JACKSONVILLE
TRANSPORTATION
AUTHORITY

Transit Development Plan
Major Update

EXECUTIVE SUMMARY




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EXECUTIVE SUMMARY

The Jacksonville Transportation Authority (JTA) is the public transit authority that serves Duval County, Florida. As mandated by federal and state statutes, this Transit Development Plan (TDP) major update serves as a comprehensive self-evaluation of the agency's existing services relative to its mission, values, goals, and objectives and the practices and performance of peer agencies. The TDP outlines JTA's array of strategies to improve its services considering changing demographic and economic conditions and to align with other plans for the Northeast Florida region over the period from 2019 to 2029.

Baseline Conditions

As a foundation for analysis and planning, this plan surveys baseline population, employment, and land use conditions in the JTA service area. JTA provides transit services to all of Duval County, including the municipalities of Jacksonville, Atlantic Beach, Baldwin, Jacksonville Beach, and Neptune Beach. As of 2019, JTA also provides paratransit and bus transit services to neighboring Clay County, as well as express bus services which connect Jacksonville to Nassau County in the north and Clay County to the southwest.

Population and Employment

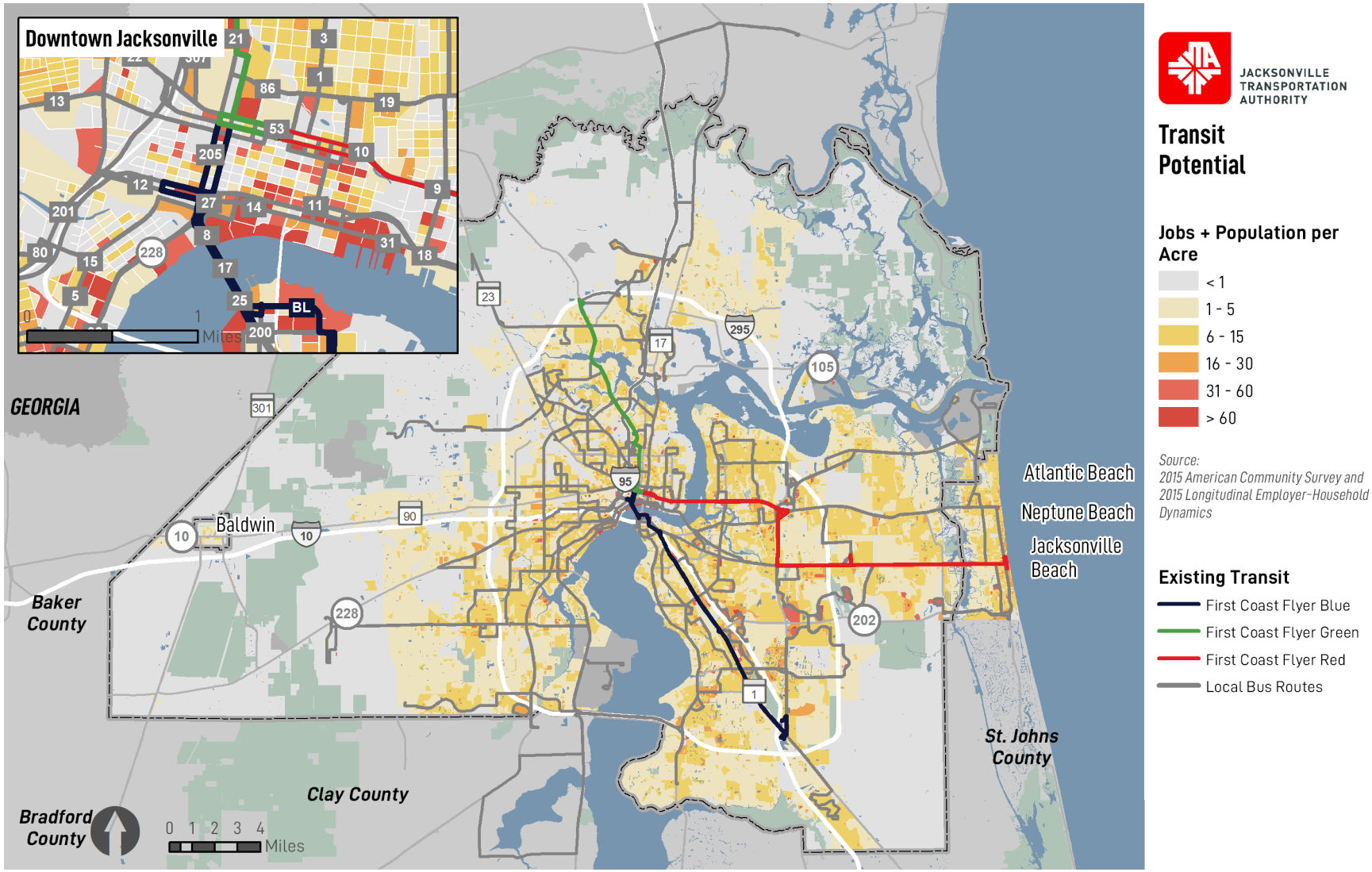
The population of Duval County was 912,043 in 2017, making up four-and-a-half percent of the state of Florida. Between 2010 and 2017, the county's total population grew by six percent, less than the statewide population, which grew by eight percent over the same period. By 2040, the population of Duval County is forecast to surpass 1.07 million, an increase of 24 percent from 2010. Like population projections, total employment is projected to grow by 22 percent between 2010 and 2040, surpassing 635,000 jobs. Approximately 19 percent of Duval County residents are below 150 percent of the poverty level and eight percent of households do not have a car. Both groups have grown since 2010, underscoring the need for public transit options.

The population of Clay County grew by nine percent between 2010 and 2017, at a greater rate than the statewide population, reaching 201,472. Total population is forecast to surpass 315,000 by 2040, an increase of 65 percent from 2010. Employment in Clay County is also projected to steadily increase to over 89,000 jobs by 2040, a thirty-year change of 63 percent. Clay County serves as a bedroom community for Jacksonville, with 48 percent of workers commuting to Duval County for work. As in Duval County, the proportion of residents below 150 percent of the poverty level has increased.

Transit Potential Areas

As a part of the socioeconomic analysis, areas with a high combination of population and employment density (**Figure ES-1**), origins with a significant presence of transit-oriented populations or commuters, and destinations for employment or other activities were identified as key areas for transit services. These areas were present throughout the JTA service area and included dense and low-income neighborhoods, job centers, universities, and shopping destinations. Beyond existing transit potential areas, future land use plans in Duval and Clay counties are supportive of the development of a more transit-friendly environment, including policies and incentives that promote the creation of denser, more affordable housing along existing and planned mass transit corridors beyond the urban core of Jacksonville.

Figure ES-1: Duval County Transit Potential



Travel Patterns

JTA analyzed current and projected travel patterns to identify common origins, destinations, and transportation needs in the Jacksonville metropolitan area. Major travel patterns in and around Duval County connect to downtown Jacksonville from all directions, in both peak and off-peak periods. The St. Johns River acts as a natural barrier to travel across the city, limiting trips between east and west Jacksonville to the seven bridges that cross the river. The greatest county-to-county volumes occur between Duval County and St. Johns County, followed by shorter trips to and from Clay County.

Existing Transit and Service Evaluation

In order to evaluate JTA's existing transit system and identify areas for improvement, each bus route and service was profiled based on numerous performance metrics. JTA currently offers regular and express bus service, community shuttles, three First Coast Southeast Corridor Flyer bus rapid transit (BRT) routes, the Skyway people mover in downtown Jacksonville, St. Johns River Ferry, paratransit services, eight on-demand ReadiRide zones, and Gameday Xpress service for major sporting events. Since 2019, JTA has offered deviated fixed-route bus service and paratransit service through a contractor in Clay County.

Fixed Route Bus Transit

Fixed-route bus service in Jacksonville is provided by 630,000 annual hours of fixed-route revenue service on 37 local routes, which provide high frequency and broad coverage, and four express routes, which connect outlying areas to the urban core during peak periods. In addition, JTA's First Coast Flyer premium BRT service offers three routes of frequent, all-day service.

JTA evaluates fixed routes for productivity, cost efficiency, on-time performance, and farebox recovery. As of 2018, most routes are below agency standards for passengers per revenue hour, passengers per revenue mile, and average passenger load. JTA routes consistently perform at or above the agency's 75 percent on-time performance standard, with trips arriving on-time 79 percent of the time. Many routes exhibit sub-standard economic and financial performance. JTA's farebox recovery ratio for fixed-route buses decreased between the 2017 and 2018 fiscal years, as a result of diverging fare revenue and operating expense trends. However, proposed changes to the fare structure may help close the gap between revenues and expenses within the TPD ten-year horizon. As a result of this comprehensive operational analysis, JTA is considering the various strategies to enhance performance and strengthen its services:

- Intelligent Transportation System (ITS) investments to improve calculations of revenues by route.
- Development of a three-variable cost model to provide more complete cost estimates by route.
- Service modifications that leverage efficient routing and scheduling to increase performance.
- Revising standards to set realistic, attainable goals and better identify underperforming routes.

Compared to peer agencies, JTA offers more hours and miles of fixed-route service. Despite covering long distances and offering more service, JTA operates fewer vehicles, resulting in the highest revenue miles per vehicle in maximum service among its peers. Ridership per capita is lower for JTA, although passenger trips per revenue hour and revenue mile are higher than peer agencies. As with other agencies, productivity has declined over recent years along with a decline in nationwide transit ridership. Financially, JTA has higher than average expenses which are met by greater than average revenues.

Other Transit Services

As the largest U.S. city by land area, Jacksonville's sheer size and relatively low density cannot be effectively served by fixed route transit alone. In order to provide flexible coverage and high-quality service when and where fixed route transit may be unfit, JTA offers numerous non-fixed route services

across many modes of transit. In downtown Jacksonville, the elevated Skyway people mover connects the urban core with free and frequent automated service. Introduced in 2018, JTA's ReadiRide service offers affordable, on-demand transportation in eight flex zones in Duval County, connecting riders to activity centers and fixed-route transit. JTA's other bus services include Gameday Xpress, which offers direct service to TIAA Bank Field from fan lots during major sporting events, and paratransit service in both Duval and Clay counties. In addition, the St. Johns River Ferry continues to provide passage for automobiles, bicyclists, and pedestrians between Mayport and Fort George Island every 30 minutes.

Beginning in 2019, JTA initiated operations of two flexible bus routes in northeastern Clay County. Operating under the name Clay Community Transportation (CCT), the Red and Blue routes offer deviated-fixed route service on weekdays between Middleburg, Orange Park Mall, Green Cove Springs, and Jacksonville Naval Air Station. For an extra fee, riders can call and request a pick-up off of the designated route.

JTA is above its peers for demand-response transportation services, providing more revenue miles and revenue hours than average. The agency's productivity is in line with peers, achieving similar rates for passenger trips per revenue mile and passenger trips per revenue hour. JTA has higher than average expenses, however, its revenues are also above the peer average.

Capital and Infrastructure

In support of its fixed and non-fixed route services, JTA operates seven transit centers throughout Duval County, including Rosa Parks Transit Station in downtown Jacksonville and transit hubs at shopping centers and colleges. JTA's newest transit center, the Jacksonville Regional Transportation Center (**Figure ES-2**), is under construction and will replace the Rosa Parks Transit Station as the central hub of Jacksonville's transit system in 2020. Other JTA transit facilities include eight Skyway stations, ten Park-n-Ride lots, and two operations and maintenance centers.

Figure ES-2: Jacksonville Regional Transportation Center rendering

Other Modes

Additional transit modes and services are under evaluation for future implementation. The First Coast Southeast Corridor Commuter Rail service would provide a direct transit connection between St. Johns County and downtown Jacksonville. The Jacksonville Skyway Modernization Program plans to overhaul and expand the existing Skyway system with the Ultimate Urban Circulator (U^2C) autonomous vehicle service in downtown and adjacent neighborhoods.

In order to expand beyond fixed route and paratransit bus services to provide innovative multimodal transportation services, the JTA Technology and Innovation Department continues to realize the agency's vision for the integration and adoption of new mobility services. From the deployment of autonomous vehicles, to the use of artificial intelligence and data analytics, to the growing concerns around risk management and cybersecurity, JTA aims to leverage technology and smart, data-driven decisions that will be responsive to the future.

Goals and Objectives

All future plans for the Jacksonville transit system are formed and informed by the mission and vision of JTA. The mission, vision, goals, and objectives for JTA were defined in the agency's Blueprint for Transportation Excellence in 2015 and remain consistent with the goals of other north Florida transportation agencies. With a vision for "universal access to dynamic transportation solutions," the agency's mission is "to improve Northeast Florida's economy, environment, and quality of life by providing safe, reliable, efficient, and sustainable multimodal transportation services and facilities." To fulfill this mission, JTA has identified seven goals and objectives:

- **Safety and Security:** Ensure safety and security throughout the transportation system and in the Authority work environment.
- **Employee Success:** Strengthen workforce through professional development opportunities that enhance knowledge, skills, and leadership abilities.
- **Customer Satisfaction:** Deliver a superior and reliable customer experience.
- **Financial Stability:** Ensure long-term financial sustainability.
- **Organizational Efficiency and Effectiveness:** Attain the highest level of agency performance.
- **Sustainability:** Advance transportation solutions that support environmental goals and are mindful of the context of our community.
- **Transformative Mobility Solutions:** Deliver innovative transportation choice providing accessible mobility throughout the community.

In addition to the goals defined for JTA as an agency, the objectives of service improvements were identified and evaluated based on public and stakeholder outreach. Public feedback was solicited in three phases throughout the development of the TDP and included 23 meetings with Jacksonville's six Citizens Planning Advisory Committees (CPACs) and other local and regional organizations, as well as an online survey and a face-to-face survey at three major transit hubs in Duval County and Orange Park Mall in Clay County.

10-Year Transit Plan

A key piece of the TDP major update is the development of a future service framework and long-term system concept which provide recommended changes to JTA's transit network over the ten-year plan horizon. This process was informed by the observed downward trend in ridership and productivity, which highlighted the need to attract new customers to JTA services or remain an attractive transportation option for existing customers. The service improvement recommendations aim to increase the integration of transportation modes, employ innovative methods to serve customers, match levels of service with

transit demand, simplify services, improve connections to jobs, provide stronger crosstown connections, and increase offerings of all-day service. The recommendations were developed without constraints but will take effect in a phased implementation between 2019 and 2029 according to expected ridership and available budget. **Figure ES-3** shows the frequency of service throughout the JTA system if all recommendations are implemented.

Service Improvement Recommendations

Recommended improvements to the service framework account for the transition of the downtown transit hub from the Rosa Parks Transit Station to the Jacksonville Regional Transportation Center and include an expanded frequent transit network, increased coverage, and the replacement of underperforming routes with more efficient fixed route or ReadiRide service. The improved network will also include the southwest BRT route, First Coast Flyer Orange, and new Express Select commuter bus services to Baker, Clay, and St. Johns counties. In Clay County, CCT Red and Blue routes will be converted to fixed bus routes with fixed stops at regular intervals and the CCT Magenta route will be re-introduced to provide service between Keystone Heights and Gainesville.

As a part of the improved service framework, ReadiRide services will be expanded across Duval and Clay counties. By 2023, seventeen zones will offer demand-response transportation to complement JTA's fixed route network. JTA will also continue to operate St. Johns Ferry seven days a week, every thirty minutes.

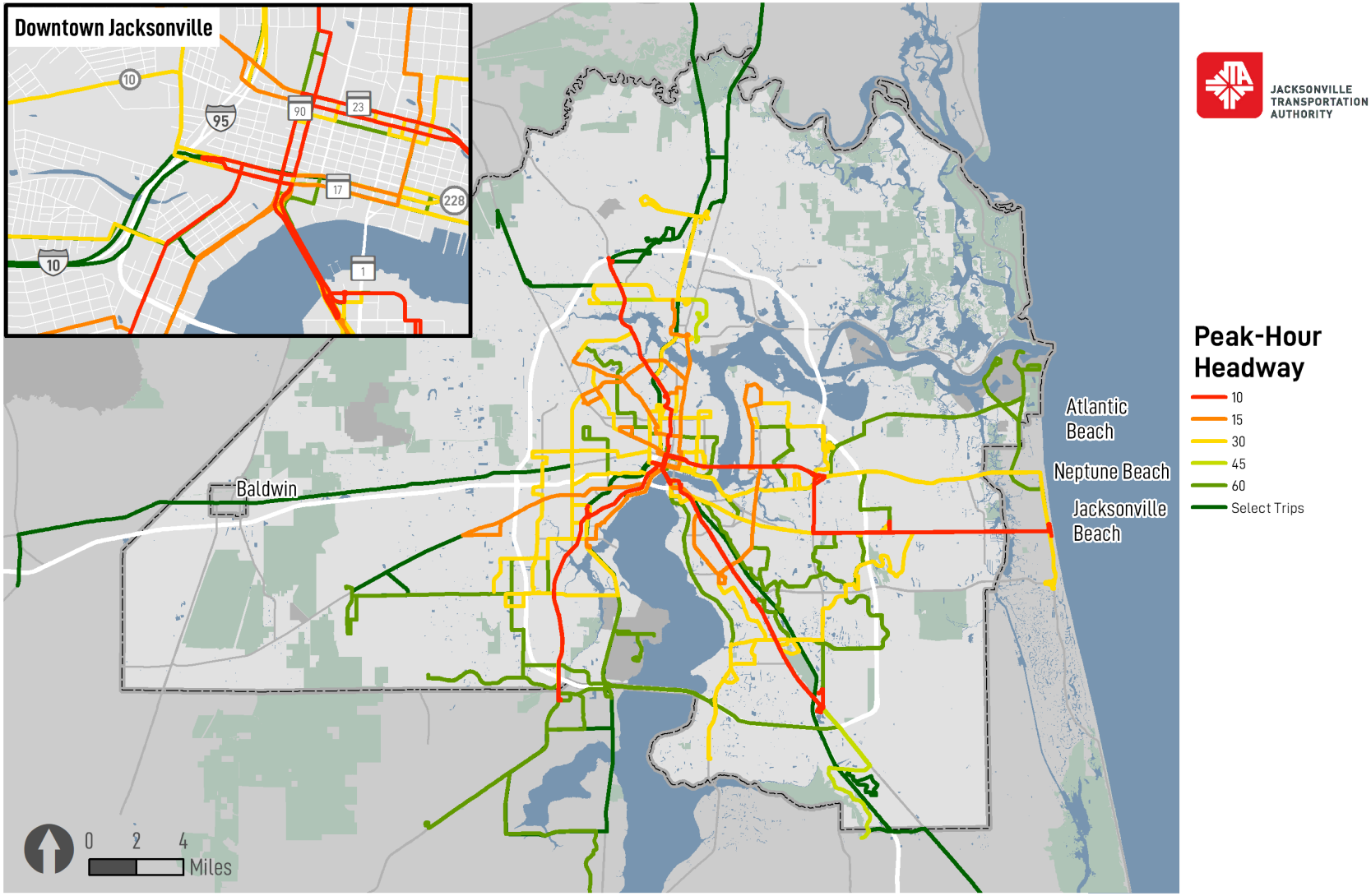
Alternative modes for the future transit network in the metropolitan region are also under consideration. JTA continues to analyze opportunities to leverage Jacksonville's extensive rail network for commuter rail service, especially along the I-95 corridor between downtown Jacksonville and St. Augustine in St. Johns County. In addition, the Skyway Modernization Project will bring innovative autonomous vehicle technology to downtown Jacksonville, reutilizing the Skyway's elevated guideway and expanding the system farther across the urban core.

In total, the JTA transit system will include 48 fixed routes and 17 ReadiRide flex zones, as well as ferry, Skyway, paratransit, and commuter rail services (**Table ES-1**).

Table ES-1: Existing and Proposed Route Types

Service Class	Existing System	Proposed System
First Coast Flyer	3	4
Frequent Routes	5	8
Mainline Routes	13	10
Connector Routes	12	12
Limited Connector Routes	4	4
Community Shuttles	3	--
Express Routes	4	3
Express Select Routes	1	4
Clay Community Transportation Routes	2	3
ReadiRide Zones	8	17
Other Major JTA Services	Ferry, Skyway, Paratransit	Ferry, Skyway/ U^{2}C, Paratransit, Southeast Rail

Figure ES-3: Peak-Hour Headways of Services Proposed in 10-Year Transit Plan



Online and in-person surveys measured public opinion on each proposed service change, resulting in an approval rating for each change. All proposed changes to fixed route service received a score of 3.5 or higher out of five, on the approval side of the scale. Public comments were also used to improve recommendations where possible, resulting in the final proposed service improvements for JTA's fixed route system between 2019 and 2029.

Future Network Evaluation

Future year recommendations for JTA's transit network were evaluated against the existing system for quality of service, ridership, productivity, cost, and cost efficiency. Forecasts for non-fixed route services mirrored population growth in Duval and Clay counties, projecting increased ridership for St. Johns Ferry, ReadiRide, and paratransit services. The existing and future proposed fixed route network were compared using the Transit Boardings and Estimation Simulation Tool (TBEST) modeling software. Outputs from TBEST were adjusted against observed ridership and operations data for JTA's 2018 system. The model showed that in 2030, the proposed fixed route system will have over four million more riders annually, higher average frequencies, and more revenue hours of service every day of the week. The system will serve a greater proportion of Duval and Clay counties, reaching 37 percent of the population, and will continue to provide access to over half of the counties' jobs. The recommended service improvements will increase the average system travel speed and improve productivity to serve more passengers per hour and mile of service. In addition, the system will be more efficient, costing less per service mile and per passenger served.

Implementation and Financial Plan

The realization of JTA's future 10-Year Transit Plan requires the phased implementation of all proposed service improvements and new services between 2019 and 2029. The implementation plan outlined in this TDP provides a constrained phasing schedule, guided by several principles:

- Support planned JTA service changes and capital improvements.
- Constrain phasing plan to reasonable increases in costs.
- Implement related improvements at the same time.
- Prioritize improvements based on ridership potential, cost, and productivity of recommendations.

The TDP Financial Plan describes the specific funding strategies used to implement the phasing plan according to estimated annual financial needs. The financial plan covers operating costs, operating revenues, funding sources, and capital needs, including investments in the existing system, fleet expansion to support the service recommendations of this TDP, and investment in new fixed-guideway infrastructure. In particular, the U^{2}C Skyway project represents a large share of anticipated capital expenses within the ten-year TDP horizon.

Action Plan

In view of the service improvements, technology investments, administrative goals, and other objectives defined in this plan and the Blueprint for Transportation Excellence, JTA developed an action plan containing all items to be implemented and monitored moving forward. As the responsible agency for these action items, JTA will manage and report progress on these objectives in future TDP Annual Updates.

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 1: INTRODUCTION

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1 INTRODUCTION

The Jacksonville Transportation Authority (JTA) is the public transit agency that serves Duval County, Florida. In 2019, in order to better providing transit services to residents, employees, and visitors in Northeast Florida, and as mandated by federal and state statutes, JTA conducted a comprehensive self-evaluation, hereafter referred to as the Transit Development Plan (TDP). The TDP outlines strategic initiatives and imagines future service plans for JTA for the ten-year period from 2019 to 2029.

Changes in travel patterns, fluctuations in the economy, increases or decreases in access to financial resources, and advances in technology all suggest a need to periodically reexamine the transit system and adapt to evolving conditions. The TDP is integral to JTA's long-term health, because it affords the agency the chance to assess its operational performance as well as the opportunity to develop a strategic blueprint for continued success.

Broadly, this document reviews JTA's vision, mission, goals, objectives, services and strategies for improvement. The TDP summarizes the existing state of Duval County's demographics and land use and travel patterns and of JTA's operations. It also incorporates findings from JTA's studies on a variety of modes of transport—including bus, bus rapid transit, commuter rail, ferry, skyway, autonomous transit services, and park and ride facilities—as well as from other related long-range plans developed by the City of Jacksonville, Duval County, and neighboring Clay County. Indeed, this TDP is but one element of a larger transportation planning effort across Northeast Florida. In the course of compiling this TDP, JTA developed a Public Involvement Plan (PIP) to offer opportunities for members of the public and agencies to provide feedback on JTA's provision of public transit. This feedback significantly informed the TDP and is included herein; the specifics of the PIP are included in **Appendix A: Public Involvement Plan**.

There is an additional financial incentive to the TDP: Transportation projects become eligible for specialized state funding streams when they are included in a TDP. In order for a project to receive state funding, it must be included in the North Florida TPO's Long Range Transportation Plan (LRTP) or the State Transportation Improvement Program (STIP). At the regional/local level, projects must be included in the TPO's Transportation Improvement Plan (TIP), which serves as the region's short-range planning document. In order to ensure this TDP aligns with the mission and direction of local, regional, and statewide agencies' plans, JTA reviewed many relevant initiatives, including:

- FDOT's 2060 Florida Transportation Plan (FTP), including its 2016 Strategic Intermodal System (SIS) Policy Plan.
- North Florida TPO's 2040 Long Range Transportation Plan.
- Northeast Florida Regional Council's 2014 Strategic Regional Policy Plan.
- Northeast Florida Regional Transportation Commission's 2017 Regional Multimodal Transportation Plan.
- North Florida TPO's 2016 Duval County Transportation Disadvantaged Service Plan.
- Reality Check First Coast (a 2009 visioning exercise) and First Coast Vision.
- City of Jacksonville's 2030 Mobility Plan & 2030 Comprehensive Plan.
- Clay County's 2040 Comprehensive Plan.

The last "major update" to JTA's TDP was conducted in 2014; major updates are conducted every five years. A "minor update" is also undertaken annually.

1.1 TDP Components

The TDP process has eight components, described in brief in each of the following subsections:

- Baseline Conditions.
- Existing Services & Performance Evaluation.
- Public and Internal Involvement.
- Situational Appraisal.
- Goals and Objectives.
- Service Framework: Long-Term System Concept.
- 10-Year Transit Plan: Alternatives Development and Education.
- Implementation Plan.

This document was developed in accordance with the state laws and regulations governing Transit Development Plans (Florida Administrative Code 14-73.001).

1.1.1 Baseline Conditions

The *Baseline Conditions* are defined by conducting a review of Duval and Clay County trends in population, employment, and socioeconomic variables; spatial analyses of population and employment densities and their relation to transit propensity; analyses of current and future land use scenarios, including with respect to employment and activity centers; and an analysis of travel patterns.

1.1.2 Existing Services and Performance Evaluation

The *Existing System Profile* comprises an overview of the system, both fixed-route and paratransit services; an overview of capital and infrastructure projects, both customer-facing and internal to JTA; and a summary of other transportation providers in the region. The *Performance Evaluation* was determined by a trend analysis and comparisons to peers' fixed-route, demand-response, ferry, and skyway services. Additionally, an analysis of the farebox recovery ratio, and potential strategies to improve it, was conducted.

1.1.3 Public and Internal Involvement

The *Public and Internal Involvement* section discusses the PIP in-depth, reviewing findings from surveys and public meetings conducted over three phases of outreach. It also discusses the process by which JTA employees were engaged in the development of the TDP via biweekly phone calls and three days of workshops.

1.1.4 Situational Appraisal

The *Situational Appraisal* underscores the significance of the findings from the preceding sections, looking at Regional Coordination, Socioeconomic Trends, Community Feedback, Organizational Issues, Land Use Plans and Policies, Technology, and Mode-level Summary and Trends.

The Regional Coordination appraisal analyzes some of the state and regional plans referenced earlier in this Introduction, including the FTP, the SIS Policy Plan, and the North Florida LRTP. It also analyzes some of JTA's own plans and policies, including the previous TDP (2014), Blueprint 2020, on-board surveys, and the MOVE plan. This section focuses on the synergies between JTA's initiatives and the longer-term state and regional visions for mobility.

The Socioeconomic Trends appraisal analyzes transit propensity in Duval and Clay counties relative to the state of Florida with respect to the counties' trends in median age, employment status, and car ownership.

The Community Feedback appraisal reviews the input given by members of the public in outreach sessions and comment periods.

The Organizational Issues appraisal reviews the management structure and recent strategic initiatives of JTA.

The Land Use Plans and Policies appraisal continues the analysis of the other regional and municipal plans referenced earlier in this Introduction, including the Reality Check First Coast, First Coast Vision, the City of Jacksonville's plans, and Clay County's 2040 Comprehensive Plan. This section focuses on the synergies between JTA's initiatives and local plans for land use and transit-oriented development.

The Technology appraisal analyzes the technologies and software in use for internal and external JTA operations, including safety and security, customer- and employee-facing apps, and transformative mobility solutions. There is considerable attention given to Mobility as a Service as a framework for future technological innovations.

1.1.5 Goals and Objectives

The *Goals and Objectives* section assesses JTA's public transportation services and how these services are developed and implemented by reviewing the agency's existing mission, vision, core values, and goals.

1.1.6 Service Framework: Long-Term System Concept

The *Service Framework* section lays out the development process and principles for a *Long-Term System Concept*. It then proposes long-term concepts and 10-year TDP alternatives with maps containing recommended service types and frequencies and tables listing proposed services and their characteristics.

1.1.7 10-Year Transit Plan: Alternatives Development and Evaluation

The *10-Year Transit Plan* summarizes *Alternatives Development and Evaluation* based on the results of the Transit Boardings Estimation and Simulation Tool (TBEST), with reference to critical indicators liked revenue hours, revenue miles, costs, and ridership. The route recommendations are also summarized in **Appendix J: Route Recommendation Profiles**.

1.1.8 Implementation Plan

The *Implementation Plan* comprises three parts: the Phasing Plan, the Financial Analysis and Plan, and the Action Plan. The Phasing Plan includes system maps in 2020 and 2030 detailing the changes to service over time. It also lists unfunded needs and determines TBEST systemwide estimates. The Financial Analysis and Plan reviews assumptions and operating and capital costs and revenues. The Action Plan details the steps JTA will need to take in order to implement these service changes.

1.2 Statutory/Legislative Requirements and TDP Checklist

Agencies that wish to receive public transit grant funds administered by FDOT must adopt a major update to their TDP once every five years and a minor update every year. Similarly, FDOT and North Florida TPO are required to consult the JTP TDP in the development of their Five-Year Work Program and TIP, respectively.

The list of elements that must specifically be addressed within the TDP document is dictated by the Florida Administrative Code (F.A.C.) *14-73.001*. These requirements and TDP practices recommended by FDOT are shown in **Table 1-1** along with their locations in the document.

Table 1-1: Transit Development Plan Requirements and Recommended Practice Checklist

TDP Component	Location in TDP
Baseline Conditions Assessment	**Chapter 2: Baseline Conditions**
Demographic	2.2. Population & Employment 2.3. Demographic and Employment Spatial Analyses
Socioeconomic	2.3 Demographic and Employment Spatial Analyses
Land Use	2.4 Land Use/Growth Characteristics
Growth	2.4 Land Use/Growth Characteristics
Travel/Mobility	2.5 Travel/Mobility Characteristics
Existing Services & Performance Evaluation	**Chapter 3: Existing Services & Performance Evaluation**
Existing System Profile	3.2 Duval County Existing System Profile 3.3 Clay County Existing System Profile Appendix E. Comprehensive Operational Analysis Appendix F. Route Profiles
Trend Analysis	3.4 System Performance Evaluation
Peer Review Analysis	3.4 System Performance Evaluation
Farebox Report	3.5 Farebox Report
Public Involvement	**Chapter 4: Public and Internal Involvement**
Approved TDP Public Involvement Plan	4.2 Public Involvement Plan Appendix A. Public Involvement Plan
Opportunities for public involvement outlined in PIP	Chapter 4: Public and Internal Involvement Appendix A. Public Involvement Plan
Solicit comments from regional workforce boards	Chapter 4: Public and Internal Involvement
Advise FDOT, regional workforce board, MPO of public meetings	Chapter 4: Public and Internal Involvement
Provide review opportunities to FDOT, regional workforce board, MPO	Chapter 4: Public and Internal Involvement
Situation Appraisal	**Chapter 2: Baseline Conditions** **Chapter 5: Situational Appraisal**

TDP Component	Location in TDP
Plans and Policy	5.1 Transportation Plans and Policies
Socioeconomic Trends	2.2. Population & Employment 2.3. Demographic and Employment Spatial Analyses 5.2 Socioeconomic Trends
Land Use	2.4 Land Use/Growth Characteristics 5.3 Land Use
Organizational Issues	5.4 Organizational Issues
Technology/Innovation	5.5 Technology
Transit Friendly Land Use and Urban Design Efforts	5.6 Transit-Friendly Land Use & Urban Design Efforts
10-year Transit Ridership Projections	5.7 10-Year Ridership Projections Chapter 8: 10-Year Transit Plan Appendix G: Transit Demand Estimation with TBEST
Goals and Objectives	**Chapter 6: Goals and Objectives**
Agency's Mission & Vision	6.1 Vision Statement 6.2 Mission Statement
Agency's Goals and Objectives	6.4 Goals and Objectives
Tracking and Monitoring	6.5 Tracking and Monitoring
Transit Demand Assessment	**Chapter 2: Baseline Conditions** **Chapter 8: 10-Year Transit Plan**
Traditional Markets	2.3 Demographic and Employment Spatial Analyses
Discretionary Markets	2.3 Demographic and Employment Spatial Analyses
Travel Markets	2.5 Travel/Mobility Characteristics
Ridership Projections	Chapter 8: 10-Year Transit Plan Appendix G: Transit Demand Estimation with TBEST
Transit Needs Development and Evaluation	**Chapter 7: Service Framework: Long-Term System Concept**
10-Year TDP Alternatives	Chapter 7: Service Framework: Long-Term System Concept
Public Outreach/Feedback	Recommendations Development Process

TDP Component	Location in TDP
Alternatives Evaluation	Chapter 8: 10-Year Transit Plan Appendix J: Recommendation Route Profiles
10-Year Transit Plan: Alternative Courses of Action	**Chapter 8: 10-Year Transit Plan** **Chapter 9: Implementation Plan**
TDP Alternatives	Chapter 8: 10-Year Transit Plan 9.2 Phasing Plan
Financial Plan	9.3 Financial Plan
Implementation Plan	Appendix K. Financial and Implementation Plan
List of Unfunded Needs	Appendix K. Financial and Implementation Plan
Performance Monitoring	9.4 Action Plan
Plan Implementation and Coordination	**Chapter 5: Situational Appraisal** **Chapter 6: Goals and Objectives**
Consistency with State and Local plans, regional transportation goals and objectives, and FDOT Work Program	Chapter 6: Goals and Objectives 5.1 Transportation Plans and Policies 5.6 Transit-Friendly Land Use & Urban Design Efforts

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 2: BASELINE CONDITIONS

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2 BASELINE CONDITIONS

2.1 Overview of Study Area

JTA is an independent state agency responsible for providing public transit service to all of Duval County, Florida, including the municipalities of Jacksonville, Atlantic Beach, Baldwin, Jacksonville Beach, and Neptune Beach. As of 2019, JTA also provides paratransit and bus transit services for Clay County, Florida, and express services that connect Nassau County and Clay County to Jacksonville. In the coming years, JTA is also considering providing additional service between Jacksonville and St. Johns and Baker Counties and between Keystone Heights and Gainesville, Florida. The study area for this Transit Development Plan encompasses Duval and Clay Counties but is sensitive to regional conditions.

Due to the consolidation of the City of Jacksonville with Duval County (October 1, 1968), the geographical areas of the County and the City coincide. Duval County is bordered by Nassau County to the north, Clay County and St. Johns County to the south, Baker County to the west, and the Atlantic Ocean to the east. Within Duval County, JTA's service area encompasses close to 1 million people across 798 square miles. Clay County lies south and west of Duval County. It is bordered by Duval County to the north, Baker and Bradford Counties to the west and Putnam County to the south. Clay County is a bedroom community to Duval County; 48 percent of the workers in Clay County work in Duval County and commute daily. The St. Johns River divides the City of Jacksonville into two parts and separates Clay County and St. Johns County. The seven bridges across the St. Johns River in Jacksonville create bottlenecks throughout the city and have an impact on traffic congestion throughout the greater metropolitan area. It is important that transit service adequately traverses both sides of the St. Johns River and extend to other parts of the region.

The Baseline Conditions chapter reviews the socioeconomic, land use, and travel conditions for Duval and Clay Counties. The analysis examines recent trends in the demographic characteristics of the two counties, with special emphasis given to the populations with a higher propensity to use transit, such as low-income persons, the young and old, and those without access to an automobile. A demographic and spatial analysis identifies the locations where transit is most likely to be successful. This demographic analysis is complimented by a forward-looking examination of changes to land use and a consideration of travel flows in the region. The findings of this Baseline Conditions assessment are complimented by the evaluation of transit services in **Chapter 3: Existing Services & Performance Evaluation** and further analysis of conditions affecting JTA's ability to effectively provide transit services in **Chapter 5: Situational Appraisal**.

2.2 Population and Employment

Addressing transit needs starts with an understanding of where people are going to and coming from. It is important to examine the population and demographic characteristics of a region to gain a better understanding of the growth and demand on transit services throughout the planning area. The following sections provide an overview of these characteristics in Duval and Clay Counties. Unless stated otherwise, data is derived from the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-Year Estimate.

2.2.1 Duval County Population Trends

Duval County, Florida has a diverse and growing population. The County is the seventh largest in the State, with an estimated total population of 912,043 in 2017, making up 4.5 percent of the total State population. The population characteristics for Duval County and the State of Florida are shown in **Table 2-1**. Between 2010 and 2017, the total population of Duval County grew by 6 percent, from 864,263 in 2010 to an estimated population of 912,043 in 2017. However, the estimated population growth in Duval County was lower than the state of Florida, which grew by 8 percent, from a population of 18,801,310 in 2010 to an estimated population of 20,278,447 in 2017. The total number of households in Duval County increased by 2 percent, from 342,450 households in 2010 to an estimated 347,783 households in 2017. The percent growth in the number of households in Duval County was slightly greater than the state of Florida, which had an overall increase of 1 percent between 2010 and 2017, with 7,420,802 households in 2010, and approximately 7,510,882 households in 2017. The 2010 and 2017 populations by census tract in Duval County are mapped in **Figure 2-1** and **Figure 2-2**.

Table 2-1: Duval Population Characteristics 2010 vs. 2017

	2010		2017		Percent Change (2010-2017)	
	Duval County	Florida	Duval County	Florida	Duval County	Florida
Total Population	864,263	18,801,310	912,043	20,278,447	6%	8%
Total Households	342,450	7,420,802	347,783	7,510,882	2%	1%

Source: MySidewalk; U.S. Census 2010 Table DP-1; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates Table B01003, Table B11005

Population trends in Duval County aid in depicting the socioeconomic status in the region. **Table 2-2** shows population projections for Duval County in the years 2030 and 2040. Projections were taken from the Northeast Regional Planning Model (NERPM) using data from the North Florida Transportation Planning Organization (TPO) 2040 Long Range Transportation Plan (LRTP). The total population of Duval County is projected to grow to approximately 1,002,508 by 2030, and to approximately 1,071,614 by 2040, according to NERPM projections. Between 2010 and 2040, the total population is projected to grow by 24 percent.

Table 2-2: 2030 and 2040 Population Projections for Duval County

	2010	2030	2040	Percent Change (2010-2040)
Total Population	864,263	1,002,508	1,071,614	24%

Source: U.S. Census 2010, NERPM projections, North Florida TPO 2040 LRTP

Figure 2-1: Duval County 2010 Population by Census Tract

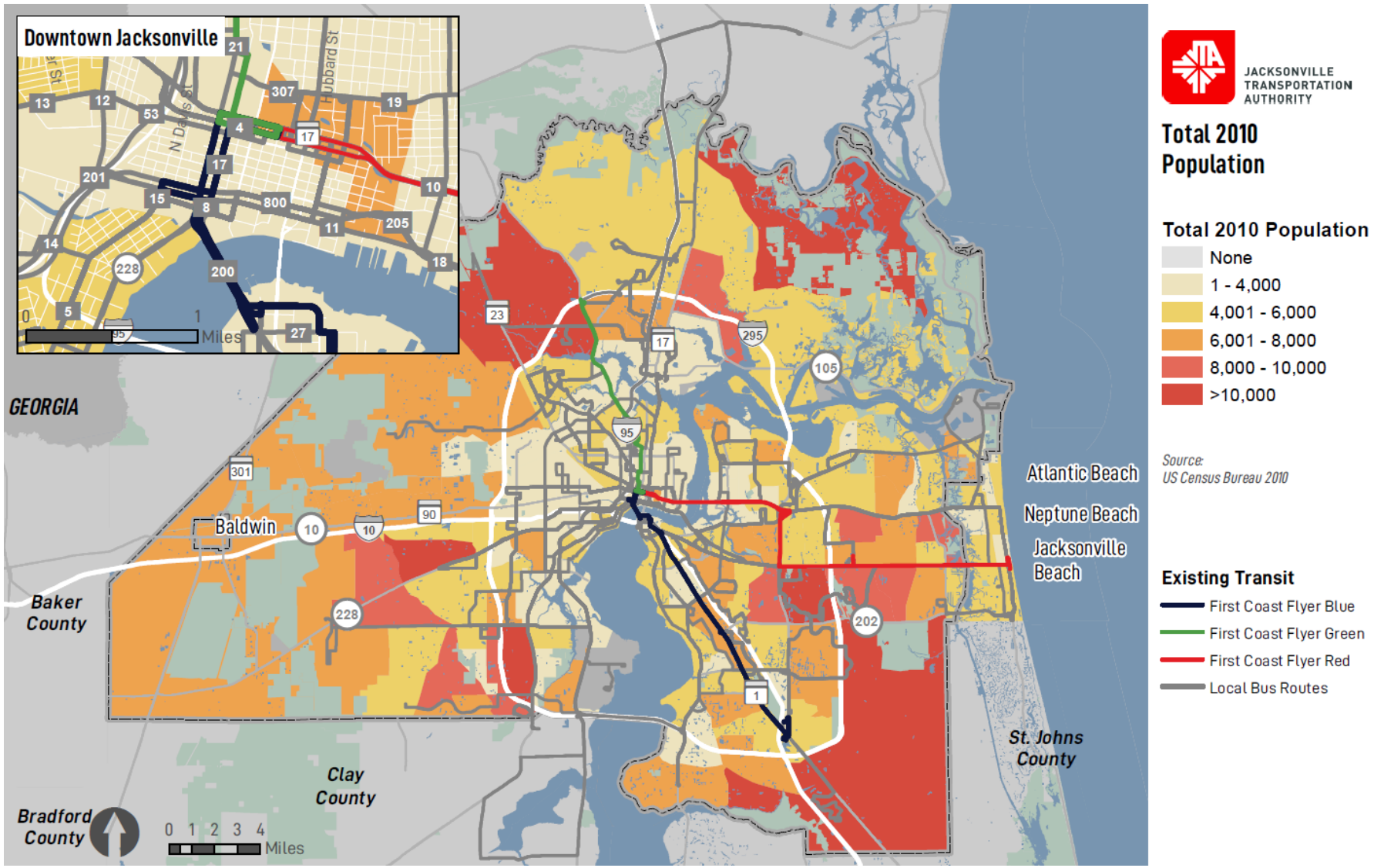
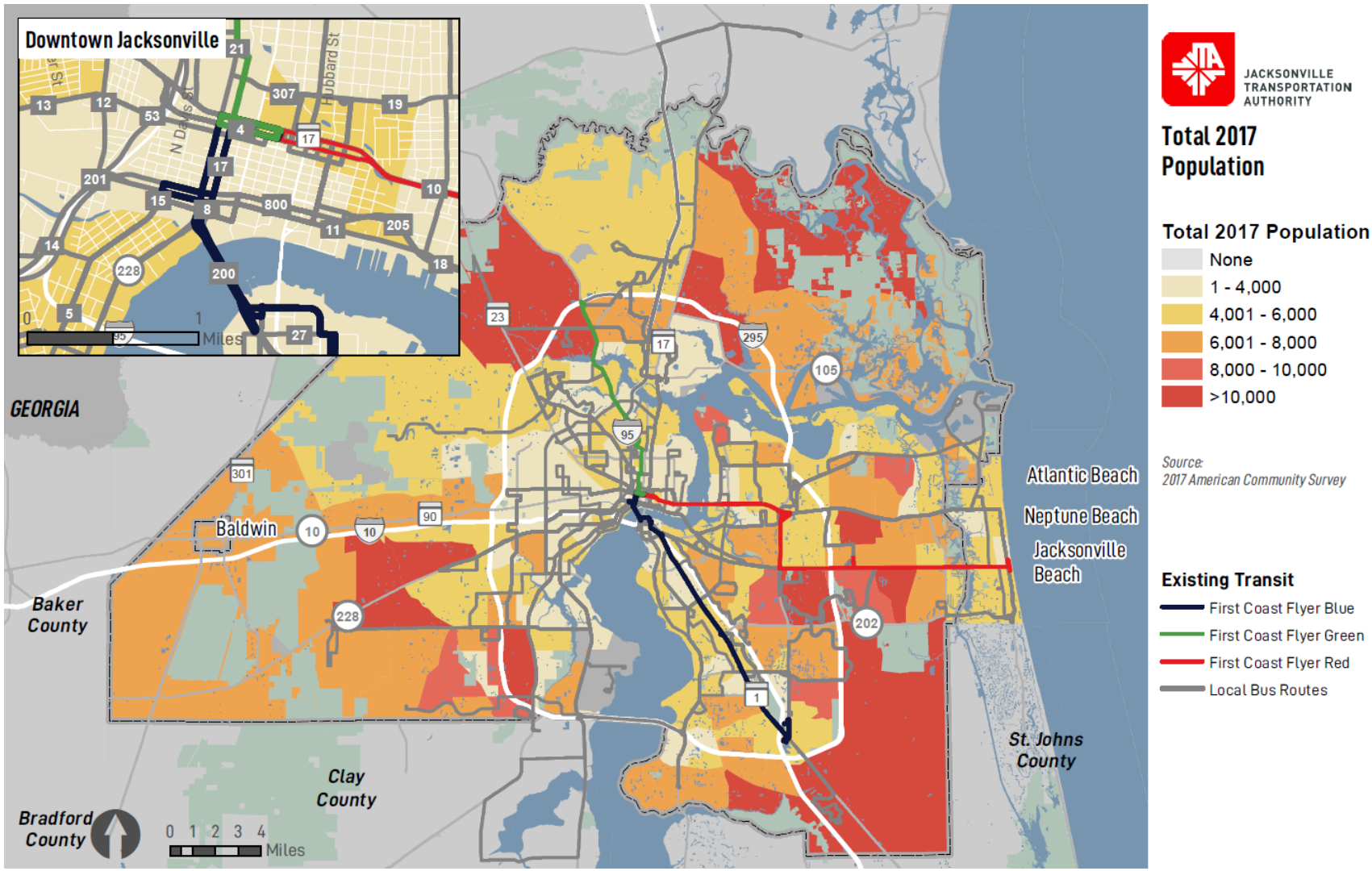


Figure 2-2: Duval County Estimated 2017 Population by Census Tract



2.2.2 Duval County Employment Trends

Table 2-3 shows employment projections for Duval County in the years 2030 and 2040. The total employment in Duval County is projected to grow to 597,835 by 2030 and to 635,765 by 2040. Between 2010 and 2040, the total employment is projected to grow by 22 percent. Approximately 1.9 percent of Duval County workers 16 years and over commuted to work using public transportation in 2017. According to *Who Rides Public* Transportation, a study conducted in 2017 by the American Public Transportation Association (APTA), 71 percent of all transit users nationwide are employed, and 7 percent are students.

Table 2-3: 2030 and 2040 Employment Projections for Duval County

	2010	2030	2040	Percent Change (2010-2040)
Total Employment	519,141	597,835	635,765	22%

Source: U.S. Census 2010, NERPM projections, North Florida TPO 2040 LRTP

2.2.3 Clay County Population Trends

Clay County has a uniform population: Approximately 73 percent of residents are white, non-Hispanic; 90 percent speak English only at home; and 76 percent of people age 25 or older have not earned a bachelor's degree. In 2010, the total population in Clay County was 184,295 and the population density was 315.8 people per square mile. Between 2010 and 2017, the total population of Clay County grew by approximately 9 percent, from about 184,295 in 2010 to an estimated population of 201,472 in 2017. This is higher than the estimated population growth for the entire state of Florida, which grew by 8 percent, over the same period. The population characteristics for Clay County and the State of Florida are shown in **Table 2-4**.

Population trends in Clay County help depict the socioeconomic status of the region. **Table 2-5** shows population projections for Clay County in the years 2030 and 2040. Projections were taken from the Northeast Regional Planning Model (NERPM) using data from the North Florida Transportation Planning Organization (TPO) 2040 Long Range Transportation Plan (LRTP). The total population of Clay County is projected to grow to approximately 274,090 by 2030, and to approximately 315,703 by 2040, according to NERPM projections. Between 2010 and 2040, the total population is projected to grow by 65 percent.

Table 2-4: Clay Population Characteristics 2010 vs. 2017

	2010		2017		Percent Change (2010-2017)	
	Clay County	Florida	Clay County	Florida	Clay County	Florida
Total Population	184,295	18,801,310	201,472	20,278,447	9%	8%
Total Households	67,493	7,420,802	71,939	7,510,882	7%	1%

Source: MySidewalk; U.S. Census 2010 Table DP-1; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates Table B01003, Table B11005

Table 2-5: 2030 and 2040 Population Projections for Clay County

	2010	2030	2040	Percent Change (2010-2040)
Total Population	184,295	274,090	315,703	65%

Source: U.S. Census 2010, NERPM projections, North Florida TPO 2040 LRTP

Figure 2-3: Clay County 2010 Population by Census Tract

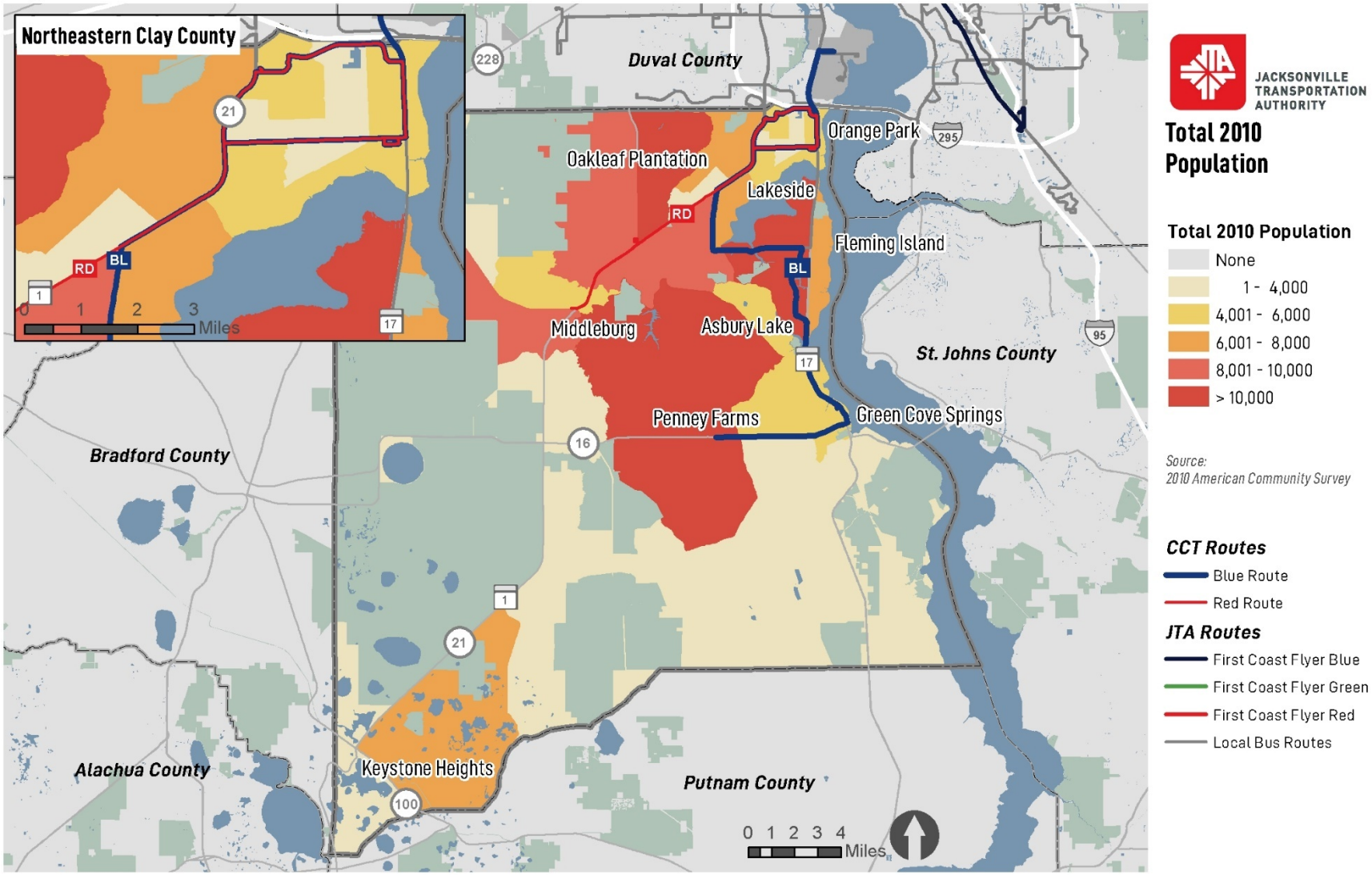
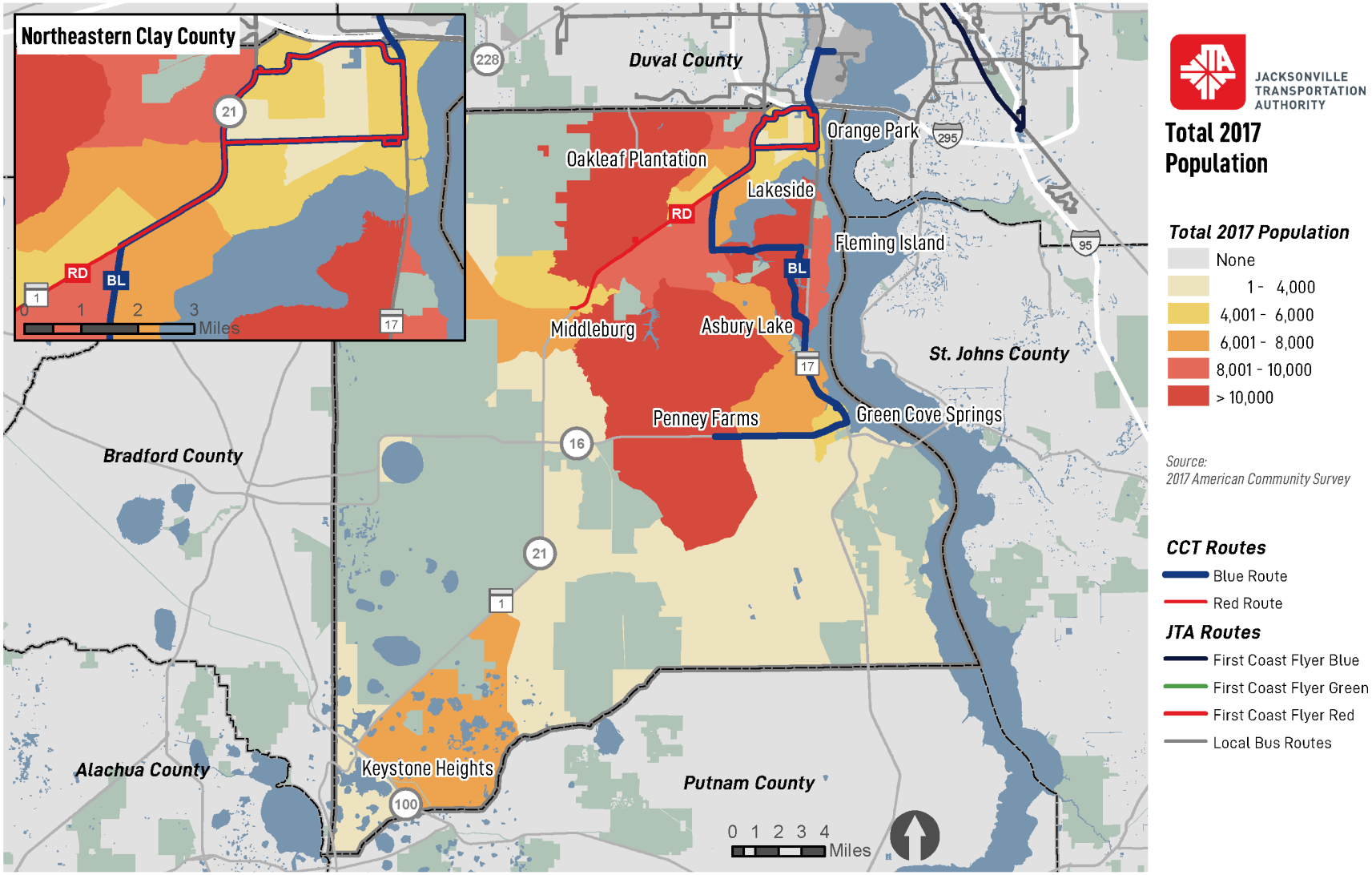


Figure 2-4: Clay County Estimated 2017 Population by Census Tract



2.2.4 Clay County Employment Trends

Table 2-6 shows employment projections for Clay County in the years 2030 and 2040. Much like the population, employment is projected to steadily increase. In 2010, the total employment in Clay County was 54,454. This number is projected to grow to 77,514 in 2030, and to 89,027 by 2040. Between 2010 and 2040, the total employment is projected to grow by 63 percent. Of the 91,495 workers over age 16 in Clay County, approximately 101, or 0.1 percent, commuted to work using public transportation in 2017.

