, overcoming people's perception of transit's safety will be just as important.**

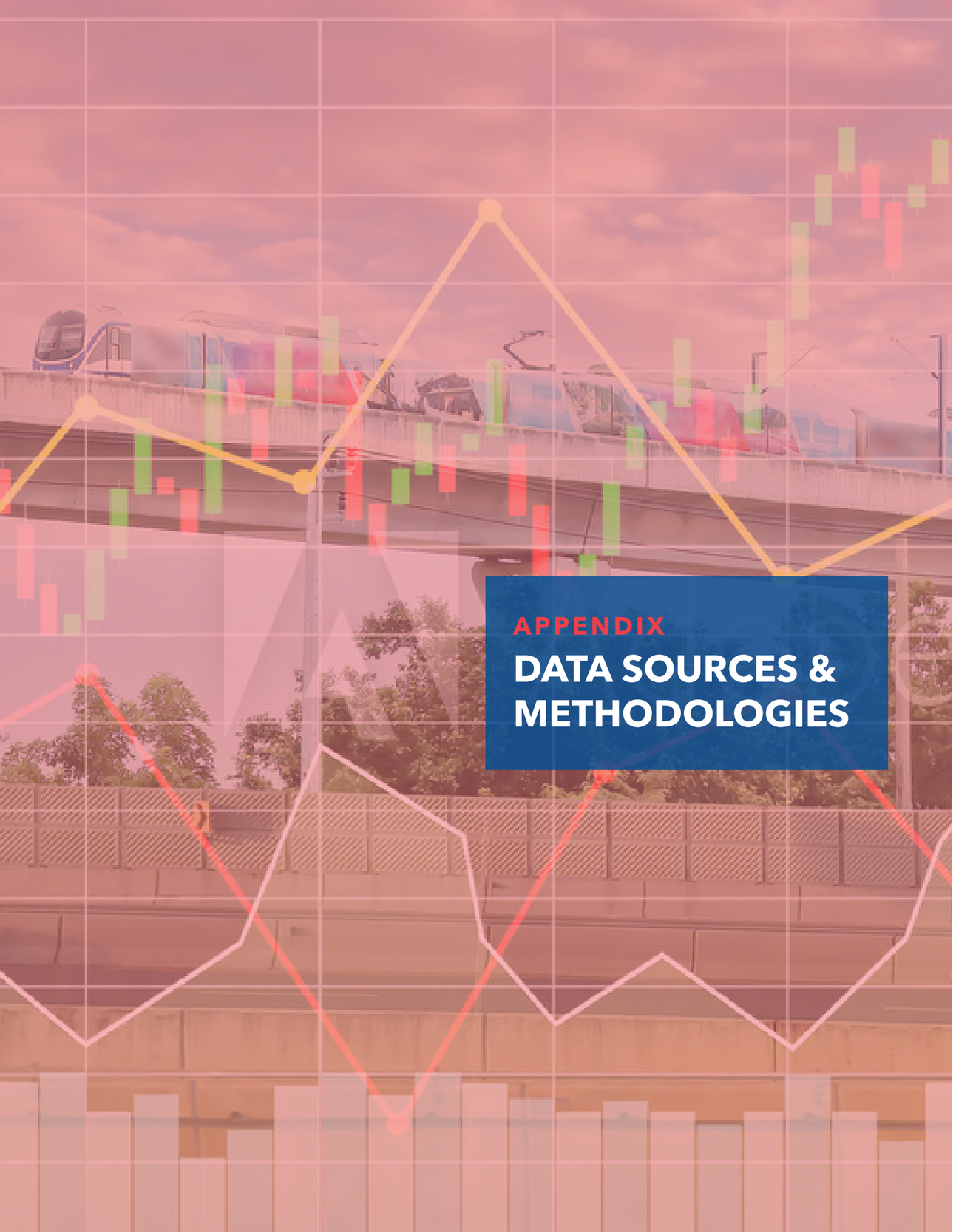
The next few years represent a unique opportunity for transit services to innovate and ask themselves: How can we make our services more attractive to riders? What new services can we provide? What technologies will help us achieve this goal?

> **Transit will continue to innovate and serve as an integral component of the Atlanta region's mobility network in the future, just as it provided a critical lifeline to many essential workers during the challenges of 2020.**
>
> *—State Rep. Kevin Tanner, sponsor of ATL-enabling legislation*

Many of the region's operators have already begun this critical process. Across the Atlanta region, there are examples of operators partnering with the private and nonprofit sectors to innovate, improve safety, and meet the most urgent needs of the region's residents.