Table 2-6: 2030 and 2040 Employment Projections for Clay County

	2010	2030	2040	Percent Change (2010-2040)
Total Employment	54,454	77,514	89,027	63%

Source: U.S. Census 2010, NERPM projections, North Florida TPO 2040 LRTP

2.2.5 Duval County Socio-Economic Trends by Variable

Population below 150 Percent of Poverty line

The U.S. Census Bureau reports that a total of 21 percent of transit-using households nationwide have a household income of less than $15,000, and in 2017, the U.S. Census Bureau poverty threshold was $25,094 for a family of four. Identifying the population below 150 percent of the poverty level allows for a depiction of the population below median income and above the poverty level, thus providing a middle-of-the-spectrum view of transit ridership in Duval County,

The population below 150 percent of the poverty level in Duval County and the state of Florida is shown in **Table 2-7**. In Duval County, the population below 150 percent of the poverty level increased by 19 percent, from 191,621 in 2010 to approximately 227,865 in 2017. The percent of the total population in Duval County below 150 percent of the poverty level increased from 23 percent in 2010 to approximately 26 percent in 2017. In Florida, the population below 150 percent of the poverty level increased by 20 percent, from 4,295,674 in 2010 to approximately 5,162,521 in 2017. The percent of the total population in Florida below 150 percent of the poverty level increased from 24 percent in 2010 to approximately 26 percent in 2017. The 2010 and 2017 population below 150 percent of the poverty level by census tract in Duval County is shown in **Figure 2-5** and **Figure 2-6**. Locating the areas of Duval County with a higher percent population below 150 percent of the poverty level provides a better picture of the socioeconomic characteristics of the region. It also allows for locating potential areas that may need increased access to transit service. JTA can use this information to help ensure that it is adequately serving disadvantaged populations.

Table 2-7: Duval County Population Below 150 Percent of the Poverty Level 2010 vs. 2017

	2010		2017		Percent Change (2010-2017)	
	Duval County	Florida	Duval County	Florida	Duval County	Florida
Population Below 150% Poverty Level	191,621	4,295,674	227,865	5,162,521	19%	20%
Population Percent Below 150% of Poverty Level	23%	24%	26%	26%	+3%	+2%

Source: U.S. Census Bureau, 2006-2010 ACS 5-Year Estimates Table C17002; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates Table C17002

Figure 2-5: Duval County 2010 Population Below 150 Percent of the Poverty Level

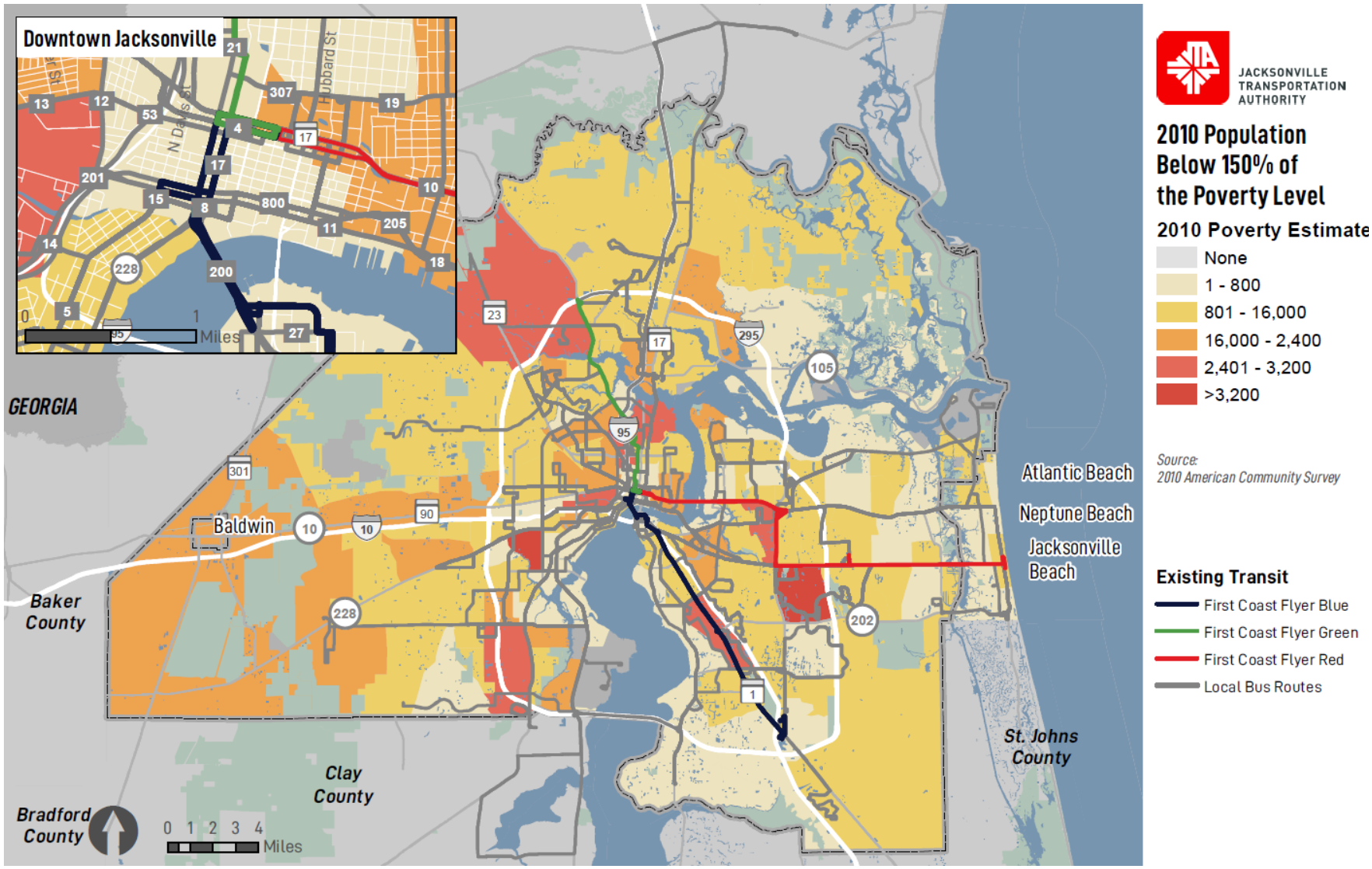
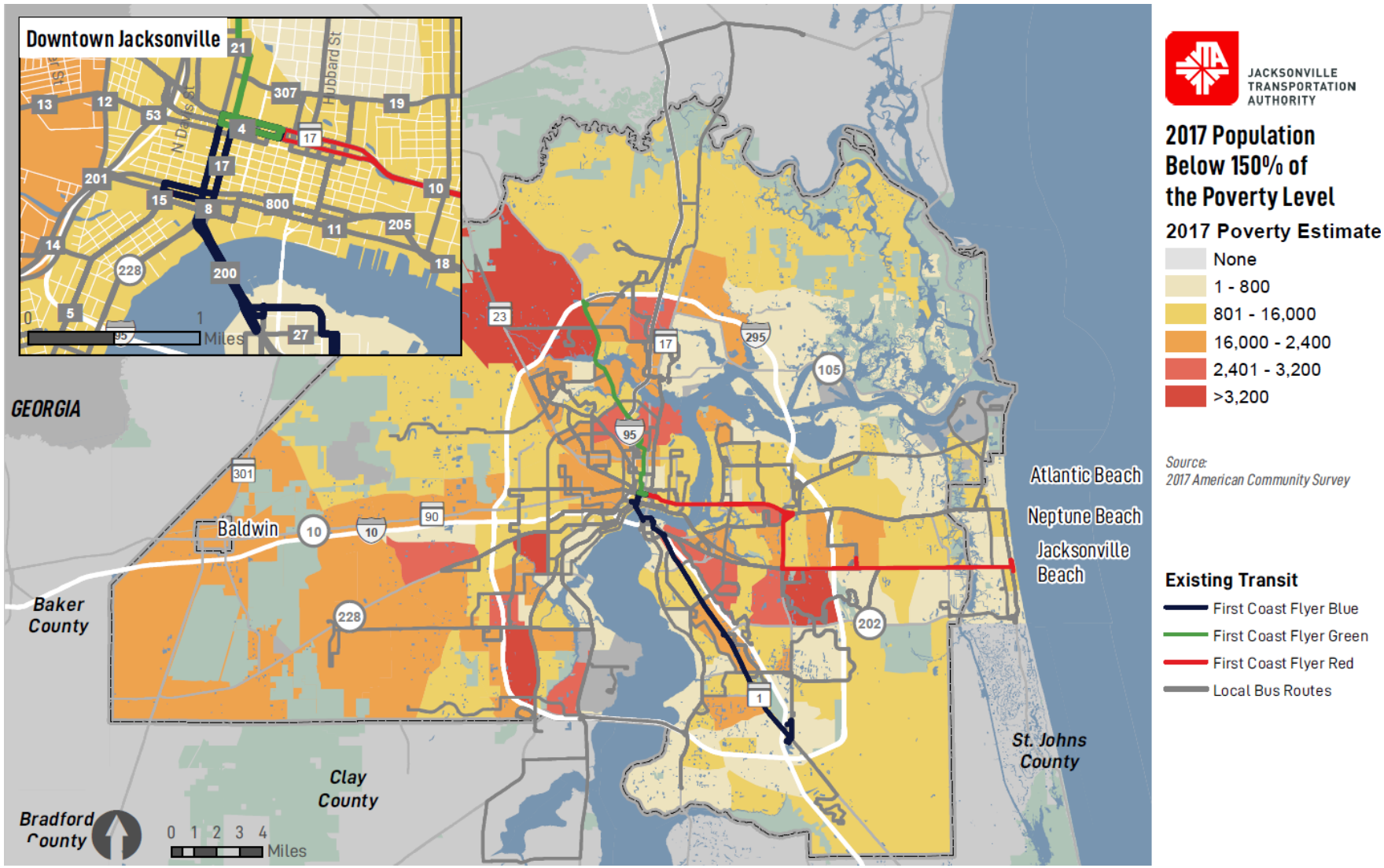


Figure 2-6: Duval County Estimated 2017 Population Below 150 Percent of the Poverty Level



Zero-Vehicle Households

Examining the number of zero-car households in Duval County and the state of Florida allows for further analysis of transit ridership, as these populations may rely on transit as their primary mode, either by choice or due to necessity. A 2017 APTA study reported that approximately 54 percent of all transit users nationwide indicated a vehicle available to them on a regular basis, and 46 percent indicated that they had no vehicle available. The number of zero-car households in Duval County and the state of Florida is shown in **Table 2-8**.

From 2010 to 2017, the number of zero-car households in Duval County increased by 12 percent, from 25,351 to 28,351 households. Zero-car households make up 7 percent of the total number of households in Duval County. The number of zero-car households in Florida increased by 9 percent, from 462,112 households in 2010 to approximately 502,079 households in 2017. The number of zero-car households make up 6 percent of the total number of households in Florida. The number of zero-car households by census tract in Duval County in 2010 and 2017 are shown in **Figure 2-7** and **Figure 2-8**.

Table 2-8: Duval County Zero-Car Households 2010 vs. 2017

	2010		2017		Percent Change (2010-2017)	
	Duval County	Florida	Duval County	Florida	Duval County	Florida
Zero Car Households	25,351	462,112	28,351	502,079	12%	9%
Percent of the total number of households	7%	6%	8%	7%	+1%	+1%

Source: U.S. Census Bureau, 2006-2010 ACS 5-Year Estimates Table B25044; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates Table B25044

Age

The estimated median age of residents by census tract in Duval County in 2017 is shown in **Figure 2-9**. Examining the median age of the region provides additional demographic information that can be used in assessing transit services. A 2017 APTA study reported that 79 percent of all transit users nationwide fall in the age range of 25 to 54. In 2017, the median age of residents countywide is 36. The median age of residents in the state of Florida is 42.

Figure 2-7: Duval County Zero-Car Households in 2010

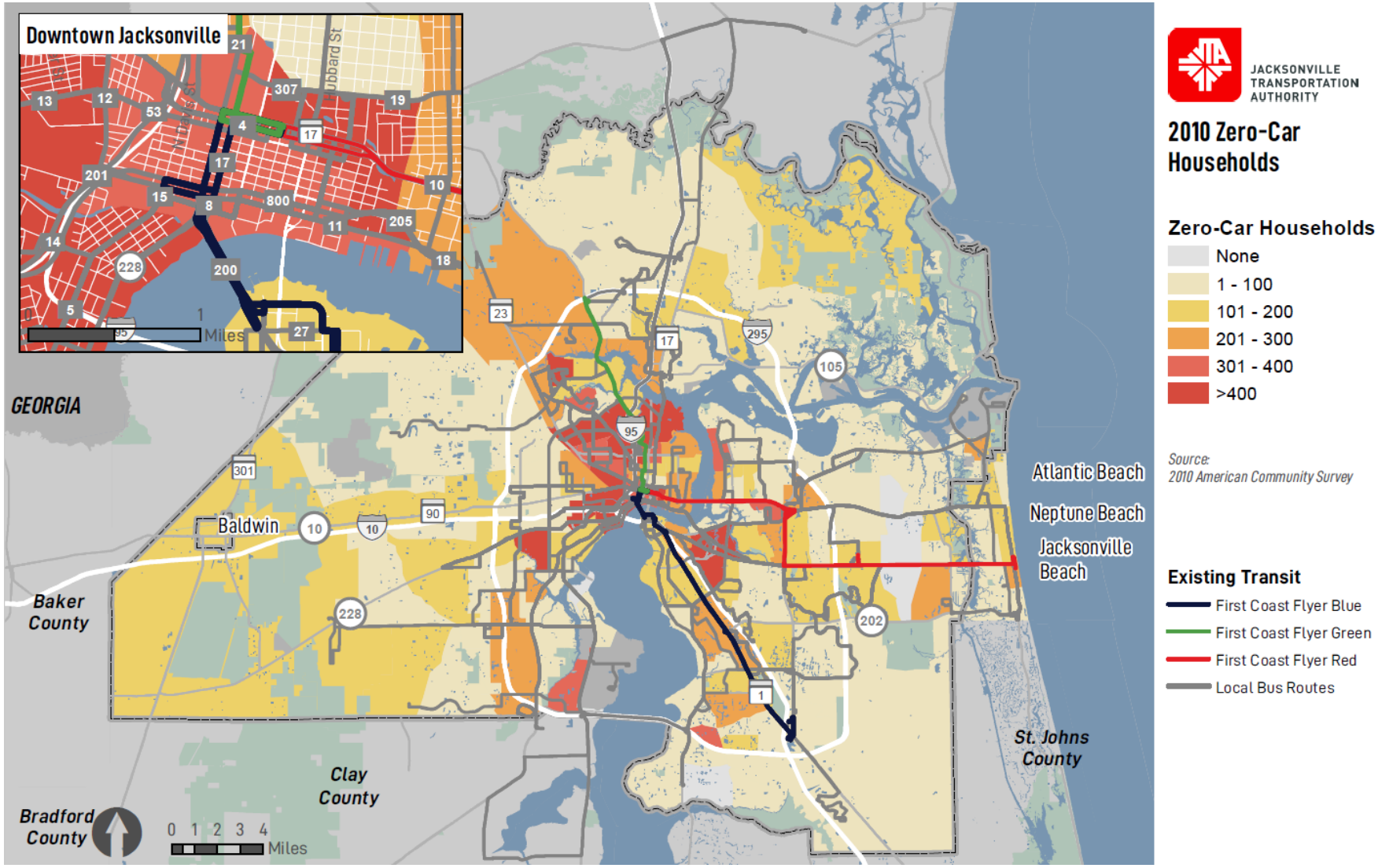


Figure 2-8: Duval County Estimated Zero-Car Households in 2017

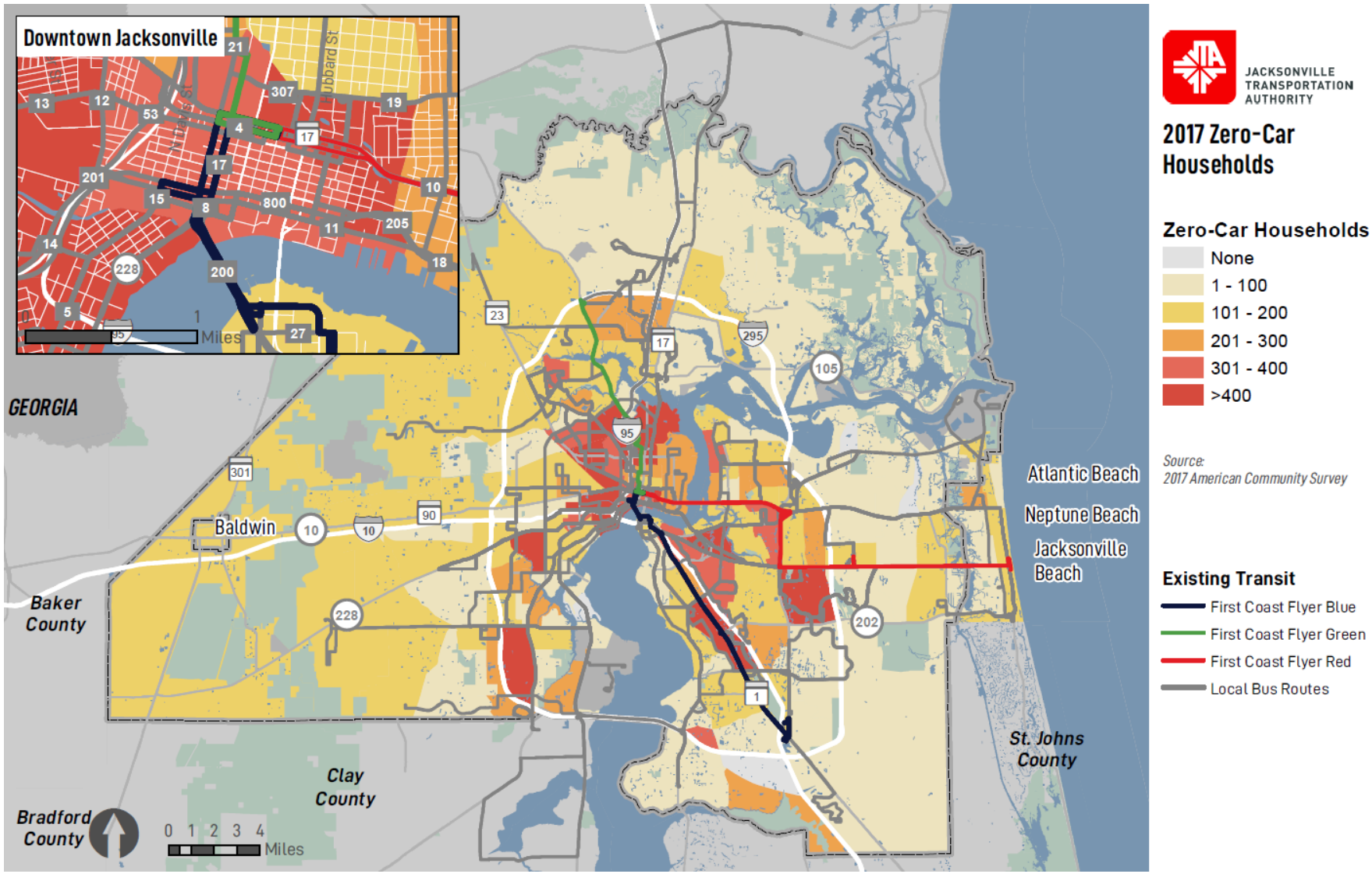
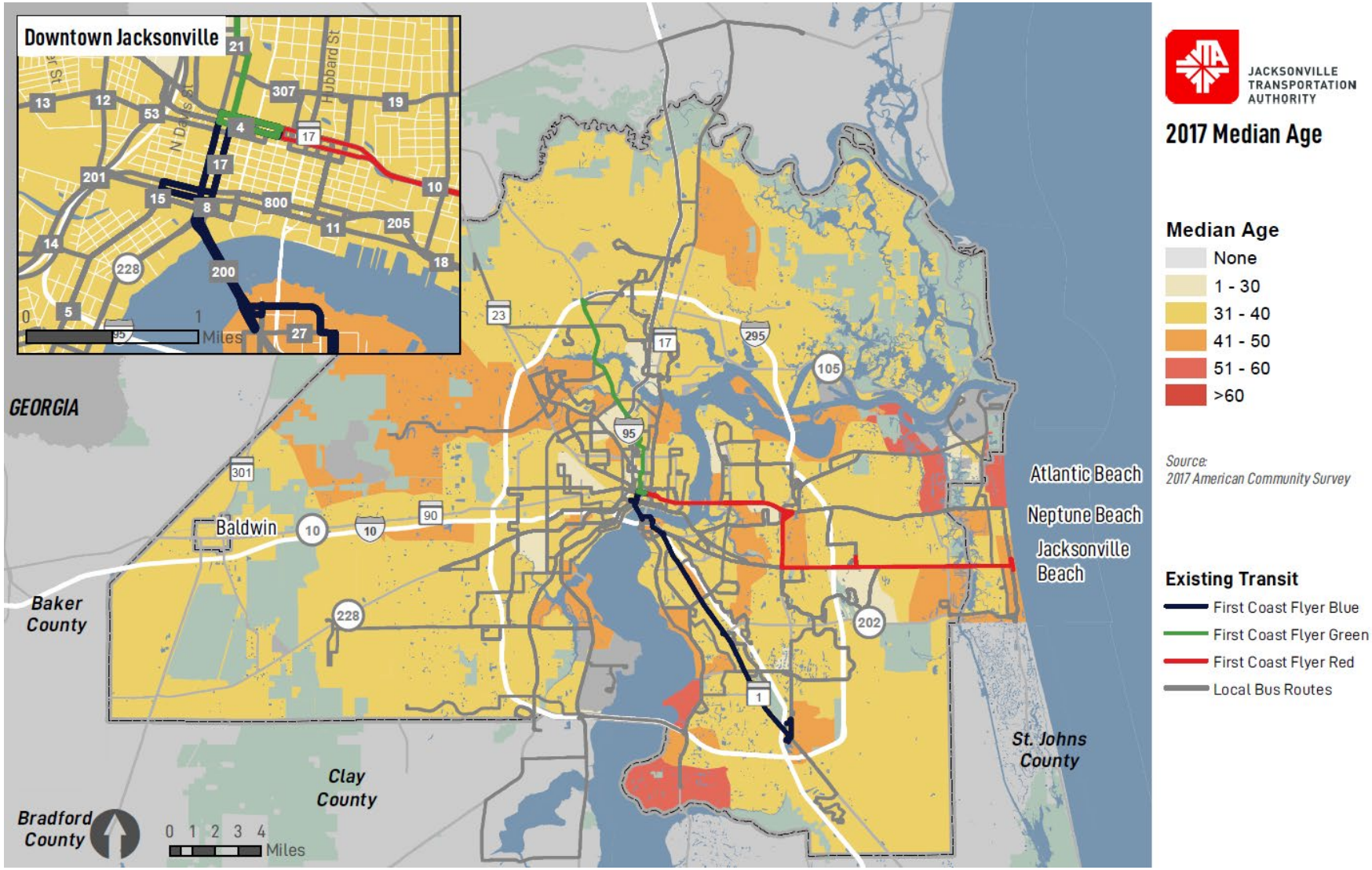


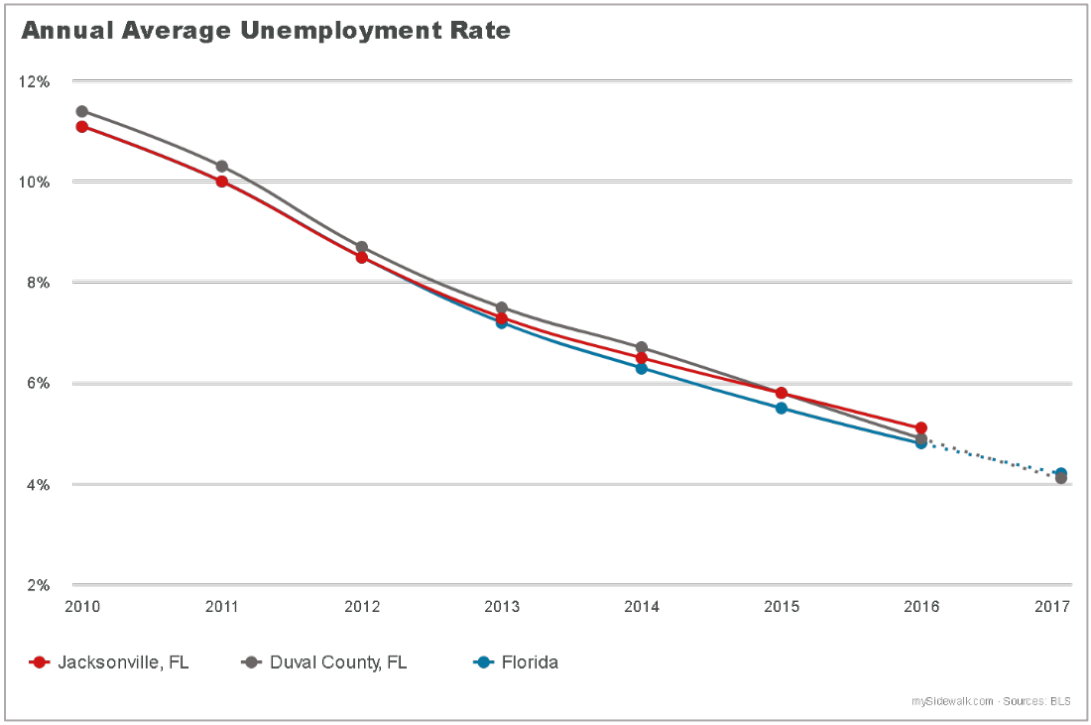
Figure 2-9: Duval County Median Age in 2017



Unemployment Rate

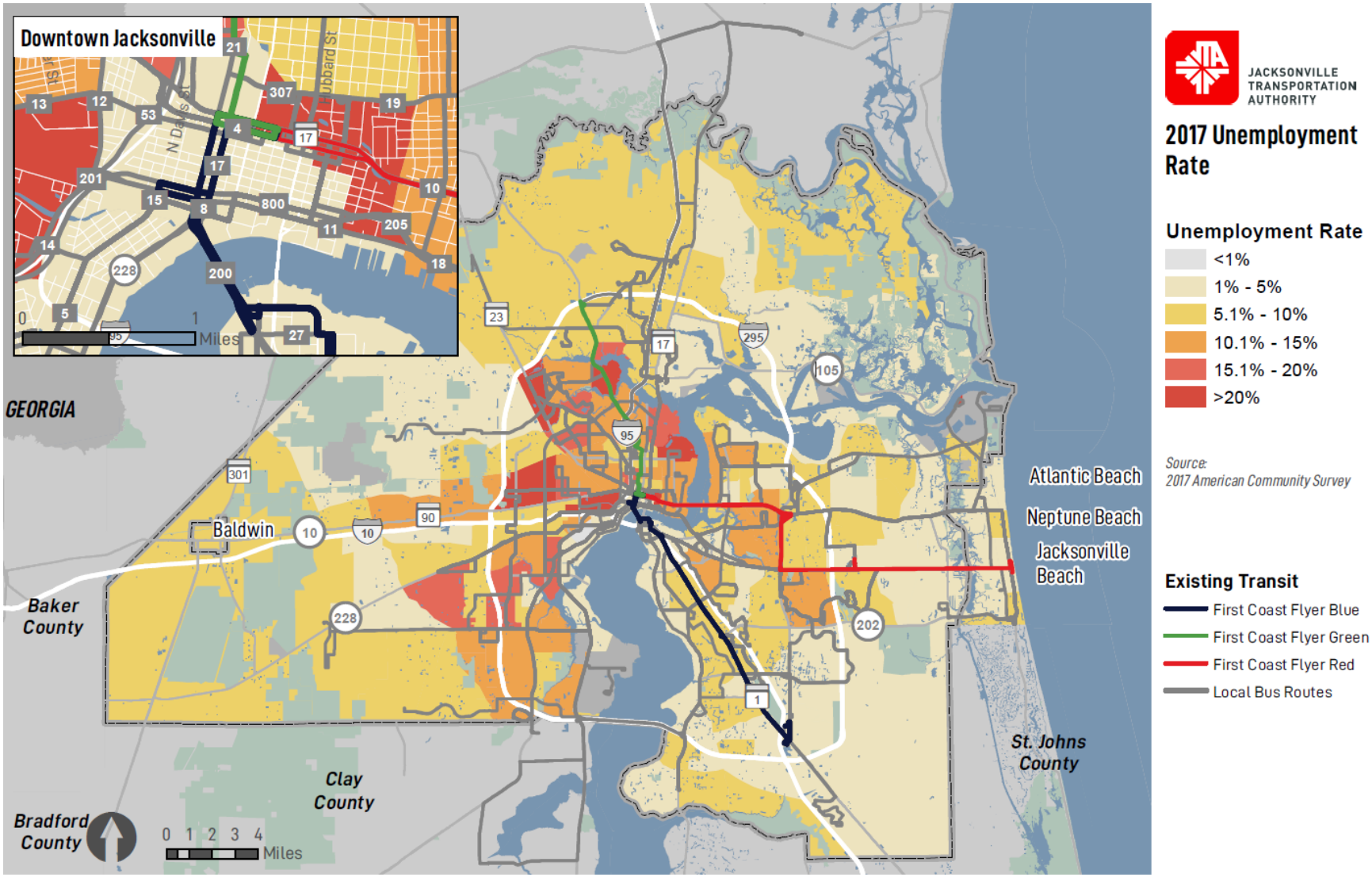
The estimated annual average unemployment rate for Duval County from 2010 to 2017 is shown in **Table 2-9**, based on data from the Bureau of Labor Statistics. The unemployment rate greatly increased after the recession but has gradually decreased since 2010. The average unemployment rate for Duval County is 4.1 percent. The estimated unemployment rate for Duval County in 2017 by census tract is shown in **Figure 2-10**.

Table 2-9: Annual Average Unemployment Rate 2010-2017



Source: MySidewalk; U.S. Census Bureau, 2006-2010 ACS 5-Year Estimates; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates

Figure 2-10: Duval County Estimated Unemployment Rate 2017



2.2.6 Clay County Socio-Economic Trends by Variable

Population below 150 Percent of Poverty level

The U.S. Census Bureau states that a total of 21 percent of transit-using households nationwide have a household income of less than $15,000, and in 2017, the U.S. Census Bureau poverty threshold was $25,094 for a family of four. Identifying the population below 150 percent of the poverty level allows for a depiction of the population below median income and above the poverty level, thus providing a middle-of-the-spectrum view of transit ridership in Clay County,

The population below 150 percent of the poverty level in Clay County and the state of Florida is shown in **Table 2-10**. In Clay County, the population below 150 percent of the poverty level increased by 40 percent, from 27,655 in 2010 to 38,813 in 2017. The percent of the total population in Clay County below 150 percent of the poverty level increased from 15 percent in 2010 to 19 percent in 2017. In Florida, the population below 150 percent of the poverty level increased by 20 percent, from 4,295,674 in 2010 to 5,162,521 in 2017.

The percent of the total population in Florida below 150 percent of the poverty level increased from 24 percent in 2010 to 26 percent in 2017. The population below 150 percent of the poverty level by census tract in Clay County in 2010 and 2017 is shown in **Figure 2-11** and **Figure 2-12**. Locating the areas of Clay County with a higher percentage of population below 150 percent of the poverty level provides a better picture of the socioeconomic characteristics of the region. It also allows for locating potential areas that may need increased access to transit service.

Table 2-10: Clay County Population Below 150 Percent of the Poverty Level 2010 vs. 2017

	2010		2017		Percent Change (2010-2017)	
	Clay County	Florida	Clay County	Florida	Clay County	Florida
Population Below 150% Poverty Level	27,655	4,295,674	38,813	5,162,521	40%	20%
Population Percent Below 150% of Poverty Level	15%	24%	19%	26%	+4%	+2%

Source: U.S. Census Bureau, 2006-2010 ACS 5-Year Estimates Table C17002; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates Table C17002

Figure 2-11: Clay County 2010 Population Below 150 Percent of the Poverty Line

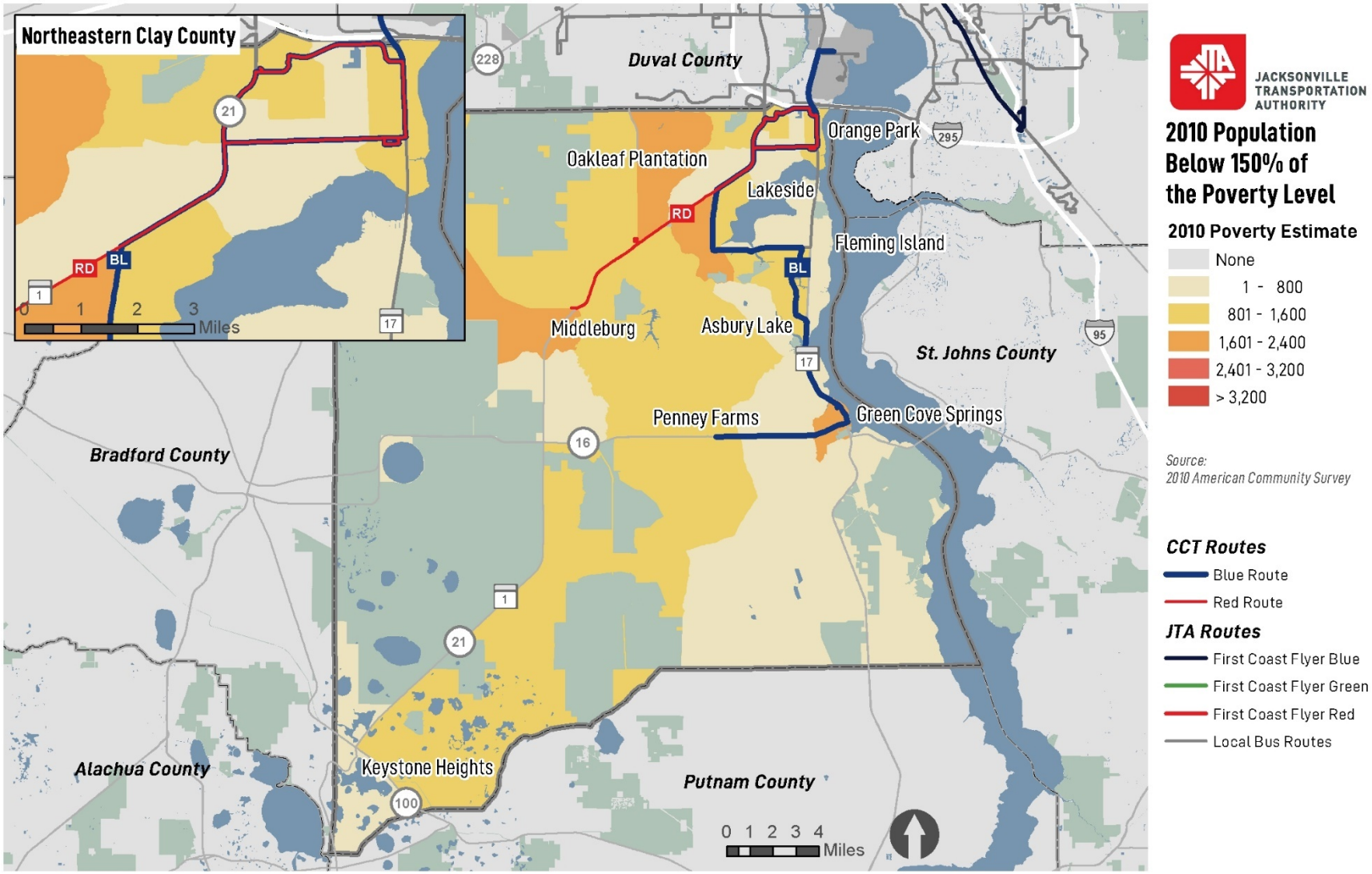
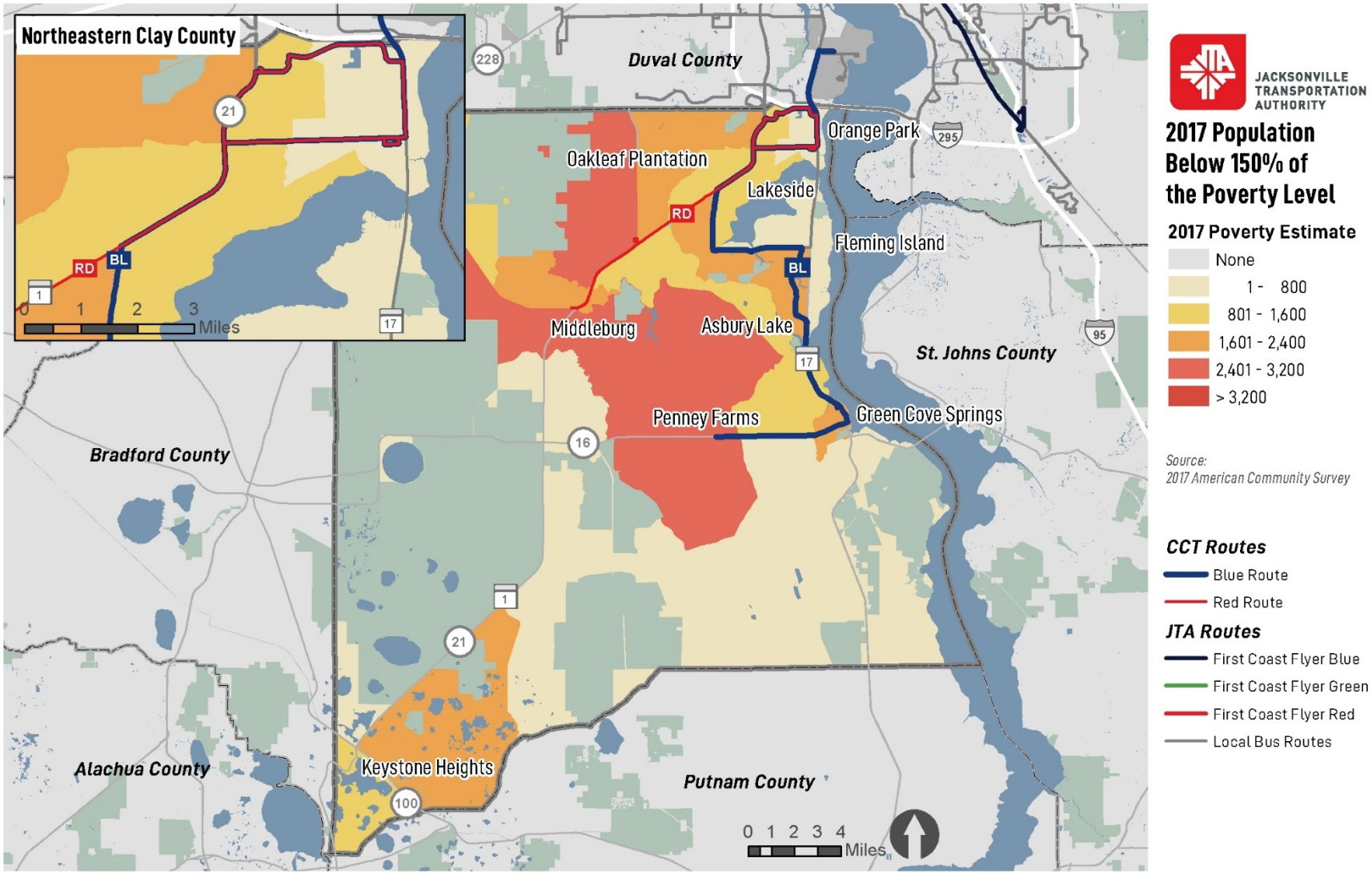


Figure 2-12: Clay County Estimated 2017 Population Below 150 Percent of the Poverty Level



Zero-Vehicle Households

Examining the number of zero-car households in Clay County and the state of Florida allows for further analysis of transit ridership, as these populations may rely on transit as their primary mode, either by choice or due to necessity. A 2017 APTA study reported that approximately 54 percent of all transit users nationwide indicated that they have a vehicle available to them on a regular basis, and 46 percent reported that they had no vehicle available. The number of zero-car households in Clay County and the State of Florida is shown in **Table 2-11**.

The number of zero-car households in Clay County remained virtually unchanged, from 2,073 households in 2010 to 2,039 households in 2017. Zero-car households make up 3 percent of the total number of households in Clay County. The number of zero-car households in Florida increased by 9 percent, from 462,112 households in 2010 to 502,079 households in 2017. In 2010, the number of zero-car households made up 6 percent of the total number of households in Florida. In 2017, this number is 7 percent. The number of zero-car households by census tract in Clay County in 2010 and 2017 is shown in **Figure 2-13** and **Figure 2-14**.

Table 2-11: Zero-Car Households 2010 vs. 2017

	2010		2017		Percent Change (2010-2017)	
	Clay County	Florida	Clay County	Florida	Clay County	Florida
Zero-Car Households	2,073	462,112	2,039	502,079	-2%	9%
Percent of the total number of households	3%	6%	3%	7%	0%	+1%

Source: U.S. Census Bureau, 2006-2010 ACS 5-Year Estimates Table B25044; U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates Table B25044

Age

The estimated median age of residents by census tract in Clay County in 2017 is shown in **Figure 2-15**. Examining the median age of the region provides additional demographic information that can be used in assessing transit services. A 2017 APTA study that approximately 79 percent of all transit users nationwide fall in the age range of 25 to 54. In 2017, the median age of residents countywide is 39. The median age of residents in the state of Florida is 42.

Figure 2-13: Clay County Zero-Car Households in 2010

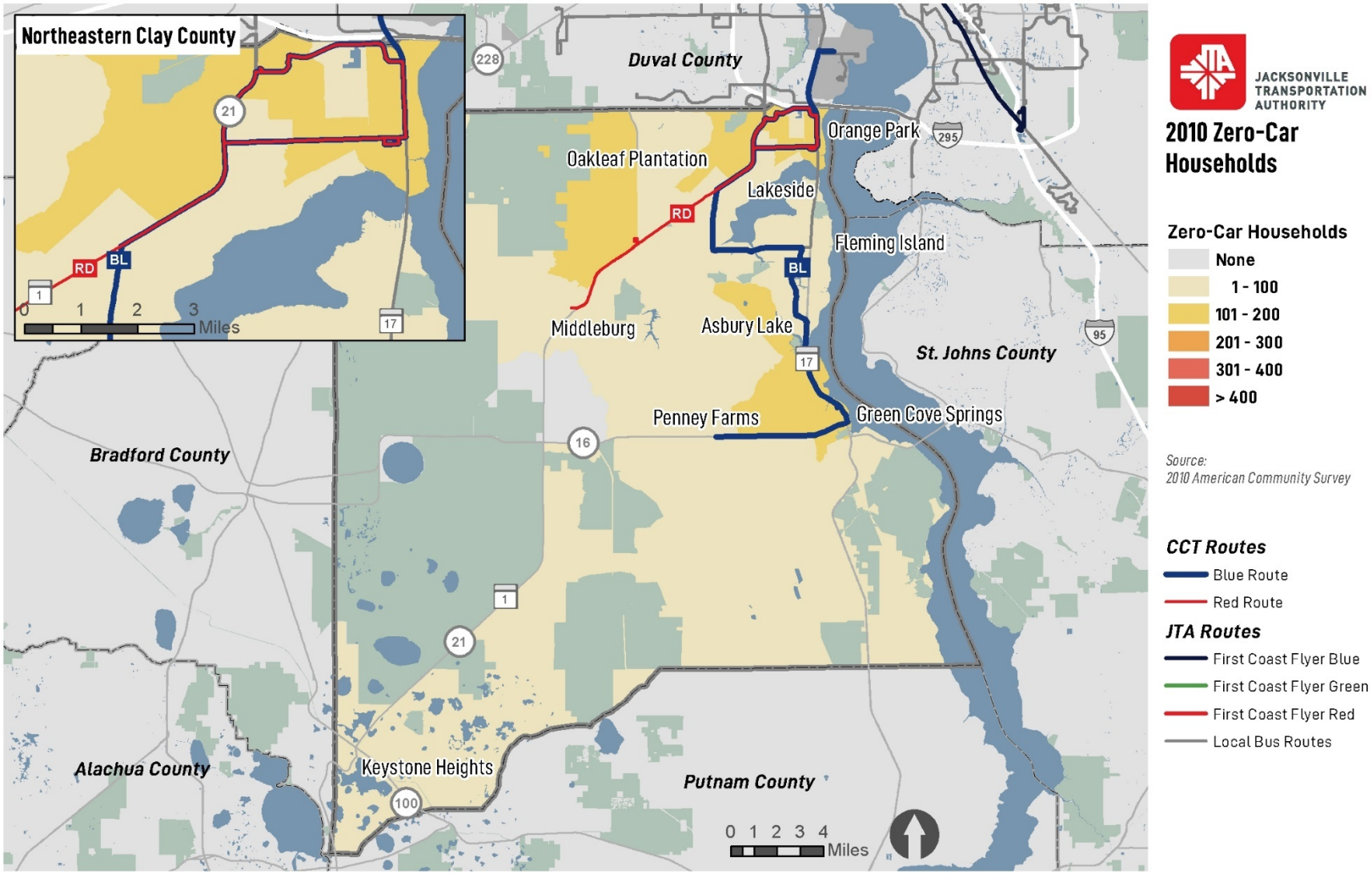


Figure 2-14: Clay County Estimated Zero-Car households in 2017

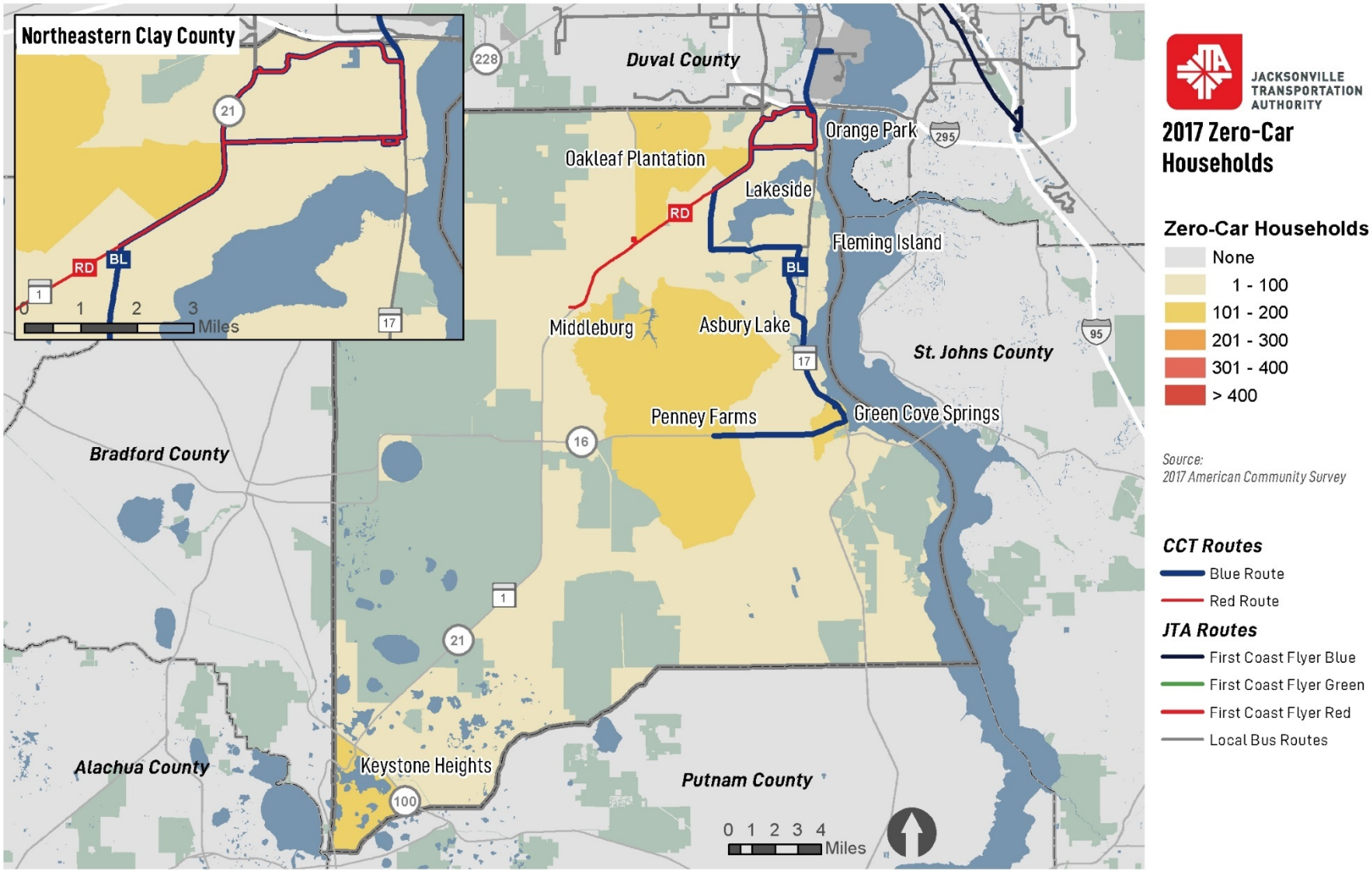
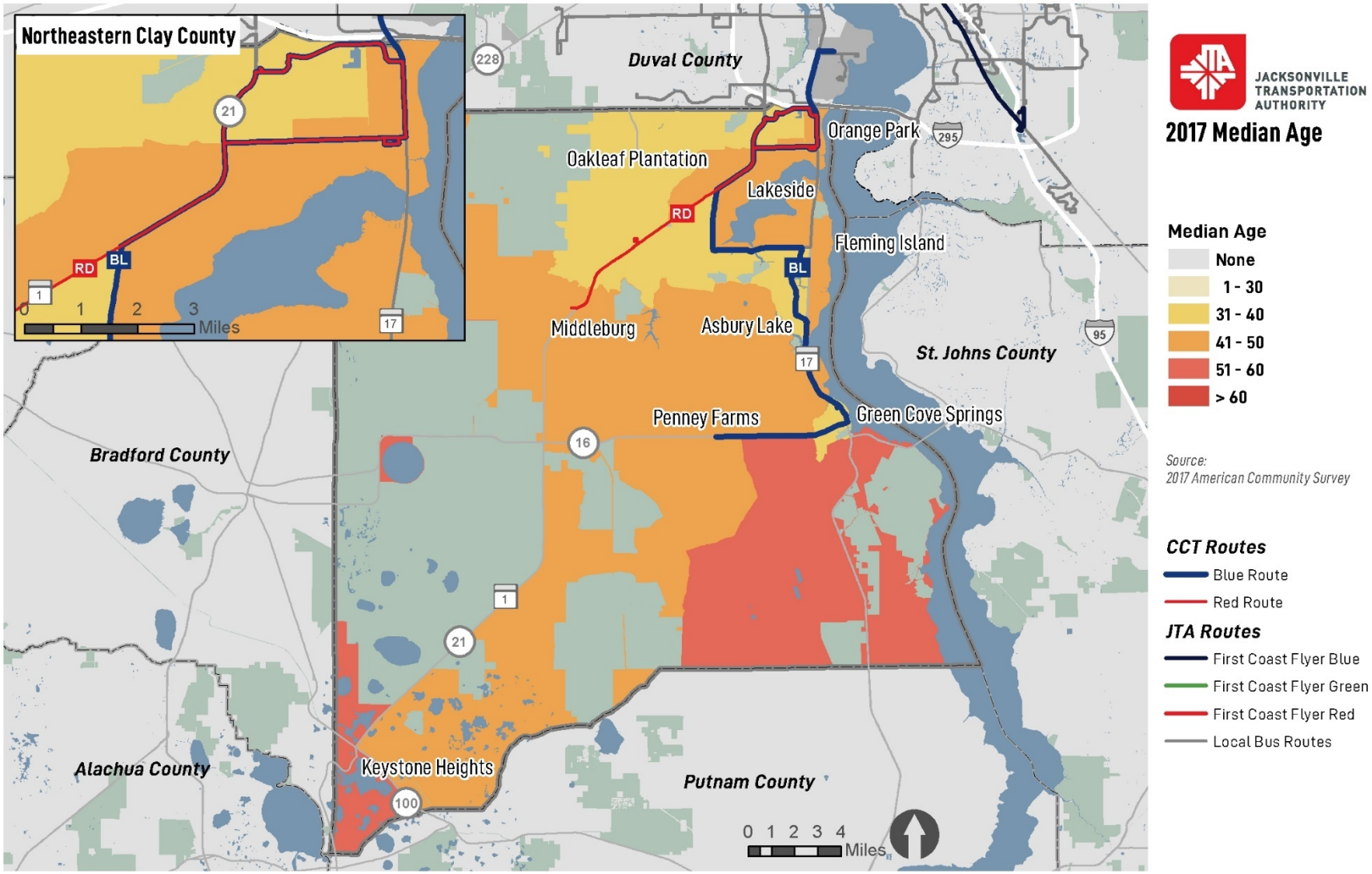


Figure 2-15: Clay County Median Age in 2017



Unemployment Rate

The estimated annual average unemployment rate for Clay County from 2010 to 2017 is shown in **Table 2-12**, based on data from the Bureau of Labor Statistics. The unemployment rate greatly increased after the recession but has gradually decreased since 2010. The average unemployment rate for Clay County in 2017 is 3.9 percent. The estimated unemployment rate for Clay County in 2017 by census tract is shown in Figure 2-16.

Table 2-12: Annual Average Unemployment Rate 2010-2017 Clay vs Duval Count

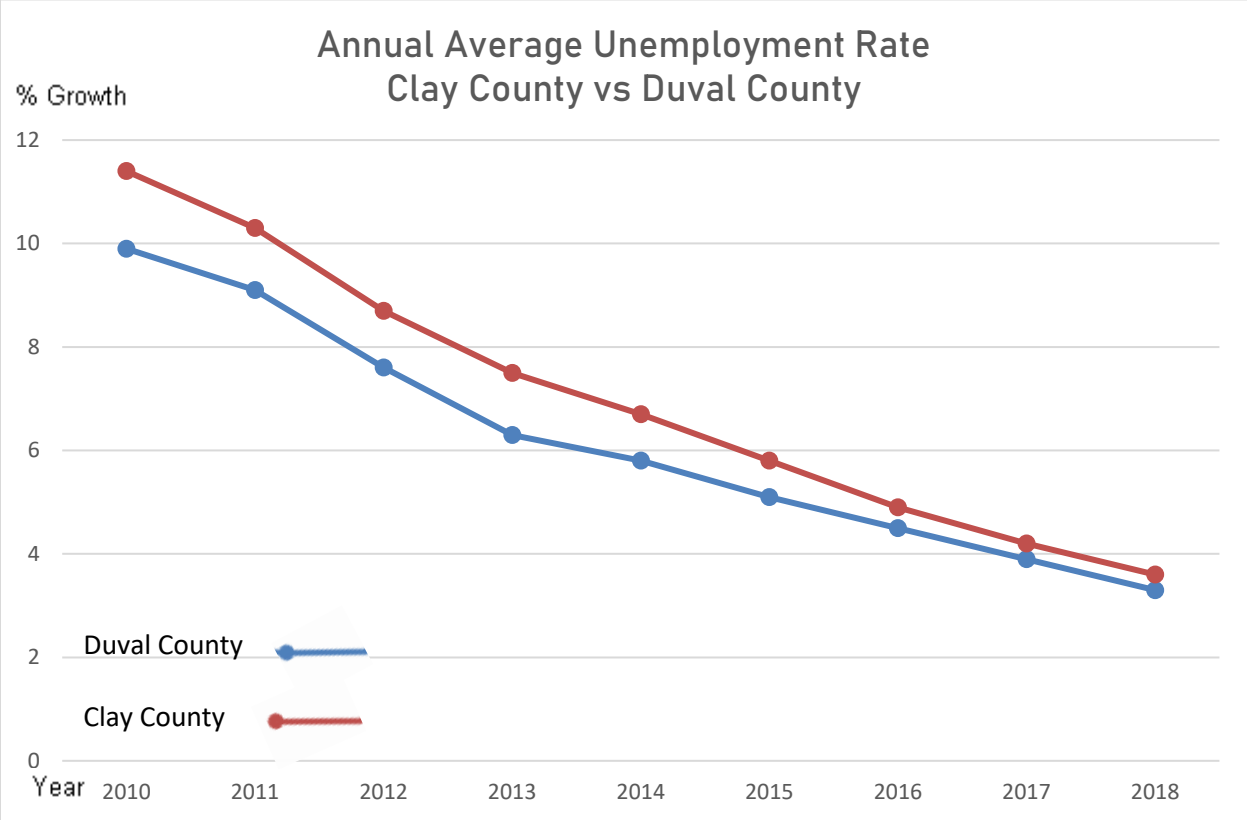
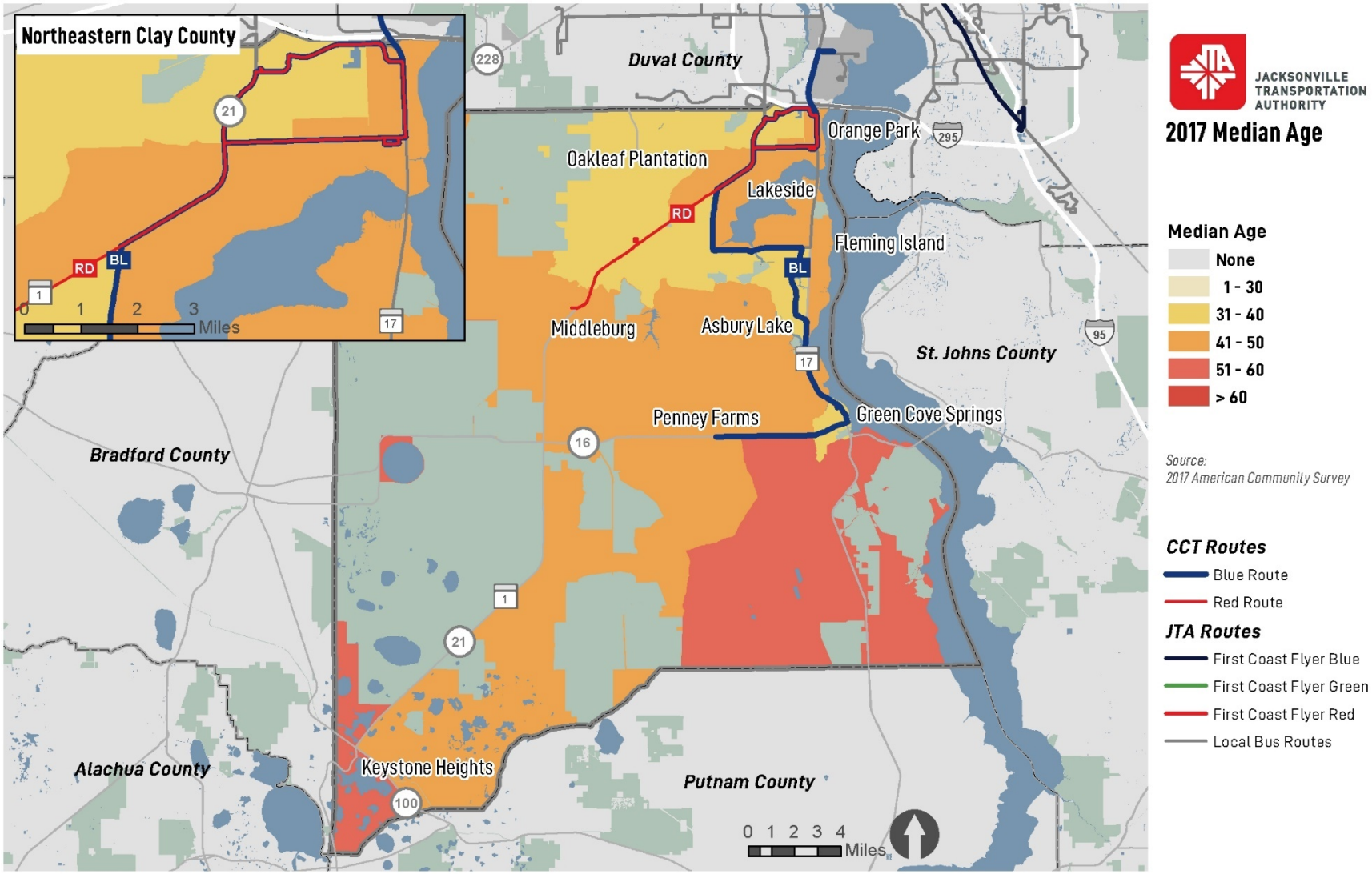


Figure 2-16: Clay County Estimated Unemployment Rate 2017



2.3 Demographic and Employment Spatial Analysis

2.3.1 Duval County Transit Potential

High transit ridership is most likely to be sustained in areas where significant concentrations of population and employment exist. Combining population and employment density together provides a measure of transit potential that shows the overall viability of transit service in each area.

Population Density

Most public transportation riders will access bus services by walking to a bus stop. Thus, the geographic areas served by transit are generally those within a quarter- or half-mile distance from a bus stop, or a 10-minute walk. Denser residential areas have more people living close enough to access a bus stop, making these stronger markets for transit. **Figure 2-17** shows the population density of JTA's service area, with darker colors corresponding to higher densities.

The densest residential areas of the service area are:

- **Urban Core:** Downtown Jacksonville, Hogan's Creek, Brentwood, and Riverside.
- **Southside:** San Jose, Baymeadows, and Craven.
- **Westside:** Hillcrest, Hyde Park, Confederate Point, Ortega Farms, and Jacksonville Heights.
- **Arlington:** Regency, University Park, Holiday Hill, and Woodland Acres.
- **Jacksonville Beach:** Along Highway A1A.

Employment Density

Employment density is a strong indicator of demand for transit, as most public transportation trips begin or end at work. Serving employment centers also provides access to job opportunities for residents. As with population density, at least six jobs per acre are typically required for an area to support fixed-route transit service. In **Figure 2-18**, areas above this threshold are shown with darker colors corresponding to higher densities. Areas with higher densities can also support greater transit frequencies.

The densest employment areas of the service area are:

- **Urban Core:** Downtown Jacksonville, Midtown, Hogan's Creek, Brooklyn, Riverside.
- **Southside:** Riverplace, St. Nicholas, Southpoint, Deerwood, Deerwood Center, Windy Hill, Regency, and the Mayo Clinic.
- **Westside:** Normandy, Fairfax.
- **Jacksonville** Beach: Along Highway A1A.

Population and Employment Density

Combining both measures helps JTA understand where the overall viability of transit service in the region is highest. Blocks with densities over five jobs plus population per acre are areas dense enough to support fixed transit, while blocks with densities between one and five jobs plus population per acre may still benefit from alternative transit options such as flexible or on-demand service. **Figure 2-19** maps population and employment density together to show transit potential.

The areas with the highest levels of transit potential are:

- **Urban Core:** Downtown Jacksonville, Brooklyn, Riverside, Hogan's Creek, and Brentwood.
- **Southside:** Riverplace, Spring Park, Southpoint, Deerwood Center, Deerwood, Windy Hill, Baymeadows, Craven, Regency, and the Mayo Clinic.
- **Westside:** Hillcrest, Fairfax, Confederate Point, Jacksonville Heights, and Normandy.
- **Jacksonville Beach:** Along Highway A1A.

Figure 2-17: Duval County Population Density

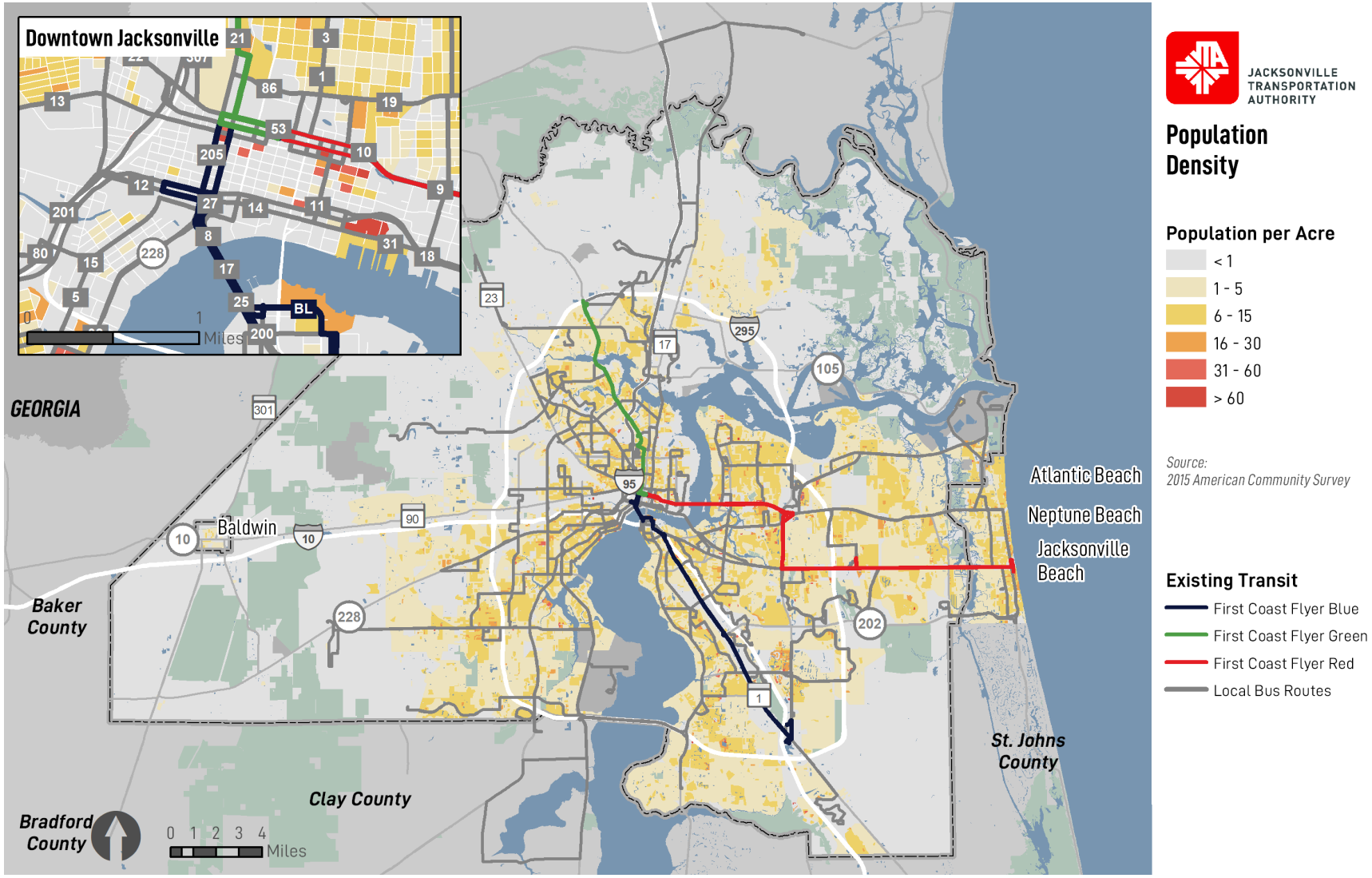


Figure 2-18: Duval County Employment Density

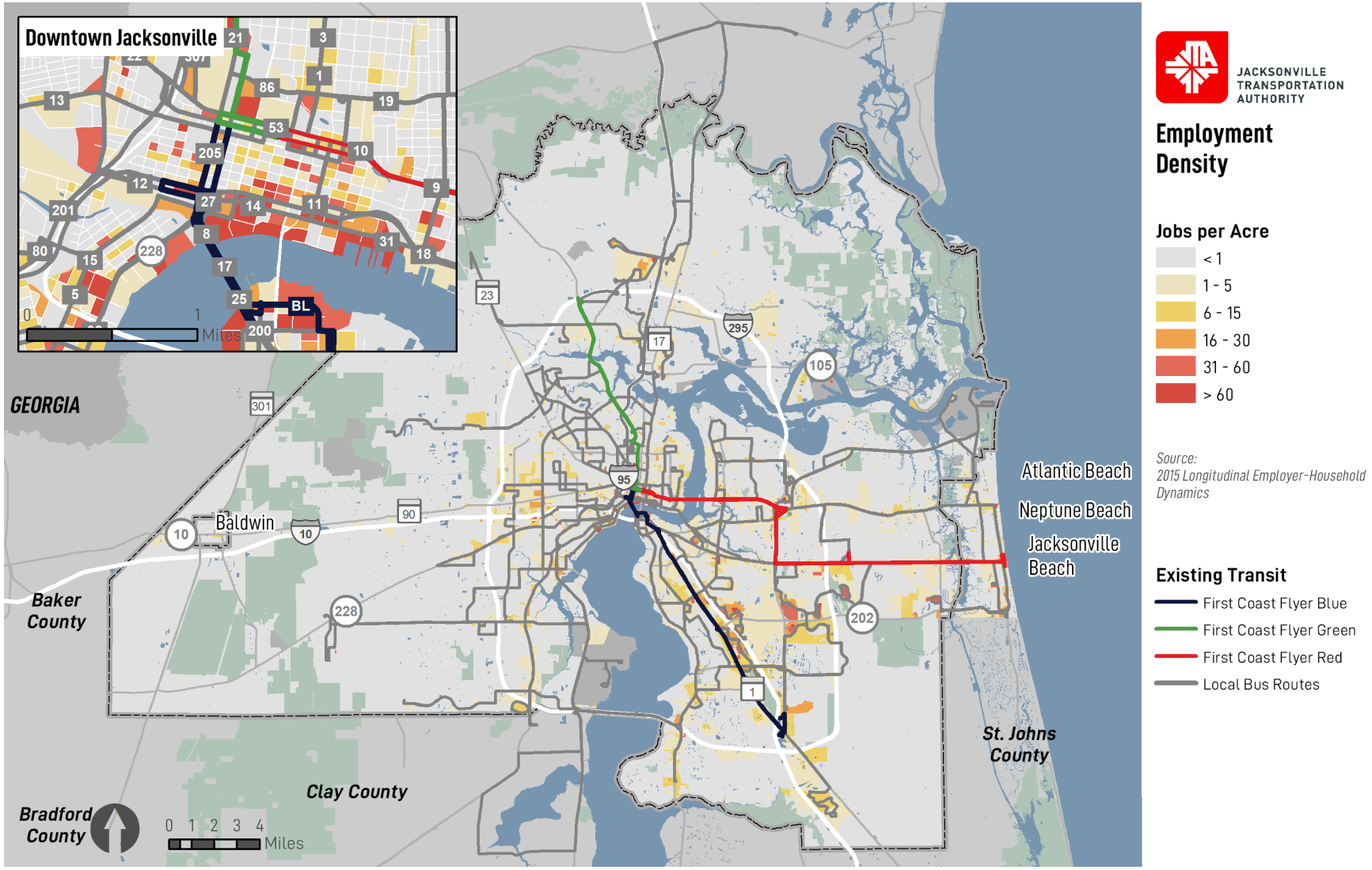


Figure 2-19: Duval County Transit Potential

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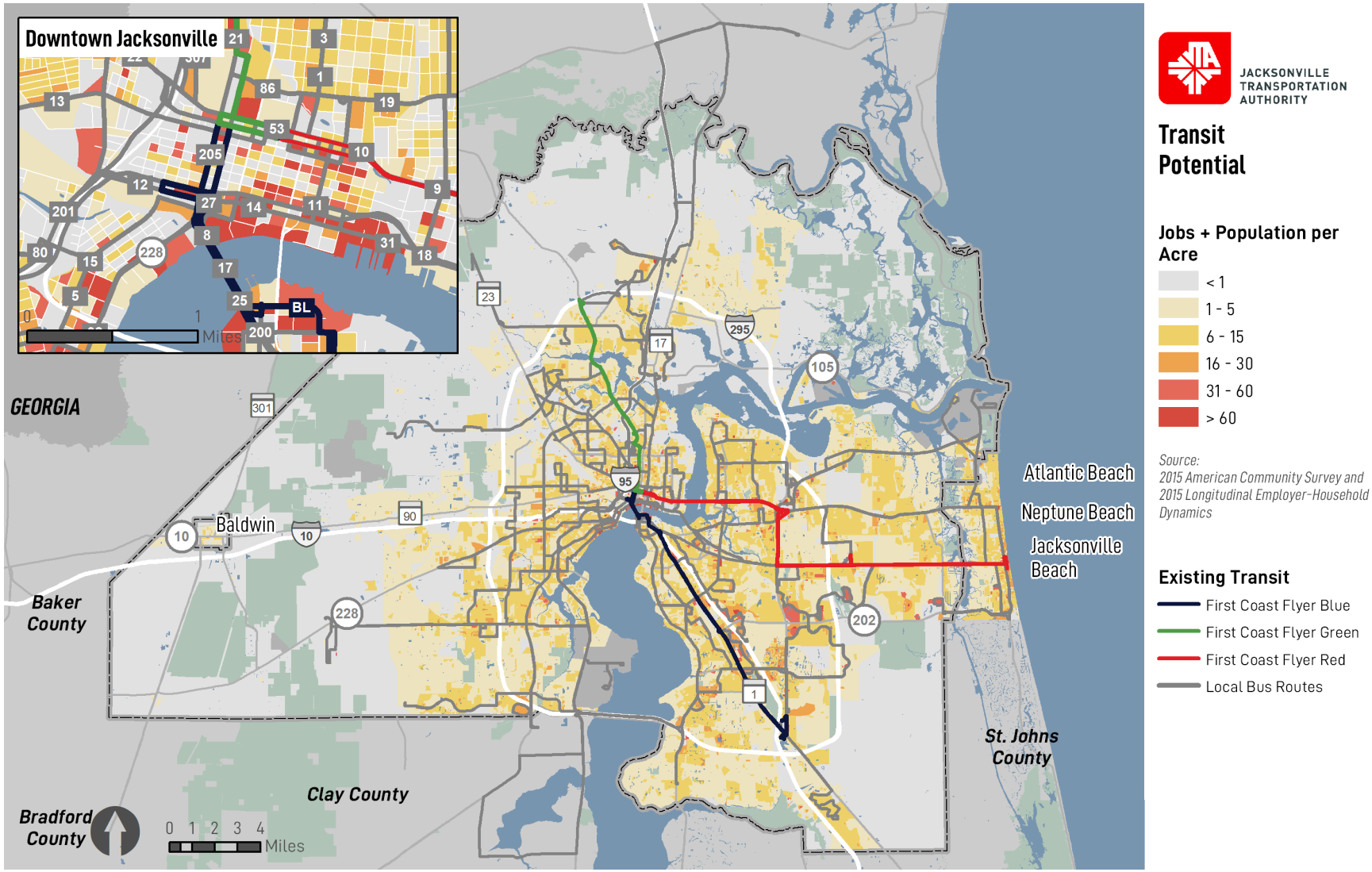


2.3.2 Duval County Transit Propensity

While some use transit only to commute between home and work, others rely on transit as a lifeline to services, such as shopping, medical appointments, and government services. The Transit Propensity indices below identify four key transit markets: transit-oriented populations, commuter populations, employment destinations, and activity destinations.

The indices draw on demographic, employment, and geographic characteristics from the ACS and Longitudinal Employer-Household Dynamics (LEHD) datasets. These measures are then weighted based on their relevance to transit ridership to generate each index's score. Together with other information on transit potential and travel flows, these indices form a basis for planning transit service in the Jacksonville region.

Transit-Oriented Populations Origin Index

The Transit-Oriented Population Origin Index (**Figure 2-20**) shows where residents who are likely to use transit live. This includes populations of young and senior citizens, low-income residents, households with one or fewer cars, and persons with disabilities. Areas with high concentrations of these populations are most in need of all-day, local transit services, providing access to downtown and crosstown destinations. In JTA's service area, the highest propensity areas are:

- **The Urban Core and the Northside neighborhoods east of New Kings Road**.
- **Southside:** San Marco, Spring Glen, San Jose, Craven, and Royal Lakes.
- **Westside:** Jacksonville Heights, Confederate Point, Cedar Hills Estate, Lackawanna, Murray Hill, Hillcrest, and Hyde Park.
- **Arlington:** Jacksonville University, Regency Mall, Woodland Acres, and Holiday Hill.

Commuter Origin Index

The Commuter Origin Index (**Figure 2-21**) details where commuters live. The data sources for this index include residents who are in the labor force or are employed, with a special emphasis on individuals who commute by transit or by means other than driving alone. Areas with high commuter origin propensity are most suitable for peak period, commuter or limited stop service, often directed towards downtown, but also serving high density residential and employer locations not located in the downtown. In JTA's service area, the highest propensity areas are:

- **Urban Core:** Springfield, Brentwood, Riverside.
- **Southside:** San Jose, Craven, Royal Lakes, and Greenland.
- **Westside:** Murray Hill, Hyde Park, Confederate Point, and Ortega Farms.
- **Arlington**: Jacksonville University, University Club, Lake Lucina, Arlington Hills, Holiday Hill, Woodland Acres, Sandalwood, and Golden Glades.
- **Jacksonville Beach and south Atlantic Beach**.

Figure 2-20: Duval County Transit-Oriented Population Origin Index

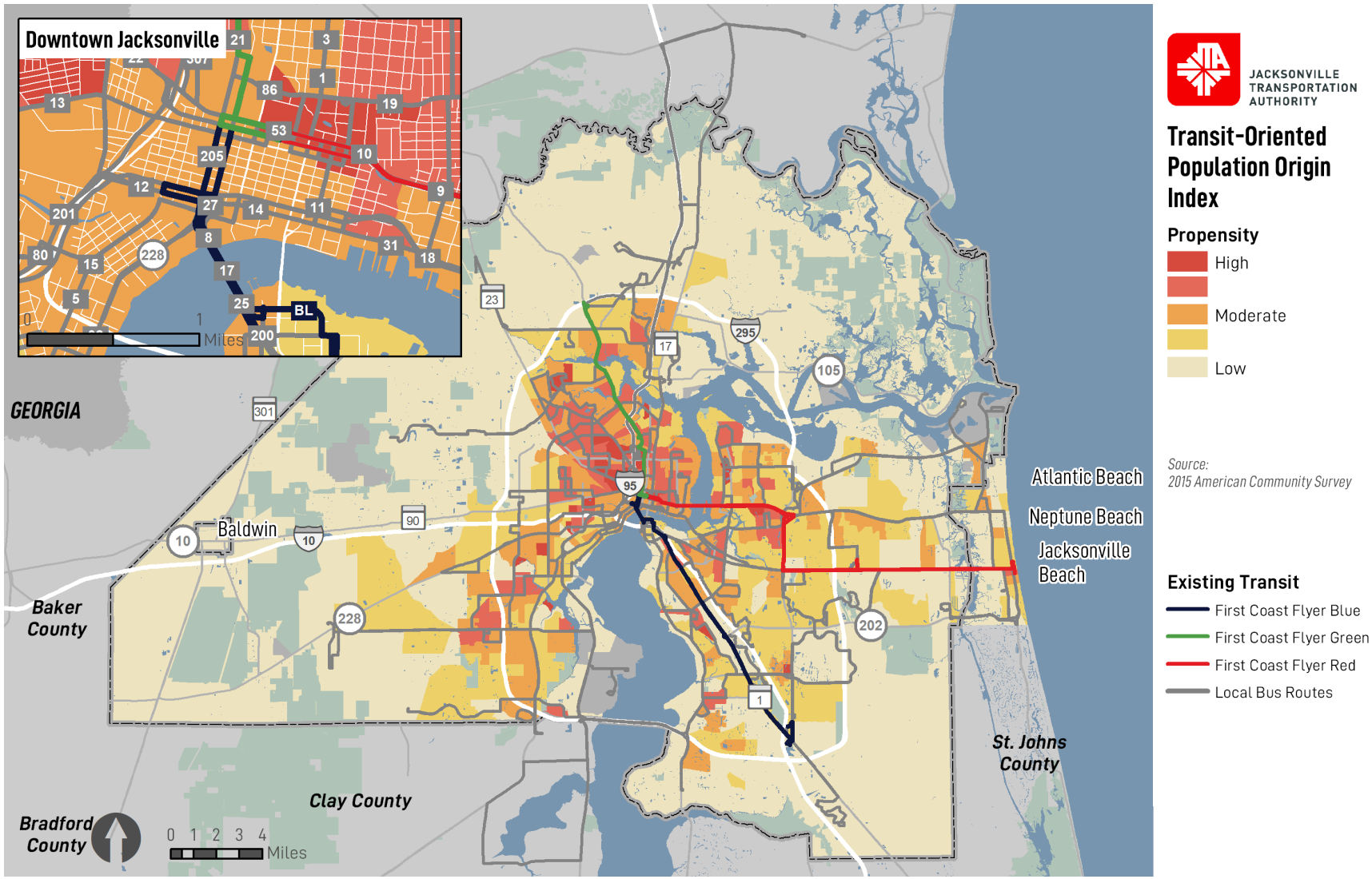
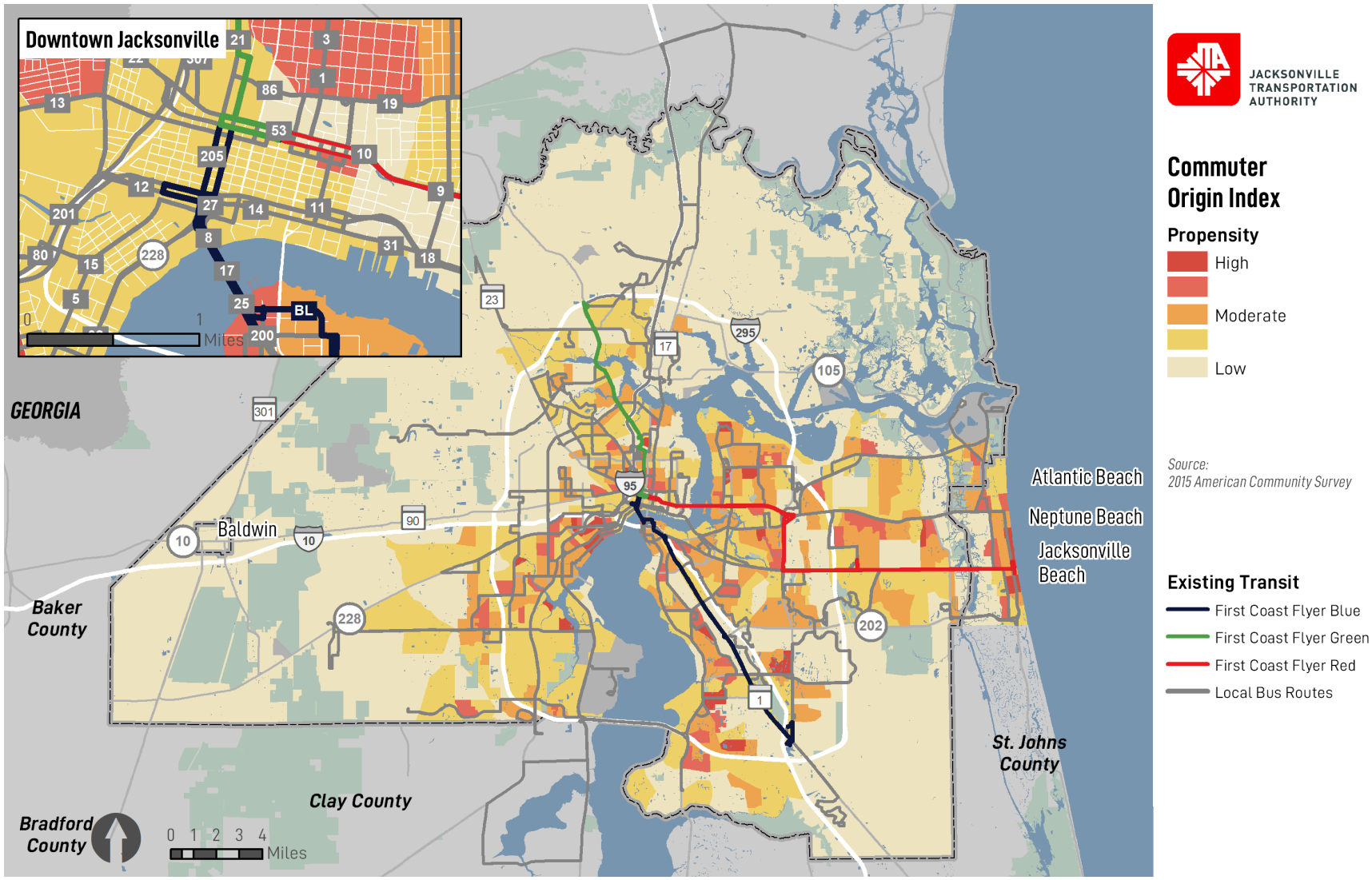


Figure 2-21: Duval County Commuter Origin Index



Employment Destination Index

The Employment Destination Index (**Figure 2-22**) shows where jobs in all sectors are heavily concentrated in the region. Areas with high employment destination propensity are most suitable for peak period, commuter or limited stop service, often directed towards downtown, but also serving high-density residential and employer locations not located in the downtown. Job density is highest in:

- **Urban Core:** Downtown Jacksonville, Brooklyn, Riverside.
- **Southside:** Riverplace, Spring Park, St. Nicholas, Sans-Souci, Southpoint, Deerwood Center, Royal Lakes, Deercreek, and the Mayo Clinic.
- **Westside:** Normandy and Fairfax.
- **Regency Mall**.
- **Jacksonville Beach**.

Activity Destination Index

The Activity Destination Index (**Figure 2-23**) illustrates other work destinations where residents might use transit to travel either for non-work trips or for lower-income service jobs. These destinations include retail, health care, social assistance, education, government facilities, recreation, and restaurants. Areas with high activity destination propensity benefit from both all day local service and peak hour high frequency service. The highest propensity areas are:

- **Urban Core:** Downtown Jacksonville, Brooklyn, and Riverside.
- **Southside:** Riverplace and Memorial Hospital in Sans-Souci.
- **Westside**: Normandy and Fairfax.
- **Arlington**: Retail near Windy Hill, Loretto, and Girvin.
- **Jacksonville Beach along Highway A1A.**

Figure 2-22: Duval County Employment Destination Index

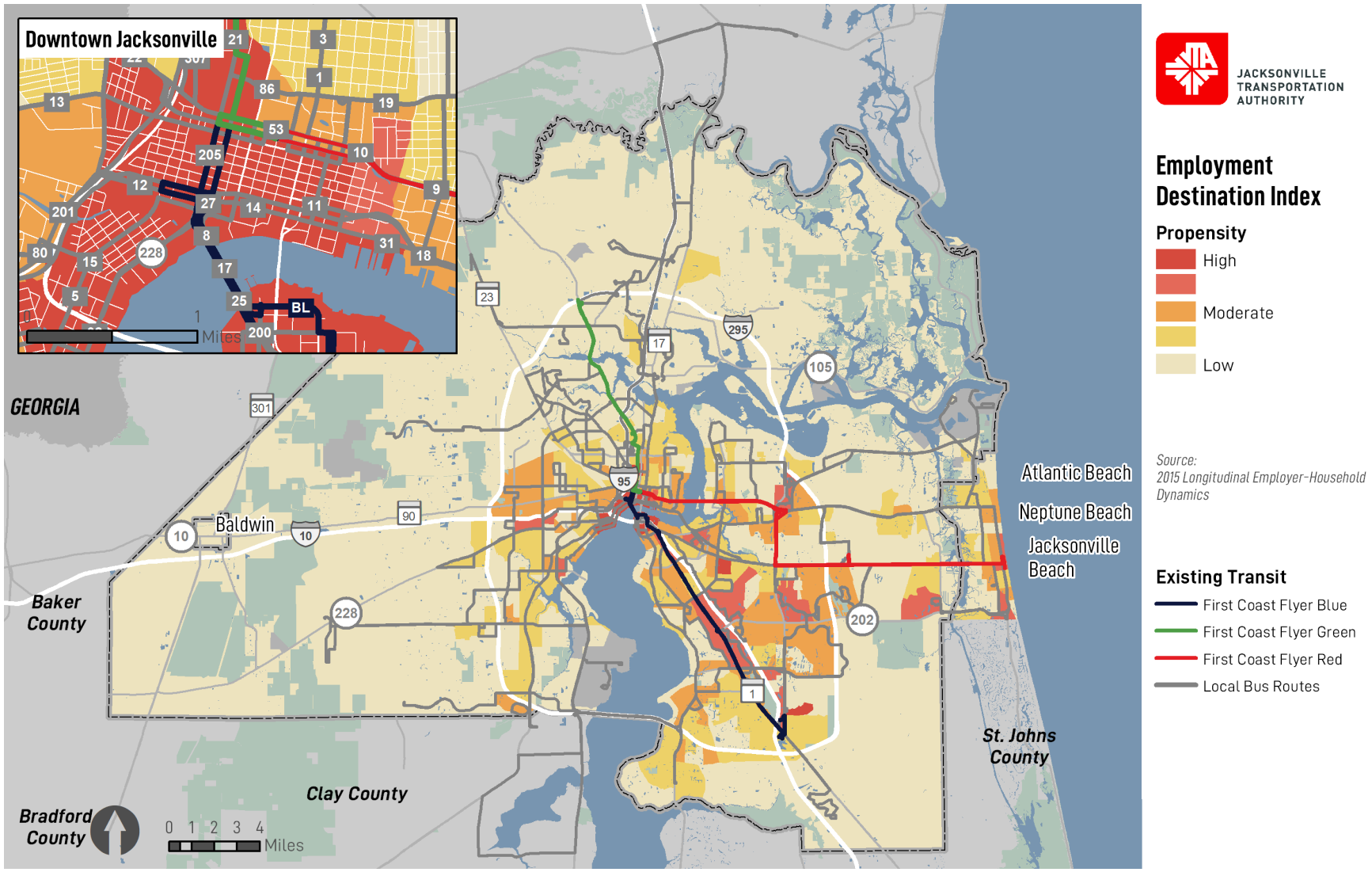
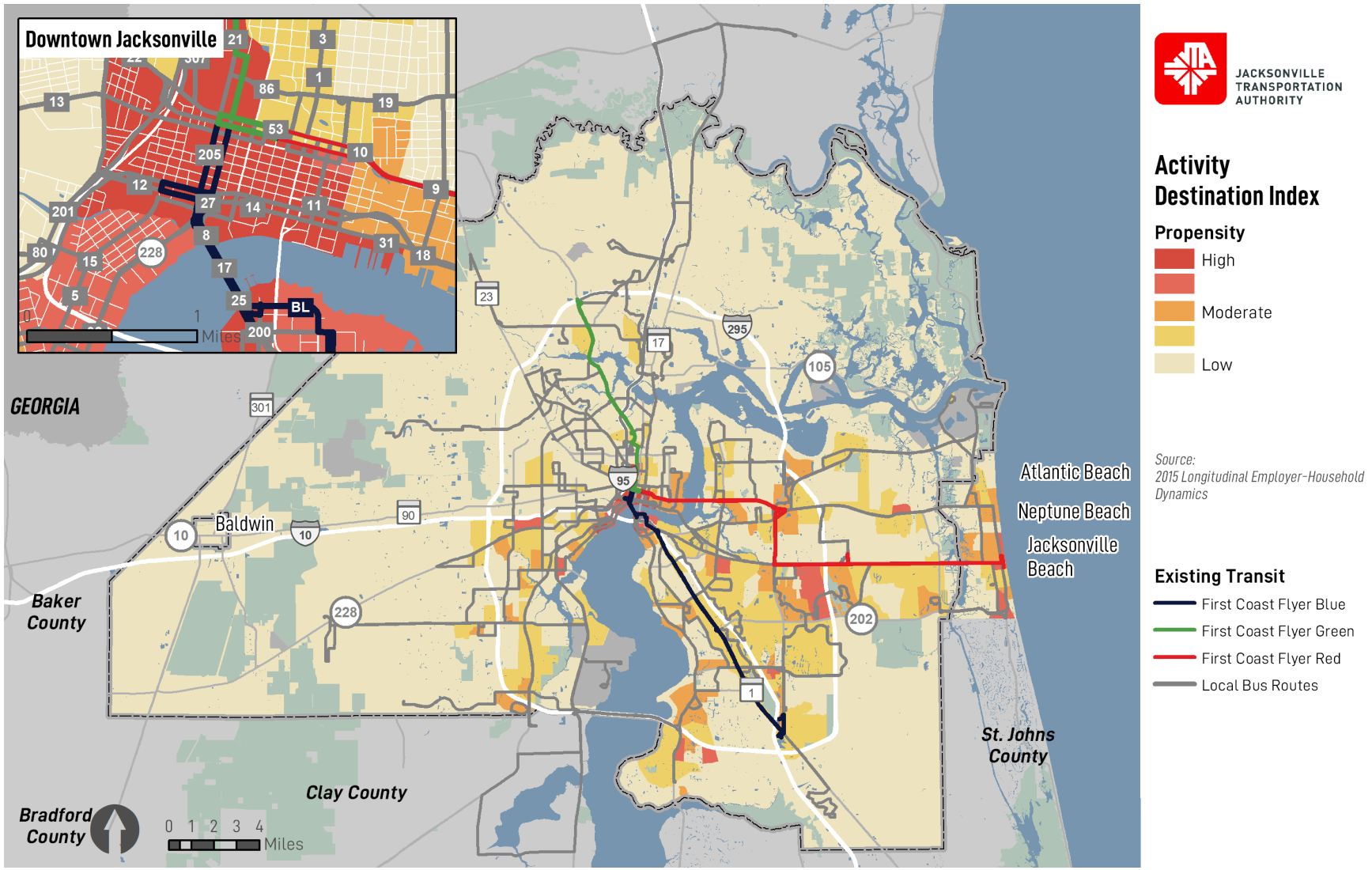


Figure 2-23: Duval County Activity Destination Index



2.3.3 Clay County Transit Potential

High transit ridership is most likely to be sustained in areas where significant concentrations of population and employment exist. Combining population and employment density together provides a measure of transit potential that shows the overall viability of transit service in each area.

Population Density

Most public transportation riders will access bus services by walking to a bus stop. Thus, the geographic areas served by transit are generally those within a quarter- or half-mile distance from a bus stop, or a ten-minute walk. Denser residential areas have more people living close enough to access a bus stop, making these stronger markets for transit. **Figure 2-24** shows the population density of Clay County with darker colors corresponding to higher densities.

Clay County is predominantly characterized by low-density suburban development patterns. The densest residential areas in Clay County are Orange Park, Bellair-Meadowbrook Terrace, Lakeside, Oakleaf Plantation, and Middleburg.

Employment Density

Employment density is a strong indicator of demand for transit as most public transportation trips begin or end at work. Serving employment centers also provides access to job opportunities for residents. At least six jobs per acre are typically required for an area to support fixed-route transit service. In **Figure 2-25**, areas above this threshold are shown with darker colors corresponding to higher densities. Areas with higher densities can also support greater transit frequencies.

Clay County employment centers are concentrated primarily along the State Road 21 (Blanding Boulevard) corridor between Middleburg and Lakeside and in the neighborhoods of Orange Park and Meadowbrook Terrace.

Population and Employment Density

Population and Employment Density combines both measures to understand where the overall viability of transit service in the region is highest. Blocks with densities over five jobs plus population per acre are areas dense enough to support fixed transit. Blocks with densities between one and five jobs plus population per acre may still benefit from alternative transit options such as flexible or on-demand service. **Figure 2-26** map population and employment density together to show transit potential.

Opportunities for fixed and on-demand transit service in Clay County are concentrated primarily in the northeast portion of the County but are generally comprised of the following neighborhoods: Orange Park, Bellair-Meadowbrook Terrace, Oakleaf Plantation, Fleming Island, Lakeside, Middleburg, Green Cove Springs, and Penney Farms.

Figure 2-24: Clay County Population Density

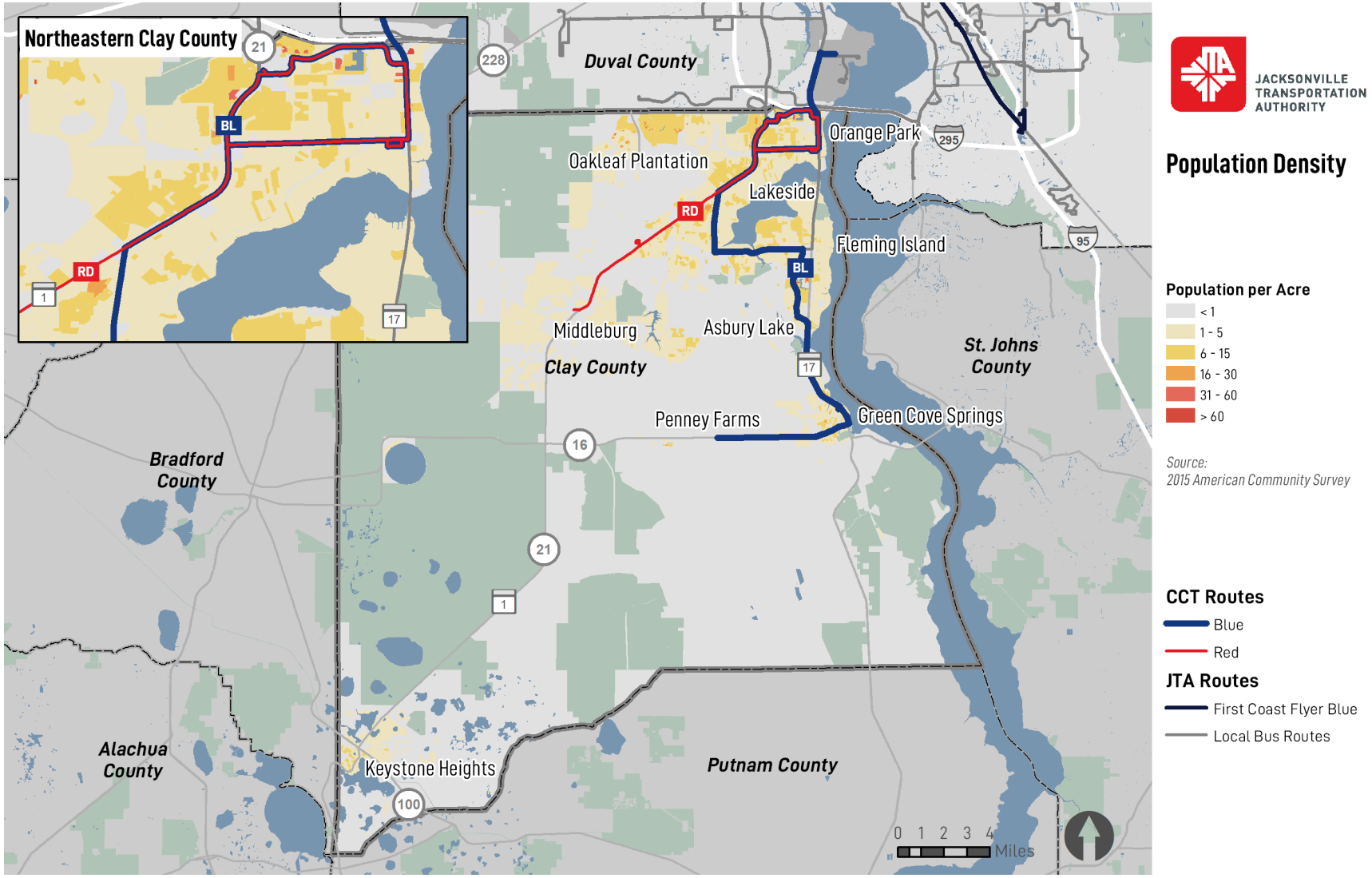


Figure 2-25: Clay County Employment Density

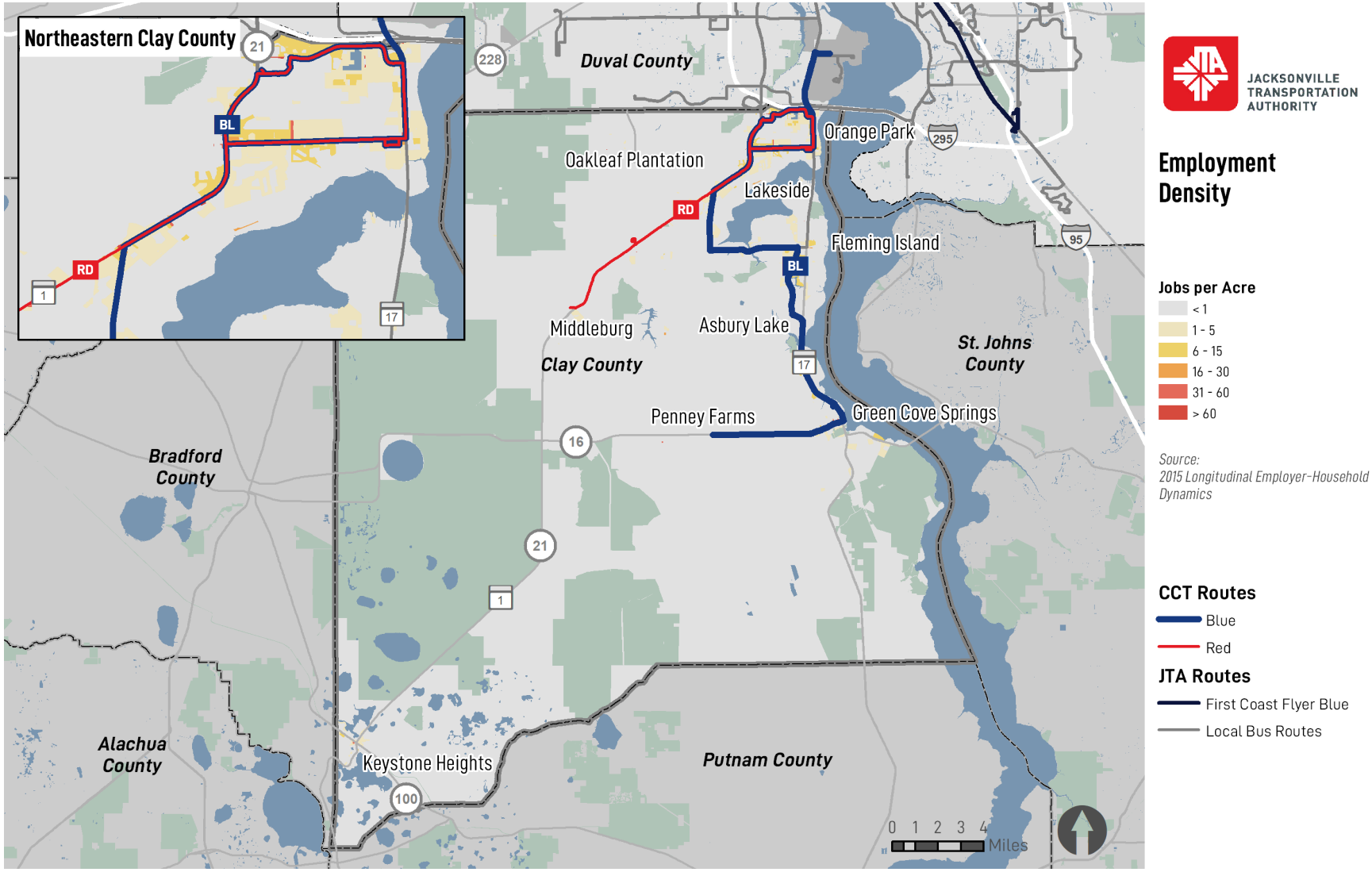
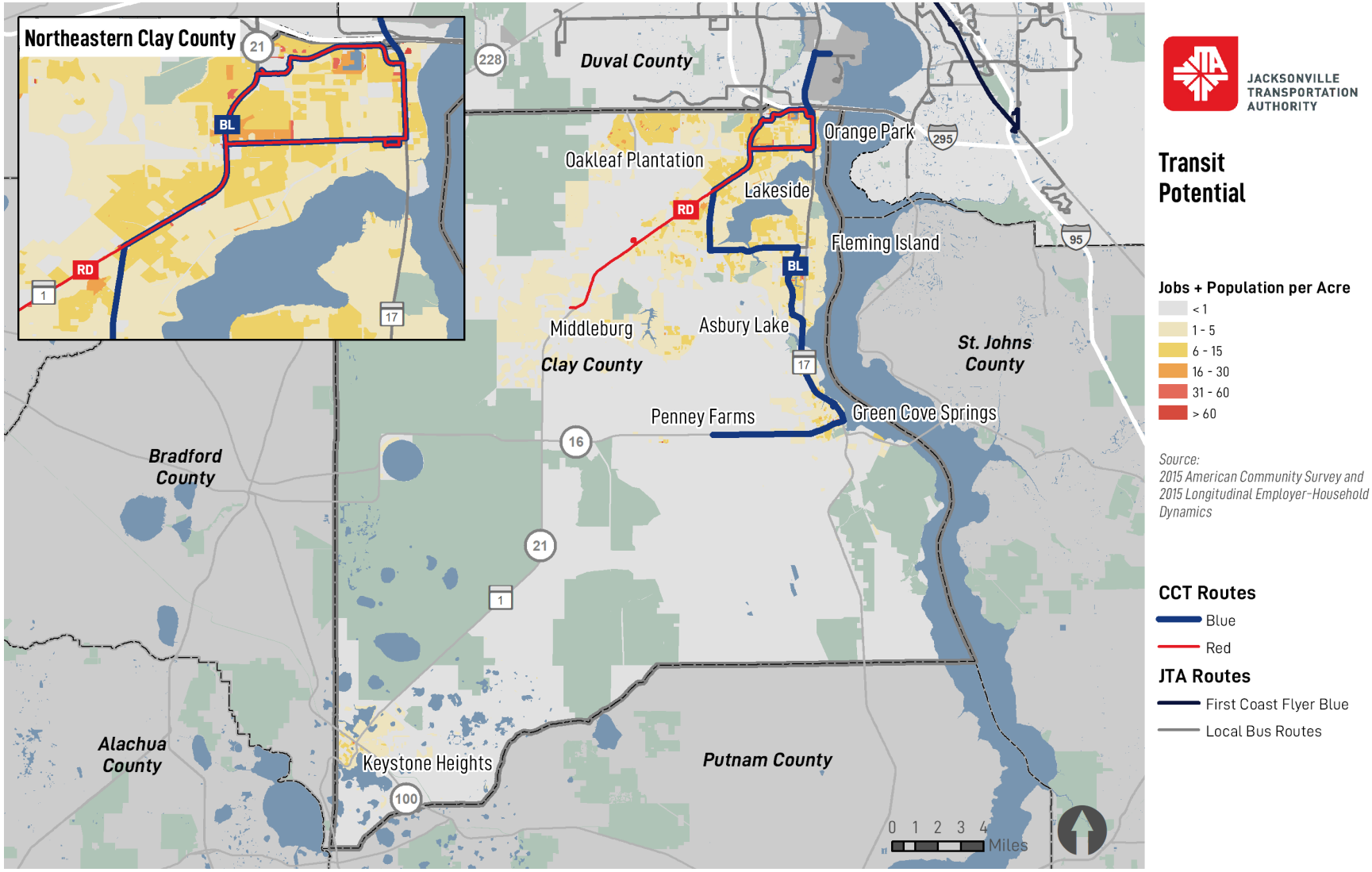


Figure 2-26: Clay County Transit Potential



2.3.4 Clay County Transit Propensity

The Transit Propensity indices below identify four key transit markets: transit-oriented populations, commuter populations, employment destinations, and activity destinations. The indices draw on demographic, employment, and geographic characteristics from the ACS and Longitudinal Employer-Household Dynamics (LEHD) datasets. These measures are then weighted based on their relevance to transit ridership to generate each index's score. Together with other information on transit potential and travel flows, these indices form a basis for planning transit service in the Jacksonville region.

The indices are calculated separately for Duval County and Clay County. Because relative scores are provided within each county, a "Moderate" propensity area for Duval County is not necessarily less suitable for transit than a "High" propensity area in Clay County.

Transit-Oriented Populations Origin Index

The Transit-Oriented Population Origin Index shows where residents who are likely to use transit live. This includes populations of young and senior citizens, low-income residents, households with one or fewer cars, and persons with disabilities. Areas with high concentrations of these populations are most in need of all-day, local transit services, providing access to downtown and crosstown destinations.

The highest propensity areas for transit-oriented populations in Clay County (**Figure 2-27**) are Orange Park, Bellair-Meadowood Terrace, Lakeside, Oakleaf Plantation, Middleburg, Fleming Island, and Green Cove Springs.

Commuter Origin Index

The Commuter Origin Index details where commuters live. The data sources for this index include residents who are in the labor force or are employed, with a special emphasis on individuals who commute by transit or by means other than driving alone. Areas with high commuter origin propensity are most suitable for peak period, commuter or limited stop service, often directed towards downtown, but also serving high-density residential and employer locations not located in the downtown.

The highest propensity areas for commuters (**Figure 2-28**) in Clay County are Orange Park, Bellair-Meadowood Terrace, Fleming Island, Middleburg, and Green Cove Springs.

Employment Destination Index

The Employment Destination Index shows where jobs in all sectors are heavily concentrated in the region. Areas with high employment destination propensity are most suitable for peak period, commuter or limited stop service, often directed towards downtown, but also serving high-density residential and employer locations not located in the downtown.

Job density in Clay County (**Figure 2-29**) is highest in Orange Park, Lakeside, Fleming Island, and Green Cove Springs.

Activity Destination Index

The Activity Destination index illustrates other work destinations where residents might use transit to travel either for non-work trips or for lower-income service jobs. These destinations include retail, health care, social assistance, education, government facilities, recreation, and restaurants. Areas with high activity destination propensity benefit from both all-day local service and peak hour high frequency service.

The highest propensity areas in Clay County (**Figure 2-30**) are Orange Park, Bellair-Meadowood Terrace, Fleming Island, Middleburg, and Green Cove Springs.