Support for transit at all levels of government will have enormous implications for whether, and how well, the industry and those it supports can recover. In the long term, the pandemic won't change the need for high-quality transit, which will always be essential for making the region livable and maintaining a competitive economy. But operators' next steps post-pandemic, and the resources they have to implement them, will determine just how high-quality that transit can be.

70 Feargus O'Sullivan, "In Japan and France, Riding Transit Looks Surprisingly Safe," *Bloomberg*, June 9, 2020.



APPENDIX

DATA SOURCES & 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 2016 through 2018, and data as reported to the NTD for 2019 (but not yet published), were used. The NTD allows agencies to report data according to their own fiscal years. For 2020, agencies provided current data directly from their tracking systems; in some cases, these data had not yet been audited or reviewed for adequacy for NTD submission. For a majority of agencies, financial data for FY 2020 had not been finalized and audited at the time of publication; for this reason, FY 2020 budgets are shown instead of expenditures in some cases. In addition, other FY 2020 data may yet be reviewed and, in some cases, undergo slight adjustments prior to FY 2020 NTD submissions.

Five of the nine operators use a different fiscal year than the ATL. CobbLinc, CATS, and Coweta operate on an October-to-September fiscal year, and Connect Douglas and GCT operate on a January-to-December fiscal year. (CPACS previously operated on an April-to-March fiscal year but now follows the same fiscal year as the ATL.) For these agencies, FY 2020 data were 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 2019 and June 2020 were added to develop GCT's 2020 total. Because of these adjustments to data to fall within the ATL's fiscal year, the numbers will not match the agencies' 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 such as vehicular failures.

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

Fiscal Years by Operator

The ATL and the operators do not all follow the same fiscal year. Most data for FY 2020 are reported on the ATL's fiscal year (July to June). Data for prior years are generally reported on the agencies' own fiscal years:

January	Connect Douglas GCT
April	CPACS (through FY 18)
July	CPACS (FY 19 and on) Henry MARTA Xpress
October	CATS CobbLinc Coweta

Reporting Change Note

CobbLinc has operated two Xpress-branded commuter routes for the past several years. Through 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 the State Road and Tollway Authority (or SRTA, the operator of Xpress service through 2019) omitted this service data from its reporting to NTD on the Xpress system. In October 2019 (after the conclusion of CobbLinc's 2018 fiscal year), SRTA began reporting data on these two routes to NTD and CobbLinc ceased reporting the data. (The ATL will be responsible for the reporting on Xpress routes beginning in FY 2021.) 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 some years, that they could be broken out by mode. Specific examples of data availability limitations, organized by topic, are shown below.

Level of Transit Investment

- As noted previously, for FY 2020, amounts shown are from approved budgets rather than spending actuals (as in 2016 through 2019), 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 expenditures for 2020 were not available by mode; 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 some 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 varied from the agency's prior NTD submissions. Thus, data for Connect Douglas for 2015-2017 were taken from NTD, while data for 2018 were taken from provided data.
- This discrepancy was illustrative of the fact 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 2020 data were available. Data were 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

Interviews were conducted with staff from all nine of the operators in August and September 2020 to inform development of this ARA.

In addition, interviews were conducted with individuals from the following organizations to provide qualitative input regarding transit's contribution to the community:

- Gwinnett Place Community Improvement District (CID)
- Malachi's Storehouse
- Statewide Independent Living Council of Georgia

A.4 Methodologies

A.4.1 Access to Fixed-Route Transit Analysis

The access to fixed-route transit analysis uses data from the ACS 2014-2018 5-year averages, the most recent year for which block group-level data are 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 2020 median family income of $82,700)[71] to estimate the number of people within walking distance to transit. Walking distance was defined as a quarter-mile walking distance (according to the region's pedestrian network) from bus stops and a half-mile walking distance from 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.

A.4.2 Access to Essential Services by Transit

Public transit travel times were based on 2020 General Transit Specification Feed data prior to any schedule adjustments resulting from the COVID-19 pandemic and reflect the median travel time for the entire day of transit service, from 6:00 a.m. to 9:00 p.m. Accessibility analysis was conducting using Conveyal.