Figure 2-27: Clay County Transit-Oriented Population Origin Index

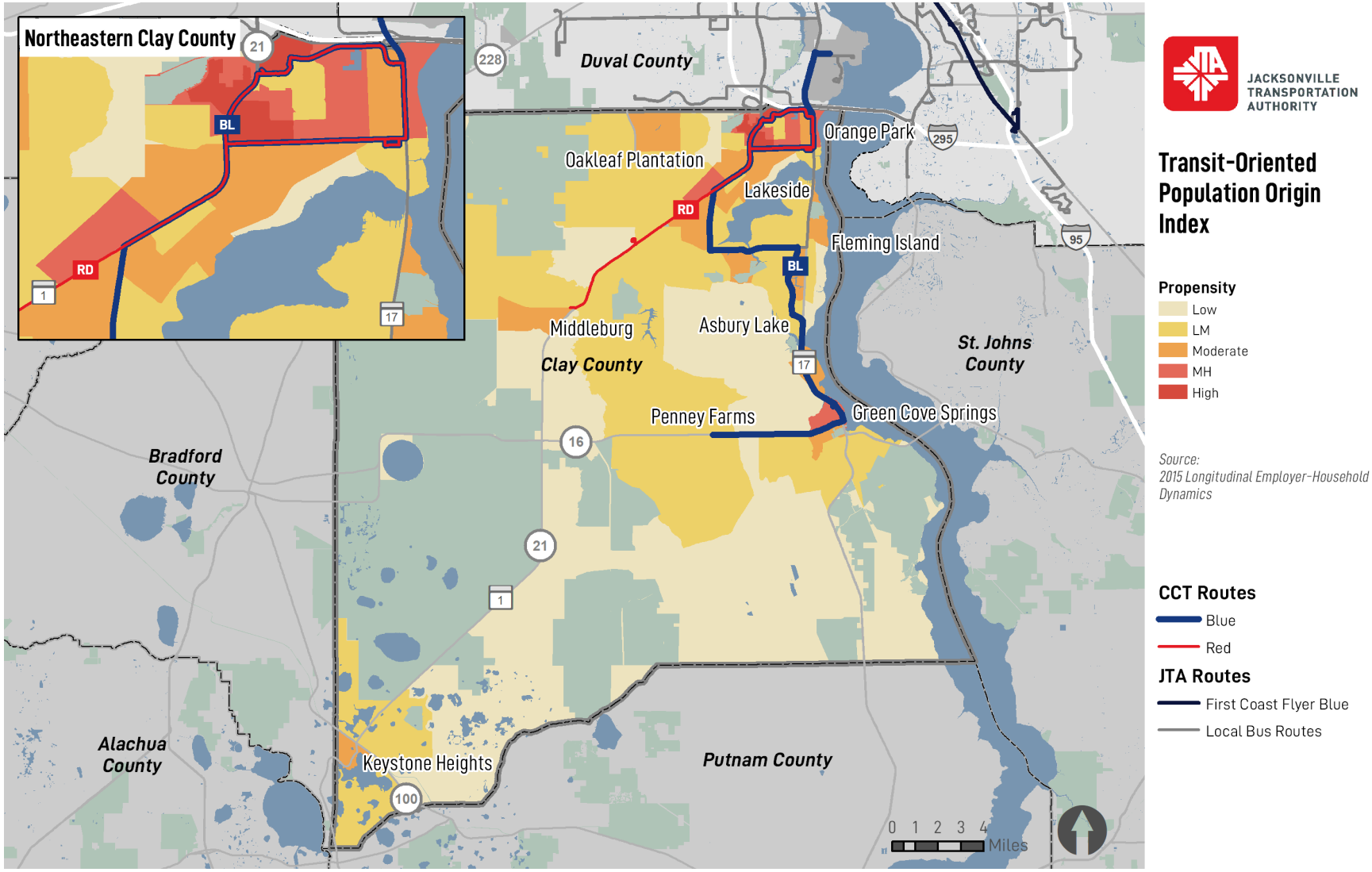


Figure 2-28: Clay County Commuter Origin Index

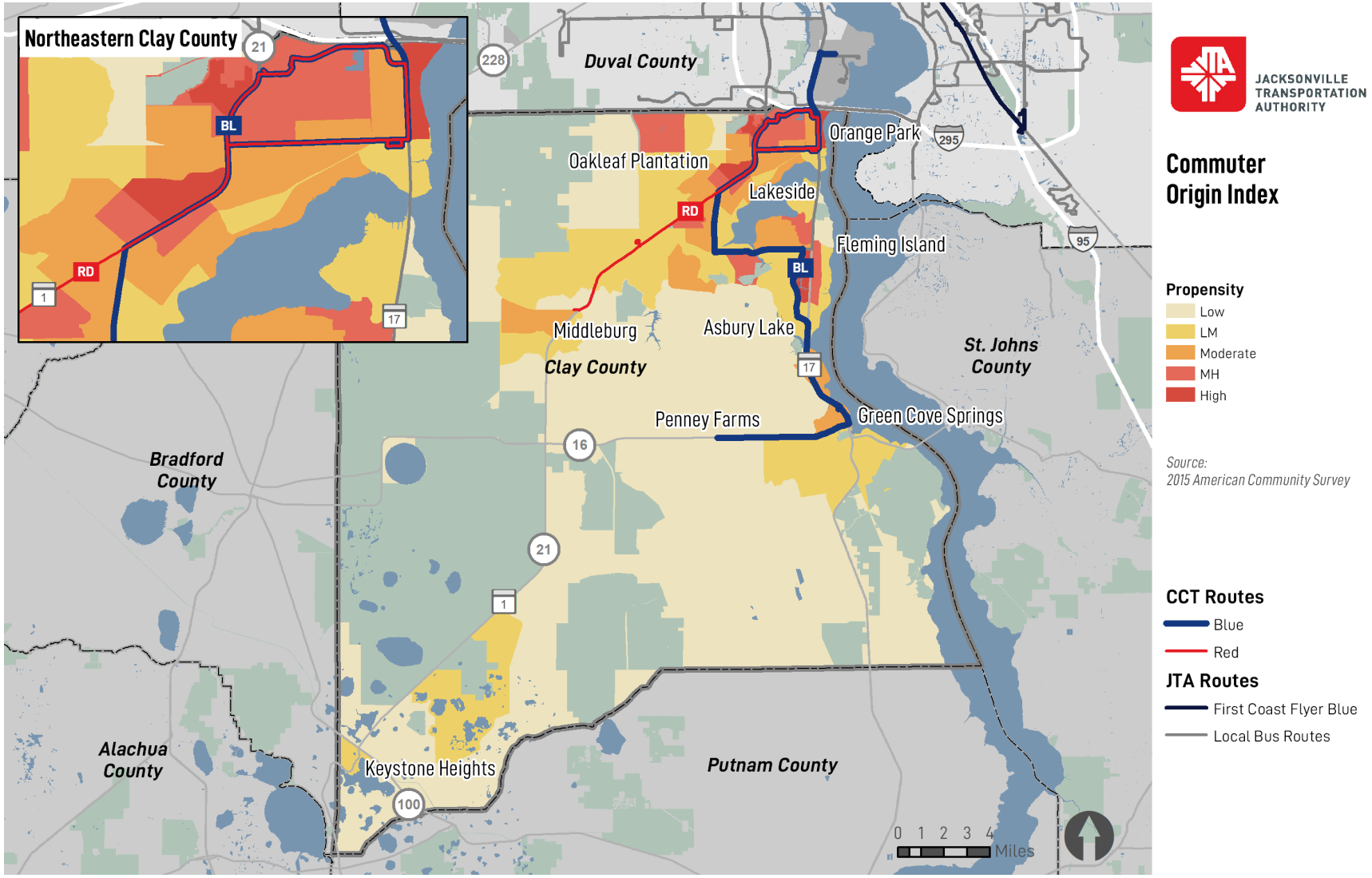


Figure 2-29: Clay County Employment Destination Index

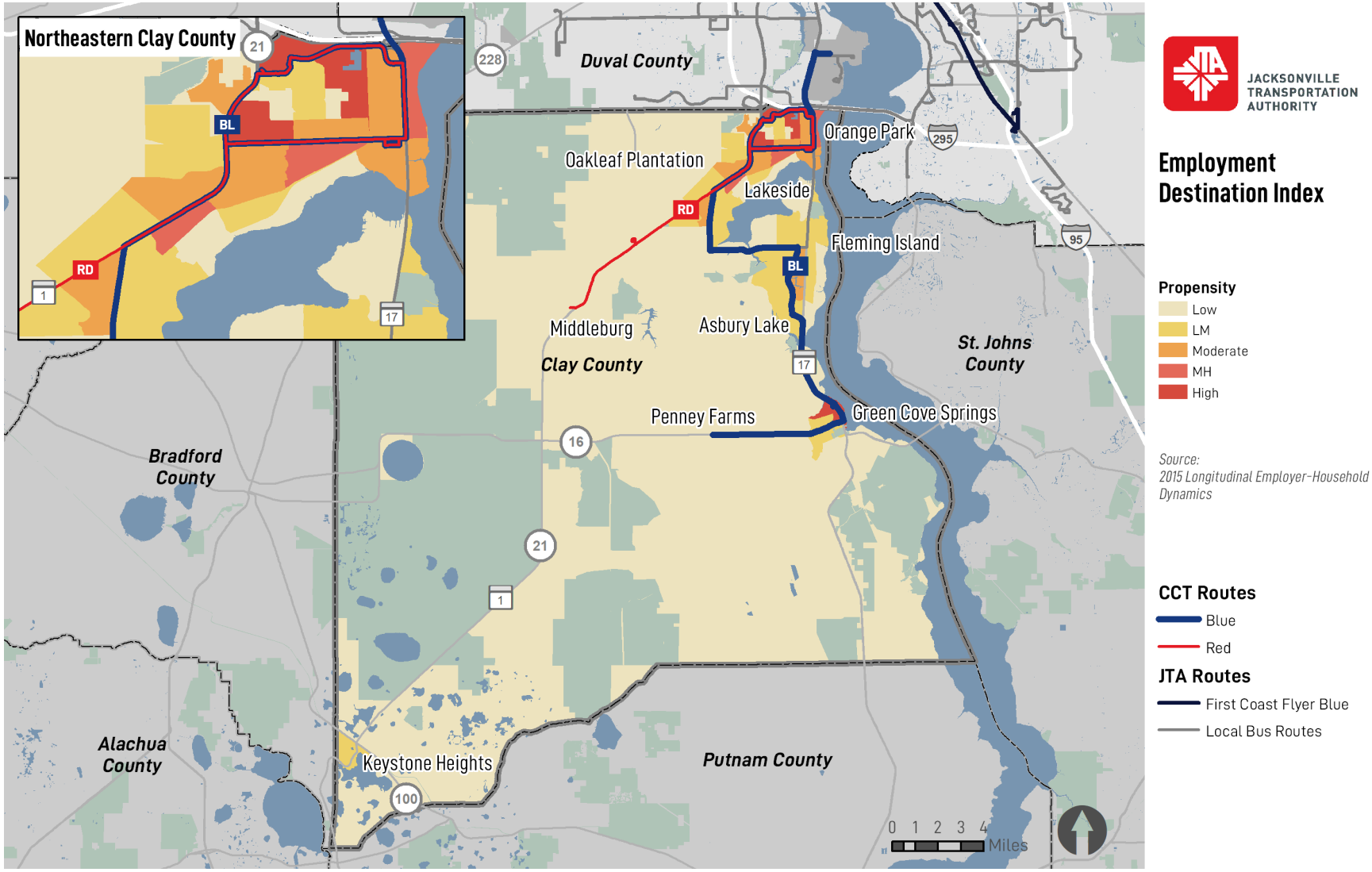
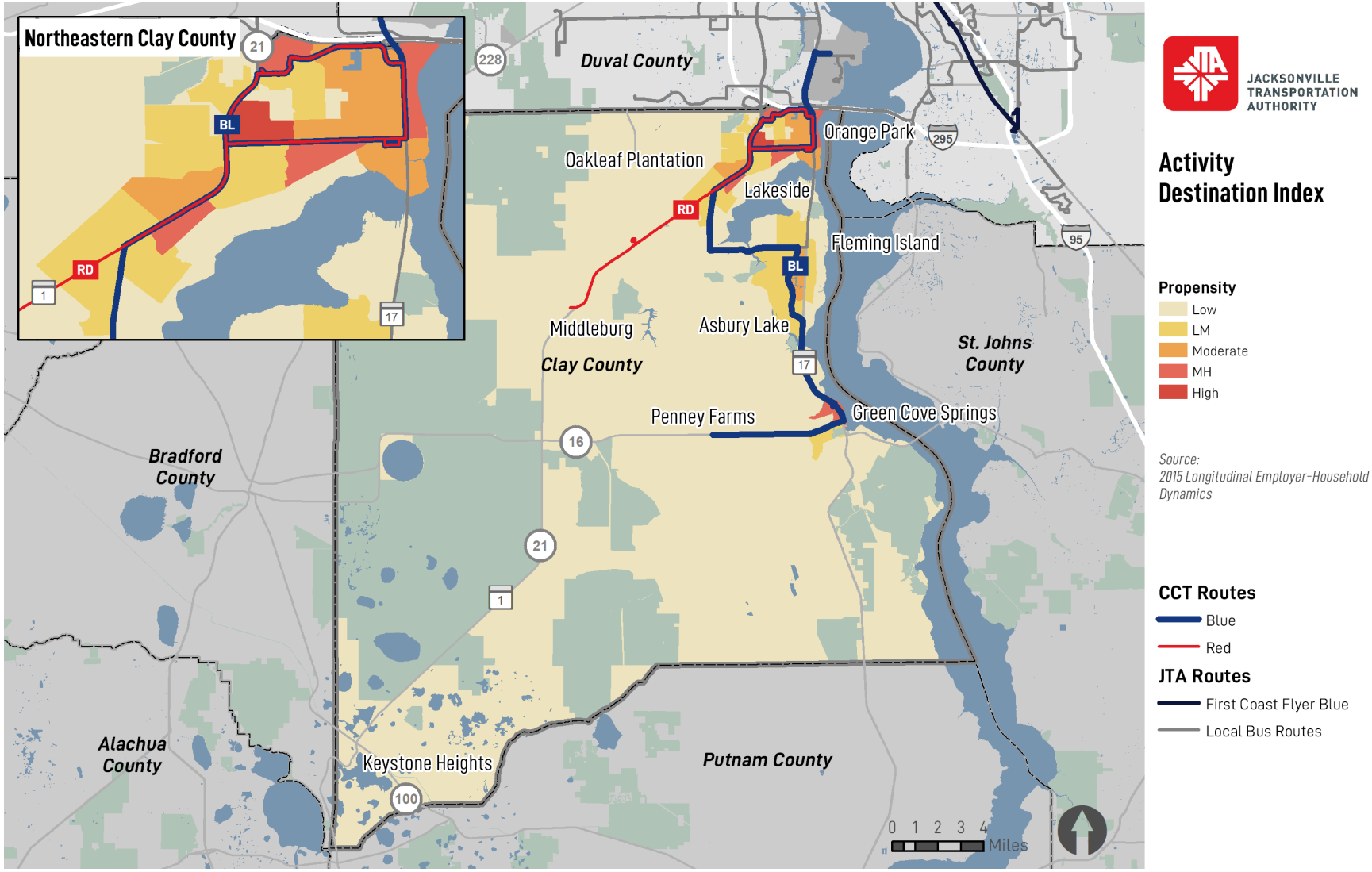


Figure 2-30: Clay County Activity Destination Index



2.4 Land Use/Growth Characteristics

Examination of the existing and future land use, as well as employment characteristics, provides insight into the changes in growth and development in the region. These characteristics are highlighted in this section as well as an examination of major developments in the region.

2.4.1 Duval County Employment by Industry or Major Employers

Identifying the employment by industry in a region is an important factor in identifying transit ridership markets. The employment by industry in Duval County for 2010, and projections for 2030 and 2040 are shown in **Table 2-13**. The largest employment sector in Duval County was Retail Trade in 2010, but it is projected to change to Health Care and Social Assistance in 2030 and 2040.

Table 2-13: Duval County Employment by Industry, 2010, 2030, 2040

Industry	2010	2030	2040
Agriculture, Forestry, Fishing and Hunting	549	601	627
Mining, Quarrying, and Oil and Gas Extraction	99	112	116
Utilities	376	411	429
Construction	39,306	43,297	45,103
Manufacturing	39,738	43,012	44,608
Wholesale Trade	20,492	22,750	23,845
Retail Trade	61,371	67,631	70,493
Transportation and Warehousing	24,449	27,355	28,796
Information	13,882	15,359	16,067
Finance and Insurance	41,546	48,496	51,922
Real Estate and Rental and Leasing	11,509	14,582	16,032
Professional, Scientific, and Technical Services	28,713	33,928	36,459
Management of Companies and Enterprises	5,425	6,226	6,639
Administrative and Support and Waste Management and Remediation Services	35,270	43,661	47,690
Educational Services	27,718	32,970	35,554
Health Care and Social Assistance	57,340	68,219	73,680
Arts, Entertainment, and Recreation	5,009	5,720	6,055
Accommodation and Food Services	38,919	42,906	44,772
Other Services (except Public Administration)	21,486	25,958	27,914
Public Administration	45,944	54,641	58,964
Total Employment	**519,141**	**597,835**	**635,765**

Source: Northeast Regional Planning Model (NERPM) projections, North Florida TPO 2040 LRTP

2.4.2 Duval County Land Use Patterns and Scenarios

Examination of land use patterns and scenarios aids in providing a comprehensive picture of growth in a region. It allows for the identification of the types of future growth that will need transit service, and the amount of service needed.

Existing Land Use Map

The Existing Land Use Map for Duval County is shown in **Figure 2-31**. The Existing Land Use Map provides an overview of existing development and the allowed uses on each parcel. These uses are further defined in the City of Jacksonville Land Development Code and zoning regulations. In the map, residential use constitutes the largest land area, followed by governmental use.

Future Land Use Map

The Future Land Use Map is part of the Future Land Use Element of the City of Jacksonville 2030 Comprehensive Plan. This Element was revised in June 2018. Development is guided by the densities and intensities as established in the Future Land Use Element and as defined by the Future Land Use map category description and their associated provisions. The Duval County Future Land Use Map is shown in **Figure 2-32**.

Future development must be consistent with the identified uses in the Future Land Use Element, which are further defined in the City of Jacksonville's Land Development Code and zoning regulations. In the Future Land Use Map, low-density residential use constitutes the largest land area, followed by agricultural use and public buildings and facilities.

2.4.3 Duval County Activity Centers

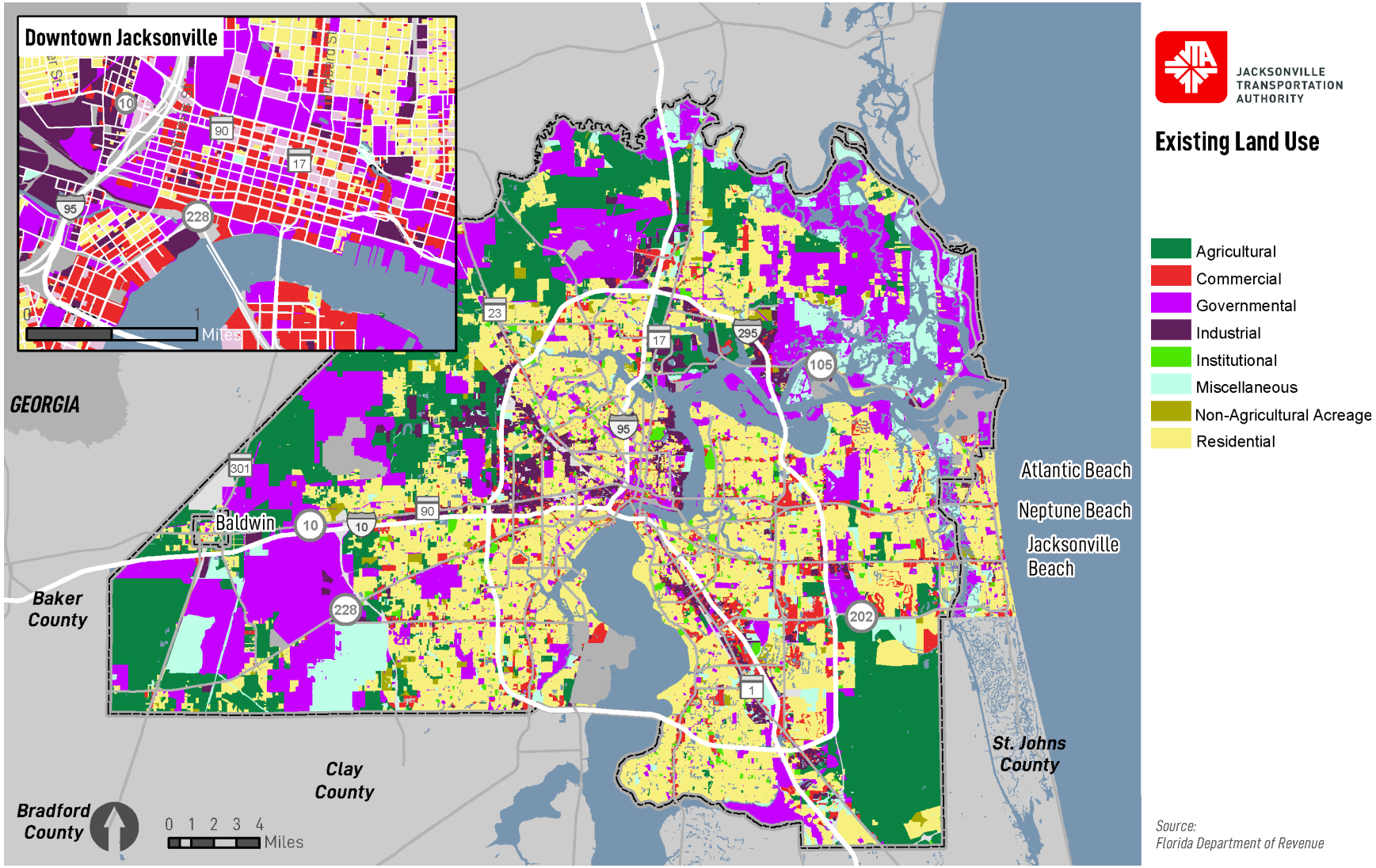
MPO Activity Centers

Duval County will continue to see future development that will impact the region's transportation system in the future. To plan for projected transit needs, developments of regional impact (DRIs) in the area were identified. A map of the DRIs in the County are shown in **Figure 2-33**.

Duval County's Future Land Use Map shows a good amount of commercial, multi-use, business park, and industrial use where future DRIs are located. As shown on this map, the larger DRIs are located outside the I-295 beltway. The spreading of the development to the outer portions of the County creates additional challenges for transit service.

Source: https://www.ju.edu/military/img/header-jacksonville-skyline.jpg. No copyright infringement is intended.

Figure 2-31: Duval County Existing Land Use



Source: Florida Department of Revenue

Figure 2-32: Duval County Future Land Use

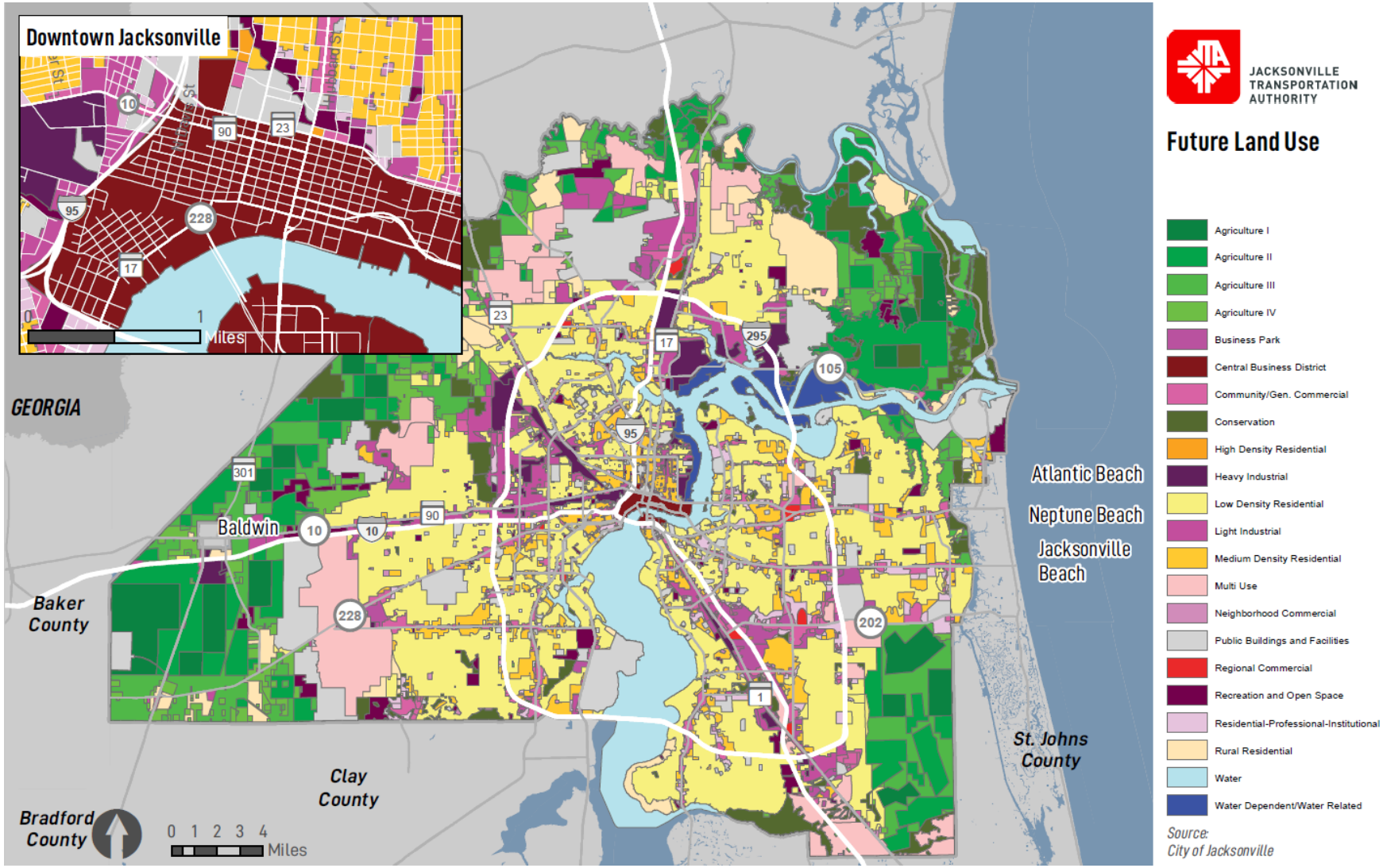
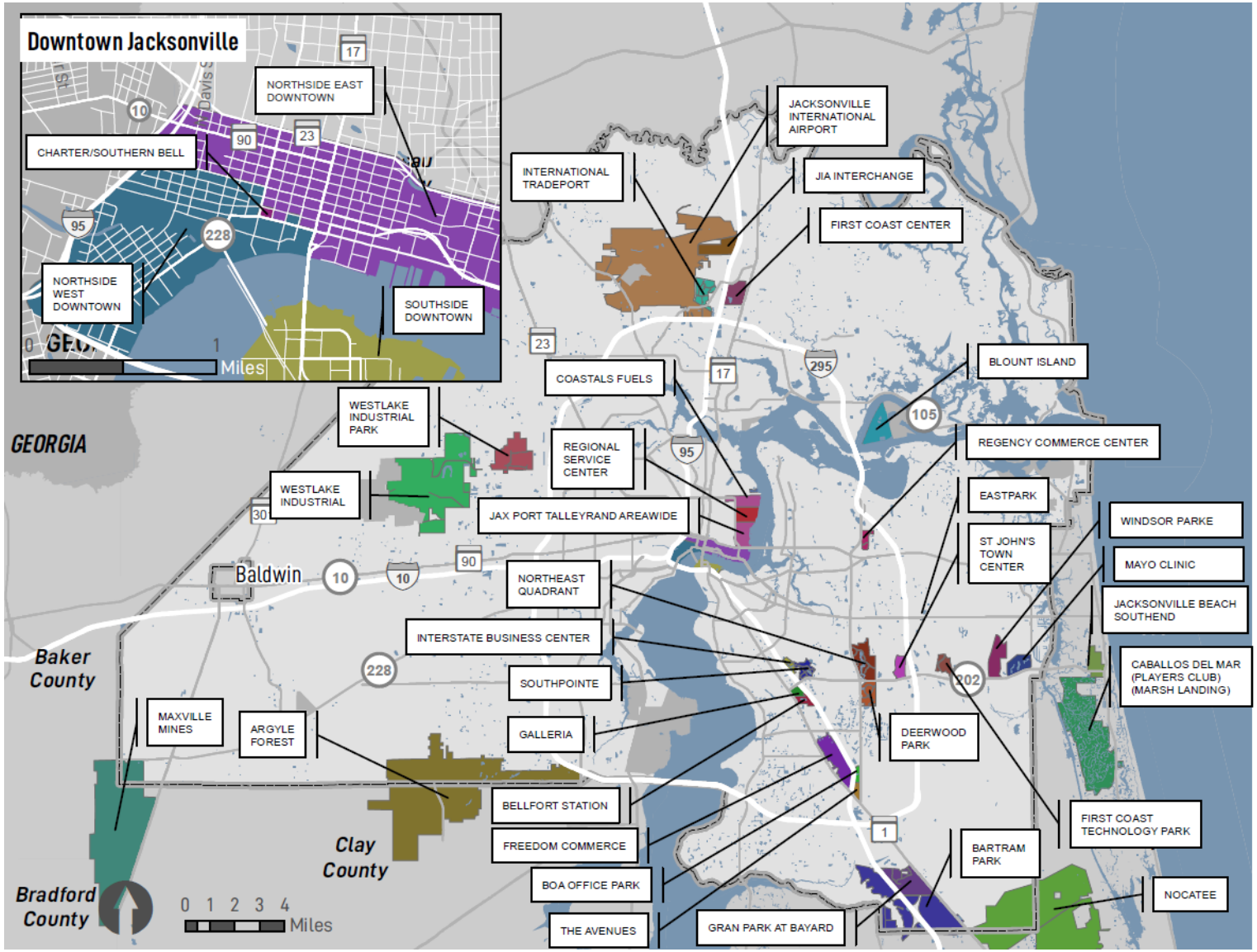


Figure 2-33: Developments of Regional Impact in Duval County



Source: City of Jacksonville

2.4.4 Clay County Employment by Industry or Major Employers

Identifying the employment by industry in a region is an important factor in identifying transit ridership markets. The employment by industry in Clay County for 2010, and projections for 2030 and 2040, are shown in **Table 2-14**. The largest employment sector in Clay County is Retail Trade, providing 21 percent in 2010 of the employment and 18 percent in 2030 and 2040.

Table 2-14: Clay County Employment by Industry 2010, 2030, 2040

Industry	2010	2030	2040
Agriculture, Forestry, Fishing and Hunting	75	261	355
Mining, Quarrying, and Oil and Gas Extraction	24	87	120
Utilities	619	818	919
Construction	4,615	9,666	12,189
Manufacturing	1,563	2,893	3,558
Wholesale Trade	1,496	2,327	2,741
Retail Trade	11,450	14,456	15,951
Transportation and Warehousing	964	2,011	2,536
Information	859	1,265	1,467
Finance and Insurance	1,244	1,854	2,158
Real Estate and Rental and Leasing	1,504	1,733	1,846
Professional, Scientific, and Technical Services	2,260	2,679	2,888
Management of Companies and Enterprises	177	459	599
Administrative and Support and Waste Management and Remediation Services	1,420	2,130	2,487
Educational Services	5,327	7,220	8,165
Health Care and Social Assistance	6,908	9,362	10,588
Arts, Entertainment, and Recreation	1,523	1,861	2,029
Accommodation and Food Services	6,240	7,846	8,645
Other Services (except Public Administration)	2,835	4,047	4,651
Public Administration	3,351	4,539	5,135
Total Employment	**54,454**	**77,514**	**89,027**

Source: Northeast Regional Planning Model (NERPM) projections, North Florida TPO 2040 LRTP

2.4.5 Clay County Land Use Patterns and Scenarios

Examination of land use patterns and scenarios aids in providing a comprehensive picture of growth in a region. It allows for the identification of the types of future growth that will need transit service and the amount of service needed.

Existing Land Use Map

The Existing Land Use Map for Clay County is shown in **Figure 2-34**. The Existing Land Use Map provides an overview of existing development, and the allowed uses on each parcel. These uses are further defined in the Clay County Land Development Code. In the map, agricultural use constitutes the largest land area, followed by public ownership use.

Future Land Use Map

The Future Land Use map is part of the Future Land Use Element of the Clay County 2040 Comprehensive Plan. This Comprehensive Plan is a living document and is regularly revised. The last revision to the text and map was April 23, 2019. Development is guided by the densities and intensities as established in the Future Land Use Element and as defined by the Future Land Use map category description and their associated provisions. The Clay County Future Land Use Map is shown in **Figure 2-32**. Future development must be consistent with the identified uses in the Future Land Use Element, which are further defined in the Clay County's Land Development Code. In the Future Land Use Map, agricultural use constitutes the largest land area, followed by public ownership use.

2.4.6 Activity Centers

Developments of Regional Impact

Clay County will continue to see future development that will impact the region's transportation system in the future. To plan for projected transit needs, DRIs in the area were identified. A map of the DRIs in the county are shown in **Figure 2-36**.

Figure 2-34: Clay County Existing Land Use

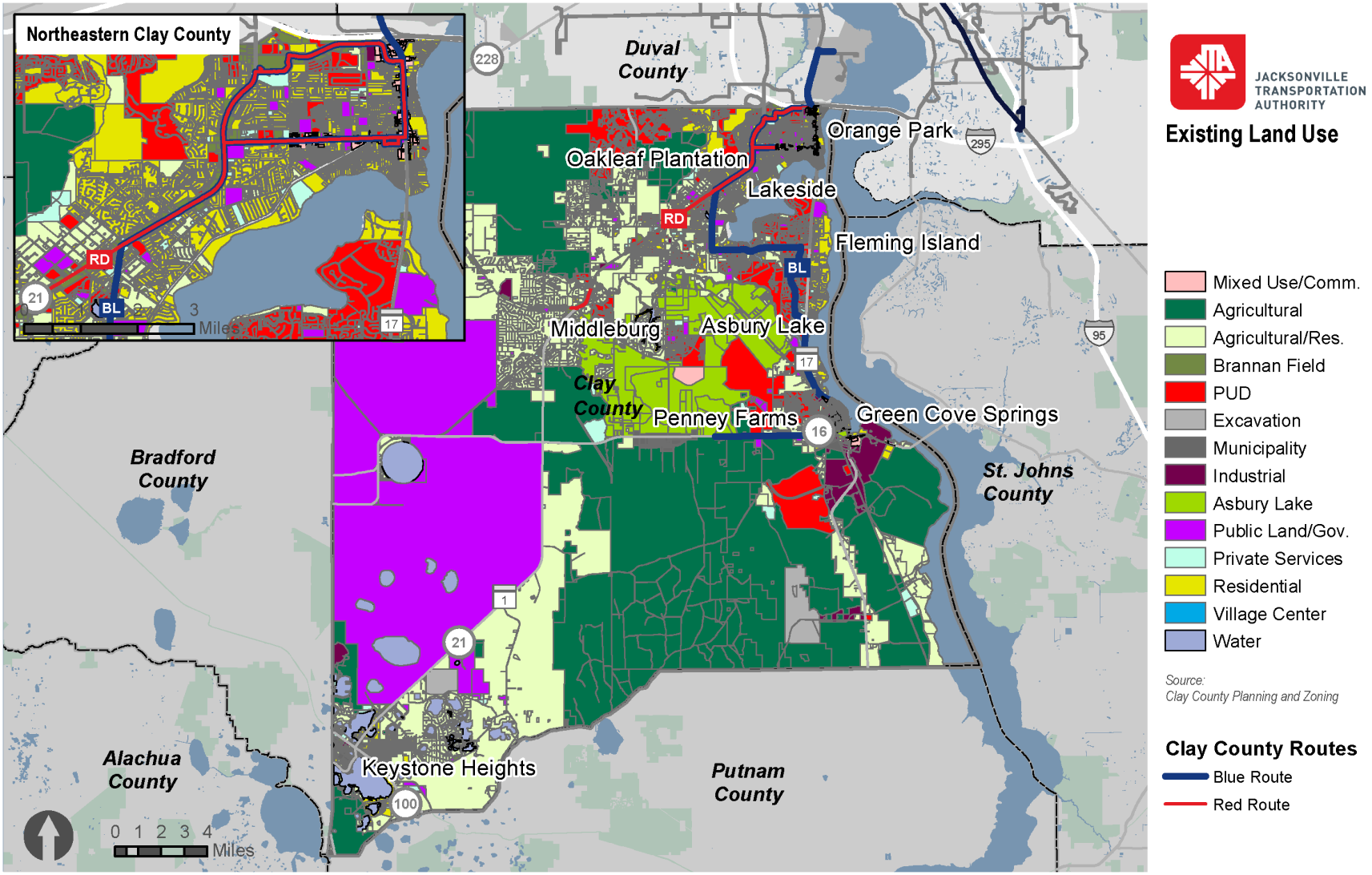


Figure 2-35: Clay County Future Land Use

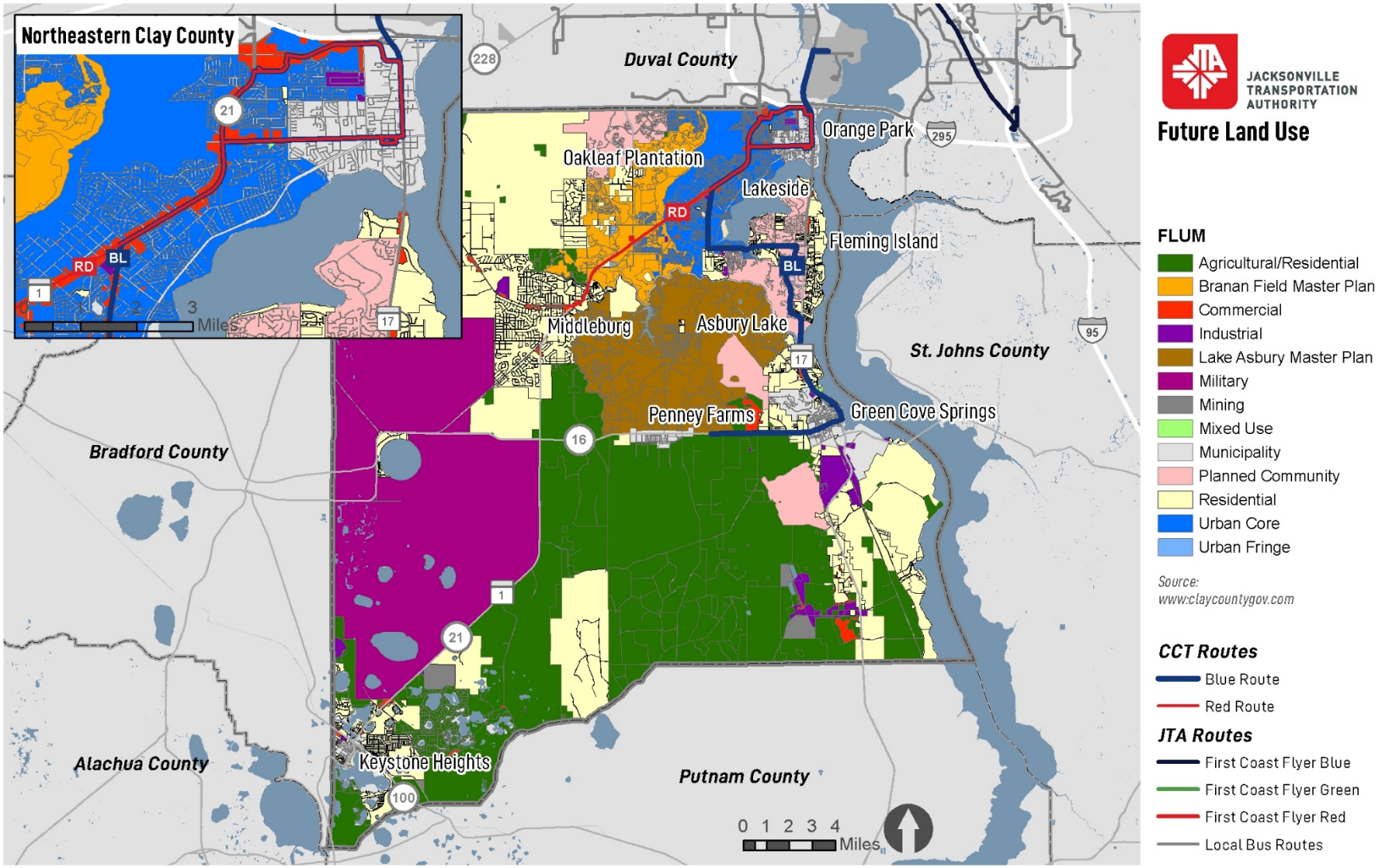
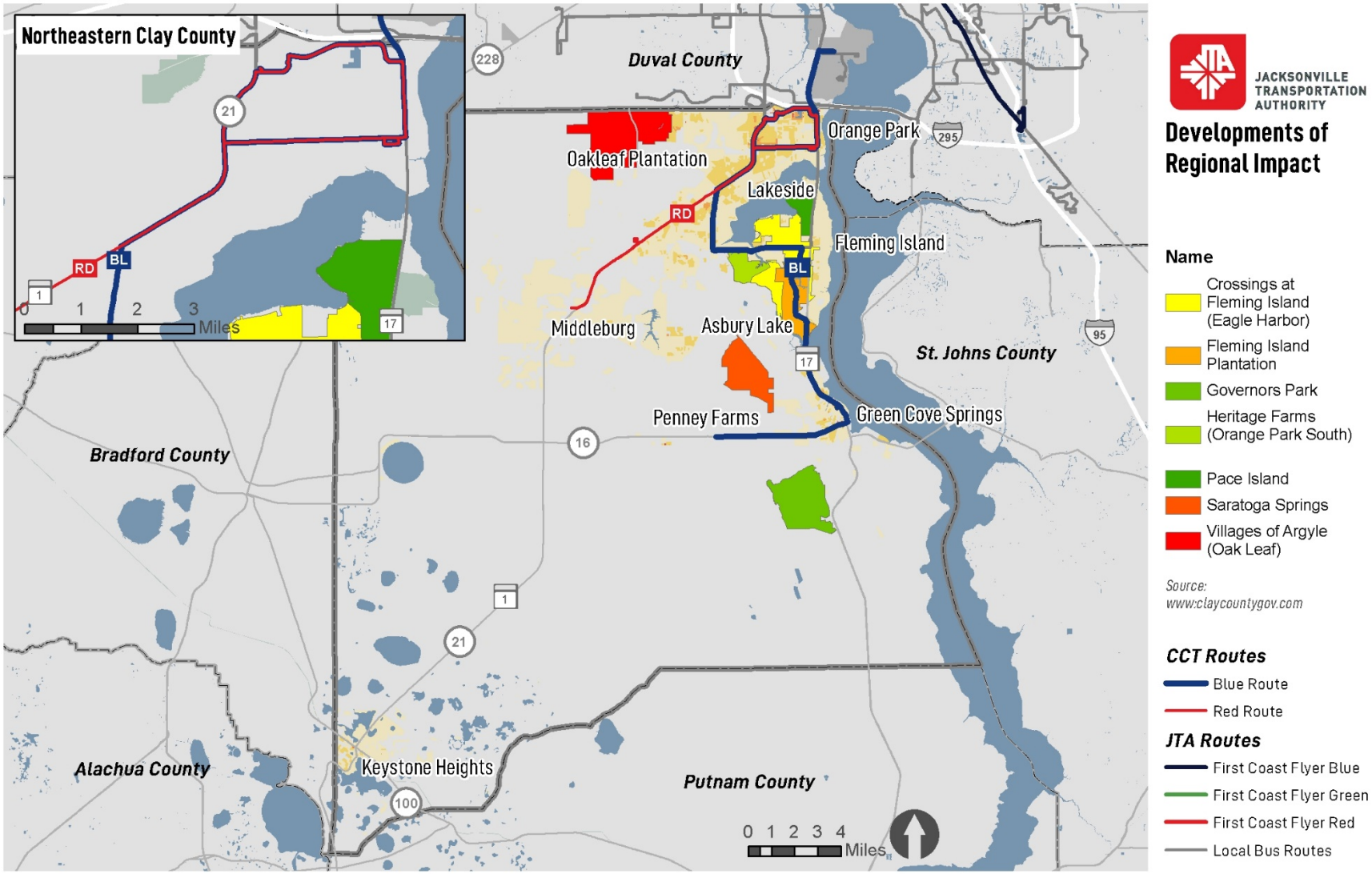


Figure 2-36: Developments of Regional Impact in Clay County



2.5 Travel/Mobility Characteristics

The Northeast Florida Transportation Planning Organization (North Florida TPO) maintains a regional travel model known as the Northeast Florida Regional Planning Model (NERPM). This model estimates current and future traffic volumes between and within almost 2,000 Traffic Analysis Zones (TAZs), which range in size from the equivalent of several city blocks to over 100 square miles. For the purposes of this analysis, TAZs have been grouped into districts based on major roads. Only travel flows to, from, and within Duval County for the projected year 2030 are shown.

2.5.1 Peak Period Travel

Travel during peak periods is a key market to be served by transit. Origin-destination pairs for peak period work travel in the Jacksonville region are visualized in **Figure 2-37**. Key findings include:

- Major travel flows connect into downtown Jacksonville, including from the Westside, from the Southside and Arlington, and from neighborhoods northwest of Downtown.
- The highest volume of trips occurs within areas in Arlington and north of downtown Jacksonville.
- There is significant travel in Southeast Jacksonville near the Mandarin, Sunbeam, and Avenues neighborhoods near I-95 and I-295.

2.5.2 Off-Peak Period Travel

Travel during off-peak periods is a key market to be served by transit routes that provide service throughout the day. Key origin-destination pairs for off-peak period travel in the Jacksonville region are visualized in **Figure 2-38**. Notable trends in off-peak period travel are as follows:

- Major off-peak travel flows connect into downtown Jacksonville, including from the Westside.
- Relative to peak period travel, off-peak period travel is more strongly concentrated as internal flows within the traffic analysis zone groupings.

2.5.3 County-to-County Trips

Travel flows between counties indicate opportunities for long-haul commuter services and regional coordination of transportation services. Key origin-destination pairs for county-to-county travel in the Jacksonville region are visualized in **Figure 2-39**. Notable trends in county-to-county trips include:

- The highest volume of inter-county travel is seen between Duval and St. Johns County, which includes St. Augustine and other beach communities like Ponte Vedra Beach.
- The second highest volume of inter-county travel is between Duval and Clay County, which includes outlying suburbs of Jacksonville like Lakeside, Orange Park and Bellair-Meadowbrook Terrace. Peak and off-peak travel flows from these places primarily connect to neighborhoods immediately across the Clay-Duval County border.

Figure 2-37: Peak Period Trips, All Modes, 2010

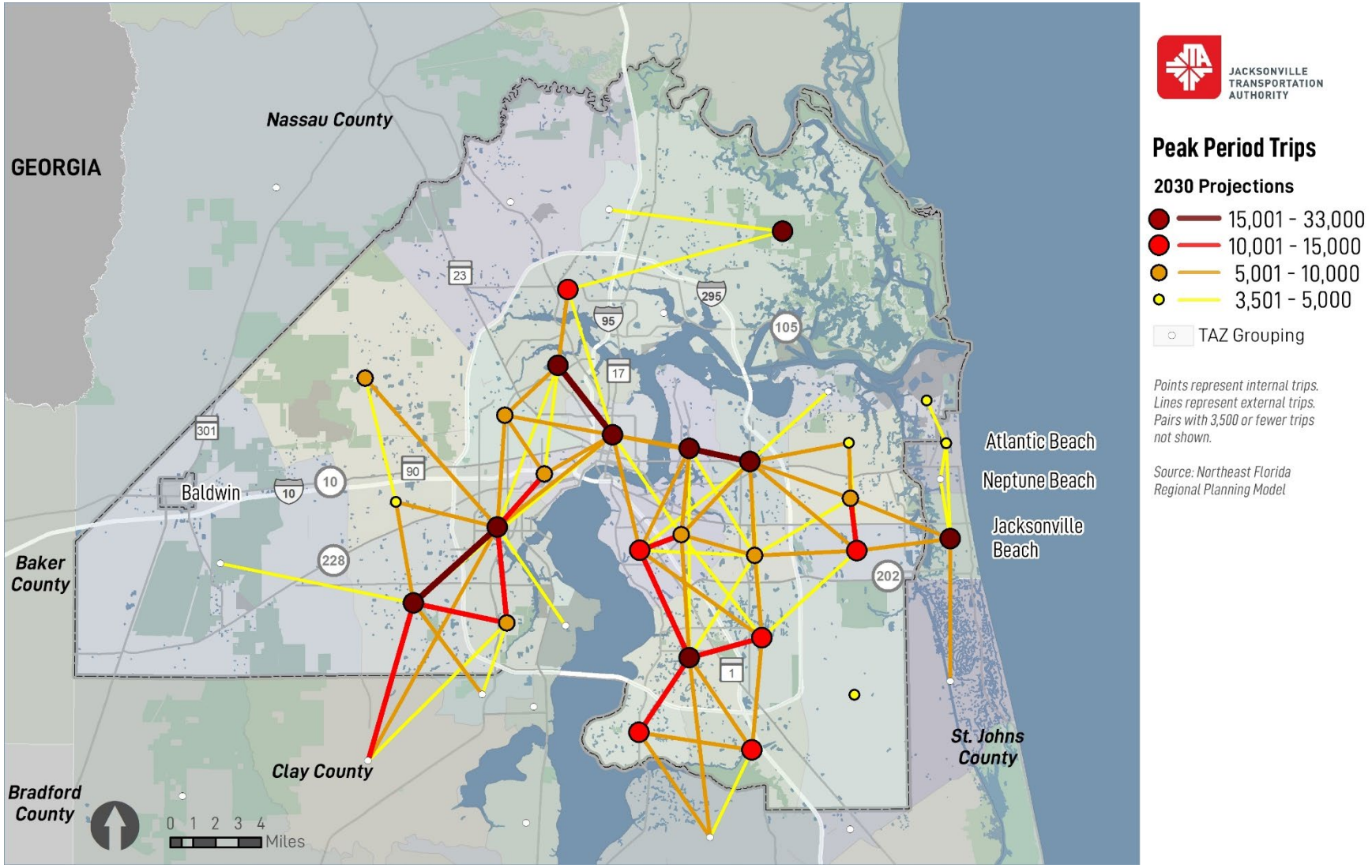


Figure 2-38: Off-Peak Period Trips, 2010

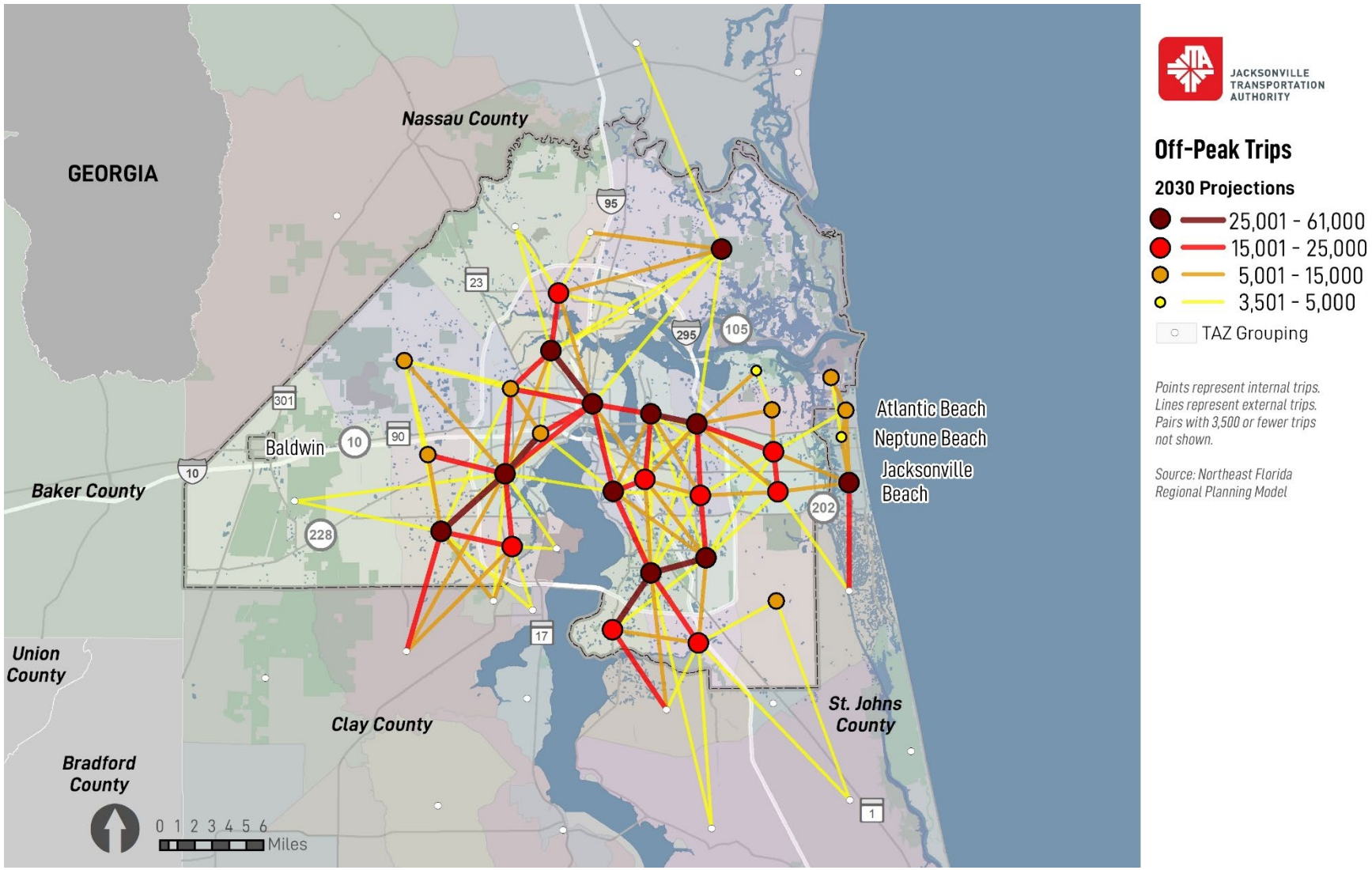
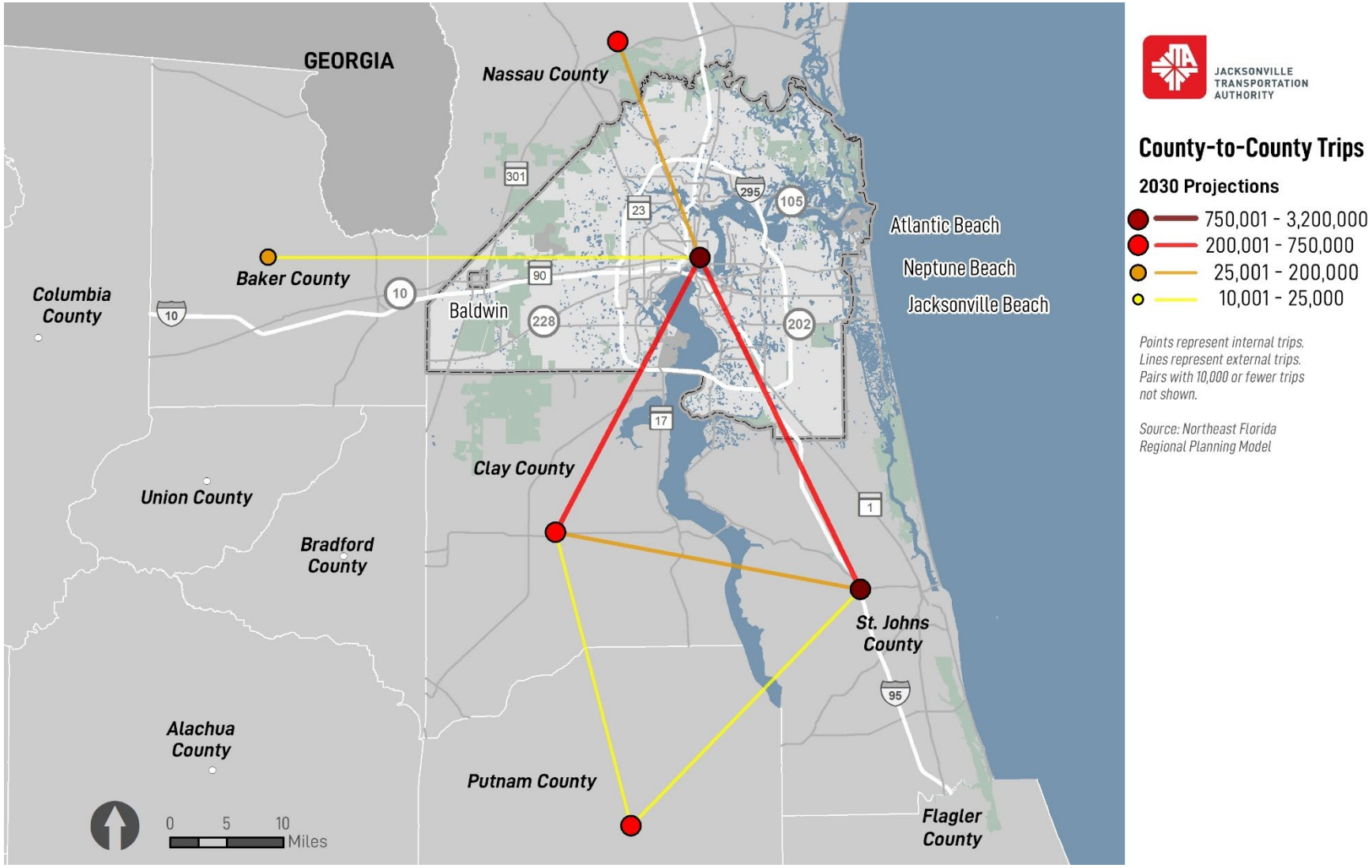


Figure 2-39: County-to-County Trips, 2010



JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 3: EXISTING SERVICES AND PERFORMANCE EVALUATION

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3 EXISTING SERVICES & PERFORMANCE EVALUATION

3.1 Introduction

JTA is challenged with providing efficient and convenient transit service that addresses the demands of a growing population across a City that possesses the largest land mass in the United States. Additionally, the high volume of freight traffic and the rail infrastructure in the County pose difficulties to scheduling transit service that operates efficiently. The mass transit services provided by JTA include regular and express bus service, community and on-demand shuttles, First Coast Flyer service (BRT), the downtown Skyway monorail, the St. Johns River Ferry, paratransit services, and Gameday Xpress service for sporting events.

JTA also provides regional service to Clay County through the operation of the Clay Regional Express and Nassau County via the Nassau Express Select. As of 2019, JTA's contractor, MV Transportation, is also providing paratransit service to Clay County's transportation disadvantaged communities and deviated fixed-route bus service. JTA also coordinates with surrounding counties on the planning of bus routes to provide intra-county bus service.

This section provides a profile of existing services in Duval County and Clay County, beginning with a profile of transit services and infrastructure. A detailed performance evaluation of JTA's existing fixed route bus services is provided in **Appendix E: Comprehensive Operational Analysis** and **Appendix F: Route Profiles**. JTA's performance effectiveness is compared to peer agencies and recent agency trends to identify strengths and weaknesses of JTA's services. A Farebox Report reviews trends in the agency's farebox recovery ratio and steps that may be taken to improve this ratio.

3.2 Duval County Existing System Profile

3.2.1 Duval County Service Overview

JTA has responsibilities that span multiple transit and transportation modes, including the design and construction of bridges and highways and the provision of varied transit services. The provider's bus services include both fixed and non-fixed route services. JTA is also contemplating several services and modes for future transit to serve the region:

- **First Coast Southeast Commuter Rail:** JTA is undertaking evaluations for a future commuter rail system.
- **Jacksonville Skyway Modernization Program:** JTA is undertaking a project to modernize the Skyway with new equipment and an expansion of autonomous service in downtown and the neighborhoods adjacent to downtown.

Other planned and recommended developments in JTA's service offerings are discussed in **Chapter 7: Service Framework: Long-Term System Concept**.

Fixed Bus Route Services

As of October 2018, JTA's fleet has 232 vehicles that travel 12.5 million miles per year on 44 routes; 157 diesel, 62 compressed natural gas, 13 hybrid buses. The extent of JTA fixed bus route services as of

December 2018 are shown in the agency's system map in **Figure 3-1** and described below**.** JTA operates 44 fixed bus routes divided into three overarching classes:

Local Bus Routes

There are 37 local bus routes in the JTA system. Core fixed-route bus routes in the JTA system are divided into four classes: Frequent (five routes), Mainline (13 routes), Connector (12 routes), and Limited Connector (seven routes). JTA previously operated Community Shuttles that provided deviated fixed-route service. In December 2018, the remaining Community Shuttle routes were eliminated or converted to Limited Connector services with an overlaid ReadiRide zone. **Figure 3-2** through **Figure 3-5** illustrate the services within each class.

Express Bus Routes

The four Express Routes are JTA's 200-series routes that run limited-stop service during weekday peak hours. Five once-daily early morning routes are offered which originate from an outlying area and go directly to their destination with no intermediate stops, then return in late afternoon. Express bus routes provide service between Downtown Jacksonville and portions of Clay and St. Johns County, and Mayport (**Figure 3-6**). In addition, the Wildcat Shuttle operated by the Baker County Council on Aging provides service between Macclenny and Downtown Jacksonville serving the rural areas of Duval County. In December 2018, JTA introduced a new class of express service between Downtown Jacksonville and Nassau County via the Nassau Express Select.

First Coast Flyers

JTA's premium bus rapid transit (BRT) service is known as the First Coast Flyer series and consists of three routes. Flyer buses arrive every 10 minutes during peak hours and 15 minutes during non-peak hours, offering high levels of service to the Northside, Southeast, and Eastside areas of Jacksonville currently (**Figure 3-7**). In 2020, the Southwest Corridor will have BRT service with the addition of First Coast Flyer Orange.

Figure 3-1: JTA System Map, December 2018

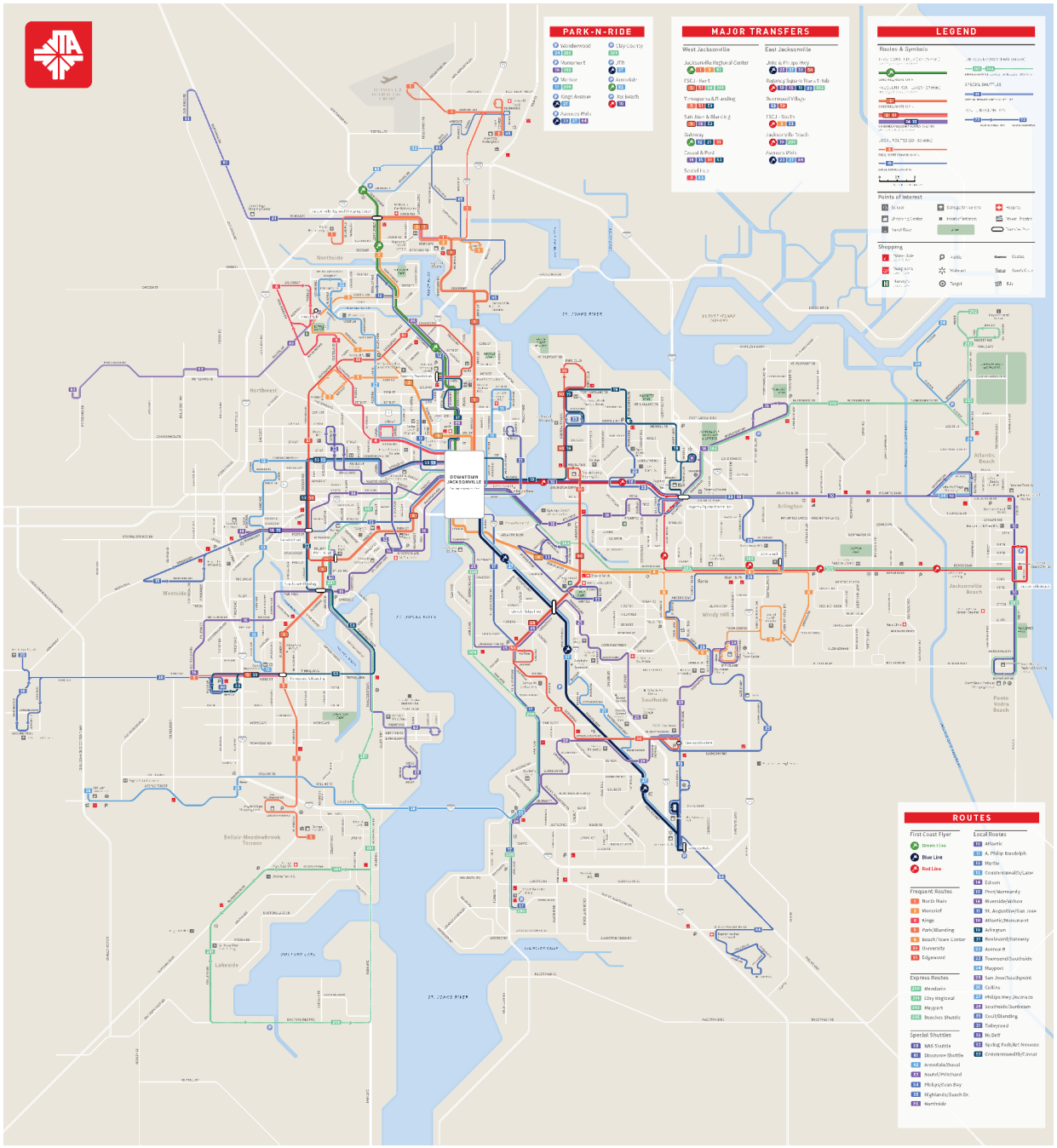
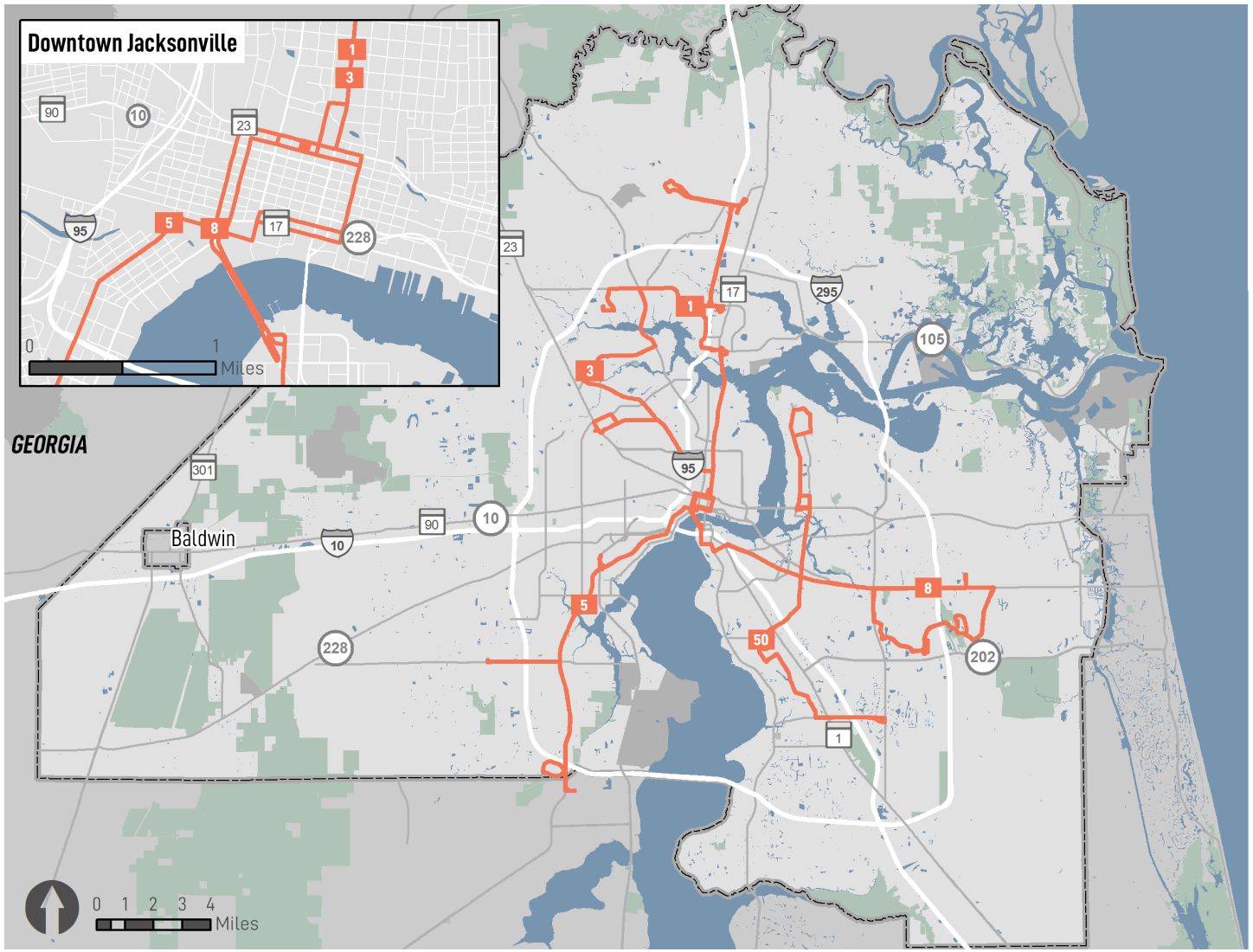


Figure 3-2: Frequent Routes



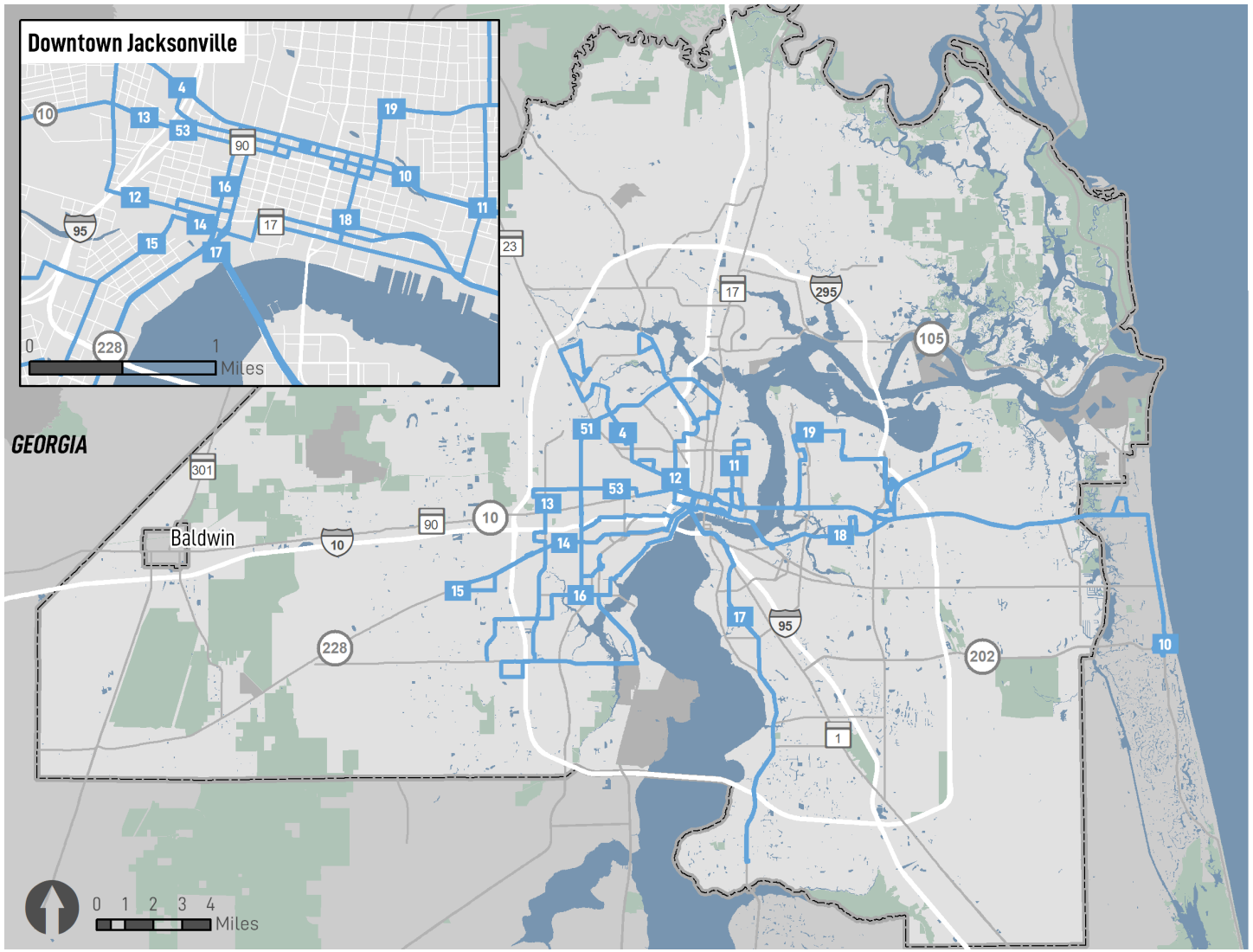
JACKSONVILLE TRANSPORTATION AUTHORITY

Frequent Routes

1 - North Main
3 - Moncrief
5 - Park/Blanding
8 - Beach/Town Center
50 - University

Route Type Characteristics:
Frequency: 15 min
Service Days: Every day
Span: 5:00 a.m. to 12:00 a.m.
Stop Spacing: 3 - 4 per mi.

Figure 3-3: Mainline Routes



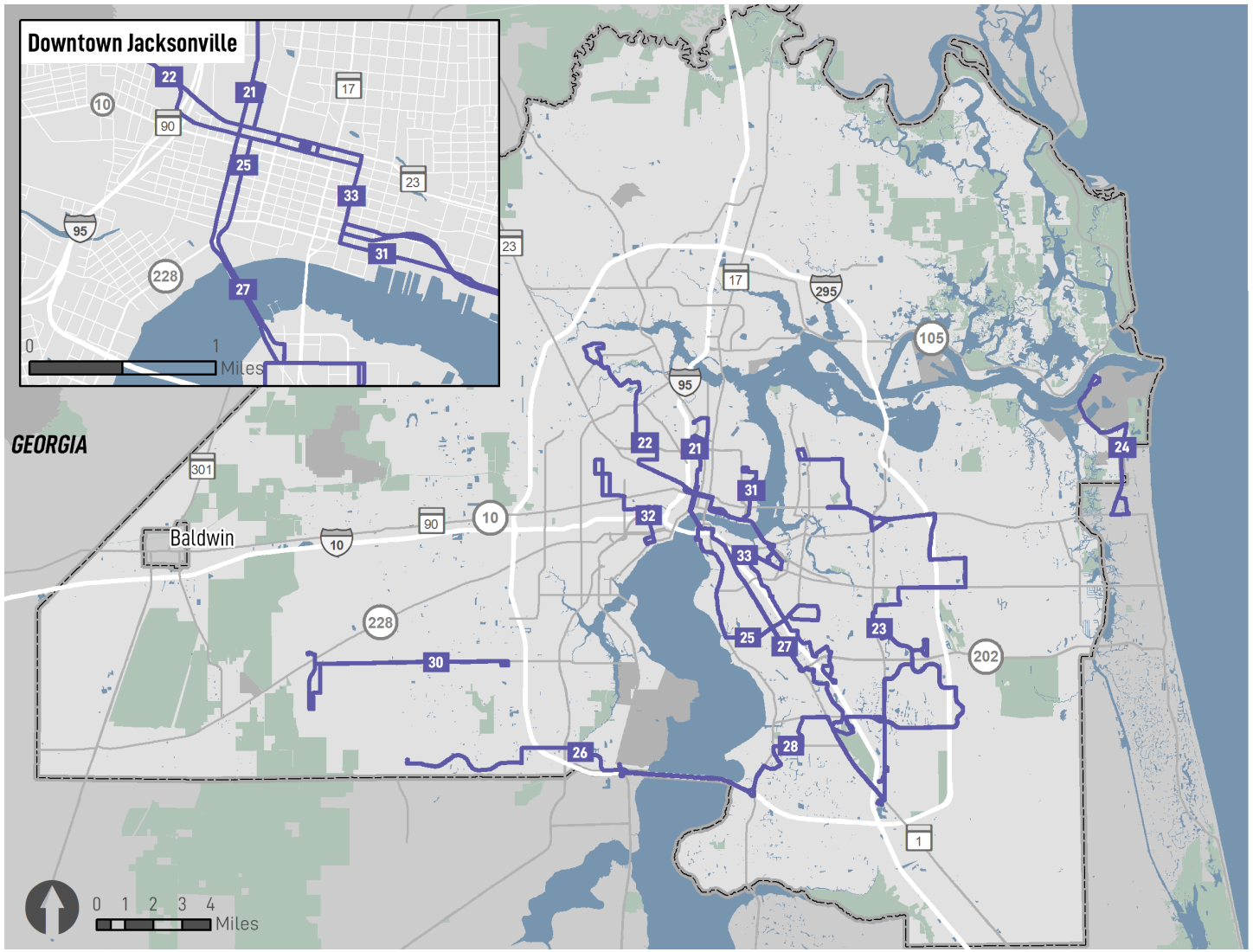
JACKSONVILLE TRANSPORTATION AUTHORITY

Mainline Routes

4 - Kings
10 - Atlantic
11 - A Philip Randolph
12 - Myrtle/Lem Turner
13 - Commonwealth/Lane
14 - Edison
15 - Post/Normandy
16 - Riverside/Wilson
17 - St. Augustine
18 - Atlantic/Monument
19 - Arlington
51 - Edgewood
53 - Commonwealth/Cassat

Route Type Characteristics:
Frequency: 30 min
Service Days: Every day
Span: 6:00 a.m. to 10:30 p.m.
Stop Spacing: 5 - 7 per mi.

Figure 3-4: Connector Routes



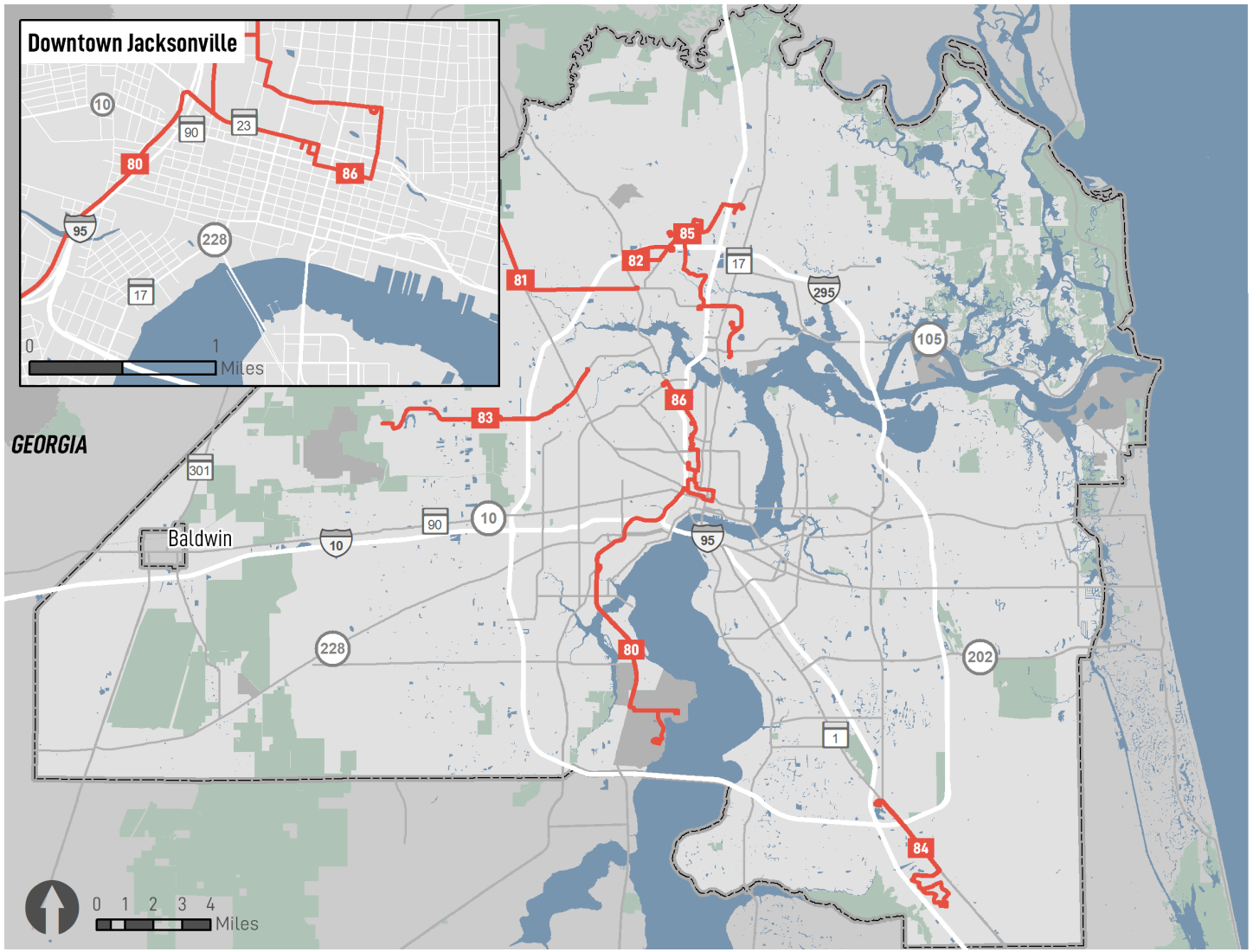
JACKSONVILLE TRANSPORTATION AUTHORITY

Connector Routes

21 - Boulevard/Gateway
22 - Avenue B
23 - Townsend/Southside
24 - Mayport
25 - San Jose
26 - Oakleaf/Buckman
27 - Phillips/Avenue
28 - Sunbeam/Southside
30 - Cecil
31 - Talleyrand
32 - McDuff
33 - Spring Park/Phillips

Route Type Characteristics:
Frequency: 60 min
Service Days: Every day
Span: 6:00 a.m. to 8:00 p.m.
Stop Spacing: 5 - 7 per mi.

Figure 3-5: Limited Connector Routes



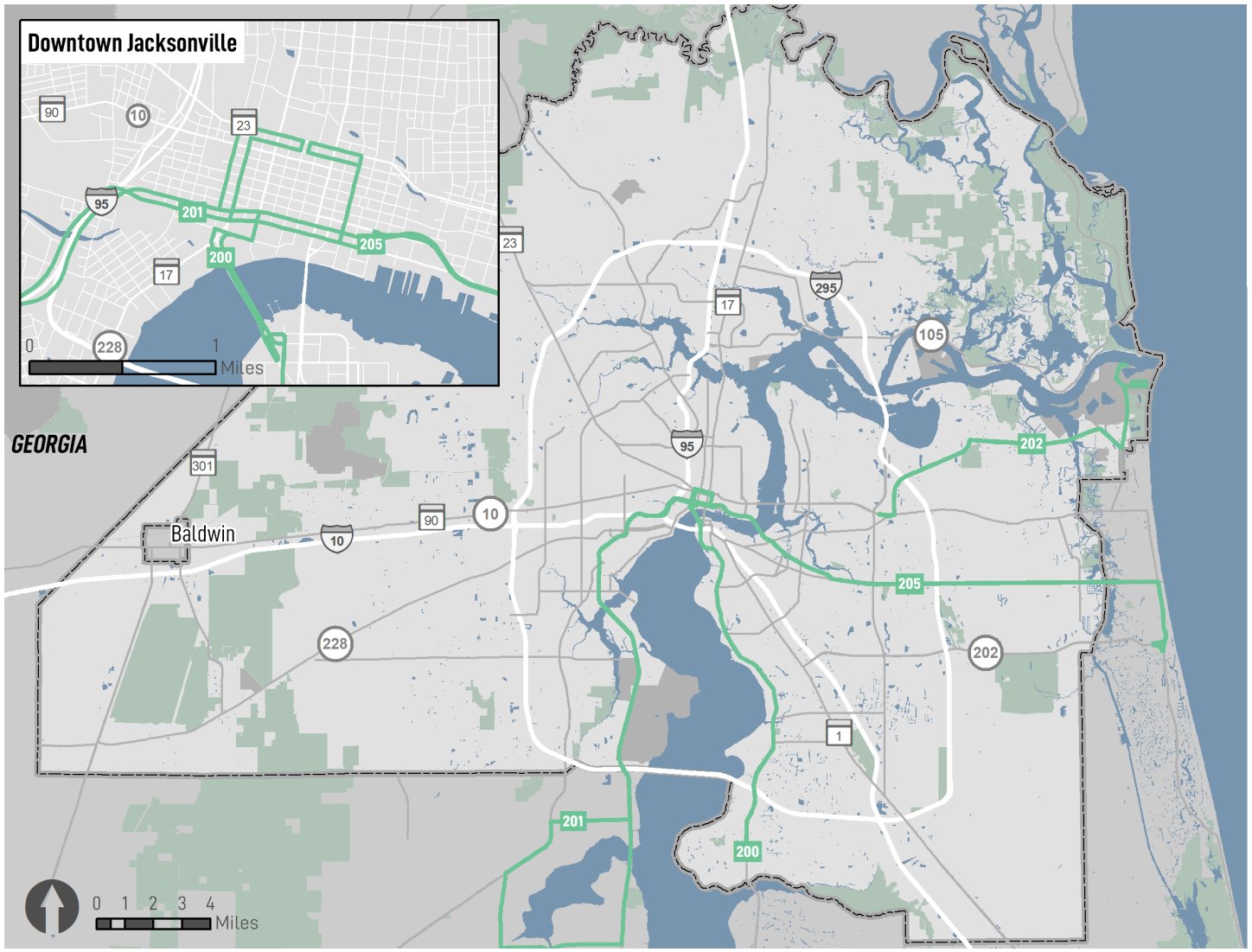
JACKSONVILLE TRANSPORTATION AUTHORITY

Limited Connector Routes

80 - NAS Shuttle
81 - Dinsmore Shuttle
82 - Amazon Shuttle
83 - Pritchard Shuttle
84 - Phillips/Gran Bay
85 - Highlands/Busch Dr.
86 - Northside

Route Type Characteristics:
Frequency: 4 - 5 trips per day
Service Days: Weekday only
Span: Peak hours only
Stop Spacing: Limited stops

Figure 3-6: Express Routes



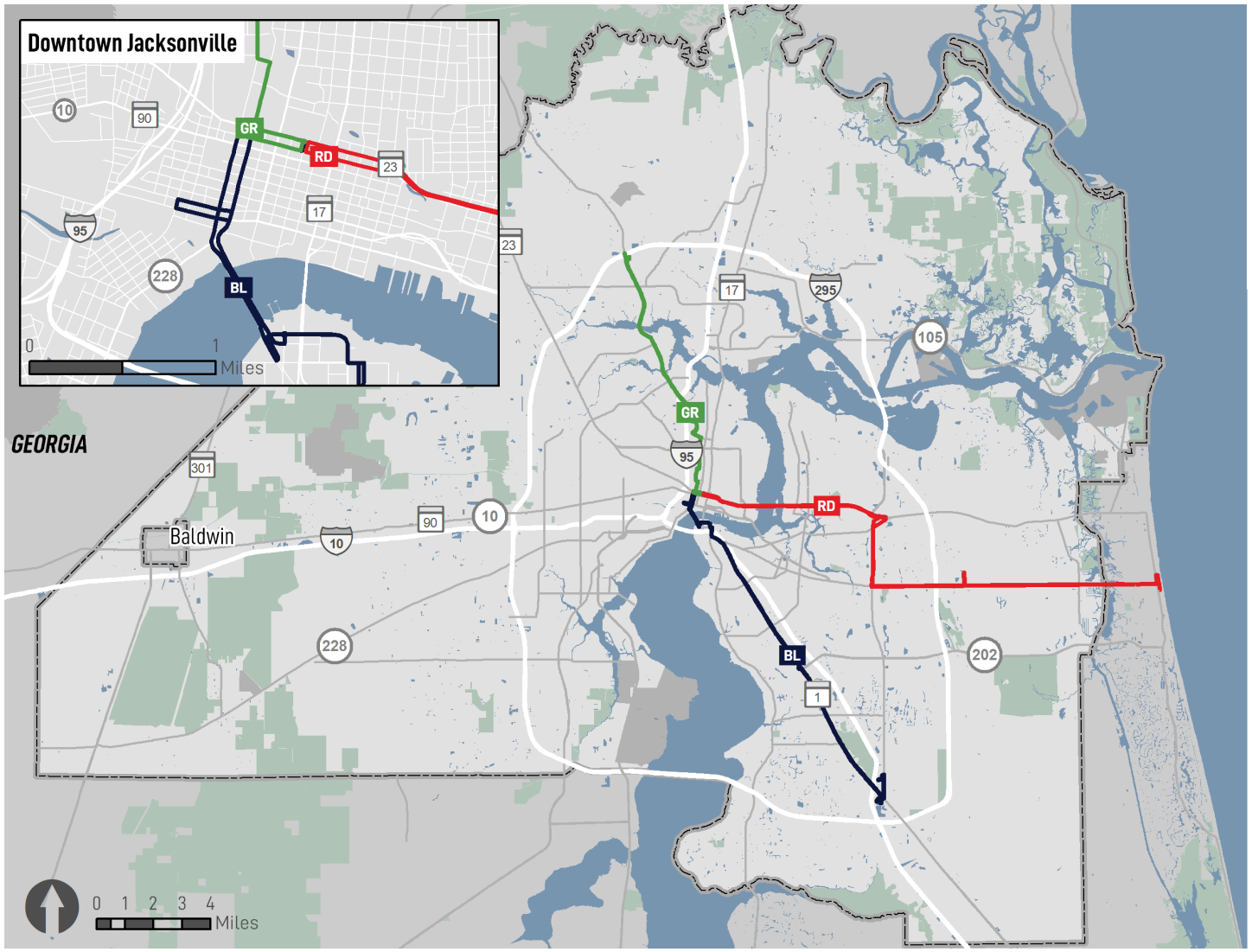
JACKSONVILLE TRANSPORTATION AUTHORITY

Express Routes

200 - Mandarin Express
201 - Clay Regional Express
202 - Mayport Express
205 - Beaches Express

Route Type Characteristics:
Frequency: 4 - 5 trips per day
Service Days: Weekday only
Span: Peak hours only
Stop Spacing: Limited stops

Figure 3-7: First Coast Flyer Routes



Non-Fixed Bus Services

JTA has a challenging role serving the largest city in the continental U.S. in terms of landmass. The goal of JTA is to provide mobility options and improve the flow of traffic into and throughout Duval County. An integrated transportation network is a critical element in any community to properly manage growth, provide mobility and offer a good quality of life. JTA has 105 paratransit vehicles, 10 Skyway cars, and one ferry.

Skyway

JTA's automated monorail known as the Skyway is designed to circulate passengers around downtown Jacksonville. The automated people mover system travels 2.5 miles from the King Street garage across the St. Johns River and through the central business district, ending at the Convention Center or the Florida State College at Jacksonville downtown campus.

ReadiRide

ReadiRide is JTA's on-demand service offered by JTA through Owl Inc. It provides affordable, on-call transportation to customers within ReadiRide zones.

Ferry

JTA oversees the operations of the St. Johns River Ferry, which provides automobile transportation between Mayport and Fort George Island.

Coastal Cab and Beachside Buggies

The Coastal Cab taxi service provides subsidized taxi fares in portions of the Arlington, Mandarin, and Southside areas. As of July 2019, the service has been replaced with ReadiRide services covering the same zones.

As of 2017, JTA is a sponsor of Beachside Buggies (also known as Beach Buggy), which provides free transportation within a portion of Jacksonville, Neptune, and Atlantic Beaches.

Gameday Xpress

JTA provides transportation services to Jacksonville Jaguar games and certain other special events at TIAA Bank Field. Gameday Xpress service operates two hours before the event's start and one hour after the event has ended, picking passengers up and dropping them off at one of six designated parking lots.

Paratransit

Connexion is JTA's paratransit for people with disabilities who are functionally unable to use regular accessible fixed route bus service for some or all their transportation needs, and for people who are transportation-disadvantaged.

Governance

JTA is governed by a seven-member Board of Directors. The mayor of Jacksonville appoints three members who must be confirmed by the Jacksonville City Council; the Florida Governor appoints three members who must be confirmed by the Florida Senate. Each member serves a four-year, unpaid term and can be re-appointed for a second term. If a member serves eight consecutive years, they must rotate off the board. From its membership, the Board elects its own Chairman, Vice Chairman, Secretary and Treasurer for one-year terms. The seventh member is the District Two Secretary from the Florida Department of Transportation (FDOT).

3.2.2 Duval County Fixed-Route Transit Service Profile

Route Performance Evaluation

A detailed Comprehensive Operational Analysis and Route Profiles are provided in **Appendix E: Comprehensive Operational Analysis** and **Appendix F: Route Profiles**, which also provides additional detail on non-fixed route bus services**.** JTA evaluates routes on seven performance metrics:

- **Passengers per Revenue Hour:** the average ridership per revenue service hour.
- **Passengers per Revenue Mile:** ridership generated per revenue service mile supplied.
- **Average Load:** Calculated as the average number of passenger miles traveled per revenue service mile.
- **Subsidy per Passenger:** The total subsidy for a route is the net of operating cost and fare revenues. This figure is divided by boardings to calculate the subsidy per passenger.
- **Cost per Passenger Mile:** Operating costs divided by passenger miles, resulting in the average cost of transporting a passenger for one mile.
- **Farebox Recovery Ratio:** Revenues as a percent of operating costs.
- **On-Time Performance:** Departure from a timepoint no more than one minute early and less than six minutes late.

Routes are evaluated based on nine defined route types and JTA's Fiscal Year 2018 Route Performance Standards (**Table 3-1**). The standard for on-time performance is 75 percent on-time for all routes. Community Shuttle routes that were converted to limited connector and ReadiRide service in December 2018 are evaluated using FY2018 standards and performance data.

Table 3-1: Fiscal Year 2018 Performance Standards

Route Type	Pass. per Hour	Pass. per Mile	Average Load	Farebox Recovery	Subsidy per Passenger	Cost per Pass. Mile
First Coast Flyer	25	1.9	8.8	23%	$ 3.00	$ 0.83
Frequent Routes	25	1.9	8.8	23%	$ 3.00	$ 0.83
Mainline Routes	20	1.5	7.0	19%	$ 3.75	$ 1.00
Connector Routes	15	1.1	4.4	14%	$ 4.50	$ 1.40
Limited Connector Routes	10	0.4	7.0	14%	$ 6.50	$ 0.52
Community Shuttles*	7	0.5	2.5	7%	$ 10.00	$ 3.00
Express Routes	10	0.4	7.0	14%	$ 6.50	$ 0.52
Evaluation Method	**Higher is better**	**Higher is better**	**Higher is better**	**Higher is better**	**Lower is better**	**Lower is better**

Source: JTA Fiscal Year 2018 Route Performance Standards
**Community Shuttles were converted to ReadiRide and Limited Connector services in December 2018*

Many JTA fixed route bus services perform below the agency's standards:

- In terms of service productivity, most routes are below their route type standard for passengers per revenue hour, passengers per revenue mile, and average load.
- Many routes exhibit sub-standard economic and financial performance, with only one route (81) exceeding farebox recovery ratio standards for Weekday, Saturday, and Sunday service periods.
- JTA routes consistently perform at or above the agency's on-time performance standard, with trips arriving on-time 79 percent of the time.

To improve data collection, enhance measurement of system performance, and strengthen its services, JTA should consider the following strategies:

- **Make Intelligent Transportation System (ITS) investments to improve calculations of revenues by route:** JTA's current farebox and pass systems make it difficult to allocate revenue from cash fares at fareboxes, pass revenue, and mobile payments to particular routes. As a result, current estimates of revenues by route were based on per passenger averages across fixed routes. Without more detailed revenue data, JTA has fewer meaningful economic performance indicators to identify routes generating higher amounts of revenue per unit of service delivered.
- **Make Intelligent Transportation System (ITS) investments to improve calculations of revenues by route:** JTA's current farebox and pass systems make it difficult to allocate revenue from cash fares at fareboxes, pass revenue, and mobile payments to particular routes. As a result, current estimates of revenues by route were based on per passenger averages across fixed routes. Without more detailed revenue data, JTA has fewer meaningful economic performance indicators to identify routes generating higher amounts of revenue per unit of service delivered.
- **Develop a three-variable cost model for the agency:** Estimates of costs by route were based on an average cost per revenue hour multiplied by the number of revenue hours operated for a route. A more complete, three-variable cost model involving revenue hours, revenue miles, and peak vehicles would better estimate route-level costs. In this model, the cost per revenue hour would reflect the cost of operator pay and benefits, the cost per revenue miles would reflect expenses for maintenance, and the cost per peak vehicle would address the overall administrative cost of operating the system. Overall, a three-variable cost model would better differentiate performance among JTA's fixed bus routes.
- **Modify services to increase performance:** Potential improvements include minimizing one-way loops, assessing the effectiveness of interlining at optimizing layovers, and reducing low-performing deviations, and modifying the span and frequency of routes. For example, Route 83 shows especially low performance on Saturdays and Sundays, with less than one passenger per hour on those service days. Eliminating Saturday and Sunday service would address the route's underperformance. Route-specific strengths and weaknesses are provided in **Appendix F: Route Profiles**.
- **Revise performance standards to match performance:** In Fiscal Year 2018, many fixed routes fell below standard across the agency's six route performance measures. For example, the First Coast Flyer Green and Blue routes each fell below JTA's service performance measures for Passengers per Revenue Hour, Passengers per Revenue Mile, and Average Load. Realistic and attainable goals for services should be set to better identify underperforming routes that require corrective action.

Figure 3-8: The First Coast Flyer Red Line

Table 3-2: JTA Fixed Route Performance

Route Type	Route	Passengers per Revenue Hour	Passengers per Revenue Mile	Average Load	Farebox Recovery Ratio	Subsidy per Passenger	Cost per Passenger Mile	On-Time Performance
First Coast Flyer	Green	19.9	1.4	7.1	16%	$5.01	$1.19	91%
	Blue	10.9	0.7	5.0	9%	$9.89	$1.45	86%
	Red*	19.6	1.2	11.6	16%	$5.08	$0.64	71%
Frequent Routes	1	21.5	1.5	9.4	17%	$4.55	$0.86	79%
	3	24.2	1.9	9.4	20%	$3.93	$0.99	75%
	5	18.2	1.3	9.9	15%	$5.54	$0.86	79%
	8	13.6	1.0	6.9	11%	$7.76	$1.24	78%
	50	13.4	1.0	4.4	11%	$7.89	$2.10	76%
Mainline Routes	4	21.3	1.8	7.1	17%	$4.60	$1.41	78%
	10	19.7	1.2	10.9	16%	$5.04	$0.67	76%
	11	23.4	2.4	6.3	19%	$4.10	$1.88	82%
	12	17.8	1.5	5.7	14%	$5.70	$1.70	83%
	13	20.4	1.6	11.0	16%	$4.84	$0.85	78%
	14	17.5	1.5	6.8	14%	$5.82	$1.54	73%
	15	16.6	1.4	7.0	13%	$6.18	$1.44	81%
	16	15.2	1.3	7.1	12%	$6.82	$1.38	76%
	17	16.8	1.2	9.9	14%	$6.09	$0.87	73%
	18	16.2	1.1	7.1	13%	$6.34	$1.15	78%
	19	23.2	1.7	10.5	19%	$4.14	$0.83	83%
	51	12.6	1.0	4.7	10%	$8.43	$1.92	79%
	53	17.1	1.2	8.2	14%	$5.97	$0.97	77%
Connector Routes	21	18.4	1.8	4.9	15%	$5.48	$2.35	88%
	22	18.3	1.5	6.4	15%	$5.51	$1.49	78%
	23	10.0	0.7	5.9	8%	$10.89	$1.41	76%
	24	14.3	0.9	2.7	12%	$7.32	$2.80	81%
	25	12.0	0.9	6.3	10%	$8.93	$1.44	74%

Route Type	Route	Passengers per Revenue Hour	Passengers per Revenue Mile	Average Load	Farebox Recovery Ratio	Subsidy per Passenger	Cost per Passenger Mile	On-Time Performance
	26	2.1	0.1	0.9	2%	$55.08	$7.89	79%
	27	11.7	0.8	5.4	9%	$9.20	$1.51	79%
	28	4.4	0.4	1.9	4%	$26.16	$5.65	83%
	30	6.4	0.3	1.8	5%	$17.54	$3.53	84%
	31	6.3	0.5	1.5	5%	$17.87	$6.59	83%
	32	5.2	0.5	1.9	4%	$21.78	$6.01	80%
	33	9.6	0.7	1.7	8%	$11.41	$5.00	72%
Limited Connector Routes	80	4.6	0.2	1.3	4%	$24.96	$4.39	66%
	81	38.3	1.5	10.4	31%	$2.13	$0.45	89%
	82	14.4	0.5	1.5	12%	$7.25	$2.72	88%
	83	3.4	0.2	1.2	3%	$34.24	$5.52	90%
Community Shuttles**	84*	6.0	0.3	1.3	5%	$18.83	$3.99	90%
	85*	4.5	0.2	1.2	4%	$25.48	$5.72	86%
	86*	4.2	0.2	0.7	3%	$27.32	$10.35	76%
Express Routes	200	7.8	0.4	4.3	6%	$14.13	$1.50	70%
	201	4.1	0.2	2.4	3%	$27.64	$2.23	75%
	202	4.7	0.3	2.2	4%	$24.47	$3.12	85%
	205	8.2	0.4	4.5	7%	$13.45	$1.27	72%

Source: JTA FY18 Metrics Workbook, FY18 JTA GTFS Feeds for Trip Statistics.

** New service; Fiscal Year 2018 data used from a comparable route*
***Community Shuttles were replaced with Limited Connector and ReadiRide services in December 2018*
FY2018 data and standards for Community Shuttles are used to represent the performance of Routes 84, 85, and 86, which began service in December 2018.

Table 3-3: Other JTA Service Performance

Service	Passengers per Revenue Hour	Passengers per Revenue Mile	Average Load	Farebox Recovery Ratio	Subsidy per Passenger	Cost per Passenger Mile	On-Time Performance
Ferry	97.1	54.0	24.2	46.6%	$3.56	$14.85	99%
Skyway	56.5	5.8	5.5	0.0%	$7.23	$7.61	
ReadiRide*	1.2	0.2	1.0	3.3%	$28.96	$6.86	
Nassau Express*	0.3	0.0	0.3	1.3%	$194.17	$7.16	60%
Gameday Xpress	52.8	5.4	27.4	85%	$0.61	$0.81	

Source: JTA Calendar Year 2018 Performance Metrics, JTA 2018 Alternative Service Analysis, August 2018 Connexion Ridership, JTA Gameday Xpress 2018 Season Income Statement, December 2018 ReadiRide Invoice Summary.
** Services evaluated using preliminary 2018 data.*

3.2.3 Duval County ADA Paratransit Service Profile

JTA Connexion provides paratransit for the disabled and elderly, provided by private vendors with specially equipped vehicles and drivers. Service is available from 8 a.m. to 5 p.m. every day, including weekends and holidays. Door-to-door service is provided anywhere within Duval County, and out-of-county transportation is available for medical appointments. JTA also offers Connexion Plus service, in which reservations can be made as little as two or more hours before service is needed for an additional fee. Fares are as follows:

- **ADA:** $3.00.
- **Transportation Disadvantaged, In County:** $3.50.
- **Transportation Disadvantaged, Out-of-County:** $6.00.
- **Connexion Plus:** $6.00.

Additional fares may be required for personal care attendants or escorts.

Performance of Connexion service is summarized in **Table 3-4**, with additional detail provided in **Appendix F: Route Profiles.**

Table 3-4: Connexion Performance

Passengers per Hour	Passengers per Mile	Average Load	Farebox Recovery	Subsidy per Passenger	Cost per Pass. Mile	On-Time Performance
1.6	0.1	0.1	10%	$26.25	$29.03	85%

Source: August 2018 Ridership and JTA Calendar Year 2018 Performance Metrics

3.2.4 Duval County Capital/Infrastructure Overview

As mandated by the FAST Act (2015) and administered by the FTA, JTA developed a Transit Asset Management Plan (TAMP) to inventory assets such as its buildings, systems, rolling stock, equipment, and infrastructure. This section provides an overview of facilities owned and managed by JTA that are important to the development of a comprehensive TDP that meets the needs of all its riders.

Facilities are defined as; any structure used to support public transportation services that JTA owns or has a direct capital responsibility. JTA owns, maintains, and operates several agency and customer-facing facilities at different locations detailed in this section.

JTA's office for administrative authority functions (e.g. executives, human resources, finance, procurement, etc.) is in a leased building at 121 W. Forsyth Street, Jacksonville, Fla. JTA has no capital responsibility for this building.

Customer-Facing Facilities

Transit Centers

- **Rosa Parks Transit Station:** Rosa Parks Transit Station is the main transfer hub for the city's transit system, providing a transfer point for most bus routes in JTA service area, including all of the First Coast Flyers and the Skyway monorail as well. Rosa Parks Station has 18 bus bays.
- **Gateway Transit Hub:** The Gateway Transit Hub is located on Norwood Avenue east of I-95 and adjacent to the Brentwood and Norwood neighborhoods north of downtown. Features a bus loop that connects Jacksonville to the Gateway Town Center with retail and grocery shopping options. Service to and from Gateway Transit Hub is provided by Routes 12, 21, 51, 86, and First Coast Flyer Green, providing users with BRT to and from Downtown Jacksonville.

- **Regency Square Hub:** The Regency Square Hub is located off the Arlington Expressway at Atlantic Boulevard, providing a bus stop that connects users to the to the Regency Square Mall via Routes 10, 18, 19, 23, 202, and First Coast Flyer Red.
- **Soutel Transit Hub:** The Soutel Transit Hub is located on Soutel Drive in northwest Jacksonville and connects residents to downtown via Routes 3 and 4.
- **FSCJ Kent Campus Station:** This station provides access to Florida State College at Jacksonville's Kent Campus via Routes 5, 51, and 80. It has a bus shelter and encased transit system map to aid users in addition to a bus turnout and crosswalk.
- **FSCJ South Campus Station:** This station is served by Routes 8, 23, and First Coast Flyer Red. It has two bus shelters and a bus turnout.
- **Deerwood Village:** The bus bay at Southside Boulevard and Baymeadows Road, connected at the southern extent of route 50, provides a line of access to FSCJ Deerwood and the Deerwood Village shopping center.

Skyway Transit Stations

There are eight Skyway stations along the 2.5-mile alignment. They are:

- Rosa Parks Transit Station.
- Hemming Plaza Station.
- Central Station.
- Jefferson Street Station.
- Convention Center Station.
- San Marco Station.
- Riverplace Station.
- Kings Avenue Station.

Figure 3-9: JTA's Skyway San Marco Station

Park-n-Ride Lots

Park-n-Ride lots are served by local bus routes and Express bus service to Downtown. Avenues Walk Park-n-Ride Center is the newest lot to open, featuring 88 parking spots and a 1,400-square foot customer service building in addition to three bus bays, three bus shelters, bike racks, and ticket vending services. **Table 3-5** provides information on each Park-n-Ride lot. In addition to the lots listed in the below table, there are numerous Skyway Park-n-Rides (Convention Center, San Marco, and Kings Avenue Stations) accessible to users for a fee which then grants free access to the Skyway.

Table 3-5: JTA Park-n-Ride Lots

Park-n-Ride	Address	Parking Spaces
A1A & Wonderwood	Jacksonville, FL 32233	73
Armsdale	3191 Armsdale Rd.	189
Avenues Walk	10508 Avenues Walk Blvd.	88
Baldwin	801 W. Beaver St.	21
Clay County	CR 220 & Sleepy Hollow Rd.	50
Johnson Street	W. Bay St.	209
Jefferson Street	West Bay / Jefferson	117
Kings Avenue Garage	1201 Kings Avenue	1,665
Kings Avenue Surface	1201 Kings Avenue	65
Marbon*	Jacksonville, FL 32223	175
Mayport	Wonderwood Drive / SR A1A	73
Monument Road**	Jacksonville, FL 32225	73
Philips Highway & JTB	7000 Philips Highway	76

** From 2020 onward, this lot will have only 15 spaces.*

***From 2020 onward, this lot will be defunct.*

Agency Facilities

In addition to the public-facing facilities owned and operated by JTA, there are other facilities which the agency uses for administrative, operations, and maintenance purposes.

- **Myrtle Avenue Operations Campus (100 N. Myrtle Avenue):** The Myrtle Avenue Operations Campus is the central location for bus service administration, storage, and maintenance. It comprises 10 buildings and an 803,000-square-foot parking lot; it includes a Compressed Natural Gas fueling facility for fleet operations as well. **Table 3-6** details the individual facilities.

Table 3-6: Myrtle Avenue Operations Campus Facilities

Description/Name	Location	Facility Type	Square Footage
Building 1 "F" – Safety & Security	100 N. Myrtle Ave.	Administrative Facility	5,285
Building 2 "G" – Administrative	100 N. Myrtle Ave.	Administrative Facility	9,300
Building 3 "E" – Mass Transit Operations	100 N. Myrtle Ave.	Administrative Facility	11,802
Building 4 "C" – Service Station	100 N. Myrtle Ave.	General Purpose Maintenance Facility	9,287
Building 5 "D" – Vault	100 N. Myrtle Ave.	Administrative Facility	1,246
Building 6 "A" – Fleet Maintenance	100 N. Myrtle Ave.	Heavy Maintenance Facility	62,681
Building 7 "M" – Preventative Maintenance	100 N. Myrtle Ave.	General Purpose Maintenance Facility	7,380
Building 8 "B" – Connexion Maintenance	100 N. Myrtle Ave.	Heavy Maintenance Facility	4,816
Building 9 -- CTC Operations	100 N. Myrtle Ave.	Administrative Facility	1,344
Building 10 – Storage	100 N. Myrtle Ave.	Maintenance Facility	974
Myrtle Avenue Operations Campus	100 N. Myrtle Ave.	Parking Lot	803,805

- **Skyway Operations and Maintenance Center (725 Leila Street):** The JTA Skyway Operations and Maintenance Center is used for the maintenance and storage of Skyway vehicles, maintenance vehicles, and equipment. It also houses the Skyway operations center.

Planned Inventory Changes

The TAM Plan asset inventory is used to determine the State of Good Repair (SGR) backlog and future years SGR needs. Future SGR needs will also include life cycle management of expansions and additions to JTA's asset base. Future analyses will account for this. Additional projects that are ongoing or planned that will generate future SGR needs, but that are not captured by the TAM Plan, include:

- JTA is developing the asset inventory for the Intercity Bus Terminal (IBT) that was recently completed. However, at the time the TAM Plan was written, the inventory was not yet available.
- JTA is currently constructing the Jacksonville Regional Transportation Center (JRTC) which, after completion, will be added to JTA's facility asset base to plan for future SGR needs. This facility will be a new intermodal transit center, which will have a Skyway station inside the building and is bringing together the Jacksonville Skyway, JTA bus service, First Coast Flyer service, intercity bus, and rail service in one facility. JRTC at Lavilla will be situated near the Prime F. Osborn III Convention Center.

- The Ultimate Urban Circulator (U^2C), as described above, is another project with which JTA is planning to overhaul and expand the current Skyway system to a wider network and autonomous vehicles. However, at this stage, it was too early to include in the TAM Plan as the changes to the existing infrastructure are new and additional assets are unknown.
- JTA expects to open the BRT Southwest Corridor by December 2020 which will operate between the Convention Center in downtown Jacksonville, via Florida State College-Jacksonville (Kent Campus), to the Orange Park Mall in Clay County. Assets include, among others, traffic signal priority technology, real-time bus arrival information, and CNG buses.

3.2.5 Duval County Other Transportation Providers

Additional providers exist in the JTA service area that provide transportation services to residents and visitors. JTA makes a concerted effort to coordinate services with inter-county transit service providers, as well as accommodates other transportation service providers in their facilities. For example, JTA is currently constructing the Jacksonville Regional Transportation Center (JRTC), a hub that will connect the First Coast Flyer system, fixed-route buses, the U^2C, intercity bus routes, and future Amtrak and commuter rail stations. It will also accommodate shared mobility options like car-shar and bike-share.

Figure 3-10: Rendering of the Jacksonville Regional Transportation Center

JTA recognizes the importance of the development of a “Regional Transit Network” to integrate services across the region. It is important for economic growth and maintaining a high quality of life in a growing Northeast Florida Region. JTA has supported efforts of the Northeast Florida RTC to create a regional multimodal transportation plan. A website entitled “TransPortal” was developed by the Northeast Florida Mobility Coalition through funding provided by the Federal Transit Administration to aid in linking public and private transportation providers in Northeast Florida with customers. The portal provides a tool that allows an individual to plan out a trip and generates a list of transportation options for that trip. These options include services provided by both public and private service providers. Transportation options provided include: traditional transit and paratransit services, bicycling, walking, car and vanpools, volunteer driver programs, taxis, motor or long-distance coaches such as Greyhound and Megabus, passenger rail, and social and not-for-profit agency services.[1]

[1] *Northeast Florida Coordinated Mobility Plan: A Public Transit and Human Services Transportation Plan for Northeast Florida.* Northeast Florida Mobility Coalition. September 2014.

3.3 Clay County Existing System Profile

JTA became the Community Transportation Coordinator for Clay County on January 1, 2019. On March 4, 2019, JTA began the operation of two routes in Clay County, the Red and Blue lines. These new JTA services provide transportation to the Orange Park Mall, St. Johns River State College, and the Orange Park Medical Center.

The Clay County Council of Aging (COA) was the previous transportation provider for the County. The Florida Commission for the Transportation Disadvantaged reassigned the COA's transportation disadvantaged contracts to JTA.

3.3.1 Clay County Service Overview

Fixed-Route Bus Services

The two buses which JTA operates in Clay County also provide flex service. Other services provided by JTA are express bus service and paratransit service.

Governance

JTA is governed by a seven-member Board of Directors. The mayor of Jacksonville appoints three members who must be confirmed by the Jacksonville City Council; the Florida Governor appoints three members who must be confirmed by the Florida Senate. Each member serves a four-year, unpaid term and can be re-appointed for a second term. If a member serves eight consecutive years, they must rotate off the board. From its membership, the Board elects its own Chairman, Vice Chairman, Secretary and Treasurer for one-year terms. The seventh member is the District Two Secretary from the Florida Department of Transportation (FDOT).

The Florida Commission for the Transportation Disadvantaged (CTD) contracts with Community Transportation Coordinators (CTC) to ensure the provision of transportation services to the transportation disadvantaged. As the CTC for Clay County, JTA is overseen by a Local Coordinating Board intended to represent a cross-section of the local community. The Northeast Florida Regional Council may make recommendations to the CTC as the Official Planning Agency designated by the CTD. JTA contracts with MV transportation to provide CTC services.

3.3.2 Clay County Transit Service Profile

JTA operates a variety of fixed-route and demand-responsive transit services using several modes of transportation:

- **Red Line:** This weekday route provides service from the Orange Park Mall to Middleburg. It will provide service to the Clay County Library, Orange Park Library, Orange Park Mall, Orange Park Medical Center, Orange Park Senior Center, and St. Vincent's Medical Center.
- **Blue Line:** This weekday route provides service from NAS Jacksonville to the Pier Station. It will serve the Clay County Courthouse, Clay County Health Department, Kindred Hospital North Florida, Naval Air Station Jacksonville, Orange Park Library, Orange Park Mall, Orange Park Medical Center, Orange Park Senior Center, and St. Johns River State College.
- **JTA Route 5**: This JTA route provides service between Orange Park Mall, the Florida State College at Jacksonville–Kent Campus, and Rosa Parks Transit Station.
- **Flex service:** For a $1 fee, Blue and Red line services will deviate for passenger pick-ups if the schedule permits.

- **Express service:** The Clay County Regional Express provides service to and from downtown Jacksonville along Roosevelt Boulevard from Rosa Parks Transit Station to the Black Creek Park n Ride lot. The service runs several trips on weekdays between 5 a.m. and 7:30 p.m.
- **Paratransit:** Connexion is JTA's paratransit for riders in Duval County with disabilities who are functionally unable to use regular accessible fixed route bus service for some or all their transportation needs, and for people who are transportation disadvantaged. In Clay County, paratransit services were coordinated by the Clay County Council on Aging before ceasing operation in December 2018. JTA currently has a contract with MV Transportation to provide paratransit services to transportation-disadvantaged Clay County residents.

Additionally, in late 2020, JTA will launch First Coast Flyer Orange service between Orange Park Mall and Rosa Parks Transit Station.

3.3.3 Clay County Other Transportation Providers

JTA recognizes the importance of the development of a Regional Transit Network to integrate services across the region. As the Authority wrote in its *Blueprint For Transportation Excellence*, it "is important for economic growth and maintaining a high quality of life in a growing Northeast Florida Region."[2]

The Ride Solutions, the public transportation provider for Putnam County, operates a route that services the Orange Park Mall. This service connects with JTA service at the Mall. It runs from 5:30 a.m. until 7:00 p.m. every weekday.

In addition to Ride Solutions, taxi services in Clay County include Aabac Taxi, Clay Taxi, Orange Park Taxi, and Westside Taxi.[3]

3.4 System Performance Evaluation

This section includes an evaluation of peer transit agencies—that is, transit agencies with operations similar to JTA. The examination covers existing transit services, including fixed-route, demand-response, ferry, and Skyway. This section also presents a trend analysis examining how JTA has changed over the years using various performance measures. The analysis focuses on JTA's operations in Duval County.

3.4.1 Peer Comparison and Trend Analysis

Data used as the basis for this analysis was taken from the Federal Transit Administration (FTA), which maintains a comprehensive database of operational and financial information for each transit agency receiving FTA funding, known as the National Transit Database (NTD). Data is compiled annually, with strict requirements on how it is reported to the NTD. Due to the level of detail and information included, it provides consistent information that can be used to examine the same factors across various agencies.

The Florida Department of Transportation (FDOT) Transit Office has developed the Florida Transit Information System (FTIS) that includes several web-based systems that allow for the exchange and analysis of transit data. The Urban Integrated National Transit Database (Urban iNTD) system is one of four major systems under the FTIS, and can be used to conduct trend analyses, peer evaluations, and other data queries. This system was used in this analysis to identify peer agencies to JTA based on its urban area size, three "screening" factors and 14 "peer-grouping" factors. The three screening factors

[2] *Blueprint for Transportation Excellence FY 2018-2022*. Jacksonville Transportation Authority. 2017. 20.
[3] *2016-2021 Clay County Transportation Disadvantaged Service Plan*. Clay County Transportation Disadvantaged Coordinating Board. 2018. 11.

were used to ensure the peer agencies selected operated a similar combination of modes as JTA. The Quick Guide for Applying the "TCRP Peer Section Method," as well as the results of this analysis, are included in **Appendix D: Peer Selection**. The "peer grouping factors" were used to identify peer agencies that are most similar to JTA. There are five "service characteristics" and nine "urban area characteristics." A "total likeness score" was assigned based on a combination of these factors, and the most similar agencies based on these factors were identified as peers. The lower the likeness score, the more similar the agency to JTA. The cities and respective transit agencies emerging from the screening are:

- **Indianapolis, IN:** Indianapolis and Marion County Public Transportation (IndyGo).
- **St. Petersburg, FL:** Pinellas Suncoast Transit Authority (PSTA).
- **Columbus, OH:** Central Ohio Transit Authority (COTA).
- **Tampa, FL:** Hillsborough Area Regional Transit Authority (HART).
- **Memphis, TN:** Memphis Area Transit Authority (MATA).
- **El Paso, TX:** Mass Transit Department- City of El Paso (Sun Metro).
- **Dayton, OH:** Greater Dayton Regional Transit Authority (Dayton RTA).
- **Grand Rapids, MI:** Interurban Transit Partnership (The Rapid).