- Job locations were based on 2017 Longitudinal Employer-Household Dynamics data.
- Food store locations were based on a dataset compiled by ARC, including grocery stores, convenience stores, and gas station stores that sell food. The dataset includes 773 locations in the Greater Atlanta region, 671 of which are within the 13-county region.
- Healthcare locations are from the ARC Hospital Community Facilities dataset (https://opendata.atlantaregional.com/datasets/hospital-community-facilities), the ARC Emergency Medical Services Community Facilities dataset (https://opendata.atlantaregional.com/datasets/emergency-medical-service-community-facilities), and the US Department of Homeland Security Urgent Care Facilities dataset (https://hifld-geoplatform.opendata.arcgis.com/datasets/urgent-care-facilities). To account for missing hospital data in Paulding and Forsyth counties, hospital locations in these counties were extracted from the national data on hospital locations from the US Department of Homeland Security (https://hifld-geoplatform.opendata.arcgis.com/datasets/hospitals/data). In total, the dataset used for healthcare analysis includes 415 locations in the region.

A.4.3 Emissions Avoided and Vehicle Electrification Analysis – Modeling Methodology

The analysis in **Section 4.14.1** is based on a median boarding-to-alighting distance of 4.04 miles as reported by the ARC On-Board survey. An additional 0.25 miles is added on each end of a trip to account for boarding and alighting. Driving alone and being driven by someone else assume the exact same length as the replaced transit trip. Car/vanpool assumes have the replaced transit trip, to account for some efficiencies of sharing. Replacement by Taxis, Uber, and Lyft, etc. assume a 25 percent premium to account for deadhead mileage.[72]

Emissions impacts were estimated for transit operator fleets using the US EPA's Motor Vehicle Emissions Simulator (MOVES) model, the regulatory standard for emissions modeling under the Clean Air Act.[73] This analysis also uses the ARC's MOVES inputs used for transportation conformity. The results presented in this report, therefore, may be used to understand the ATL's contributions to maintaining clean air in the Atlanta region, and reveals opportunities for continuing to minimize transit's impact on the environment. The analysis included consideration of the following NAAQS criteria pollutants and precursors:

- Carbon monoxide (CO)
- Coarse particulate matter (diameter less than ten microns, PM10)
- Fine particulate matter (diameter less than 2.5 microns, PM2.5)
- Ozone precursors nitrogen oxides (NOx) and volatile organic compounds (VOCs)
- Carbon dioxide equivalents (CO_2e), also referred to as greenhouse gases (GHGs)

For both PM10 and PM2.5, only exhaust emissions were included rather than total emissions including brakewear and tirewear. While brakewear and tirewear contribute substantially to transportation PM emissions, reduction strategies are not well-studied, and countermeasures have not proliferated widely. Excluding these emissions processes also enables comparisons to subsequent policy proposals that would reduce exhaust PM with no meaningful effect on other PM emissions processes.

Social cost factors used for the analysis came from USDOT and the World Bank (for the CO_2e). USDOT does not provide factors to monetize CO or PM10 emissions impacts. In the case of CO, this is likely because, unlike PM and ozone, CO is primarily an asphyxiant and exposure is not known to

71 U.S. Department of Housing and Urban Development. Income Limits.

72 Clewlow, Regina R., and Gouri S. Mishra. "Disruptive transportation: The adoption, utilization, and impacts of ride-hailing in the United States." (2017).

73 The analysis uses the December 2018 version of MOVES2014b.

cause enduring health effects. CO poisoning risk is highest indoors, where poor ventilation may allow it to accumulate to dangerous levels. However, high temperatures encourage CO accumulation, especially hot outdoor locations subject to the heat island effect. Therefore, reducing CO emissions is worthwhile even when the benefits cannot be monetized. Likewise, USDOT does not provide a factor for PM10. While exposure to PM10 is known to have long-lasting health effects, USDOT guidance focuses elsewhere because these effects are dwarfed by those from PM2.5. Nevertheless, minimizing exposure to PM of any size remains a priority.

Importantly, this emissions analysis does not include "upstream" emissions from electrical power generation. It also does not consider relative energy consumption. Consequently, this analysis does not consider emissions from passenger rail operations in the ATL region.

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 the 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 OTP, 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.

Fleet Roster

> The vehicular makeup of the CATS vanpool fleet was assumed to be comparable to the Xpress vanpool fleet.

Mean Distance Between Failures

> MDBF is defined for the purposes of the ARA as vehicle revenue miles (VRM) divided by failures, each of which were provided by agencies. For 2020, GCT provided an already-calculated MDBF based on total vehicle miles, as well as total vehicle miles. The consultant team calculated the number of failures from these two figures, and then recalculated MDBF using VRM. Data for GCT before 2020 were calculated the ARA standard way (VRM divided by failures). Due to an aberration in 2016 GCT commuter bus data, this datapoint was calculated like 2020 GCT data: inferring the number of failures by dividing the as-provided MDBF by total vehicle miles, and then dividing VRM by this number.

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