This section includes a three-year trend analysis using data from Fiscal Years 2015 through 2017 for JTA, and a one-year peer comparison based on Fiscal Year 2017 data. This peer review and trend analysis contains a review of operational and financial measures. The operational measures are broken out into general, vehicle, labor, service and service effectiveness categories. The financial measures are broken out into expense and revenue and efficiency measures. All data was sourced from the FTA National Transit Database.

Agency-wide measures included in this section are:

General:
- Service Area Population.
- Service Area Size.
- Passenger Trips.

Labor:
- Total Employee Full Time Equivalents (FTE).
- Revenue Hours per Employee FTE.
- Passenger Trips per Employee FTE.

Expense and Revenue:
- Operating Expenses.
- Vehicle Maintenance Expenses.
- Non-Vehicle Maintenance Expenses.
- General Administration Expenses.
- Operating Funds.
- Capital Funds.
- Local Revenue.
- Passenger Fare Revenue.

The measures that are subdivided by mode are included in the following sections under each modal category:

General:
- Passenger Miles.
- Passenger Trips.
- Revenue Miles.
- Revenue Hours.
- Average Passenger Trip Length.

Vehicle:
- Vehicles Available in Maximum Service.
- Vehicles Operated in Maximum Service.
- Revenue Miles per Vehicles in Maximum Service.

Service/ Service Effectiveness:
- Average Age of Fleet (years).
- Vehicle Trips per Capita.
- Passenger Trips per Vehicles in Max Service.
- Passenger Trips per Revenue Mile.
- Passenger Trips per Revenue Hour.

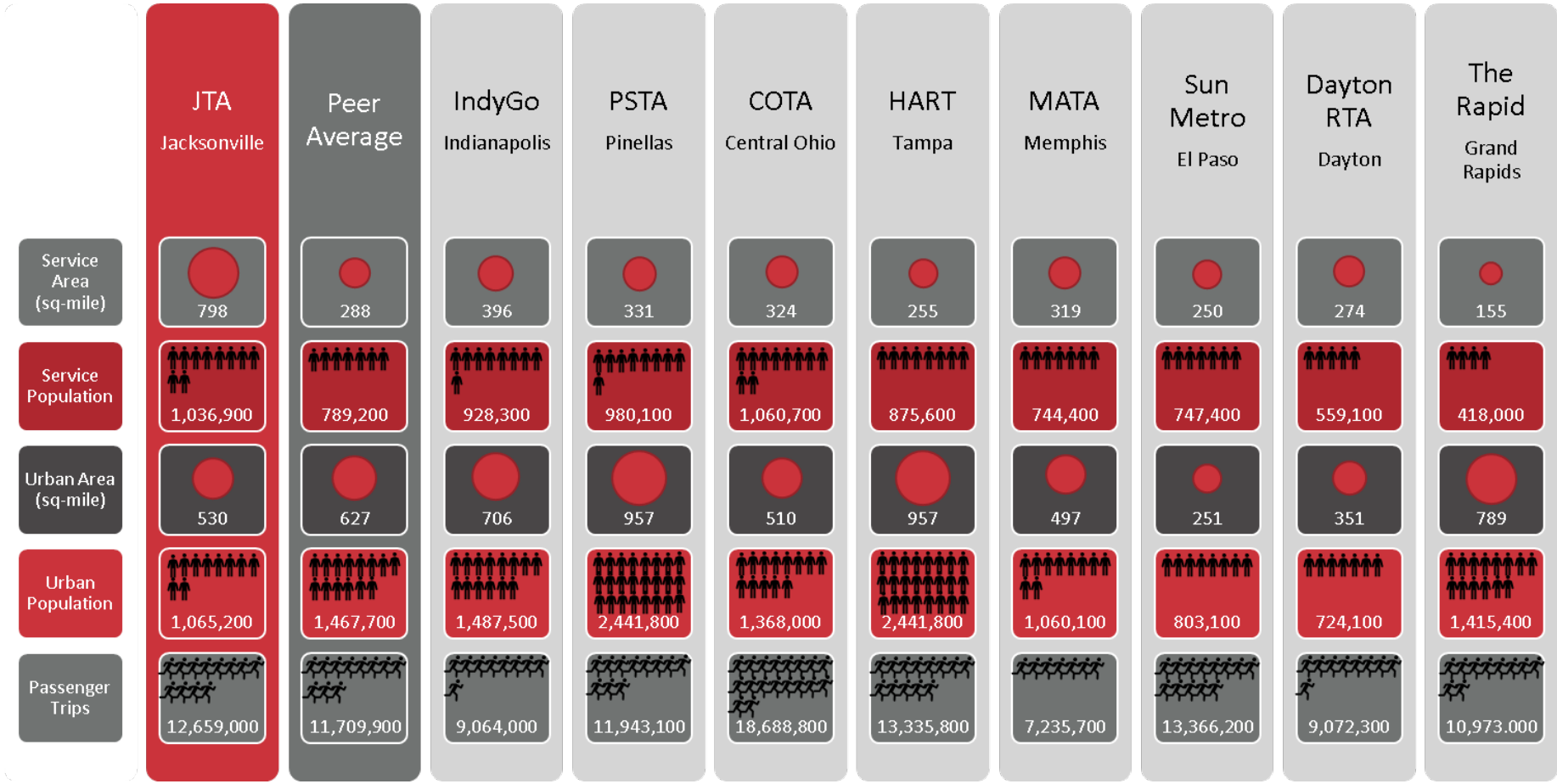
Expense and Revenue:
- Operating Expenses.
- Vehicle Maintenance Expenses.
- Non-Vehicle Maintenance Expenses.
- General Administration Expenses.
- Capital Funds.
- Passenger Fare Revenue.
- Average Fare.

Efficiency:
- Operating Expense per Capita.
- Operating Expense per Passenger Trip.
- Operating Expense per Revenue Hour.
- Maintenance Expense per Revenue Hour.
- Maintenance Expense per Vehicle.

General Measures

JTA's service area is the largest in comparison to the selected peers and is much higher than the overall average; however, the service area population is similar to Columbus, St. Petersburg, and Indianapolis. JTA's urban area is smaller than the overall average in comparison to its peers, with half of the peers having a larger urban area and half of the peers having a smaller urban area. JTA's urban area population is smaller than five of the selected peer agencies and is also lower than the overall average. JTA ranks similar in the number of passenger trips to St. Petersburg, Central Ohio, Tampa, and El Paso. **Figure 3-11** summarizes the urbanized area population, service area population, square mileage of the service area, and number of passenger trips for JTA and the peer transit systems selected for analysis.

Figure 3-11: Urban and Service Area Characteristics Peer Comparison, FY2017



Labor Measures

The Full Time Equivalent (FTE) count shows the number of employees that work the equivalent of full time (i.e., one 40-hours per week employee, or two 20-hour per week employees, equals one FTE) at each agency, in comparison to revenue hours generated and passenger trips generated. **Table 3-7** shows the number of employees that work full time at JTA and each peer agency, in comparison to revenue hours generated and passenger trips generated. JTA has a larger number of FTEs, revenue hours per employee FTE, and passenger trips per employee FTE than the peer group average value.

Table 3-7: FTE Data Peer Comparison, FY2017

	JTA	Peer Group Average Value	IndyGo	PSTA	COTA	HART	MATA	Sun Metro	Dayton RTA	The Rapid
Total Employee FTEs	722	**619**	606	1090	929	472	644	671	347	672
Revenue Hours per Employee FTE	1,213	**1,151**	1,472	1,149	829	904	1,148	846	1,747	1,156
Passenger Trips per Employee FTE	17,533	**14,642**	19,708	17,146	14,355	15,330	20,755	13,521	31,622	18,385

Expense and Revenue Measures

The expense and revenue measures provide a picture of JTA's expenses and the revenue generated by the agency. JTA agency-wide financial data for Fiscal Years 2015 through 2017 is shown in **Table 3-8**. Over the three-year period, JTA's general administration expenses and operating expenses had the largest percent change, while operating funds increased by approximately 7 percent and capital funds increased by approximately 1 percent.

Table 3-8: JTA Agency-wide Expenses and Revenue, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses	$90,691,650	$92,918,587	$96,792,327	7%
Vehicle Maintenance Expenses	$15,299,593	$15,765,303	$15,642,123	2%
Non-Vehicle Maintenance Expenses	$4,978,766	$5,733,824	$5,052,014	2%
General Administration Expenses	$29,110,318	$29,653,430	$32,336,307	11%
Operating Funds	**$91,286,765**	**$93,665,379**	**$97,641,482**	**7%**
Capital Funds	**$26,610,460**	**$30,066,339**	**$26,803,284**	**1%**

Table 3-9 shows that in 2017, JTA's local revenue made up approximately 75 percent and passenger fare revenue made up approximately 13 percent of JTA's operating budget. The remaining 12 percent of funds in JTA's operating budget came from state, federal, and other funds. These funds are included in the total operating funds listed in **Table 3-8**.

Table 3-9: JTA Agency-wide Operating Revenue, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Local Revenue	$66,038,592	$68,622,499	$73,194,803	1%
State Funds	$6,133,836	$4,531,188	4,593,397	-25%
Federal Assistance	$5,782,958	$6,385,052	6,028,223	4%
Other Funds	$1,482,069	$1,319,079	1,120,697	-24%
Passenger Fare Revenue	$11,849,310	$12,807,561	$12,704,362	7%

Table 3-10 shows that in 2017, federal funds provided approximately 92 percent of the total capital funds expended by JTA, and state funds made up the remaining eight percent. These funds are included in capital funds listed in **Table 3-8**.

Table 3-10: JTA Agency-wide Capital Revenue, FY2015-FY2017

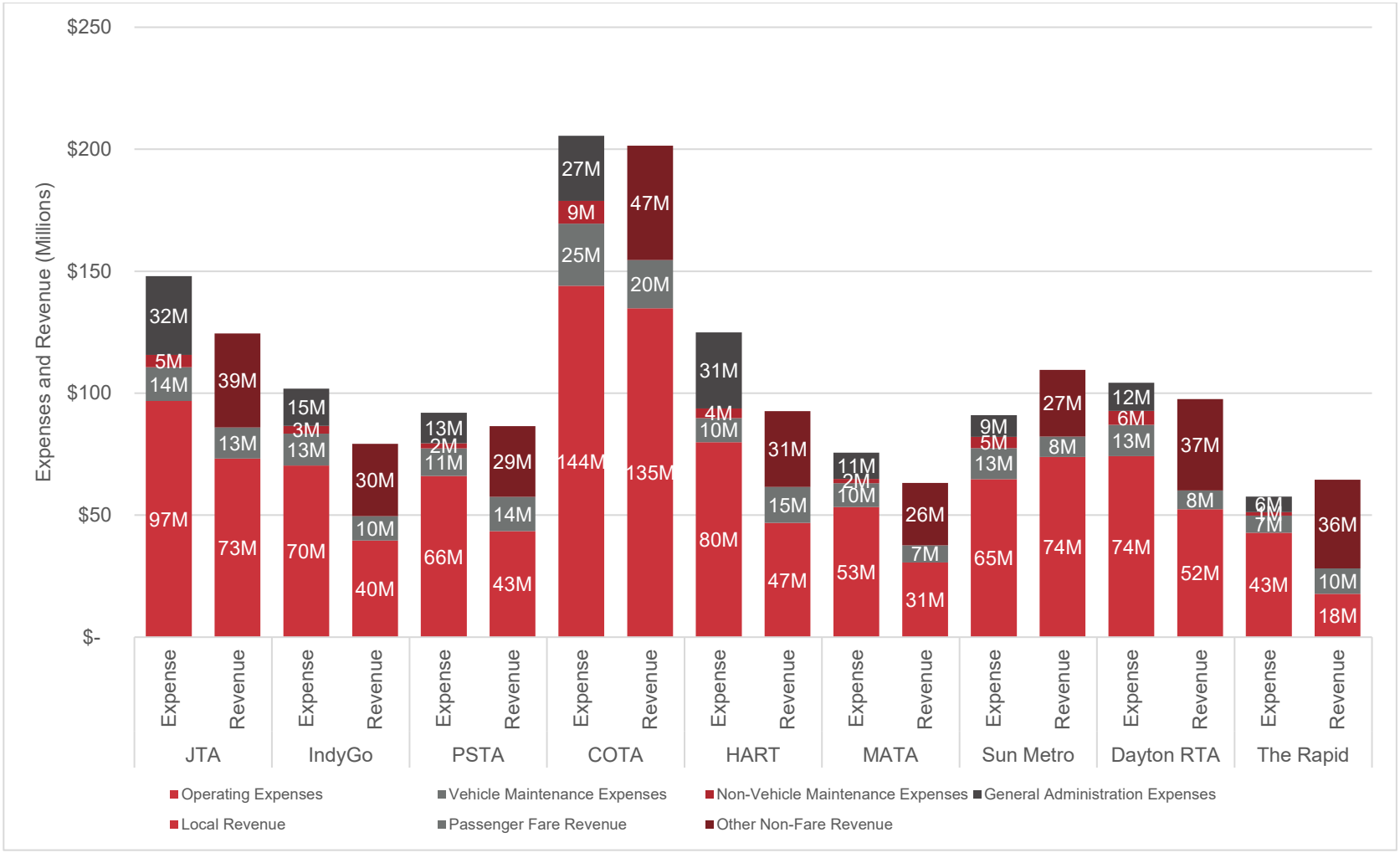
	2015	2016	2017	Percent Change (2015-2017)
Local Revenue	---	---	---	---
State Funds	$2,142,667	$2,480,999	$2,101,753	-1.9%
Federal Assistance	$24,467,793	$27,585,340	$24,701,531	1.0%
Other Funds	---	---	---	---
Passenger Fare Revenue	---	---	---	---

JTA's expenses and revenue values are higher than the peer group average but are similar to El Paso (Sun Metro), Columbus (COTA), and Tampa (HART). When examining operating expenses, JTA's expenses are approximately 23 percent higher than the peer average value, and JTA's maintenance and administration expenses are also higher than their peers. However, JTA's operating funds are approximately 22 percent higher than the peer average value. JTA's capital funds are approximately 16 percent higher than the peer average value and are used for capital expenses related to revenue vehicles, systems and guideways, facilities and stations, and other capital needs. **Table 3-11** shows JTA's agency-wide financial information in comparison to selected peer agencies for Fiscal Year 2017. **Figure 3-12** shows the comparisons in a graph format.

Table 3-11: Agency-wide Expenses and Revenue Peer Comparison, FY2017

	JTA	Peer Group Average	IndyGo	PSTA	COTA	HART	MATA	Sun Metro	Dayton RTA	The Rapid
Operating Expenses	$96,792,327	$74,436,010	$70,404,701	$66,047,790	$144,045,834	$79,925,347	$53,279,153	$64,798,436	$74,153,536	$42,833,285
Vehicle Maintenance Expenses	$15,642,123	$12,766,196	$13,059,157	$11,345,906	$25,471,563	$9,882,061	$9,834,999	$12,690,693	$12,836,054	$7,009,137
Non-Vehicle Maintenance Expenses	$5,052,014	$3,987,855	$3,102,078	$2,030,188	$9,322,109	$3,951,220	$1,756,436	$4,572,692	$5,740,539	$1,427,578
General Administration Expenses	$32,336,307	$15,387,479	$15,253,422	$12,527,951	$26,695,645	$31,118,144	$10,715,314	$8,910,188	$11,521,003	$6,358,164
Operating Funds	$97,641,482	$76,619,166	70,473,033	71,819,274	149,666,202	81,918,303	$53,449,530	67,494,292	74,187,207	43,945,490
Capital Funds	$26,803,284	$22,640,148	$8,821,675	$14,695,528	$51,808,437	$9,943,461	$9,753,985	$42,064,791	$23,397,639	$20,635,670
Local Revenue	$73,194,803	$54,924,653	$39,560,713	$43,445,235	$134,846,872	$46,824,737	$30,595,152	$73,858,968	$52,477,810	$17,787,735
Passenger Fare Revenue	$12,704,362	$11,590,885	$10,057,717	$14,695,528	$19,688,255	$14,789,726	$7,030,476	$8,316,705	$7,702,909	$10,445,764

Figure 3-12: Agency-wide Expenses and Revenue Peer Comparison, FY2017



Fixed Route Transit Service

This section presents a peer evaluation and trend analysis of JTA's fixed route bus service. Each of the identified group of measures is used to evaluate JTA's service over a period of three years to detail JTA service trends in relation to the identified peer agencies. All data was sourced from the FTA National Transit Database. The following measures are included in this section:

General:
- Passenger Miles.
- Passenger Trips.
- Revenue Miles.
- Revenue Hours.
- Average Passenger Trip Length.

Vehicle:
- Vehicles Available in Maximum Service.
- Vehicles Operated in Maximum Service.
- Revenue Miles per Vehicles in Maximum Service.

Service/ Service Effectiveness:
- Average Age of Fleet (years).
- Vehicle Trips per Capita.
- Passenger Trips per Vehicles in Max Service.
- Passenger Trips per Revenue Mile.
- Passenger Trips per Revenue Hour.

Expense and Revenue:
- Operating Expenses.
- Vehicle Maintenance Expenses.
- Non-Vehicle Maintenance Expenses.
- General Administration Expenses.
- Capital Funds.
- Passenger Fare Revenue.
- Average Fare.

Efficiency:
- Operating Expense per Capita.
- Operating Expense per Passenger Trip.
- Operating Expense per Revenue Hour.
- Maintenance Expense per Revenue Hour.
- Maintenance Expense per Vehicle.

General Measures

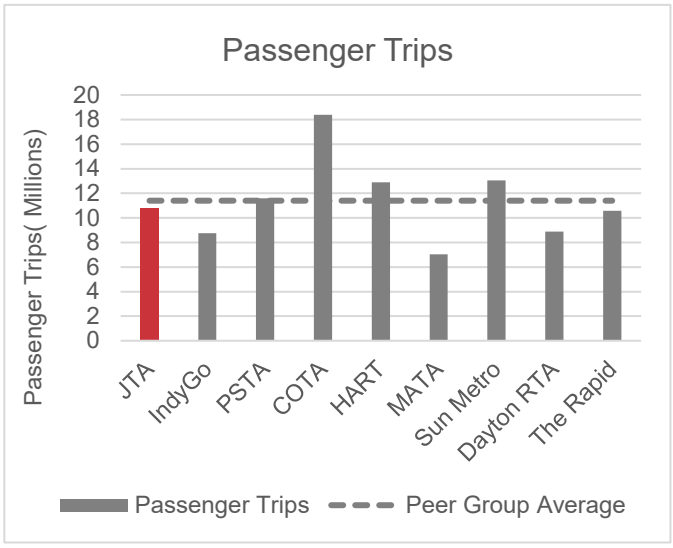
Analysis of general characteristics provides an overview of JTA and how it has changed. The number of passenger trips, passenger miles, revenue miles, revenue hours, and average passenger trip length for fixed route service for Fiscal Years 2015 through 2017 is included in **Table 3-12**.

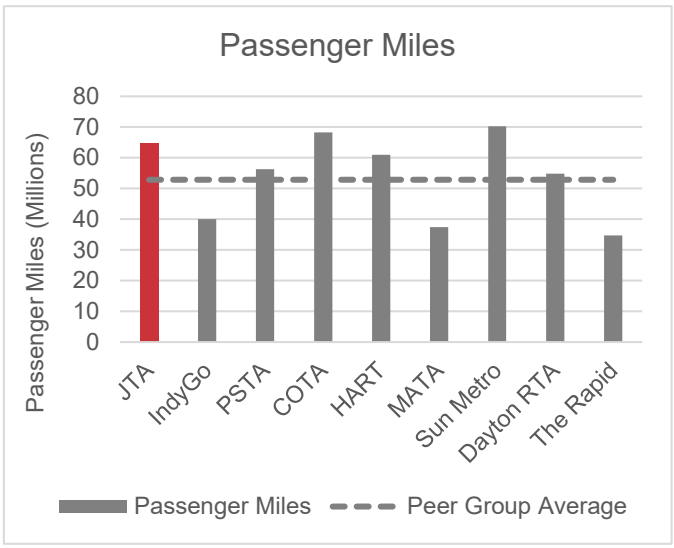
Table 3-12: JTA Fixed Route General Measures, FY2015-FY2017

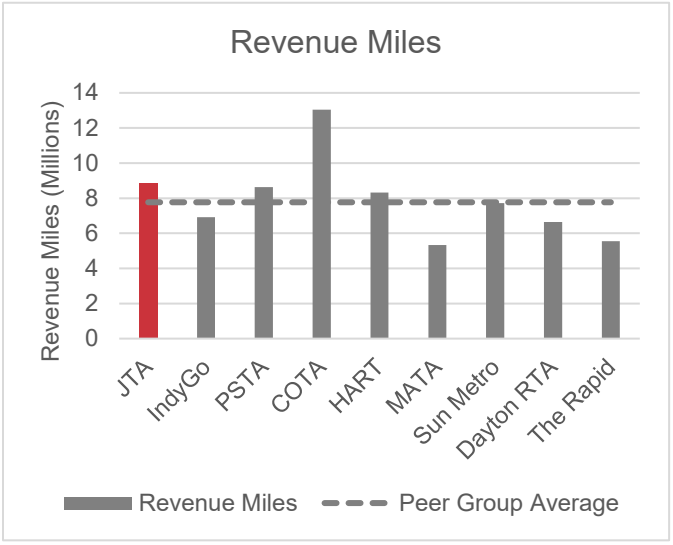
	2015	2016	2017	Percent Change (2015-2017)
Passenger Trips	11,634,258	11,508,138	10,794,798	-7%
Passenger Miles	70,409,205	68,144,307	64,694,247	-8%
Revenue Miles	8,557,699	8,712,949	8,853,123	3%
Revenue Hours	618,327	623,183	630,492	2%
Average Passenger Trip Length	6.1	5.9	6.0	-2%

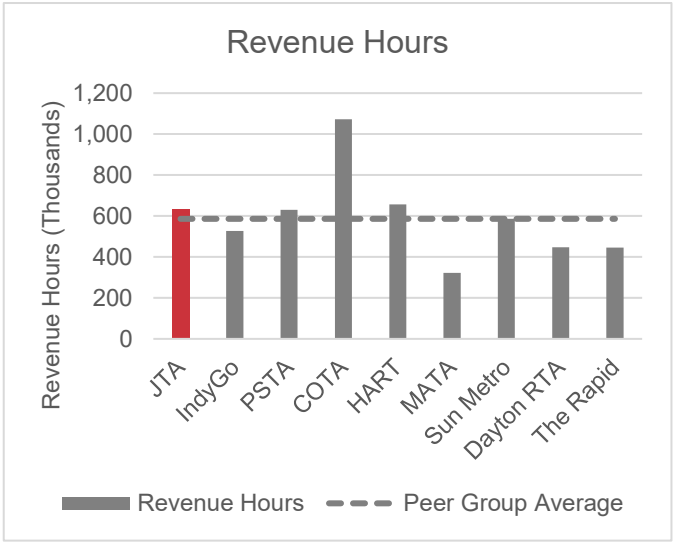
A comparison of passenger trips, passenger miles, revenue miles, revenue hours, and average passenger trip length between JTA and its peer agencies is shown in **Figure 3-13**, as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer average value for all the measures under this category except for fixed route passenger trips.

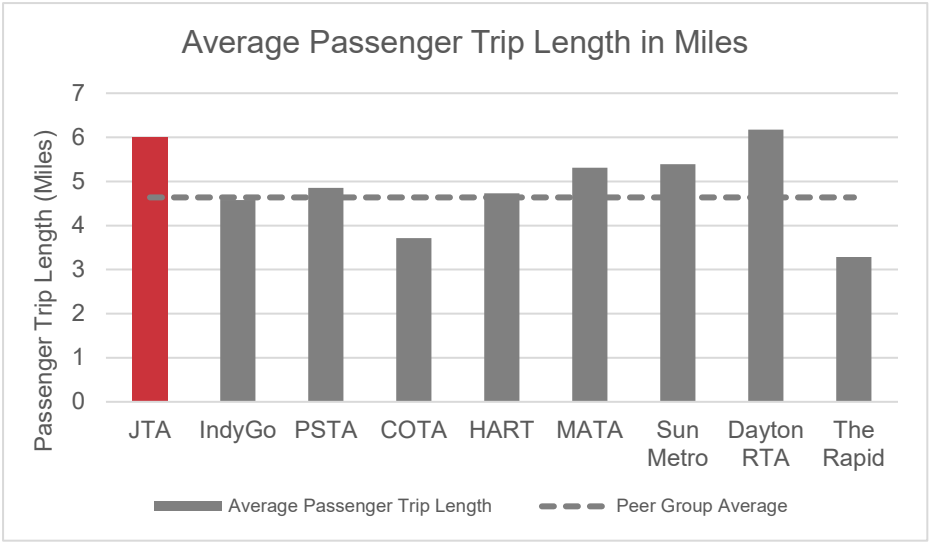
Figure 3-13: Fixed Route General Measures Peer Comparison, FY2017











Vehicle Measures

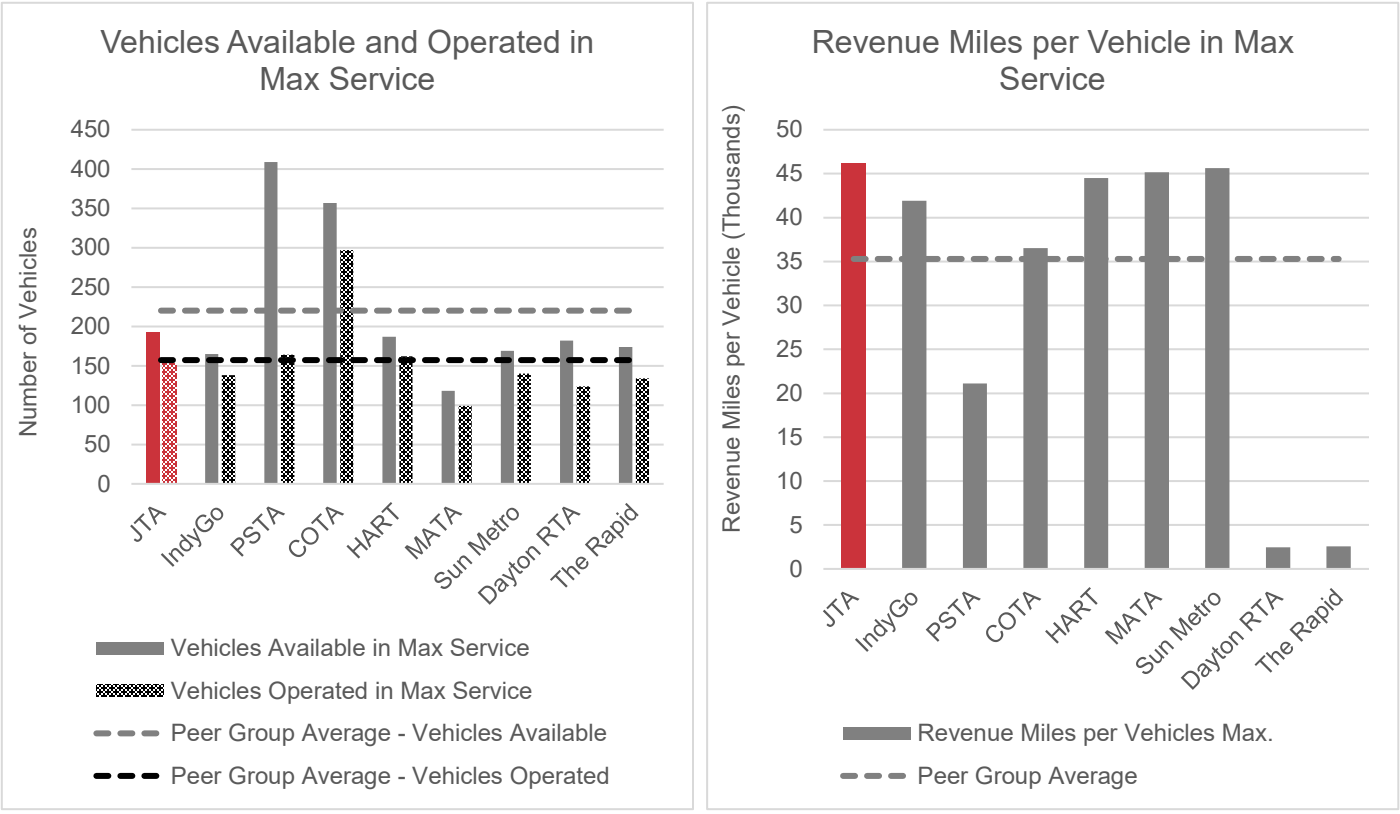
Analysis of vehicle measures provides an overview of the size of JTA and the number of vehicles available for service. The number of vehicles available in maximum service, vehicles operated in maximum service, and revenue miles per vehicles in maximum service for fixed route service for Fiscal Years 2015 through 2017 is listed in **Table 3-13**.

Table 3-13: JTA Fixed Route Vehicle Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Vehicles Available in Maximum Service	175	190	192	9.7%
Vehicles Operated in Maximum Service	150	150	153	2.0%
Revenue Miles per Vehicles in Maximum Service	48,901	45,858	46,110	-5.7%

A comparison of vehicles available in maximum service, vehicles operated in maximum service, and revenue miles per vehicles in maximum service between JTA and its peer agencies is shown in **Figure 3-14**, as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer average for vehicles operated at maximum service and revenue miles per vehicles in maximum service, but below the average value for vehicles available at maximum service.

Figure 3-14: Fixed Route Vehicle Measures Peer Comparison, FY2017



Service/Service Effectiveness Measures

Analysis of service/service effectiveness measures provides an overview of the age of the fleet, and number of trips offered based on the size of the service area population, the number of vehicles operated, and the amount of revenue miles/hours generated. The average age of fleet (in years), passenger trips per capita, passenger trips per vehicles in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour for fixed route service for Fiscal Years 2015 through 2017 is listed in **Table 3-14**.

Table 3-14: JTA Fixed Route Service/Service Effectiveness Measures, FY2015-FY2017

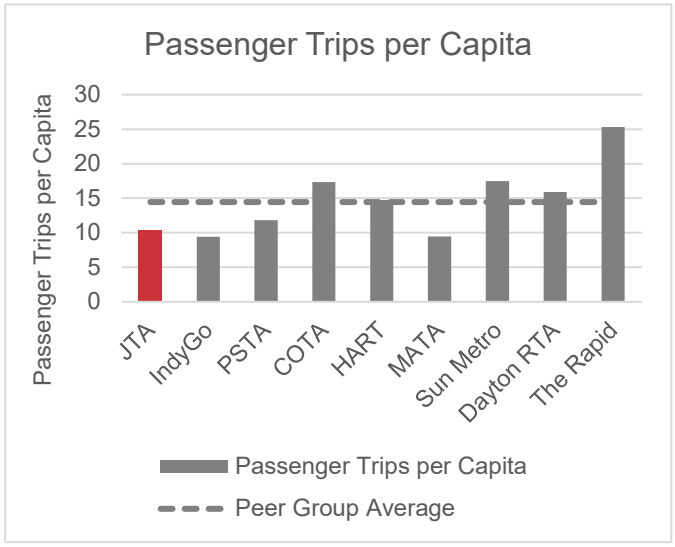
	2015	2016	2017	Percent Change (2015-2017)
Average Age of Fleet (in years)	6.7	6.6	6.9	3%
Passenger Trips per Capita	11.62	11.27	10.41	-10%
Passenger Trips per Vehicles in Maximum Service	66,481.47	60,569.15	56,222.91	-15%
Passenger Trips per Revenue Mile	1.40	1.30	1.20	-14%
Passenger Trips per Revenue Hour	18.80	18.50	17.10	-9%

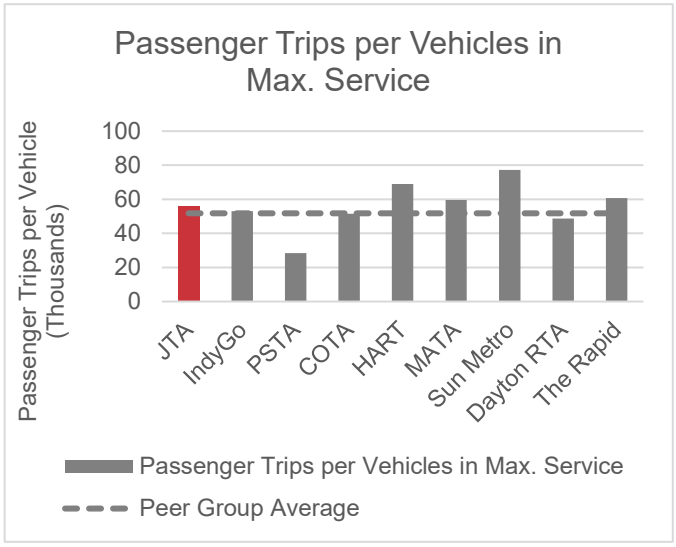
A comparison of average age of fleet (in years), passenger trips per capita, and passenger trips per vehicles in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour between JTA and its peer agencies is shown in **Figure 3-16**, as well as the average group value for each category for Fiscal Year 2017. JTA is below the peer group average for all measures except the passenger trips per vehicles in maximum service.

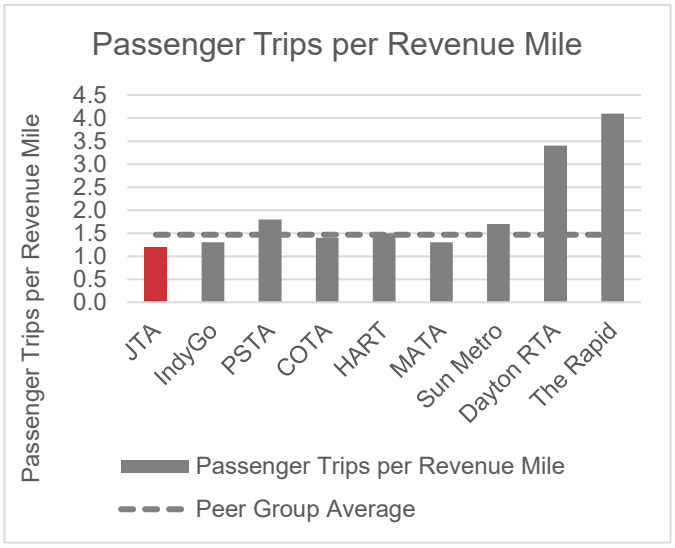
Figure 3-15: A CMAX BRT bus in Columbus, Ohio

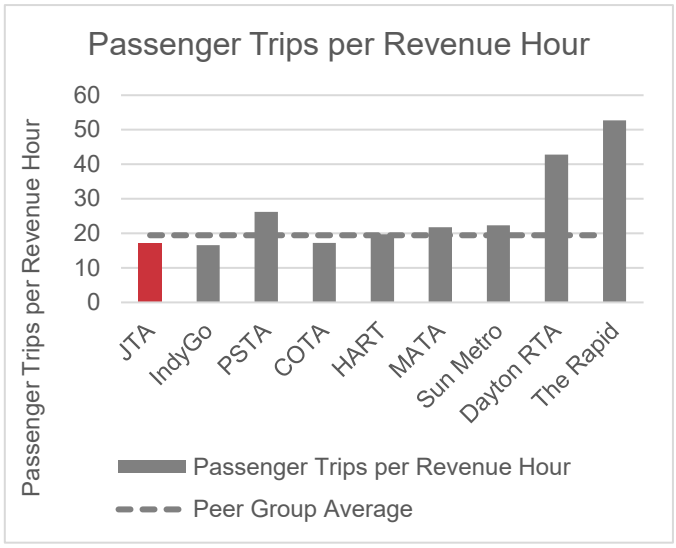
Source: https://www.columbusunderground.com/wp-content/uploads/2017/12/CMAX-at-Northland-Transit-Center-1.png, no copyright infringement is intended.

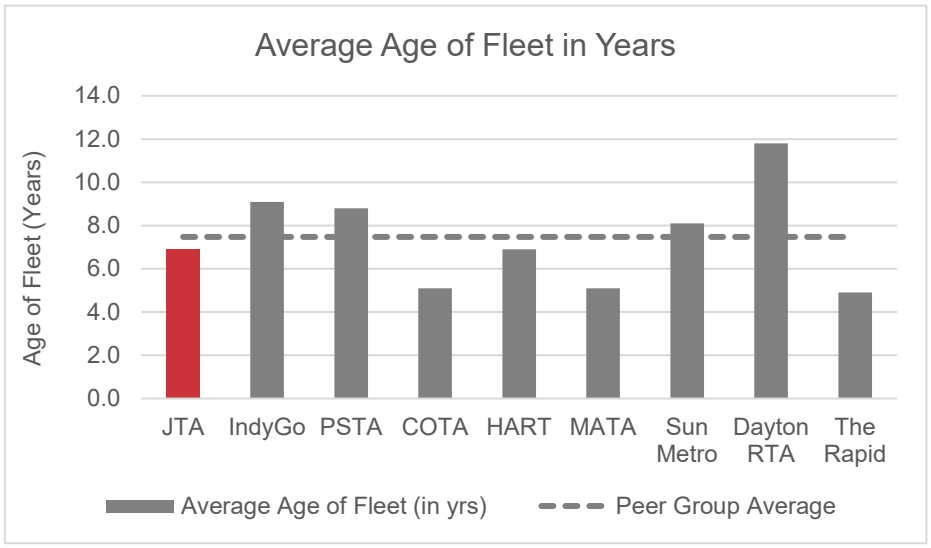
Figure 3-16: Fixed Route Service/Service Effectiveness Measures Peer Comparison, FY2017











Expense and Revenue Measures

The financial data for fixed route transit service is shown in **Table 3-15**. This table shows the amount of JTA's expenses and revenue for Fiscal Years 2015 through 2017. Operating, vehicle maintenance, and general administration expenses increased over the three-year period, while non-vehicle maintenance expenses, capital funds, and passenger fare revenue decreased.

Table 3-15: JTA Fixed Route Expense and Revenue Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses	$70,455,887	$71,581,487	$74,234,599	5%
Vehicle Maintenance Expenses	$10,404,723	$10,777,718	$10,898,333	5%
Non-Vehicle Maintenance Expenses	$3,782,151	$4,076,337	$3,618,119	-5%
General Administration Expenses	$23,240,593	$23,235,070	$24,922,424	7%
Capital Funds	$22,358,543	$24,280,401	$22,133,914	-1%
Passenger Fare Revenue	$10,844,655	$10,907,338	$10,384,644	-4%

A comparison of the amount of JTA's expenses and revenue for Fixed Route Service for Fiscal Year 2017 in relation to its peer agencies is shown in **Table 3-16**. JTA's expenses and revenue are higher than the peer average value for all the measures except for the vehicle maintenance expenses. **Figure 3-18** shows this comparison in graph format.

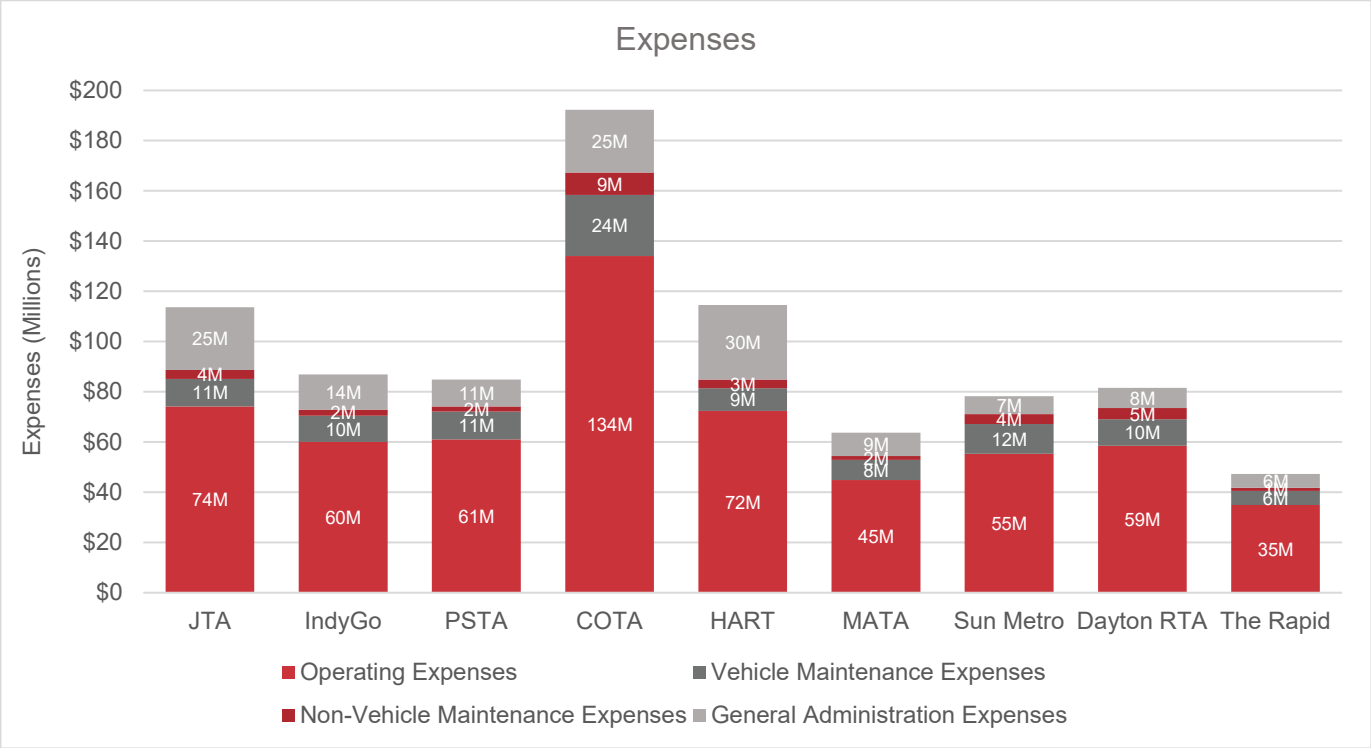
Figure 3-17: An IndyGo BRT bus in Indianapolis, Ind.

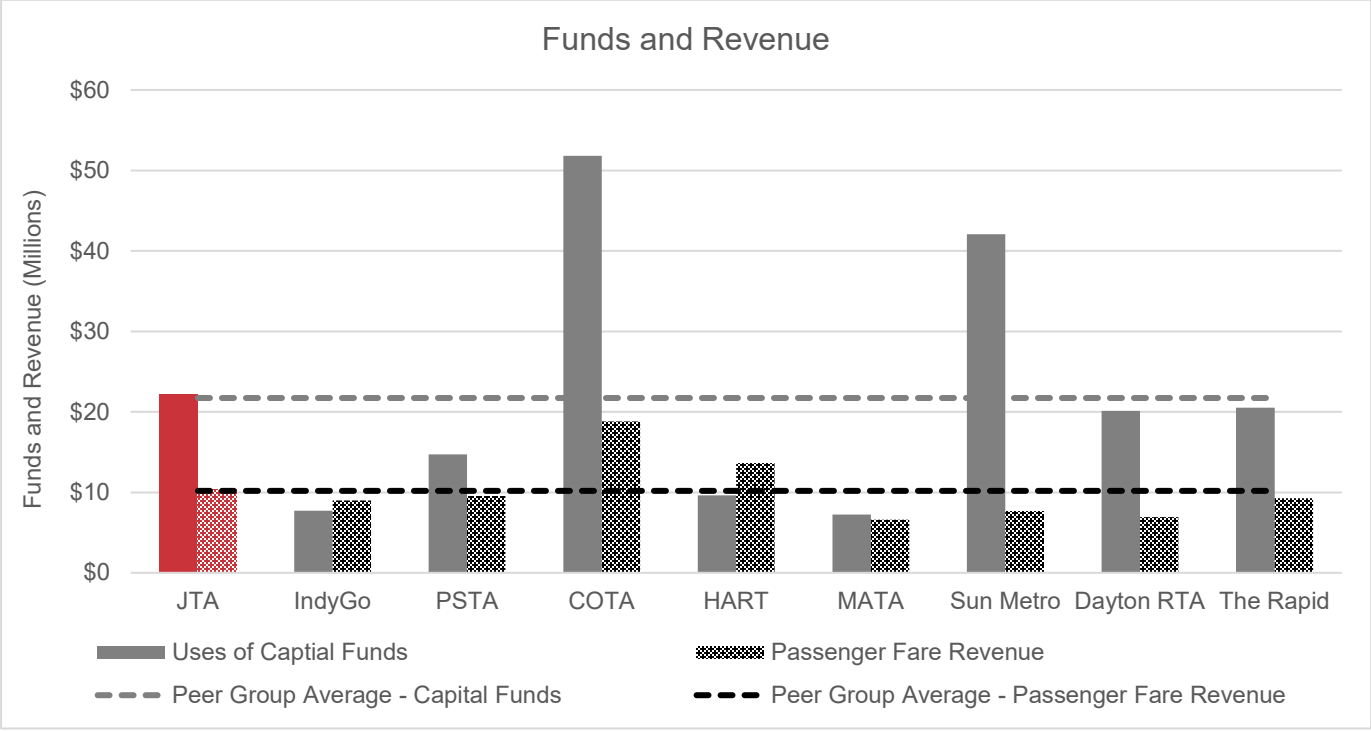
Source: https://files.constantcontact.com/45d3237d001/f8272b25-802b-47fd-990c-a47690d3ff8d.jpg, no copyright infringement is intended.

Table 3-16: Fixed Route Expense and Revenue Peer Comparison, FY2017

	JTA	Peer Group Average Value	IndyGo	PSTA	COTA	HART	MATA	Sun Metro	Dayton RTA	The Rapid
Operating Expenses	$74,234,599	$65,136,618	$60,034,216	$61,020,161	$134,095,530	$72,349,970	$44,889,156	$55,276,038	$58,554,063	$34,873,808
Vehicle Maintenance Expenses	$10,898,333	$11,389,477	$10,494,164	$11,122,143	$24,360,139	$9,090,806	$7,981,152	$11,887,192	$10,475,583	$5,704,638
Non-Vehicle Maintenance Expenses	$3,618,119	$3,485,903	$2,427,619	$2,006,340	$8,841,964	$3,435,503	$1,503,034	$3,938,349	$4,532,962	$1,201,455
General Administration Expenses	$24,922,424	$13,690,911	$13,906,073	$10,771,001	$25,041,266	$29,733,583	$9,335,774	$7,202,065	$7,962,996	$5,574,528
Capital Funds	$22,133,914	$21,721,142	$7,694,779	$14,695,528	$51,808,437	$9,613,755	$7,253,086	$42,064,791	$20,133,962	$20,504,795
Passenger Fare Revenue	$10,384,644	$10,181,183	$8,998,862	$9,535,246	$18,816,434	$13,633,263	$6,603,898	$7,689,310	$6,911,641	$9,260,806

Figure 3-18: Fixed Route Expense and Revenue Peer Comparison, FY2017





Efficiency Measures

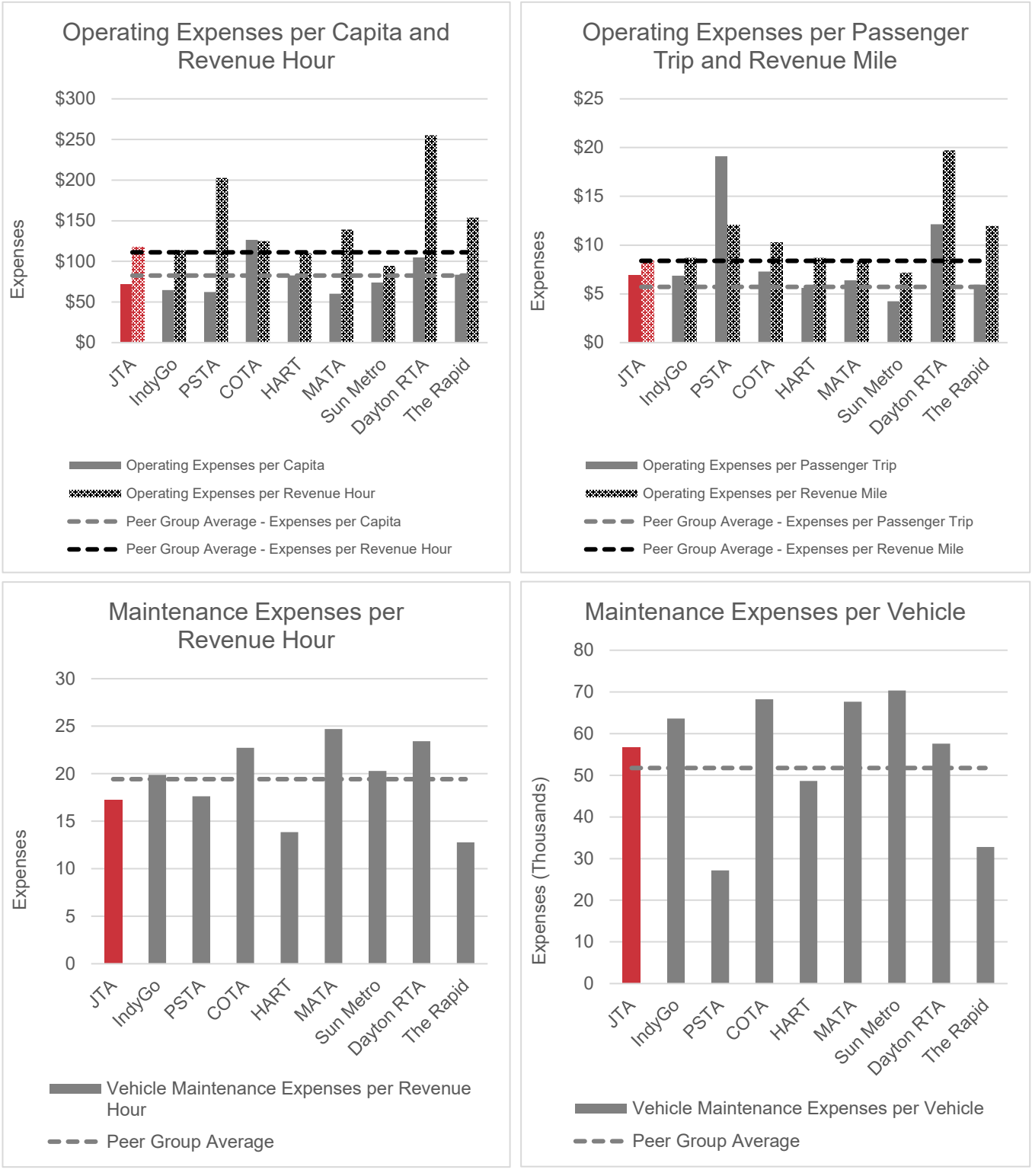
The efficiency measures provide an overview of JTA's operating expenses and maintenance expenses based on the service area population, trips generated, revenue miles and hours generated, and number of vehicles. The operating expenses per capita, operating expenses per passenger trip, operating expense per revenue hour, maintenance expense per revenue hour, and maintenance expense per vehicle for fixed-route service for Fiscal Years 2015 through 2017 is listed in **Table 3-17**.

Table 3-17: JTA Fixed Route Efficiency Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses per Capita	$70.36	$70.08	$71.59	2%
Operating Expenses per Passenger Trip	$6.06	$6.22	$6.88	14%
Operating Expenses per Revenue Mile	$8.23	$8.22	$8.39	2%
Operating Expenses per Revenue Hour	$113.95	$114.86	$117.74	3%
Vehicle Maintenance Expenses per Revenue Hour	$16.83	$17.29	$17.29	3%
Vehicle Maintenance Expenses per Vehicle	$59,456	$56,725	$56,762	-5%

A comparison of operating expenses per capita, operating expenses per passenger trip, operating expense per revenue hour, maintenance expense per revenue hour, and maintenance expense per vehicle between JTA and its peer agencies is shown in **Figure 3-19**, as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer group average for all measures except the operating expenses per capita, and vehicle maintenance expenses per revenue hour. JTA's value is the same as the peer group average value for operating expenses per revenue mile.

Figure 3-19: Fixed Route Efficiency Peer Comparison, FY2017



Key Takeaways

JTA is above the peer group average value for the number of passenger miles, revenue miles, revenue hours, and average passenger trip length. However, it provides this service level with a lower than average number of vehicles available at maximum service and vehicles operated at maximum service. It also has the highest number of revenue miles per vehicles in maximum service when compared to its peer agencies. It is below the peer group average value for passenger trips per capita, but it is above the average peer group value for passenger trips per revenue mile, passenger trips per revenue hour, and average age of fleet in years. This means that JTA is providing service with an older fleet than the peer group average, while providing more trips per revenue mile and hour and providing this service with less vehicles.

JTA's operating expenses, non-vehicle maintenance expenses, and general administration expenses are higher than the peer group average, but the amount of capital funds and passenger fare revenue received is also higher than the peer group average. When examining operating expenses, JTA's expenses are approximately 12 percent higher than the peer group average value, but JTA's vehicle maintenance expenses are approximately 5 percent lower than the peer group average. Notably, JTA's general administration expenses are approximately 45 percent higher than the peer group average value. When examining funds received, capital funds and passenger fare revenue are 2 percent higher than the peer group average value. Therefore, JTA has higher than average expenses (largely general administration expenses); however, it also has slightly higher than average funding to offset them.

When examining efficiency, JTA is above the peer group average for operating expenses per revenue hour, operating expenses per passenger trip, and vehicle maintenance expenses per vehicle. However, JTA is below the peer group average value for operating expenses per capita and vehicle maintenance expenses per revenue hour. JTA's value is the same as the peer group average value for operating expenses per revenue mile. However, when considering Daytona RTA's and PSTA's outlier agency values for operating expenses per revenue hour, operating expenses per passenger trip, and operating expenses per revenue mile, JTA's operating expenses are consistent with its peer agencies.

Figure 3-20: A JTA bus beneath the Skyway

Source: The Florida Times-Union, no copyright infringement is intended.

Demand-Response Transit Service

This section presents a peer evaluation and trend analysis of JTA's demand respond transit service. JTA's demand-response (paratransit) service is provided by Connexion and Connexion Plus. The service is purchased transportation and not directly operated by JTA.

Each of the identified group of measures is used to evaluate JTA's service against its identified peers over a period of three years in a similar fashion as the fixed route peer review. All data was sourced from the FTA National Transit Database. The following measures are included in this section:

General:
- Passenger Miles.
- Passenger Trips.
- Revenue Miles.
- Revenue Hours.
- Average Passenger Trip Length.

Vehicle:
- Vehicles Available in Maximum Service.
- Vehicles Operated in Maximum Service.
- Revenue Miles per Vehicles in Maximum Service.

Service/ Service Effectiveness:
- Average Age of Fleet (years).
- Vehicle Trips per Capita.
- Passenger Trips per Vehicles in Max Service.
- Passenger Trips per Revenue Mile.
- Passenger Trips per Revenue Hour.

Expense and Revenue:
- Operating Expenses.
- Vehicle Maintenance Expenses.
- Non-Vehicle Maintenance Expenses.
- General Administration Expenses.
- Capital Funds.
- Passenger Fare Revenue.
- Average Fare.

Efficiency:
- Operating Expense per Capita.
- Operating Expense per Passenger Trip.
- Operating Expense per Revenue Hour.
- Maintenance Expense per Revenue Hour.
- Maintenance Expense per Vehicle.

General Measures

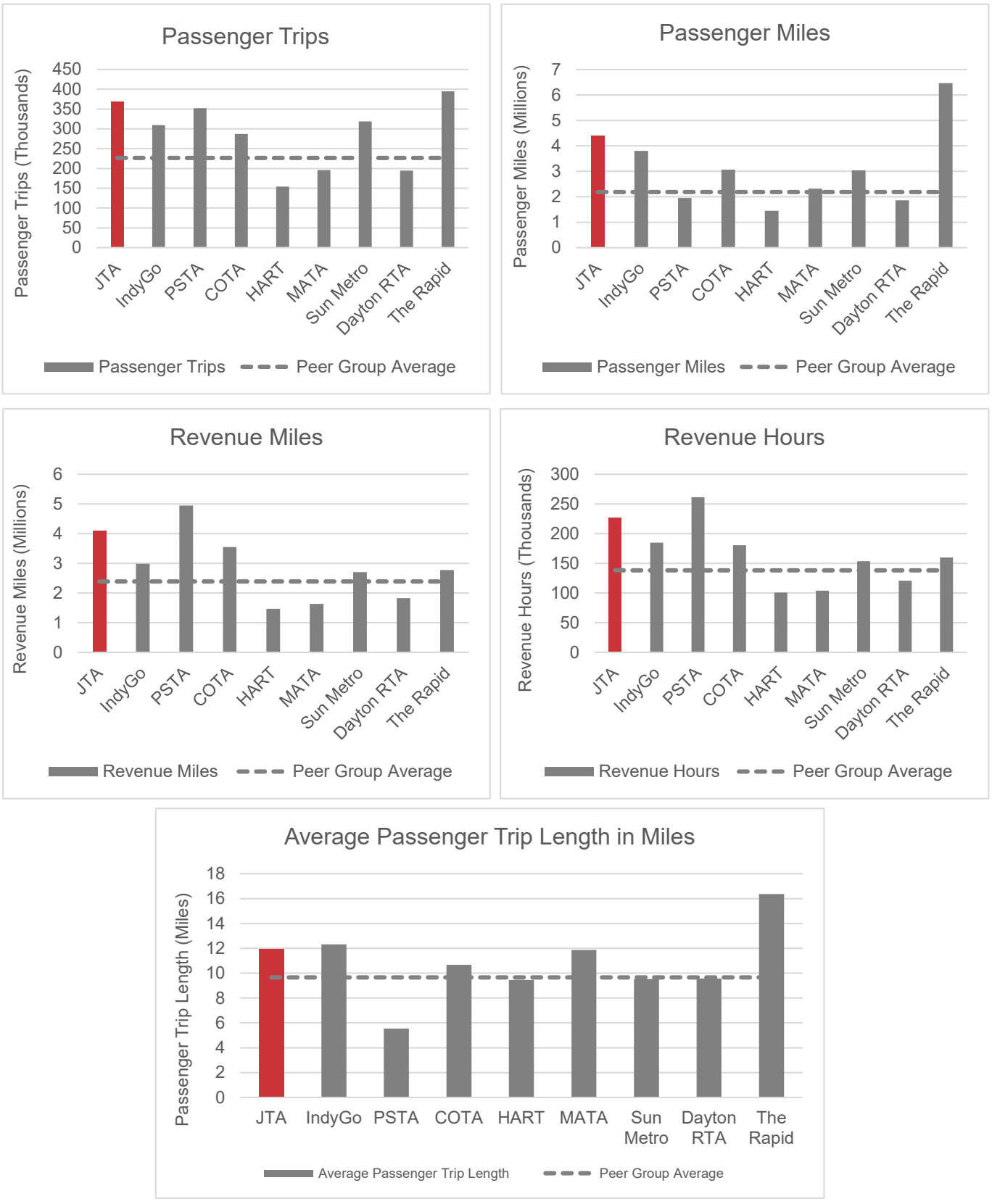
Analysis of general characteristics provides an overview of JTA and how it has changed. The number of passenger trips, passenger miles, revenue miles, revenue hours, and average passenger trip length for demand-response service for Fiscal Years 2015 through 2017 is included in **Table 3-18**.

Table 3-18: JTA Demand-Response General Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Passenger Trips	375,013	370,001	368,596	-2%
Passenger Miles	4,432,844	4,432,053	4,396,241	-1%
Revenue Miles	4,112,869	4,097,045	4,092,002	-1%
Revenue Hours	225,662	226,342	226,790	0%
Average Passenger Trip Length	11.8	12.0	12.0	1%

A comparison of passenger trips, passenger miles, revenue miles, revenue hours, and average passenger trip length between JTA and its peer agencies is shown in **Figure 3-21,** as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer average value for all the measures under this category.

Figure 3-21: Demand-Response General Measures Peer Comparison, FY2017



Vehicle Measures

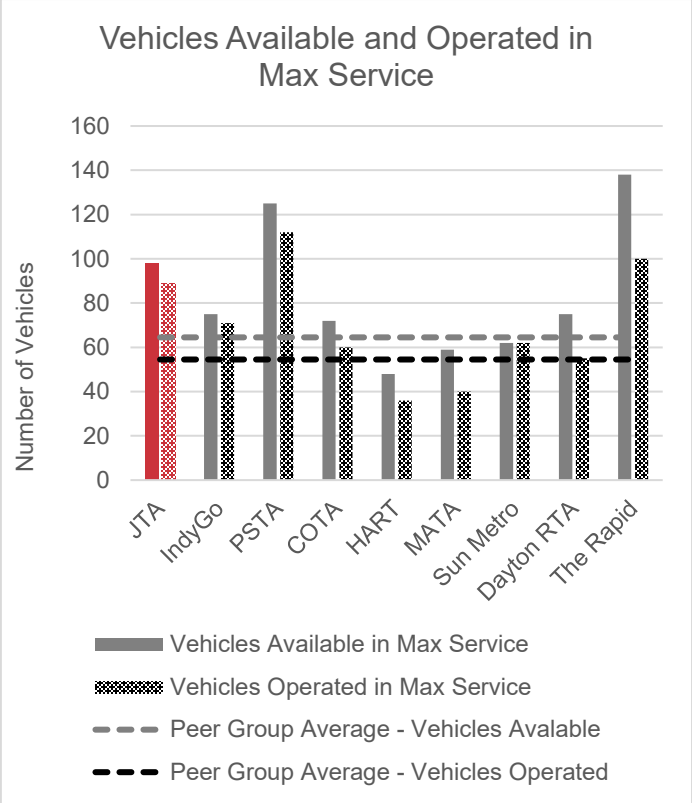
Analysis of vehicle measures provides an overview of the size of JTA and the number of vehicles available for service. The number of vehicles available in maximum service, vehicles operated in maximum service, and revenue miles per vehicles in maximum service for demand-response service for Fiscal Years 2015 through 2017 is listed in **Table 3-19**.

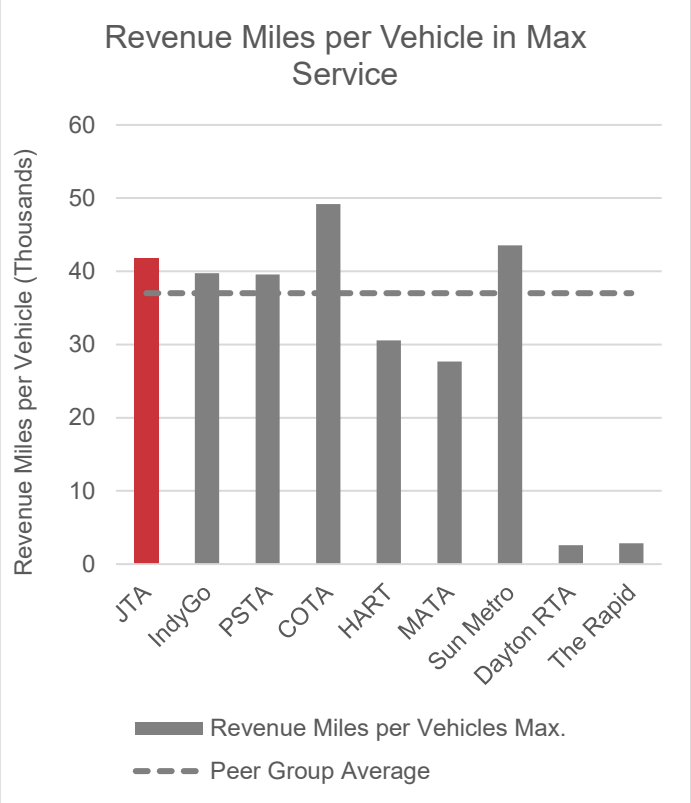
Table 3-19: JTA Demand-Response Vehicle Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Vehicles Available in Maximum Service	97	99	98	1.0%
Vehicles Operated in Maximum Service	91	88	89	-2.2%
Revenue Miles per Vehicles in Maximum Service	42,401	41,384	41,755	-1.5%

A comparison of vehicles available in maximum service, vehicles operated in maximum service, and revenue miles per vehicles in maximum service between JTA and its peer agencies is shown in **Figure 3-22**, as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer average for all measures.

Figure 3-22: Demand-Response Vehicle Measures Peer Comparison, FY2017





Service/Service Effectiveness Measures

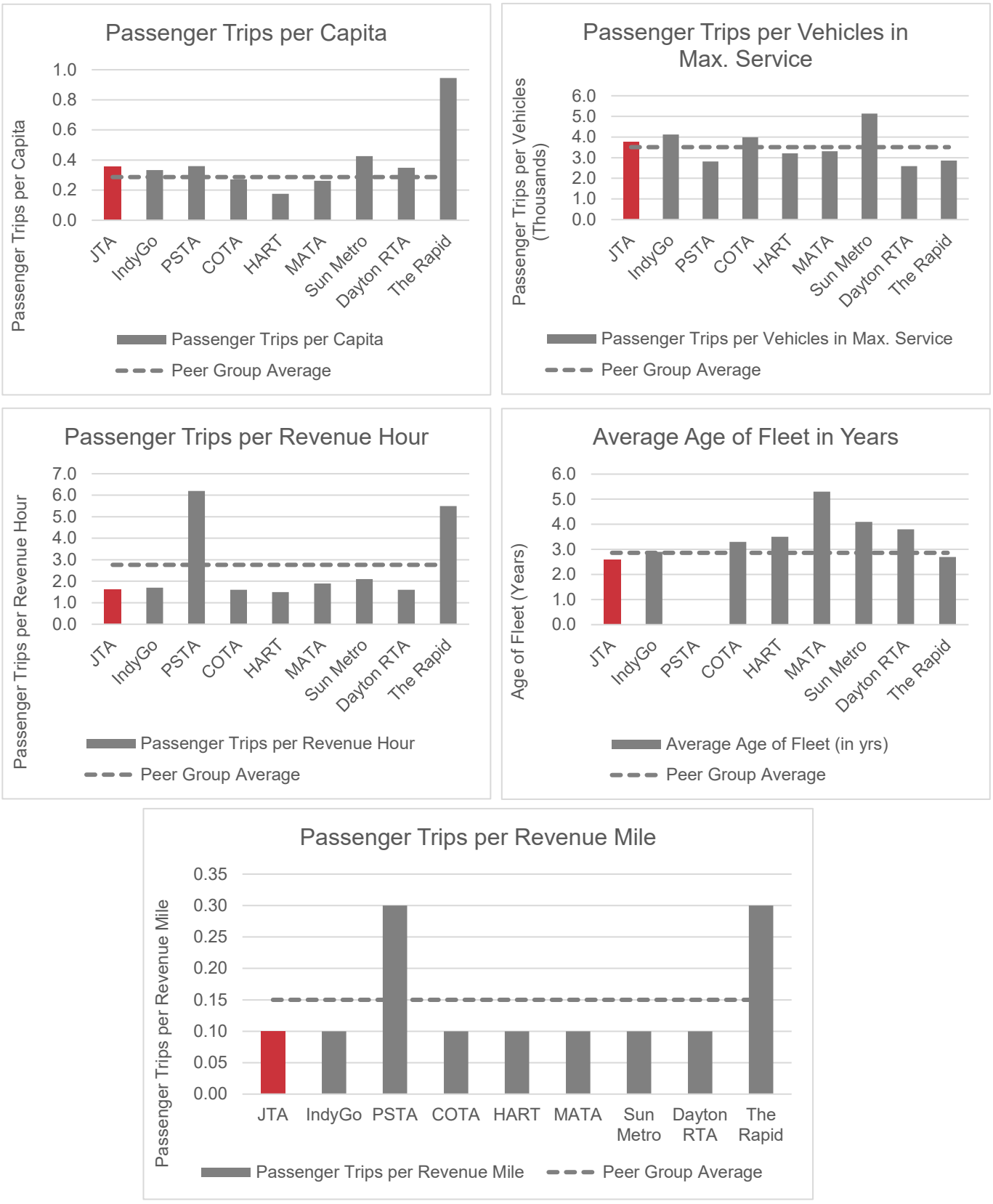
Analysis of service/service effectiveness measures provides an overview of the age of the fleet, and number of trips offered based on the size of the service area population, the number of vehicles operated, and the amount of revenue miles/hours generated. The average age of fleet (in years), passenger trips per capita, passenger trips per vehicles in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour for demand-response service for Fiscal Years 2015 through 2017 is listed in **Table 3-20**.

Table 3-20: JTA Demand-Response Service/Service Effectiveness Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Average Age of Fleet (in years)	2.2	1.8	2.6	18%
Passenger Trips per Capita	0.37	0.36	0.36	-5%
Passenger Trips per Vehicles in Maximum Service	3,866.11	3,737.38	3,761.18	-3%
Passenger Trips per Revenue Mile	0.10	0.10	0.10	0%
Passenger Trips per Revenue Hour	1.70	1.60	1.60	-6%

A comparison of average age of fleet (in years), passenger trips per capita, and passenger trips per vehicles in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour between JTA and its peer agencies is shown in **Figure 3-23**, as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer group average for all measures except the passenger trips per revenue mile, passenger trips per revenue hour, and average age of fleet (in years). It should be noted that some of the data points for PSTA are not available because PSTA does not own its own demand-response fleet.

Figure 3-23: Demand-Response Service/Service Effectiveness Measures Peer Comparison, FY2017



Expense and Revenue Measures

The financial data for demand-response transit service is shown in **Table 3-21**. This table shows the amount of JTA's expenses and revenue for Fiscal Years 2015 through 2017. Operating expenses, vehicle maintenance expenses, non-vehicle maintenance expenses, general administration expenses, and passenger fare revenue increased over the three-year period, while capital funds decreased.

Table 3-21: JTA Demand-Response Expense and Revenue Measures, FY2015-FY2017

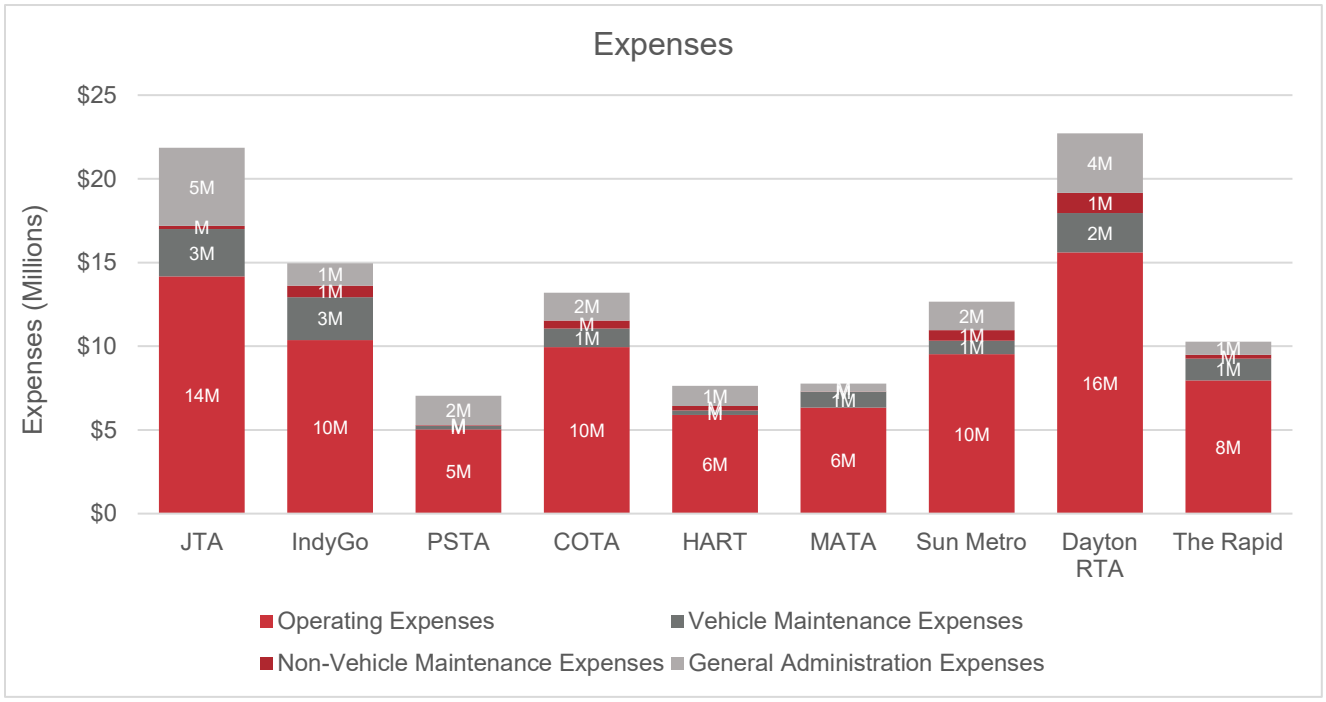
	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses	$14,079,521	$13,625,770	$14,177,196	1%
Vehicle Maintenance Expenses	Data Incomplete	$2,575,407	$2,831,049	---
Non-Vehicle Maintenance Expenses	$0	$313,667	$176,456	100%
General Administration Expenses	$4,363,297	$4,523,172	$4,664,933	6%
Capital Funds	$2,833,303	$406,350	$13,763	-100%
Passenger Fare Revenue	$1,004,655	$1,074,061	$1,072,358	6%

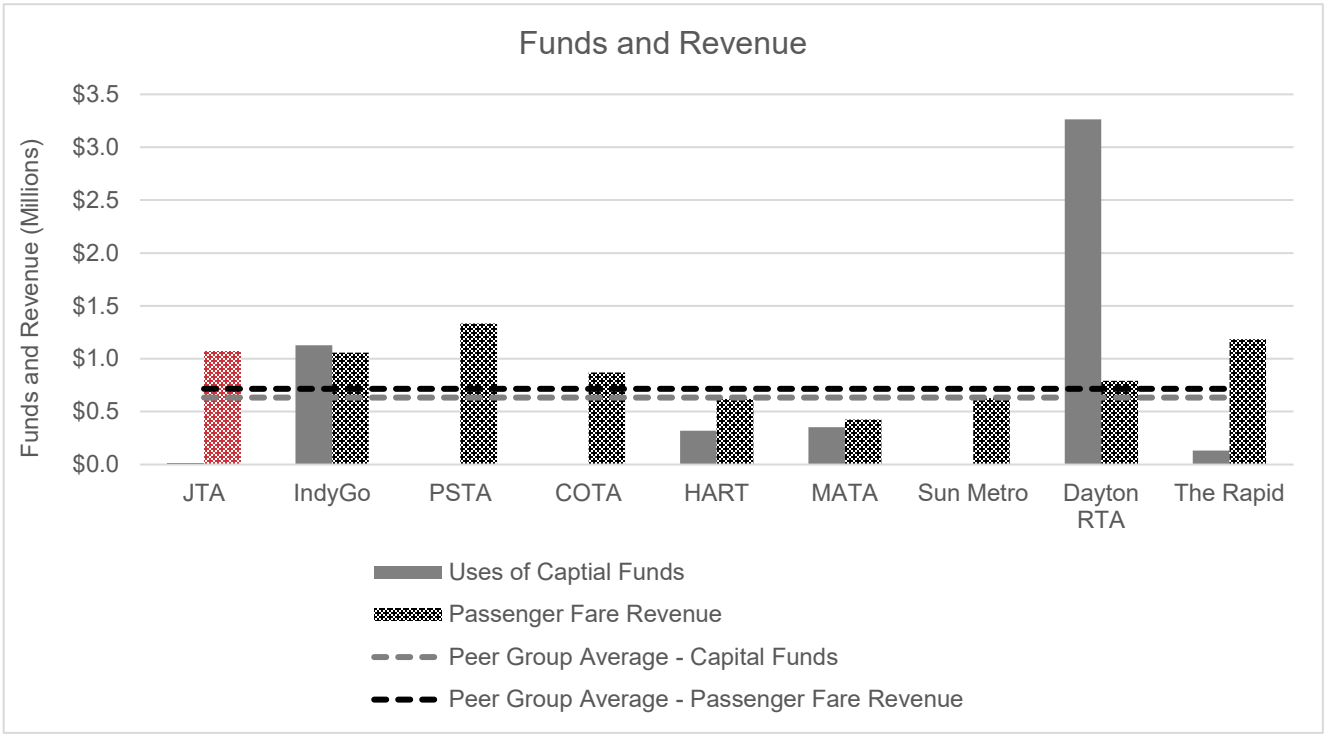
A comparison of the amount of JTA's expenses and revenue for demand-response service for Fiscal Year 2017 in relation to its peer agencies is shown in **Table 3-22**. JTA's expenses and revenue are higher than the peer average value for all the measures except for the non- vehicle maintenance expenses and capital funds. **Figure 3-24** shows this comparison in graph format.

Table 3-22: Demand-Response Expense and Revenue Peer Comparison, FY2017

	JTA	Peer Group Average	IndyGo	PSTA	COTA	HART	MATA	Sun Metro	Dayton RTA	The Rapid
Operating Expenses	$14,177,196	$7,836,325	$10,370,485	$5,027,629	$9,950,304	$5,887,930	$6,332,384	$9,522,398	$15,599,473	$7,959,477
Vehicle Maintenance Expenses	$2,831,049	$1,199,049	$2,564,993	$223,763	$1,111,424	$277,006	$946,738	$803,501	$2,360,471	$1,304,499
Non-Vehicle Maintenance Expenses	$176,456	$439,901	$674,459	$23,848	$480,145	$268,100	$4,616	$634,343	$1,207,577	$226,123
General Administration Expenses	$4,664,933	$1,561,600	$1,347,349	$1,756,950	$1,654,379	$1,206,533	$477,822	$1,708,123	$3,558,007	$783,636
Capital Funds	$13,763	$633,175	$1,126,896	$0	$0	$321,250	$353,574	$0	$3,263,677	$130,875
Passenger Fare Revenue	$1,072,358	$715,888	$1,058,855	$1,333,520	$871,821	$617,985	$426,263	$627,395	$791,268	$1,184,958

Figure 3-24: Demand-Response Expense and Revenue Peer Comparison, FY2017





Efficiency Measures

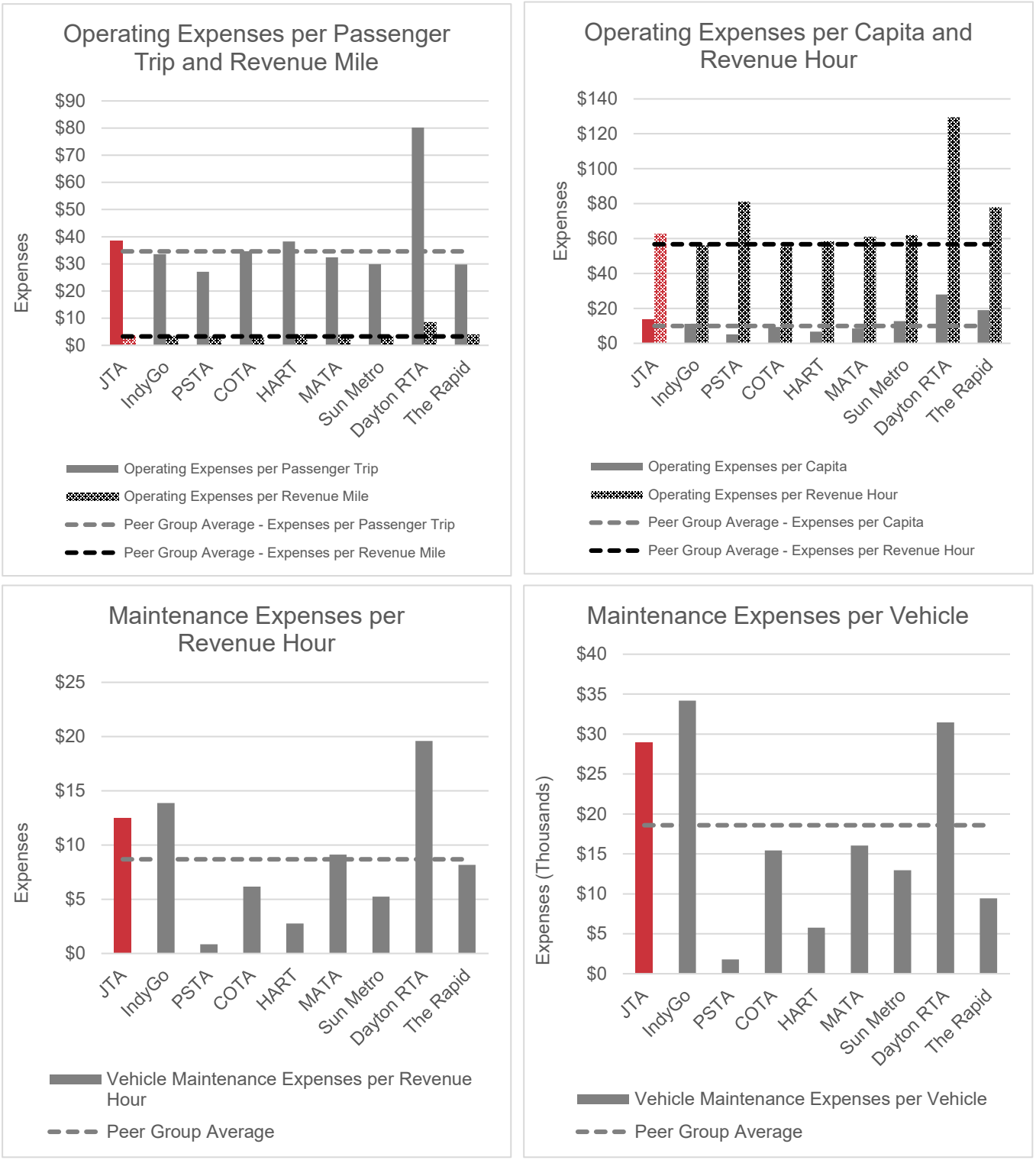
The efficiency measures provide an overview of JTA's operating expenses and maintenance expenses based on the service area population, trips generated, revenue miles and hours generated, and number of vehicles. The operating expenses per capita, operating expenses per passenger trip, operating expense per revenue hour, maintenance expense per revenue hour, and maintenance expense per vehicle for demand-response service for Fiscal Years 2015 through 2017 is listed in **Table 3-23**.

Table 3-23: JTA Demand-Response Efficiency Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses per Capita	$14.06	$13.34	$13.67	-3%
Operating Expenses per Passenger Trip	$37.54	$36.83	$38.46	3%
Operating Expenses per Revenue Mile	$3.42	$3.33	$3.46	1%
Operating Expenses per Revenue Hour	$62.39	$60.20	$62.51	0.2%
Vehicle Maintenance Expenses per Revenue Hour	Data Incomplete	$11.38	$12.48	---
Vehicle Maintenance Expenses per Vehicle	Data Incomplete	$26,014	$28,888	---

A comparison of operating expenses per capita, operating expenses per passenger trip, operating expenses per revenue hour, maintenance expenses per revenue hour, and maintenance expenses per vehicle between JTA and its peer agencies is shown in **Figure 3-20**, as well as the average group value for each category for Fiscal Year 2017. JTA is above the peer group average for all measures, meaning their expenses are higher than the peer group average value for all values.

Figure 3-25: Demand-Response Efficiency Peer Comparison, FY2017



Key Takeaways

JTA is above the peer group average value for the general measures and the vehicle measures. JTA's demand-response service is generating an above the peer group average number of passenger trips, passenger miles, revenue miles, and revenue hours, with an above the peer group average number of vehicles operated and available at maximum service. Therefore, JTA is generating more trips, with more vehicles operated and available at maximum service than the peer group average values.

When examining the service and service effectiveness measures, JTA is above the peer group average value for all measures except the passenger trips per revenue mile, passenger trips per revenue hour, and average age of fleet (in years). Its number of passenger trips per capita is similar to IndyGo, PSTA and Daytona RTA. When examining passenger trips per revenue mile and passenger trips per revenue hour, JTA is below the peer average value, however, there are two outliers that are driving the peer average higher when considering the remaining peer agency values. When not considering PSTA and The Rapid, JTA is consistent with the other peer agencies. JTA's average age of the fleet is also lower than the peer average value.

When examining the expense and revenue measures, JTA is higher than the peer average for all values except non-vehicle maintenance expenses and capital funds. Notably, JTA's non-vehicle maintenance expenses are 149 percent lower than the peer average value, and JTA's capital funds are 45 percent lower than the peer agency value. JTA's operating expenses are 45 percent higher than the peer average value, vehicle maintenance expenses are 58 percent higher than the peer average value, and general administration expenses are 67 percent higher than the peer average value. However, passenger fare revenue is 33 percent higher than the peer average value.

When considering efficiency measures, JTA is above the peer group average value for all measures. Operating and maintenance expenses are above average, and maintenance expenses greatly increased between 2015 and 2017. JTA's operating expenses, though above the peer average value, are similar to all peer agencies except for Dayton RTA, which could be considered an outlier.

Ferry Transit Service

This section presents a trend analysis of JTA's ferry service. JTA took over operation of the St. Johns River Ferry on March 31, 2016. Each of the identified group of measures is used to evaluate JTA's service over a period of two years to show trends in service characteristics. All data was sourced from the FTA National Transit Database. The following measures are included in this section:

General:

- Passenger Miles.
- Passenger Trips.
- Revenue Miles.
- Revenue Hours.
- Average Passenger Trip Length.

Ferry:

- Ferries Available in Maximum Service.
- Ferries Operated in Maximum Service.
- Revenue Miles per Ferries in Maximum Service.

Service/ Service Effectiveness:

- Average Age of Fleet (years).
- Vehicle Trips per Capita.
- Passenger Trips per Vehicles in Max Service.
- Passenger Trips per Revenue Mile.
- Passenger Trips per Revenue Hour.

Expense and Revenue:

- Operating Expenses.
- Vehicle Maintenance Expenses.
- Non-Vehicle Maintenance Expenses.
- General Administration Expenses.
- Capital Funds.
- Passenger Fare Revenue.
- Average Fare.

Efficiency:

- Operating Expense per Capita.
- Operating Expense per Passenger Trip.
- Operating Expense per Revenue Hour.
- Maintenance Expense per Revenue Hour.
- Maintenance Expense per Vehicle..

General Measures

Analysis of general characteristics provides an overview of JTA and how it has changed. The number of passenger trips, passenger miles, revenue miles, revenue hours and average passenger trip length for ferry service for Fiscal Years 2016 through 2017 is included in **Table 3-24**. All values increased by over 70 percent in the two-year period except for average passenger trip length, which stayed the same.

Table 3-24: JTA Ferry General Measures, FY2016-FY2017

	2016	2017	Percent Change (2016-2017)
Passenger Trips	252,503	442,032	75%
Passenger Miles	113,626	198,914	75%
Revenue Miles	4,334	7,956	84%
Revenue Hours	2,410	4,420	83%
Average Passenger Trip Length	0.9	0.9	0%

Ferry Measures

Analysis of ferry measures provides an overview of the size of JTA and the number of ferries available for service. The number of ferries available in maximum service, ferries operated in maximum service, and revenue miles per ferries in maximum service for Fiscal Years 2016 through 2017 is listed in **Table 3-25**. The only value that increased is revenue miles per ferries in maximum service, while the other two values stayed the same.

Table 3-25: JTA Ferry Vehicle Measures, FY2016-FY2017

	2016	2017	Percent Change (2016-2017)
Ferries Available in Maximum Service	1	1	0%
Ferries Operated in Maximum Service	1	1	0%
Revenue Miles per Ferries in Maximum Service	4,334	7,956	84%

Service/Service Effectiveness Measures

Analysis of service/service effectiveness measures provides an overview of the age of the fleet, and number of trips offered based on the size of the service area population, the number of ferries operated, and the amount of revenue miles/hours generated. The average age of fleet (in years), passenger trips per capita, passenger trips per ferries in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour for Fiscal Years 2016 through 2017 is listed in **Table 3-26**. Over the two-year period, the average age of fleet (in years), passenger trips per capita, and passenger trips per ferries in maximum service increased while passenger trips per revenue mile and passenger trips per revenue hour decreased.

Table 3-26: JTA Ferry Service/Service Effectiveness Measures, FY2016-FY2017

	2016	2017	Percent Change (2016-2017)
Average Age of Fleet (in years)	20	21	5%
Passenger Trips per Capita	0.2	0.4	72%
Passenger Trips per Ferries in Maximum Service	252,503	442,032	75%
Passenger Trips per Revenue Mile	58.3	55.6	-5%
Passenger Trips per Revenue Hour	104.8	100	-5%

Expense and Revenue Measures

The financial data for ferry service is shown in **Table 3-27**. This table shows the amount of JTA's expenses and revenue for Fiscal Years 2016 through 2017. Operating expenses, vehicle maintenance expenses, general administration expenses, and passenger fare revenue increased over the two-year period, while capital funds and non-ferry maintenance expenses decreased.

Table 3-27: JTA Ferry Expense and Revenue Measures, FY2016-FY2017

	2016	2017	Percent Change (2016-2017)
Operating Expenses	$1,175,606	$2,302,822	96%
Ferry Maintenance Expenses	$54,013	$93,219	73%
Non-Ferry Maintenance Expenses	$124,922	$91,506	-27%
General Administration Expenses	$456,203	$1,047,392	130%
Capital Funds	$4,758,467	$2,933,482	-38%
Passenger Fare Revenue	$826,162	$1,247,360	51%

Efficiency Measures

The efficiency measures provide an overview of JTA's operating expenses and maintenance expenses based on the service area population, trips generated, revenue miles and hours generated, and number of ferries. The operating expenses per capita, operating expenses per passenger trip, operating expense per revenue hour, maintenance expense per revenue hour, and maintenance expense per ferry for ferry service for Fiscal Years 2016 through 2017 is listed in **Table 3-28**. All values increased except for ferry maintenance expenses per revenue hour, which decreased.

Table 3-28: JTA Ferry Efficiency Measures, FY 2016-2017

	2016	2017	Percent Change (2016-2017)
Operating Expenses per Capita	$1.15	$2.22	93%
Operating Expenses per Passenger Trip	$4.66	$5.21	12%
Operating Expenses per Revenue Mile	$271.25	$289.44	7%
Operating Expenses per Revenue Hour	$487.80	$521.00	7%
Ferry Maintenance Expenses per Revenue Hour	$22.41	$21.09	-6%
Ferry Maintenance Expenses per Vehicle	$54,013	$93,219	73%

Key Takeaways

JTA's general measure values increased by over 70 percent in the two-year period from 2016 through 2017, except for average passenger trip length, which stayed the same. This means that over the two-year period, JTA has seen an increase in ridership, as well as an increase in the number of trips and overall demand for the service. The ferry measures show an 84 percent increase in revenue miles per ferries in maximum service between 2016 and 2017.

When considering the service and service effectiveness measures, over the two-year period, the average age of fleet (in years), passenger trips per capita, and passenger trips per ferries in maximum service increased while passenger trips per revenue mile and passenger trips per revenue hour decreased.

When examining expense and revenue measures, operating expenses, ferry maintenance expenses, general administration expenses, and passenger fare revenue increased over the two-year period, while capital funds and non-ferry maintenance expenses decreased. Operating expenses increased by 96 percent, ferry maintenance expenses by 73 percent, general administration expenses by 130 percent, and passenger fare revenue by 51 percent, while capital funds decreased by 38 percent and non-ferry maintenance expenses decreased by 27 percent.

A closer look at JTA's efficiency measures shows an increase between 2016 and 2017 for all measures, except the ferry maintenance expenses per revenue hour, which decreased by 6 percent in the two-year period. Notably, ferry maintenance expenses per vehicle increased by 73 percent.

Figure 3-26: A JTA ferry in the St. Johns River

Source: The Jacksonville Daily Record, no copyright infringement is intended.

Skyway Transit Service

This section presents a peer evaluation and trend analysis of JTA's Automated Guideway (Skyway) service, using a similar method to the other JTA service peer reviews. The agency identified for this effort is Miami-Dade County Department of Transportation and Public Works (DTPW)–Transit. The two systems are relatively similar; however, the Miami-Dade service provides connections to a Metrorail service. All data was sourced from the FTA National Transit Database. The following measures are included in this section:

General:
- Passenger Miles.
- Passenger Trips.
- Revenue Miles.
- Revenue Hours.
- Average Passenger Trip Length.

Vehicle:
- Vehicles Available in Maximum Service.
- Vehicles Operated in Maximum Service.
- Revenue Miles per Vehicles in Maximum Service.

Service/ Service Effectiveness:
- Average Age of Fleet (years).
- Vehicle Trips per Capita.
- Passenger Trips per Vehicles in Max Service.
- Passenger Trips per Revenue Mile.
- Passenger Trips per Revenue Hour.

Expense and Revenue:
- Operating Expenses.
- Vehicle Maintenance Expenses.
- Non-Vehicle Maintenance Expenses.
- General Administration Expenses.
- Capital Funds.
- Passenger Fare Revenue.
- Average Fare.

Efficiency:
- Operating Expense per Capita.
- Operating Expense per Passenger Trip.
- Operating Expense per Revenue Hour.
- Maintenance Expense per Revenue Hour.
- Maintenance Expense per Vehicle.

General Measures

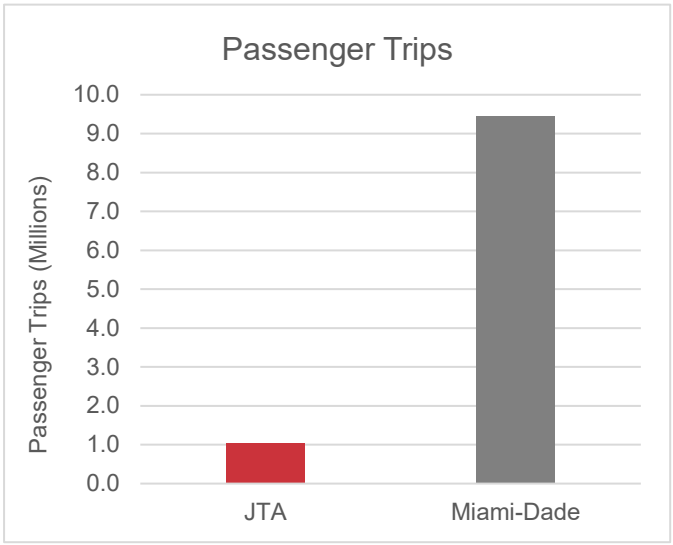
Analysis of general characteristics provides an overview of JTA and how it has changed. The number of passenger trips, passenger miles, revenue miles, revenue hours and average passenger trip length for automated guideway service for Fiscal Years 2015 through 2017 is included in **Table 3-29**. Over the three-year period, all values decreased.

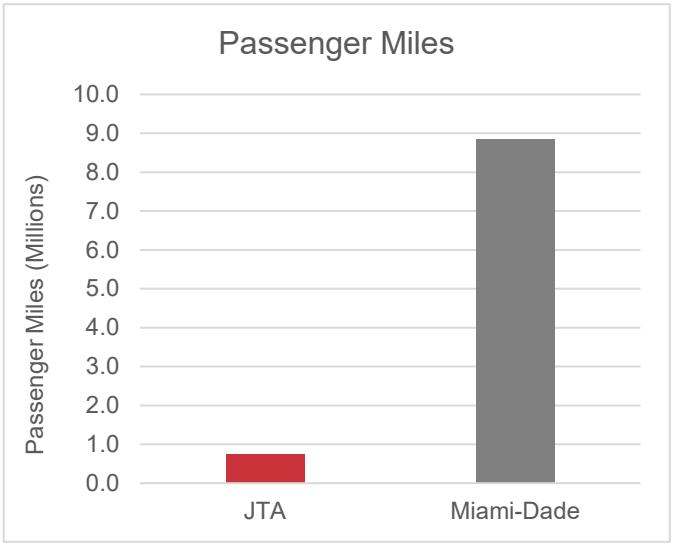
Table 3-29: JTA Automated Guideway General Measures, FY2015-FY2017

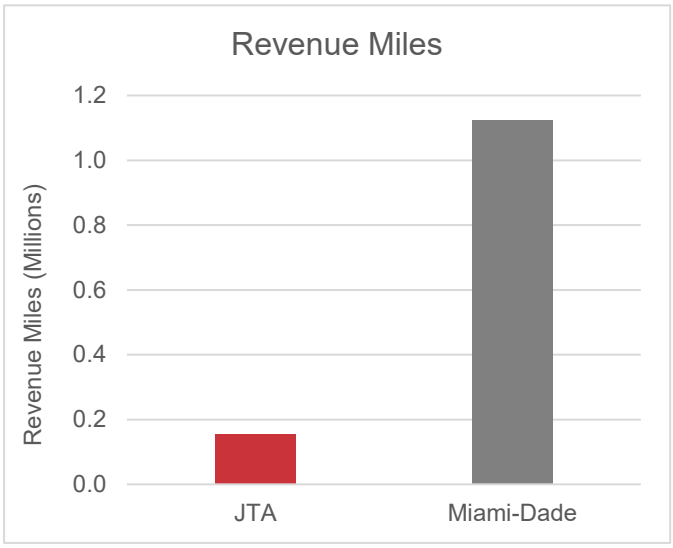
	2015	2016	2017	Percent Change (2015-2017)
Passenger Trips	1,315,833	1,186,358	1,053,621	-20%
Passenger Miles	1,118,458	972,814	748,071	-33%
Revenue Miles	168,341	165,218	154,618	-8%
Revenue Hours	15,025	15,621	14,247	-5%
Average Passenger Trip Length	0.85	0.82	0.71	-29%

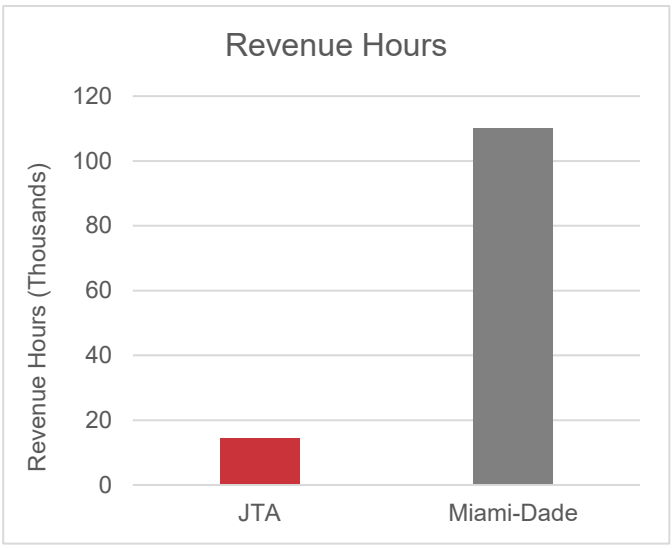
A comparison of passenger trips, passenger miles, revenue miles, revenue hours and average passenger trip length between JTA and Miami-Dade County DTPW–Transit is shown in **Figure 3-27**. JTA falls below Miami-Dade County DTPW–Transit for all values.

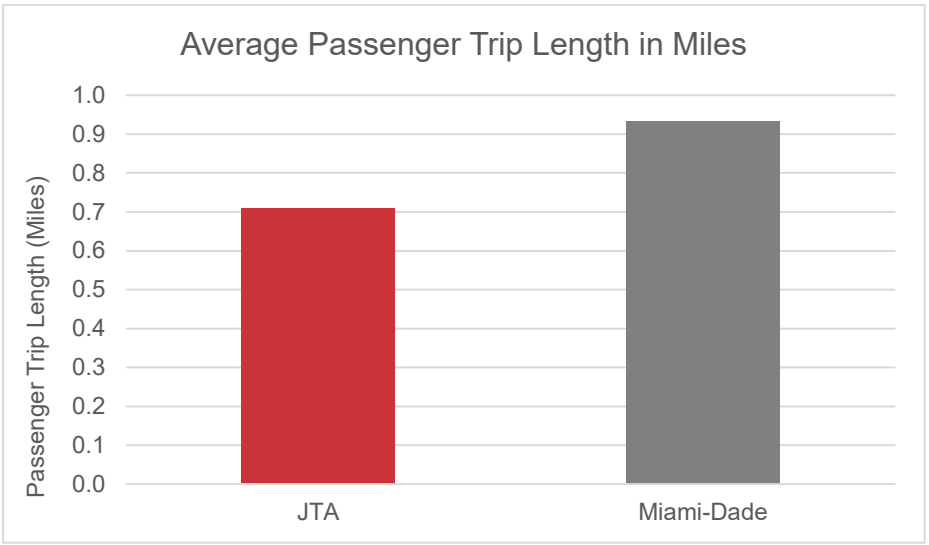
Figure 3-27: Automated Guideway General Measures Peer Comparison, FY2017











Vehicle Measures

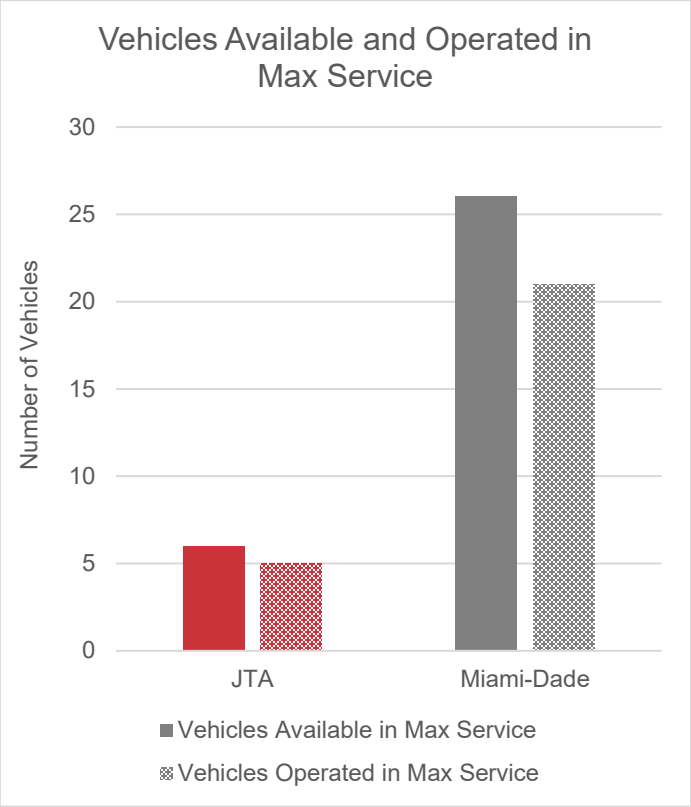
Analysis of vehicle measures provides an overview of the size of JTA and the number of vehicles available for service. The number of vehicles available in maximum service, vehicles operated in maximum service, and revenue miles per vehicles in maximum service for automated guideway service for Fiscal Years 2015 through 2017 is listed in **Table 3-30**.

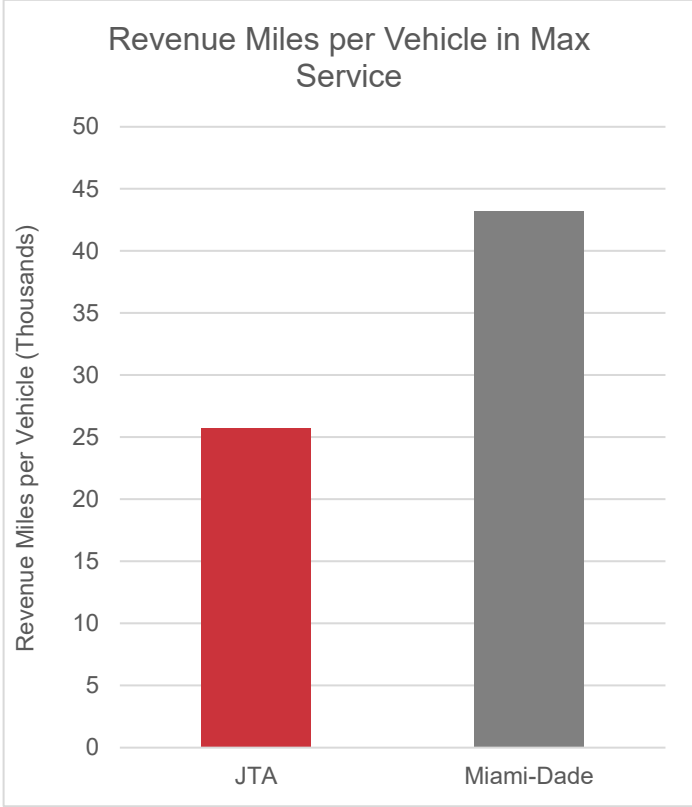
Table 3-30: JTA Automated Guideway Vehicle Measures, FY2015-FY2017

	2015	2016	2017	Percent Change (2015-2017)
Vehicles Available in Maximum Service	6	6	6	0%
Vehicles Operated in Maximum Service	5	5	5	0%
Revenue Miles per Vehicles in Maximum Service	28,057	27,536	25,770	-8%

A comparison of vehicles available in maximum service, vehicles operated in maximum service, and revenue miles per vehicles in maximum service between JTA and Miami-Dade County DTPW–Transit is shown in **Figure 3-28.** JTA falls below Miami-Dade County DTPW–Transit for all values.

Figure 3-28: Automated Guideway Vehicle Measures Peer Comparison, FY2017





Service/Service Effectiveness Measures

Analysis of service/service effectiveness measures provides an overview of the age of the fleet, and number of trips offered based on the size of the service area population, the number of vehicles operated, and the amount of revenue miles/hours generated. The average age of fleet (in years), passenger trips per capita, passenger trips per vehicles in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour for automated guideway service for Fiscal Years 2015 through 2017 is listed in **Table 3-31**.

Table 3-31: JTA Automated Guideway Service/Service Effectiveness Measures, FY2015-FY2017

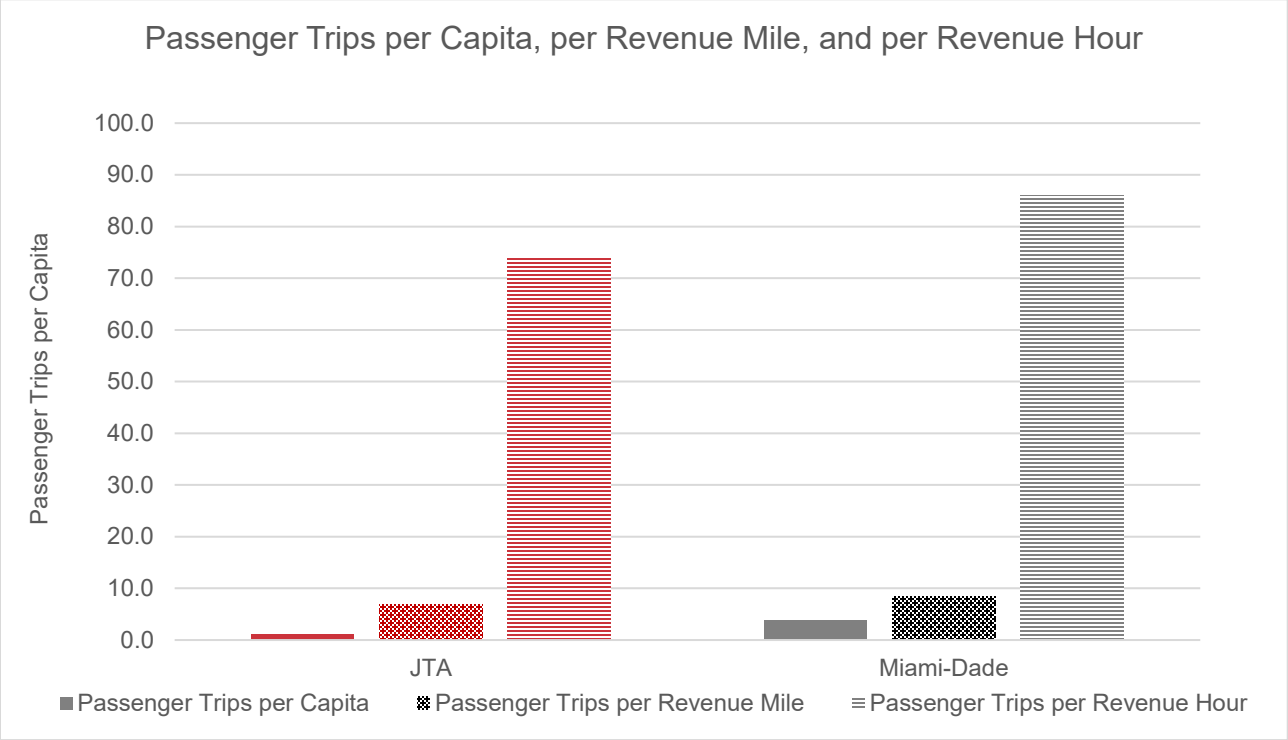
	2015	2016	2017	Percent Change (2015-2017)
Average Age of Fleet (in years)	16.6	17.2	18.2	10%
Passenger Trips per Capita	1.31	0.95	1.02	-23%
Passenger Trips per Vehicles in Maximum Service	219,305.50	162,135.67	175,603.50	-20%
Passenger Trips per Revenue Mile	7.80	7.20	6.80	-13%
Passenger Trips per Revenue Hour	87.60	76.00	74.00	-16%

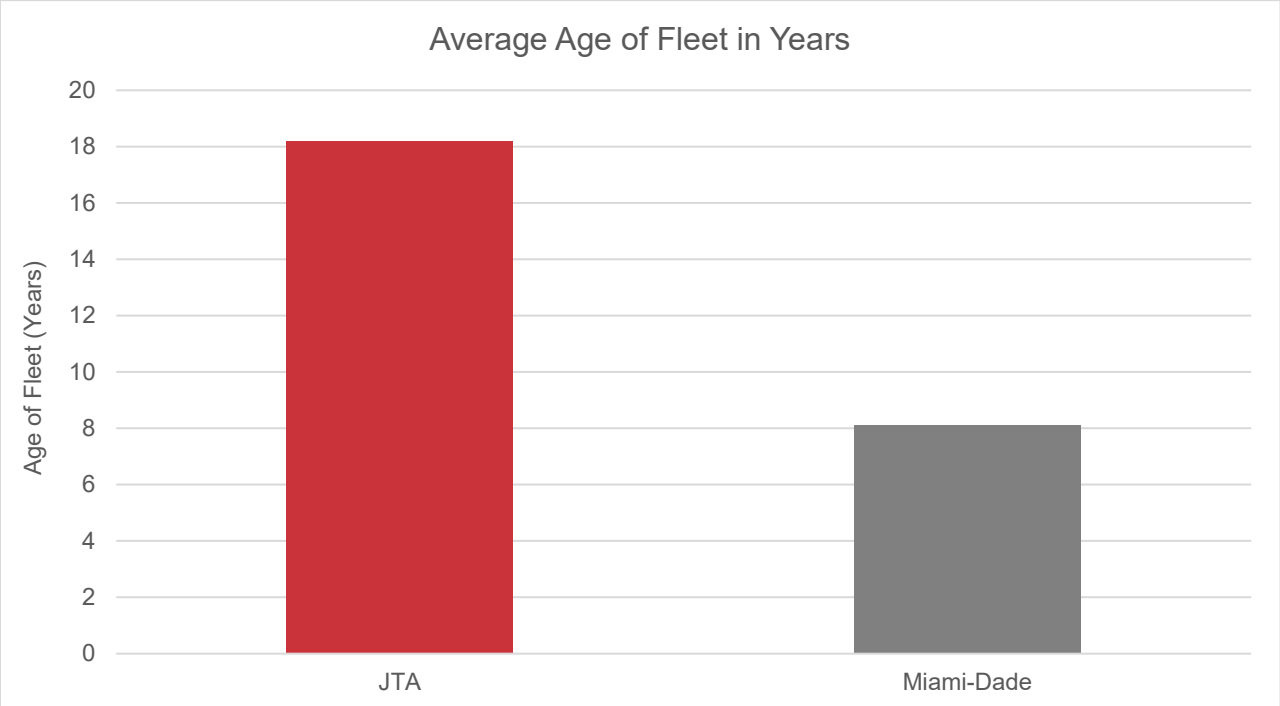
A comparison of average age of fleet (in years), passenger trips per capita, and passenger trips per vehicles in maximum service, passenger trips per revenue mile, and passenger trips per revenue hour between JTA and Miami-Dade County DTPW–Transit is shown in **Figure 3-30**. JTA falls below Miami-Dade County DTPW–Transit for all measures except average age of fleet (in years).

Figure 3-29: The Miami-Dade County DTPW–Transit Metromover

Source: http://www.miami-airport.com/public-transportation.asp, no copyright infringement is intended.

Figure 3-30: Automated Guideway Service/Service Effectiveness Measures Peer Comparison, FY2017





Expense and Revenue Measures

The financial data for automated guideway service is shown in **Table 3-32**. This table shows the amount of JTA's expenses and revenue for Fiscal Years 2015 through 2017. Operating expenses, vehicle maintenance expenses, non-vehicle maintenance expenses, general administration expenses, and passenger fare revenue increased over the three-year period, while capital funds decreased. JTA's Skyway service is complimentary, hence there is no passenger fare revenue generated.

Table 3-32: JTA Automated Guideway Expense and Revenue Measures, FY2015-FY2017

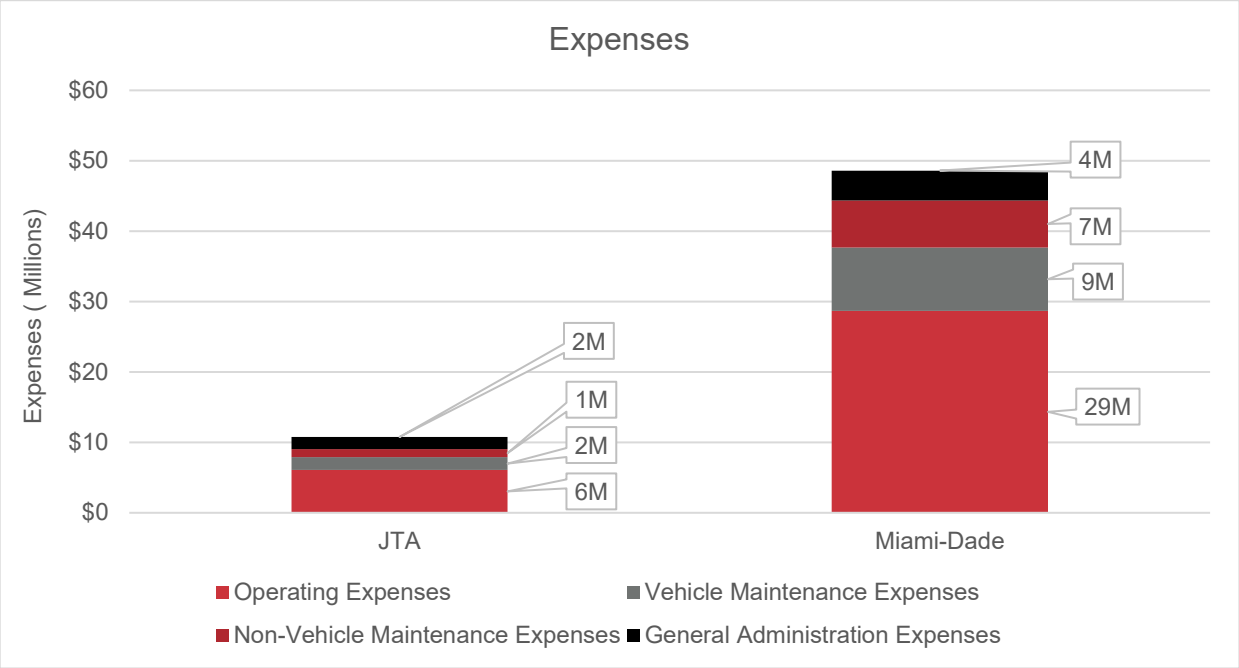
	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses	$6,156,242	$6,535,724	$6,077,710	-1%
Vehicle Maintenance Expenses	$1,986,912	$2,358,165	$1,819,522	-8%
Non-Vehicle Maintenance Expenses	$1,196,615	$1,218,898	$1,165,933	-3%
General Administration Expenses	$1,506,428	$1,438,985	$170,558	-89%
Capital Funds	$1,418,614	$621,121	$1,722,125	21%
Passenger Fare Revenue	---	---	---	---

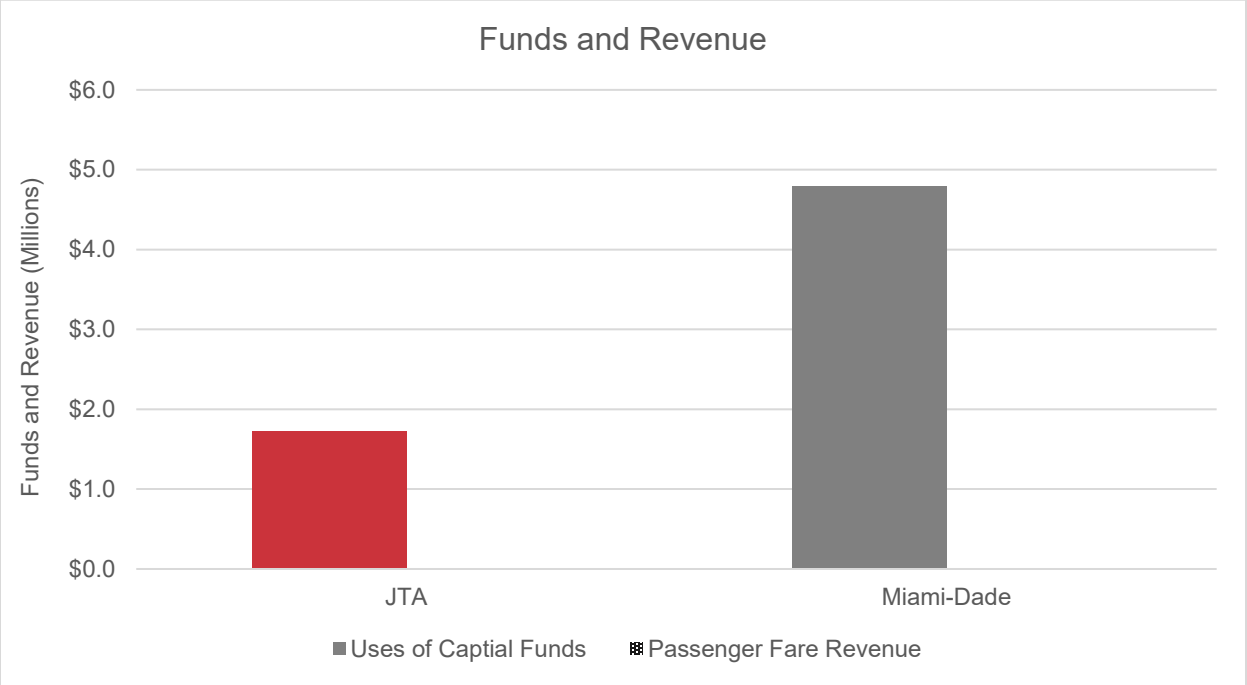
A comparison of the amount of JTA's expenses and revenue for Fixed Route Service for Fiscal Year 2017 in relation to Miami-Dade County DTPW–Transit is shown in **Table 3-33**. JTA is below Miami-Dade County DTPW–Transit for all values. **Figure 3-24** shows this comparison in graph format.

Table 3-33: Automated Guideway Expense and Revenue Measures Peer Comparison, FY2017

	JTA	Miami-Dade
Operating Expenses	$6,077,710	$28,675,295
Vehicle Maintenance Expenses	$1,819,522	$8,997,960
Non-Vehicle Maintenance Expenses	$1,165,933	$6,696,907
General Administration Expenses	$1,701,558	$4,235,436
Uses of Capital Funds	$1,722,125	$4,792,430
Passenger Fare Revenue	---	---

Figure 3-31: Automated Guideway Expense and Revenue Measures Peer Comparison, FY 2017





Efficiency Measures

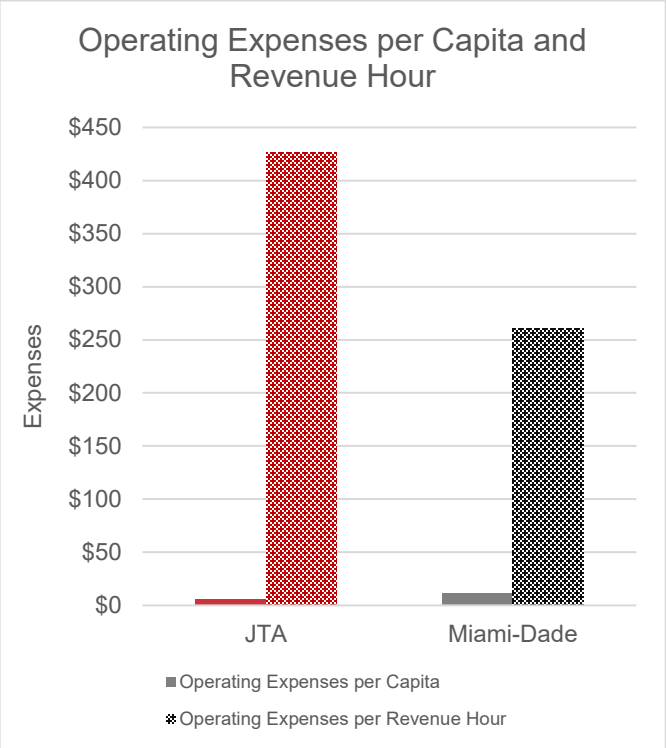
The efficiency measures provide an overview of JTA's operating expenses and maintenance expenses based on the service area population, trips generated, revenue miles and hours generated, and number of vehicles. The operating expenses per capita, operating expenses per passenger trip, operating expense per revenue hour, maintenance expense per revenue hour, and maintenance expense per vehicle for automated guideway service for Fiscal Years 2015 through 2017 is listed in **Table 3-34**.

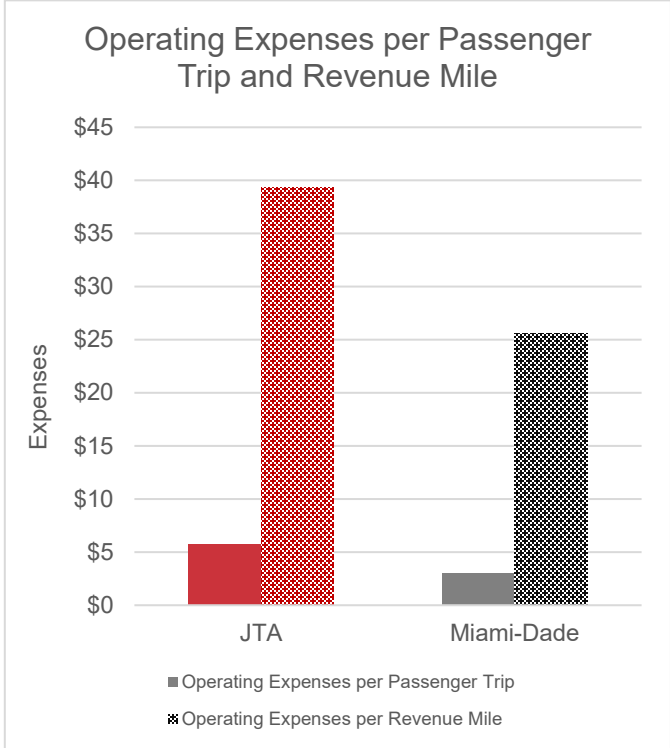
Table 3-34: JTA Automated Guideway Efficiency Measures, FY 2015-2017

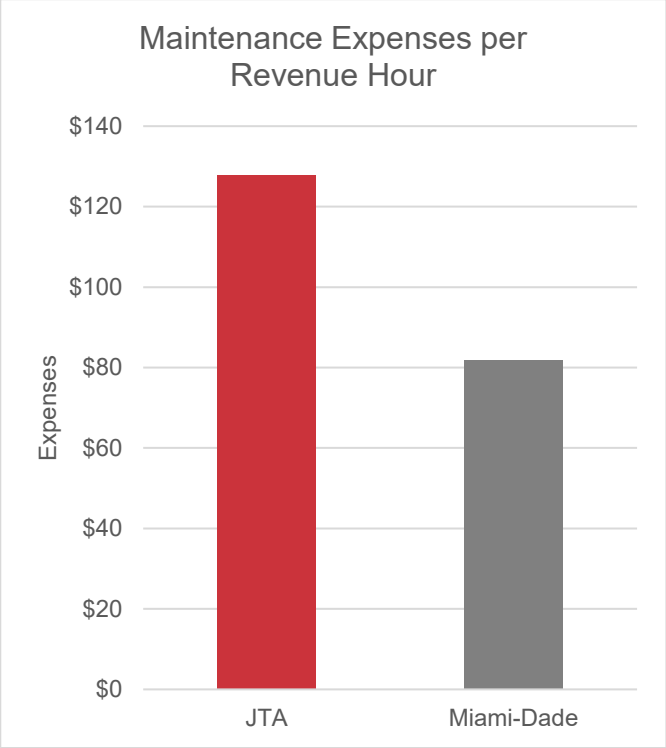
	2015	2016	2017	Percent Change (2015-2017)
Operating Expenses per Capita	$6.15	$6.40	$5.86	-5%
Operating Expenses per Passenger Trip	$4.68	$5.51	$5.77	23%
Operating Expenses per Revenue Mile	$36.57	$39.56	$39.31	8%
Operating Expenses per Revenue Hour	$409.73	$418.39	$426.60	4%
Vehicle Maintenance Expenses per Revenue Hour	$132.24	$150.96	$127.71	-3%
Vehicle Maintenance Expenses per Vehicle	$331,152	$393,028	$303,254	-8%

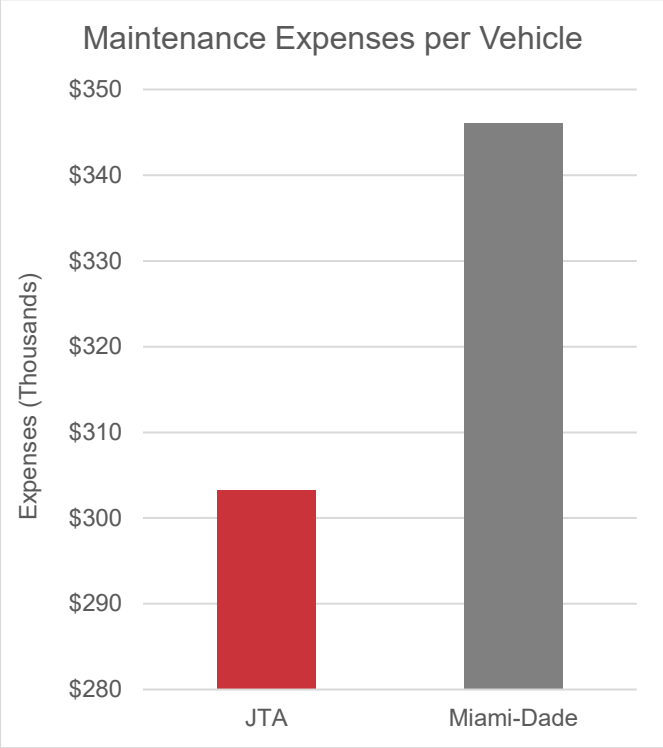
A comparison of operating expenses per capita, operating expenses per passenger trip, operating expense per revenue hour, maintenance expense per revenue hour, and maintenance expense per vehicle between JTA and Miami-Dade County DTPW–Transit is shown in **Figure 3-32**. JTA falls below Miami-Dade County DTPW–Transit for operating expenses per capita and is above Miami-Dade County DTPW–Transit for operating expenses per passenger trip, operating expenses per revenue mile, and operating expenses per revenue hour. Overall, it appears that while JTA's operating expenses per capita are lower than Miami-Dade's, all other operating expenses are higher.

Figure 3-32: Automated Guideway Service/Service Effectiveness Measures Peer Comparison, FY2017









Key Takeaways

JTA's automated guideway transit service is similar in characteristic to Miami-Dade DTPW–Transit's automated guideway service. When examining the general measures and vehicle measures for JTA, the values fall below Miami-Dade for all measures. This is likely because Miami-Dade's service is interfaced with its Metrorail service as well as the Brightline service, providing connectivity between routes, boosting the number of passenger trips, passenger miles, revenue trips, and revenue hours. JTA has a lower number of vehicles available and operated in maximum service as well, most likely due to demand.

When examining service and service effectiveness measures, JTA's number of passenger trips per capita, per revenue mile, and per revenue hour are below Miami-Dade's. However, JTA's average age of fleet is higher than Miami-Dade's. This means JTA is operating an older fleet with a lower number of passenger trips for the overall service population. This may be due to the fact that JTA's service area and population is about half the size of Miami-Dade's.

JTA's expenses and revenue are both lower than Miami-Dade's. Most notably, Miami-Dade's operating expenses amounted to over $28 million in 2017, while JTA's operating expenses were only $6 million. Miami-Dade received approximately $4 million in capital funds, while JTA received approximately $2 million.

When examining efficiency, JTA's operating expenses per revenue hour, per passenger trip, and per revenue mile, as well as its maintenance expenses per revenue hour, were significantly higher than Miami-Dade's. JTA's maintenance expenses per vehicle were lower than Miami-Dade's.

3.5 Farebox Report

3.5.1 Current Farebox Recovery Ratio

JTA's farebox recovery ratio for fixed-route buses in Fiscal Year 2018 was 13.7 percent, which was a reduction of 1.7 percent from FY 2017's ratio of 14.0 percent. Fare revenue and operating expense trends have diverged over the past five years: fare revenue for fixed-route bus services decreased 5.7 percent between 2014 and 2018, while operating expenses increased by 14.7 percent. Consequently, the farebox recovery rate decreased by 17.7 percent during the same period, as shown in **Table 3-35**.

3.5.1 Previous Fare Studies and Changes

JTA began providing bus service in 1971 and has increased fares on four occasions since then. The last fare increase was in 2012, when single-trip fares increased from $1 to $1.50.

In 2014, the JTA entered a partnership with retail outlets Winn-Dixie and Walgreens to sell STAR Cards and day passes. These "Pass Partners" provide customers with more locations to buy passes and reload contactless cards.

In 2018, the Northeast Florida Regional Transportation Commission conducted a fare study to examine regional fare policies and fare media and identify a common transit fare payment system for regional transit.

3.5.2 Summary of Proposed Changes Within TDP Horizon

To close the gap between increasing its operating costs and decreasing fare revenue, JTA has proposed modifications to its fare structure in 2019. The proposal would increase single-trip fares by 25 cents and reduced-cost single-trip fares by 10 cents. JTA would also begin providing discounts on some purchases made through the myJTA mobile app (except the single-trip fare rate for local fixed-route and express buses).

This proposal, if implemented, would also consider introducing an Automatic Fare Indexing Policy, where fare policies would be adjusted more frequently based on factors including the Consumer Price Index and JTA's operating budget and labor costs.

The proposed fare modifications would also restructure fares on some non-fixed services, including St. Johns River Ferry and ReadiRide.

3.5.3 Potential Strategies to Improve the Ratio

The JTA should consider the following strategies to improve its farebox recovery ratio:

- **Implement recommendations from the Northeast Florida Regional Fare Study:** These strategies will help facilitate coordination of fare collection and provide more convenient regional trips for passengers. The major recommendations of the study are to:
  - Implement a governance structure and agree to develop a regional fare, cost-sharing framework, and associated technologies.
  - Develop a cost-sharing model to identify the costs of current services that are associated with each county served, reflecting that a passenger may begin a trip in a home county and end a trip in a non-home county.
  - Coordinate fare policies to ensure fares are equitable and established in a consistent manner, even if not all fares are the same rate.
  - Procure emerging technology while utilizing existing technology that supports fare collection and payment, including ticketing through an all-in-one smartphone application.
  - Implement the new fare collection system using an incremental process to minimize the risk of disruption to passengers and provide a smooth and successful start-up.
- **Implement recommendations from the Long-Term System Concept for fixed-route services:** These recommendations focus on service optimization, providing high-frequency service along the busiest corridors and necessary coverage in transit-dependent neighborhoods.
- **Provide free or discounted transfers between services:** With Jacksonville as the largest city by area in the contiguous United States, free transfers could engage a broader base of riders by connecting customers to more activity centers around the region. If the transfer policy is updated, the base fare for JTA services should be revisited to ensure agency revenues remain stable or increase.
- **Monitor ridership impacts following the implementation of any fare modifications in the future.**
- **Continue Pass Partners program:** Continue efforts with Winn-Dixie, Walgreens, and potentially other pass providers to offer customers additional options for where they can purchase STAR Cards and day passes.
- **Continue partnering with local universities:** Continue to foster relationships with local educational entities to offer reduced fare rates for low-income university students.
- **Continue partnering with private transit service providers:** This effort will help keep operating costs efficient while expanding the transit coverage area and attracting new riders.

Table 3-35: Fixed-Route Bus Fare Revenue and Operating Expenses for Fixed-Route Bus Services (FY2014 - FY2018(FY2014 - FY2018)

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2017 - FY2018		FY2014 - FY2018	
						Total Change	% Change	Total Change	% Change
Operating Expenses	$66,318,587	$70,455,887	$71,581,487	$74,234,599	$76,037,453	$1,802,854	2.4%	$9,718,866	14.7%
Fare Revenue	$11,081,896	$10,844,655	$10,907,338	$10,384,644	$10,452,473	$67,829	0.7%	-$629,423	-5.7%
Farebox Recovery	16.7%	15.4%	15.2%	14.0%	13.7%		-1.7%		-17.7%

Source: Results for FY14 to FY17 based on NTD (2014-2017) data. FY18 results based on JTA Revenue Report FY2018 and JTA Metrics Workbook FY2018, including revenue from cash, pass, and mobile app payments.

Table 3-36: Farebox Recovery Ratio for Non-Fixed Bus Services (2018)

	Ferry	Skyway	Connexion	ReadiRide	Nassau Express	Gameday Xpress
Farebox Recovery	46.6%	NA*	10%	3.3%	1.3%	85.1%

Source: JTA 2018 Route Performance
**The Skyway is free to ride.*

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 4: PUBLIC AND INTERNAL INVOLVEMENT

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4 PUBLIC AND INTERNAL INVOLVEMENT

4.1 Introduction

The success of any recommended changes to a public transportation system is dependent upon a proactive public outreach effort that not only seeks responses to the service proposals but also informs members of the general public and earns their buy-in. Throughout the TDP project, JTA was committed to conducting a public involvement program that focused on soliciting community interaction and incorporated a consideration of community impacts and opinions.

While technical specialists can gain a strong understanding of the needs and desires of a community, it is imperative that the affected community weigh in on all alternative ideas and identify preferences. Public involvement also helps guide decision-making by relaying what is important to the respective community. The positive value of implementing an inclusive public involvement effort generally results in conclusions and recommendations that conform to community desires and therefore result in public support for a project's conclusions.

Jacksonville is one of the largest cities in the United States, making it very hard to reach out to the public with face-to-face meetings. It is often difficult to obtain feedback on a project with the scope of a TDP, since the effort is systemwide, containing many recommendations that impact the entire region, as opposed to projects that are smaller in scale and limited to a specific geographical location. In close coordination with the JTA, it was decided to use the city's existing outreach program through the Citizens Planning Advisory Committee (CPAC) meetings.

Jacksonville's more than 200 neighborhoods are divided into six planning districts each with a CPAC. The public meeting program for the TDP project has been closely coordinated with the CPAC members. The primary purpose of the CPACs is to maintain open and effective communication between Jacksonville residents, businesses, neighborhoods, community organizations, educational institutions, and city government.

In addition to the CPAC meetings, the public involvement program included reaching out to existing groups and agencies, such as the North Florida Transportation Organization, the Bike and Pedestrian Advisory Committee (BPAC), the Jacksonville Transportation Advisory Committee (JTAC) and CareerSource Northeast Florida. The full list of meetings held during Phase 1 and Phase 2 is listed in **Table 4-1**.

Table 4-1: TDP Public Meeting Locations and Dates

Meeting Type	Location	Date	Phase
Urban Core CPAC	Ed Ball Building	January 7, 2019	Phase 1
North CPAC	Oceanway Senior Center	January 9, 2019	Phase 1
Northwest CPAC	5130 Soutel Drive	January 10, 2019	Phase 1
CareerSource	215 N Market Street	March 5, 2019	Phase 1
CAC TPO	North Florida TPO	March 6, 2019	Phase 1
TCC TPO	North Florida TPO	March 6, 2019	Phase 1
BPAC	North Florida TPO	March 7, 2019	Phase 1
JTAC	JTA Myrtle Ave	March 11, 2019	Phase 1
Southwest CPAC	Lane Wiley Senior Center	March 11, 2019	Phase 1
TPO Board	North Florida TPO	March 14, 2019	Phase 1
Arlington Beaches CPAC	San Pablo Library	March 20, 2019	Phase 1
Southeast: CPAC	10300 Southside Blvd	March 25, 2019	Phase 1
CACTPO	North Florida TPO	April 3, 2019	Phase 2
TCCTPO	North Florida TPO	April 3, 2019	Phase 2
Arlington Beaches CPAC	San Pablo Library	April 8, 2019	Phase 2
JTAC	JTA Myrtle Ave	April 8, 2019	Phase 2
North CPAC	Oceanway Senior Center	April 10, 2019	Phase 2
TPO Board	North Florida TPO	April 11, 2019	Phase 2
Northwest CPAC	5130 Soutel Dr	April 16, 2019	Phase 2
BPAC	North Florida TPO	May 2, 2019	Phase 2
Urban Core CPAC	Ed Ball Building	May 6, 2019	Phase 2
Southwest CPAC	Lane Wiley Senior Center	May 13, 2019	Phase 2
Southeast CPAC	10300 Southside Blvd	May 20, 2019	Phase 2

Two other public outreach efforts were part of the TDP process. These were an online survey and a face-to-face survey at three of the major transit hubs in Jacksonville and at the Orange Park Mall in Clay County (see **Table 4-2**).

Table 4-2: Pop-Up Events

Meeting Type	Location	Date	Phase
Pop-Up	Rosa Parks Transit Hub	June 11, 2019	Phase 3
Pop-Up	Gateway Transit Hub	June 12, 2019	Phase 3
Pop-Up	Regency Square Hub	June 12, 2019	Phase 3
Pop-Up	Orange Park Mall Hub	June 13, 2019	Phase 3

4.2 Public Involvement Plan

It is of the utmost importance that the vision, mission, and goals for the outreach component of the TDP align with overall JTA vision, mission, and goals. Public involvement is critical to the successful completion of the TDP. Thus, at the start of the project, a public involvement program was developed that included the Transportation Planning Organization (TPO) Board and committees as part of the public involvement process. The TPO is also undergoing the Year 2045 Long-Range Plan Update, and the JTA has been closely coordinating with the TPO staff and the different TPO committees. The TDP Public Involvement Plan is provided in **Appendix A: Public Involvement Plan**.

The TDP outreach process followed outreach guidelines approved by the Florida Department of Transportation (FDOT) and the local TPO's Public Involvement Plan (PIP), which are approved processes by both the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA). As part of the TDP process, a separate meeting was held with the regional workforce organization. Coordination with the regional workforce also took place through the TPO outreach process. As members of the TPO committee, all the local governments and agencies were involved with the development of the TDP from the development of the mission, goals, objectives, alternatives, and the 10-year implementation program.

The first step in the TDP process was the development of the PIP. The draft PIP plan was developed in close coordination with the JTA and submitted by the JTA to the FDOT on March 13, 2019, for review. No comments on the draft PIP processes were received.

The TDP was presented to CPAC members at two different stages. In Phase 1, members were alerted to the TDP Update, were provided information about the project and the process, and could provide input and ask questions. At the Phase 2 presentations, members were informed about the data analysis of the population and employment growth, the characteristics of the population, the characteristics of the transit services, and the strategies that were considered to increase the efficiency of the system while addressing the service needs in the different markets.

CPAC meetings are well attended, and their membership reflects the diversity of the area they represent. The membership consists of residents, business owners, and elected officials. Members were engaged in the discussions and provided pertinent information to the City and its agencies.

In addition to the CPAC meetings, the TDP process was presented to the Citizens Advisory Committee (CAC) to the North Florida TPO, the Technical Coordinating Committee (TCC) to the North Florida TPO, the City's Bike and Pedestrian Advisory Committee, the JTAC, and the TPO Board. The sign-in sheets associated with these meetings are included in **Appendix B: Public Outreach Materials**. Like the CPAC meetings, these committee meetings are well attended, and their members represent the different areas within the study area.

The BPAC was interested in the integration of biking with the transit service. The JTA bike rental program was discussed, which initially will focus on the downtown area. The JTAC meeting discussion focused on paratransit service and the flex zone service the JTA is currently providing.

All the meetings were run in an orderly fashion using Roberts Rules of Order. The city, JTA, and TPO staff ensured that those present signed in; they were also responsible for writing up meeting summaries. All sign-in sheets are in the **Appendix B** of this TDP. The comments made and the specific questions raised at the meetings are also documented in **Appendix B**. The public's interest and questions covered a wide range of topics, including questions about specific bus routes and bus stops and questions related

to implementation of new modes such as BRT and rail service. Questions were asked about funding sources as well as the socioeconomic data sources used to analyze the future needs.

4.3 Phase 1

During Phase 1 of the study, 12 public outreach meetings were held, six of which were coordinated with the different Duval County CPACs. Prior to attending the meetings, a one-page flyer was developed which contained pertinent information regarding the purpose, goals, schedule, and the TDP development process. The flyer was distributed to all the CPAC members prior to the meetings by the CPAC secretary. In addition, a PowerPoint presentation was developed which allowed for a more in-depth discussion regarding the TDP goals, schedule, and process.

At the end of January, JTA launched an online survey; survey questions are included in **Appendix B: Public Outreach Materials**. Public meeting attendees were asked to visit the project website to provide additional input into the TDP process through the survey. The JTA asked the City of Jacksonville, the North Florida TPO, and Florida State College at Jacksonville to place the survey on their websites as well.

4.3.1 Phase 1 Survey

This section provides a high-level overview of the results of the survey. For more detailed information on the survey, see **Appendix C: Public Outreach Survey Results**.

4.3.1.1 Demographics

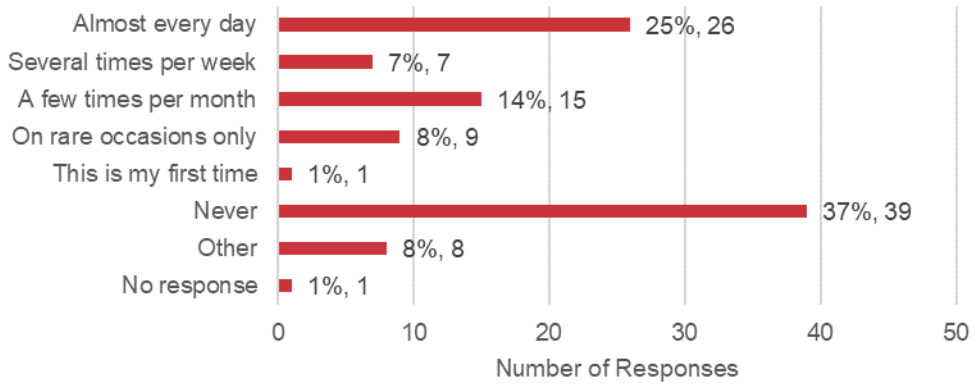
Respondents were asked basic demographic questions to comply with Title VI data collection. Additional demographic questions were also asked to understand other identities that may influence their perceptions and preferences.

- More than 60 percent of respondents stated they were white, while 28 percent stated they were black or African-American.
- Sixty-two percent of respondents stated their annual household income was under $50,000.
- Almost all respondents (98 percent) stated they spoke English as their primary language.
- Active duty military or veterans counted for 20 percent of respondents.

4.3.1.2 Frequency of Riding the JTA

Respondents were asked how frequently they ride the JTA. A plurality of respondents (37 percent) said they never ride the JTA, with 25 percent responding that they were daily riders (**Figure 4-1**).

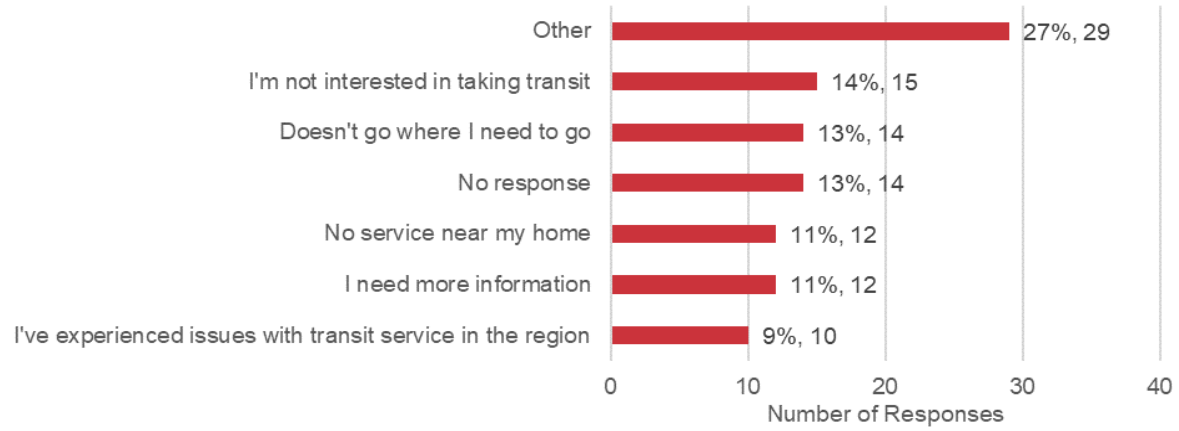
Figure 4-1: How often do you ride JTA? (n = 106)



4.3.1.3 Why Not Ride the JTA

Respondents who answered that they never take the JTA were asked why they do not ride local transit (**Figure 4-2**). The most common response (36 percent) was "other," with reasons for not riding such as that transit does not fit in their schedule, that transit is inconvenient, or that they prefer their own car. The second-most chosen option was that respondents were not interested in taking transit (31 percent).

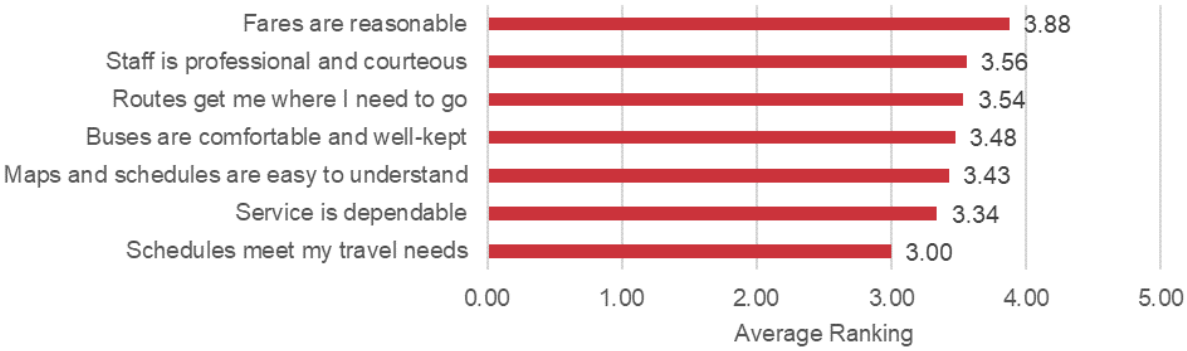
Figure 4-2: What is your primary reason for not riding any local transit? (n = 39)



4.3.1.4 Agreement Statements

Respondents were asked how much they agreed with given statements (**Figure 4-3**) and were given a Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Respondents were most likely to agree that "fares are reasonable" but least likely to agree to that "schedules meet my travel needs."

Figure 4-3: Do you agree with the following statements? (n = 65)



4.3.1.5 Trade-Off Questions

To mimic the decisions that agencies face in allocating resources, respondents were asked to choose between two tradeoffs for five scenarios. Respondents chose:

- More frequent bus service (63 percent) over longer service hours (37 percent).
- More weekend service (61 percent) over more weekday service (39 percent).
- More bus stops for less walking (71 percent) over fewer bus stops for faster service (29 percent).
- Buses running on more streets (53 percent) over buses running more frequently (47 percent).
- Improving existing service (58 percent) over serving new areas (42 percent).

4.4 Phase 2

During Phase 2 of the study, 11 public outreach meetings were held. Six of these public outreach meetings were coordinated with the different CPACs within Duval County. For these meetings, a one-page flyer was developed which contained pertinent information regarding the data that was analyzed, the findings based on the analysis of the data, and the strategies that were being considered to address the transit needs in Duval county. The flyer was distributed prior to the meeting by the CPAC secretary to all the CPAC members. In addition, a PowerPoint presentation was developed, which allowed for a more in-depth discussion regarding the TDP data and the findings.

During Phase 2, the meetings and presentations focused on the analysis of the different data items related to socioeconomic data and ridership information. The assessment of the existing conditions was presented numerically as well as on maps. The analysis and presentation focused on current and future year data as projected by the North Florida TPO. The growth patterns were displayed for the population and the employment together with land use densities and transit propensities. The characteristic of the population was displayed as well. Characteristics displayed included income (where the focus was on the population at the 150% poverty level), zero-car households, and the elderly population. The different transit markets and trip types were discussed to explain how these characteristics and growth patterns affect the transit route planning process.

Large new developments were mapped out and their location and land use characteristics were discussed. In addition, the travel patterns that were simulated through the use of the travel demand model were shown. These travel patterns were projected to the year 2030, based on the socioeconomic data projections developed by the North Florida TPO.

Next, the strategies that were being considered to address the different needs and markets were outlined. The frequency and time span of service was discussed, as well as the need to improve effectiveness and efficiency in the system.

4.5 Internal Agency Engagement

4.5.1 Operator, Supervisor, and Customer Service Representative Feedback

All throughout the study, bi-weekly phone calls were held with staff from the Planning and Operations divisions within the JTA. During these calls, all materials developed for the TDP were discussed and reviewed. The purpose of the bi-weekly calls was to ensure that the TDP aligned with the expectation of the different divisions within the JTA. It is of upmost importance that the service that is being considered is not only based on the input from the public, but also that it is implementable and supported by the JTA. The goals and objectives of the JTA were the backbone of the development process and constant feedback allowed for the development of a well aligned plan.

During each meeting, the schedule was shown and all the tasks that were accomplished, being worked on, and planned to start were outlined on the schedule. Any changes in the schedule were discussed to ensure that none of the steps within the study would delay the study.

4.5.2 Service Development Workshops

The project team held a two-day workshop for JTA employees on March 28 and March 29, 2019, to review initial recommendations for service and develop additional service concepts. This exchange of ideas proceeded throughout the project, with additional JTA employees and customer service staff providing feedback on the strengths and weaknesses of existing routes to identify opportunities to improve service. A follow-up workshop was conducted with JTA staff on May 1, 2019, to review draft final

recommendations before the final phase of public outreach. Additional discussion of the recommendations process is provided in **Chapter 7:Service Framework: Long-Term System Concept**.

4.6 Phase 3

The purpose of Phase 3 of outreach was to solicit public feedback on draft recommendations for changes to local bus, express buses, First Coast Flyer BRT, ReadiRide zones, and Clay Community Transit (CCT) routes. To engage the public, the JTA held pop-up events at transit hubs. At the pop-ups, riders could learn about the draft recommendations, ask questions, and take a survey about their support of the recommendations. Materials at the event included information boards explaining the TDP process in English and Spanish, route sheets explaining each recommendation, and iPads to take the survey. Additional discussion of how public engagement informed the service development process is provided in **Chapter 7:Service Framework: Long-Term System Concept**.

For riders that did not have time to take the survey, postcards with a URL to the online survey were handed out. The survey was also advertised on the JTA website and social media. Route sheets were linked in the survey so respondents could understand the changes.

4.6.1 Phase 3 Survey

This section provides a high-level overview of the results of the survey. For more detailed information on the survey, see **Appendix B. Public Involvement Surveys** for the full results.

4.6.1.1 Demographics

Respondents were asked basic demographic questions to comply with Title VI data collection. Additional demographic questions were also asked to understand other identities that may influence their perceptions and preferences.

- From those who gave their race or ethnicity, 44 percent stated they were black or African American, while 39 percent stated they were white.
- From those who gave their annual household income, 77 percent stated their household income was under $50,000.
- From those who gave their primary language, 93 percent stated their primary language was English.
- From those who gave their military status, 6 percent stated they were active duty or veterans of the military.

4.6.1.2 Support for Recommendations

Respondents were asked to mark their support for a recommendation on a Likert scale from 1 (Not Supportive at All) to 5 (Very Supportive). Over half (57 percent) of recommendations listed in the survey received a score of 3.5 or above. The results for each route can be found in the **Chapter 7:Service Framework: Long-Term System Concept**.

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 5: SITUATIONAL APPRAISAL

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5 SITUATIONAL APPRAISAL

5.1 Introduction

Planning for transit services through the development of a TDP requires consideration of other transportation plans and policies that affect the region. This section considers plans and studies that impact the Duval and Clay Counties area and their potential effects on the development of JTA's TDP.

5.2 Transportation Plans and Policies

Various state, regional, and local plans were reviewed during the analysis, which also considered JTA's major focus areas when evaluating each plan:

- Safety and security.
- Customer satisfaction.
- Transformative mobility solutions.
- Employee success.

Consideration of these focus areas allows for the identification of potential key initiatives that relate to JTA's mission.

5.2.1 State Transportation Plans

Florida Transportation Plan

The Florida Transportation Plan (FTP) was adopted in August 2015 and was developed to help Florida address its transportation challenges and successfully meet a long-term vision for transportation. The FTP contains three elements:

- A Vision Element.
- A Policy Element.
- An Implementation Element

It establishes long-range goals to provide a policy framework for expenditure of federal and state transportation funds that will guide transportation decisions in Florida for the next 50 years. There are seven goals identified in the plan, the first four of which address the performance of Florida's transportation system, while the last three address how transportation supports statewide priorities:

- Safety and security for residents, visitors, and businesses.
- Agile, resilient, and quality infrastructure.
- Efficient and reliable mobility for people and freight.
- More transportation choices for people and freight.
- Transportation solutions that support Florida's global economic competitiveness.
- Transportation solutions that support quality places to live, learn, work, and play.
- Transportation solutions that support Florida's environment and conserve energy.

Goals 3, 4, 6, and 7 relate directly to the enhancement of transit service and encourage the statewide effort to promote context sensitive design and complete streets implementation. The FTP identifies actions to implement the goals of the FTP, with emphasis on transportation decision-making, funding and finance, and progress tracking and reporting.

Florida Strategic Intermodal System Policy Plan

The Strategic Intermodal System (SIS) Policy Plan is the plan for managing Florida's SIS, which is a network of high-priority transportation facilities that are identified as integral to the state's economic competitiveness. These facilities include the state's most significant commercial service airports, spaceport, deep-water seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways, and highways.

This Policy Plan provides three objectives to address planning and investments related to the SIS over the next five years:

- Ensure the efficiency and reliability of multimodal transportation between Florida's economic regions and between Florida and other states and nations.
- Expand transportation choices and integrate modes for interregional trips.
- Provide transportation systems to support Florida as a global hub for trade, tourism, talent, innovation, business, and investment.

All three objectives relate to the promotion of transit service. Improving intermodal connectivity and reliability between regions promotes economic growth and competitiveness for the entire state.

5.2.2 Regional Transportation Plans

North Florida TPO Long Range Transportation Plan (LRTP)

The North Florida TPO, northeast Florida's metropolitan planning organization, is currently developing a 2045 LRTP for the region called Path Forward 2045. The TPO is required to update this plan every five years. It includes a project list to address road, transit, freight, bike, and pedestrian needs within the region. The LRTP contains identified multi-modal transportation priorities for improvements over the next 20 years, which consider new growth trends, developments, and technologies. Several goals guided the selection of the TPO's currently adopted list of transportation projects that include an increased focus on public transportation services for the region. These goals were developed for the 2045 LRTP:

- Invest in projects that enhance economic competitiveness.
- Invest in livable and sustainable communities.
- Encourage safe and secure travel.
- Enhance mobility and accessibility.
- Enhance equity in decision making.
- Preserve and maintain our existing system.
- Create reliable and resilient multimodal infrastructure.
- Enhance tourism transport management.
- Ensure north Florida is ready for connected and autonomous vehicles and IOT technologies that support transportation.

Many of these goals support and promote transit services. The Cost Feasible Plan of the 2040 LRTP includes transit capacity projects equating to approximately $1 Billion. Project types include BRT, commuter rail, ferry slip replacement, streetcar, regional transportation center improvements, and Park and Ride Lots.

Northeast Florida Regional Transportation Commission Regional Multimodal Transportation Plan

On June 18, 2013, the Northeast Florida Regional Transportation Commission was established as a nine-member Regional Transportation Committee (RTC) consisting of elected officials covering a six-county area that includes Baker, Clay, Duval, Nassau, Putnam, and St. Johns Counties. The RTC was tasked to

develop a Regional Multimodal Transportation Plan for Northeast Florida, including identifying and securing dedicated funding. The Plan, which was published in April 2017, includes five goals:

- **Economic Competitiveness:** Promote a diversified and vibrant regional economy.
- **Mobility:** Expand the range of transportation options available in the region to provide efficient mobility for people and goods between activity centers, including residential, employment, and mixed-use centers.
- **Connectivity:** Create efficient connectivity within the region and with state, national and global economies.
- **Integrated Planning:** Integrate regional land use, transportation, and natural resource plans to promote sustainable, safe, and livable communities.
- **Implementation Resources:** Maximize resources to implement a regional transportation system.

Goals 2 and 3 related directly to the promotion of transit service. Projects included in the Regional Multimodal Transportation Plan were selected using "regional significance" criteria, and "coordinated regional transit services" was identified as the RTC's top priority. A series of action items were listed for the implementation of this project, with immediate, near term, and long-term actions identified.

5.2.3 JTA Plans and Policies

JTA Transit Development Plan (TDP)

TDP Minor Update (FY 2017–2018)

The 2017 TDP minor update serves as the annual update to the current TDP and is a progress report for the on-going operational adjustments as well as new investments in the overall transit system. The report contains information regarding past year accomplishments and revisions to the implementation program. In addition, the report contains steps to be taken to attain the TDP's original goals and objectives.

Key accomplishments include:

- In August, the JTA launched Route 82, a new shuttle service that runs between the Armsdale Park-n-Ride and the Amazon Fulfillment Center Warehouse on Pecan Park Road.
- Since acquiring the St. Johns River Ferry, the JTA has seen a steady increase in ridership. They carried more than 52,000 passengers in July 2017, the most in recent history.
- The JTA is following through on its commitment to city leaders and taxpayers to improve.
- Jacksonville's roads and corridors through the JTAMobilityWorks initiative.
- In May 2017, JTA formed a partnership with Beachside Buggies to provide year-round, on-demand transportation in the Jacksonville, Neptune and Atlantic beaches area.
- The JTA took a giant leap forward to make the Jacksonville Regional Transportation Center (JRTC) a reality by breaking ground on the $57 million state-of-the art transportation center.
- The JTA launched a demonstration test and learn track for the Ultimate Urban Circulator (U²C). The JTA Board of Directors approved plans to modernize the iconic JTA Skyway and began studying the feasibility of the U²C in March 2017.

TDP Major Update (FY 2014–2024)

The 2014 TDP major update provides an overview of the existing transit system, service area, transit demands and mobility needs, vision, mission, goals, objectives, and strategies, as well as a summary of JTA's recent and ongoing studies, including those related to rapid transit, Bus Rapid Transit (BRT), commuter rail, waterborne, trolley, and park and ride facilities and services. This TDP incorporated opportunities for public and agency feedback to assist JTA in reevaluating the parameters that it utilizes in its provision of public transit services to the community.

The goals from the TDP Major Update from Fiscal Year 2014 to 2024 include:

- **Customer Service:** Increase customer satisfaction by providing a superior and reliable customer experience.
- **Safety and Security:** Ensure safety and security throughout the transit system and in the agency work environment.
- **Mobility:** Deliver accessible transportation choices, providing mobility, livability, economic prosperity, and environmental sustainability throughout the community.
- **Financial Stability**: Providing for long-term stability, while increasing our modal share and service.
- **Education and Training**: Inform the community on the value of a quality public transportation system and develop a highly qualified JTA workforce.
- **Effectiveness and Efficiency:** To deliver effective and quality multimodal transportation services and facilities in an efficient manner.

JTA Blueprint 2020

In 2014, JTA also embarked on an overhaul of its service. This effort was called the Route Optimization Initiative and was part of the Blueprint 2020 Transit Master Plan. The purpose of the Initiative was to completely redesign the bus and community shuttle service to make them more appealing to current and potential riders. Key efforts included aligning bus routes with the First Coast Flyer BRT, optimizing transit routes to make them more frequent and direct, restructuring the entire system (new routes, new numbering, and new service), improving (or extending) bus hours of operations and making the overall system simpler and easier to use.

The Route Optimization Initiative objectives were intended to increase ridership, increase annual recurring revenues, result in no increase in annual operating budget, and to reinvest increased revenue from ridership into service enhancements. In March of 2015, the ridership was up 10.1 percent compared to March of 2014. The average weekday ridership was up 7 percent. The average ridership on Saturdays increased by 10 percent and on Sundays by 15 percent. The ridership average over the first four months of the implementation was up 6 percent with by more than 200,000 trips over the same period previous year.

Enhancements included adding a frequent transit network consisting of 22 routes with 30-minute frequencies or better. The network is over 100 miles long and serves 90 percent of current JTA customers. Three new express routes were also added connecting to park and rides as a way of accessing new markets. The changes were completed and rolled out in late 2014 and by all accounts have been a resounding success.

First Coast Flyer studies

The First Coast Flyer's system was developed in five project phases. Upon completion in 2019, the First Coast Flyer will connect customers to 57 miles of destination travel from downtown to the north, southeast, east, and southwest areas of Jacksonville. Flyer service requires minimal use of schedules and features fewer stops, shorter waits, easier transfers, and frequent trips. As the Northeast Florida region expands, the Flyer is expected to be an essential part of a streamlined transit system.

The downtown portion of the project is complete and in operation. It includes enhancements such as branded stations, dedicated lanes at Broad, Jefferson, Bay and Forsyth, a queue jump on Forsyth, streetscapes, Transit Signal Priority (TSP), and ticket vending machines. The second phase of the project, the North Flyer (Green Line), began service in 2015. It includes 18 branded stations, eight CNG buses, a Park-n-Ride lot at Lem Turner/I-295, and transit signal priority. The Southeast Flyer (Blue Line), opened in 2016, operates from Rosa Parks to Avenues Walk Park-n-Ride. This line includes seven

branded stations and serves Rosa Parks Transit Station, the LaVilla Neighborhood, Courthouse, the JRTC, Southbank, and Kings Avenue in the study area. The East Flyer (Red Line) is under construction and will provide service from downtown via Arlington Expressway to the beaches. While the Southwest Flyer (Orange Line) is under final design. This line will provide service from downtown to the Orange Park Mall.

TOD program

JTA developed a Transit-Oriented Development (TOD) Policy to encourage TOD and redevelopment outside the Urban Core. It was developed to promote new development and redevelopment in areas adjacent to transit facilities, such as Skyway stations, bus rapid transit stations, and intermodal stations. The development will potentially increase transit ridership, as well as raise property values on the adjacent land. The policy is meant to establish a framework for JTA to use in evaluating development proposals on property owned or overseen by JTA and facilitate coordination with local jurisdictions and governmental approval agencies. Transit-oriented development was originally incorporated into the City of Jacksonville Zoning Code under ordinance 2007-587-E, which created approval procedures, design standards, and criteria for location and development of transit-oriented developments.

Most recently, the JTA received a $1 million grant from the FTA to analyze what types of developments/land-uses can best support transit service in the downtown area.

Ultimate Urban Circulator Program

JTA's Ultimate Urban Circulator (U^2C) Program is meant to expand mobility in downtown Jacksonville. The U^2C represents a new era for the Automated Skyway Express (Skyway), which currently operates throughout downtown Jacksonville as an elevated guideway system. The U^2C system is meant to advance the existing system using the existing Skyway assets and advancing technologies. The future U^2C will use autonomous vehicles that will operate on the current elevated guideway that the Skyway uses, with the future potential to operate at the street level. Additionally, the proposed U^2C System Plan shows new connections beyond where the existing Skyway Route/Stations are located today. The Bay Street Innovation Corridor has received funding from the U.S. Department of Transportation Better Utilizing Investments to Leverage Development (BUILD) grant program to construct an extension to the Skyway in Downtown using autonomous transit service. This U^2C system will revolutionize transit in the Jacksonville area for current and future users.

Jacksonville Regional Transportation Center

The Jacksonville Regional Transportation Center (JRTC) is a state-of-the-art regional transportation center in the La Villa neighborhood in Jacksonville's downtown district. The building will be the administrative headquarter for the JTA and will function as a mass transit hub connecting many modes of transportation. It is designed to make transfers between intercity, regional and local transportation simple. Transportation modes envisioned to pass through the hub are local bus routes, First Coast Flyers, the Skyway/U^2C system, future rail systems, taxis, rental car services, bike share, car share and providers such as the Greyhound, Megabus, etc.

JTA On-Board Surveys

2016 Onboard Rider Demographic Survey

JTA conducted an On-Board Rider Demographic survey in 2016. A 2017 report summarized the methodology of the survey and the results of the responses. JTA continues to use these survey results to perform analysis of ridership characteristics. JTA will conduct a new On-Board Rider Origin-Destination survey in 2020.

MOVE plan

JTA developed the Mobility Optimized through Vision and Excellence (MOVE) plan to address the digital evolution impacting the transportation system. The MOVE transit system developed by JTA is meant to allow customers to use their handheld devices to customize multimodal trips through scheduling and planning, mobile ticket purchasing and route service updates in real-time. The MOVE plan outlines why it is a JTA priority, identifies MOVE-related initiatives in the region and Jacksonville area, and lists strategic investments related to the promotion of advanced technologies.

5.2.4 Clay County Transportation Plans

Clay County Transit Study (12/14/2017)

The 2017 Clay County Transit Study made the following recommendations for service improvements in the county:[1]

- Simplify the bus schedules to make them easier to understand, contain chronological, accurate and clear timepoints.
- Coordinate the times of bus routes so that transfers are easier to make.
- Provide Green Line users direct access to NAS Jacksonville and provide a more streamlined and frequent routes connecting northeast Clay County with Green Cove Springs.
- Increase service frequencies and span of service, as resources are available.
- Better inform and educate the public and improve the branding of the flex route service.
- Continue to encourage Transportation Disadvantaged (TD) riders to use flex routes, if they are able, by marketing the flex route system to TD riders and training TD riders on how to effectively use the service.
- Consider regular meetings among Clay County, Clay Transit, and JTA to monitor system performance and discuss ways to improve service effectiveness and efficiency.
- Include a process for Clay County's staff and/or Board to effectively contribute to public transit planning decisions; likewise, there should be a process for the public who are interested in Clay County's public transit services to offer input and feedback.
- Identify additional funding sources, particularly sustainable local sources that are dedicated to public transit.
- Improve pedestrian and bicycle connections to transit.
- Increase coordination with local transit stakeholders and customers, including the business community and health, human service, job and education service providers.
- Improve coordination with JTA and Ride Solutions to facilitate transfers, and potentially reduce duplication and gaps of the transit services.
- Continue to identify opportunities to enhance local transit service through regional transit coordination, plans and initiatives.
- Continue reporting data to the National Transit Database, while maintaining regular data reporting and monitoring of performance indicators.

Clay County Transportation Disadvantaged Service Plan (4/19/2019)

The Clay County Transportation Disadvantaged Service Plan, updated shortly after JTA became the Clay County CTC, identifies several goals and strategies related to service improvement in Clay County:[2]

- Coordinate transportation disadvantaged services, especially with agencies purchasing transportation services using public funds (typically for transportation of clients for medical appointments).

[1] Clay County Transit Study, North Florida TPO, v-vi.
[2] Clay County Transportation Disadvantaged Service Plan, Northeast Florida Regional Council, 14–16.

- Focus on consumer choice and efficiency by developing routes to increase ridership, maintaining operation of deviated fixed-route systems as funding permits, and by authorizing and funding rides by transportation network companies, as appropriate.
- Maintain and plan for a safe and adequate fleet by using available funds to procure new or replacement vehicles.
- Support regional transit by coordinating multi-county trips and the Community Transportation Coordinators of nearby counties.

5.3 Socioeconomic Trends

According to a 2017 study by the American Public Transportation Association, transit riders nationwide are younger, more likely to be employed, and less likely to own a car than the population as a whole. Duval County's demographics look more transit-inclined than the state of Florida's as a whole, while Clay County's demographics do not necessarily exhibit higher transit propensity. In 2017, the median age of Duval County residents was 36 and of Clay County residents was 39; the median age of all Florida residents was 42. The unemployment rate in Duval County has been decreasing since 2010 and is slightly higher than that of Florida's unemployment rate as a whole, but estimates for 2017 show the rate in Duval dropping just below that of Florida's rate. Clay County's unemployment rate has followed a similar pattern as Duval's, with the gap between Clay County and Florida's unemployment narrowing continuing to narrow. From 2010 to 2017, the number of residents in Duval County who do not own a car has grown more rapidly than the rest of the state, 12 percent versus 9 percent, respectively, while the number of zero-car households in Clay County has decreased by 2 percent. In Duval County, the lower median age and lower rate of car ownership suggests that the propensity for transit ridership is growing faster there than in the state as a whole.

It is also important to note that Duval County's population grew by 6 percent from 2010 to 2017, while Florida's grew by 8 percent during the same time period. The faster rate of growth of non-car-owners in Duval County despite the slower rate of general population growth points to an even greater share of the population that may be reliant on transit. Clay County's population grew by 9 percent in the same period, a greater growth rate than the rest of the state.

Locating the employment opportunities by industry type throughout a region is an important factor in identifying potential transit markets. In Duval County, the *Health Care and Social Assistance* sector is projected to surpass *Retail Trade* as the largest employment sector by 2030 and 2040. This statistic is noteworthy in part because the healthcare sector is projected to grow at nearly double the rate of the retail sector, approximately 29 percent to 15 percent, respectively. The industries with the greatest projected growth rates from 2010 to 2040 are *Real Estate and Rental and Leasing* (40 percent growth), *Administrative and Support and Waste Management and Remediation Services* (35 percent growth), and *Other Services except Public Administration* (30 percent). In Clay County, *Retail Trade* will remain the largest employment sector in 2040, as it was in 2010, but *Construction* will grow by 164 percent to become the second-largest industry in the county. Several very small industries will experience very high growth rates due to low numbers of employees in 2010, but the next fastest-growing industries, besides *Construction*, include *Transportation and Warehousing* (163 percent growth), *Manufacturing* (128 percent growth), and *Wholesale Trade* (83 percent growth). The JTA should pay close attention to the commuting patterns of employees in these rapidly expanding fields in order to accommodate the influx of the new workforce.

5.5 Land Use

The City of Jacksonville's 2030 Comprehensive Plan (2018), its Mobility Plan (2011), and Clay County's 2040 Comprehensive Plan (2018) lend support to the development of a more transit-friendly environment, but the real measure of their effectiveness lies in the implementation of a long list of policies, such as the following:

- Creation of town and village centers in the Northwest, Southwest, and North Jacksonville areas (Mobility Plan); these centers would provide a locus for concentrated residential and commercial uses and may be served by transit.
- Requirement (in Jacksonville) or incentives (in Clay County) for higher density residential development and supporting commercial facilities to locate on major arterial or collector roads used for mass transit routes (Jacksonville 2030 Comprehensive Plan, Future Land Use Policy 3.1.17; Clay County 2040 Comprehensive Plan, Future Land Use Policy 1.4.5).
- Incentives through the Planning and Development Department to encourage new transit-oriented development and redevelopment outside of the Urban Core (Jacksonville Future Land Use Policy 3.1.18).
- Identification of parcels of land where infill or redevelopment is appropriate, and specifically where transit-oriented development, or a similar development pattern, can be aligned with the JTA's proposed Rapid Transit System (Jacksonville Future Land Use Policy 6.3.1; Clay County Future Land Use Objective 1.6).
- Identification of areas where JTA should focus investment in transit stations and related facilities to act as a catalyst for redevelopment along identified corridors (Jacksonville Future Land Use Policy 6.3.1; Clay County Transportation Policy 1.12.5).
- Targeting of the development of workforce and affordable housing in areas where individuals and families can make the best use of transportation corridors and mass transit (Jacksonville Future Land Use Policy 6.3.3).

5.6 Organizational Issues

JTA is governed by a seven-member Board of Directors:

- Three appointed by the Governor of Florida.
- Three by the mayor of Jacksonville.
- The District Two Secretary of FDOT.

Members serve a four-year term and can be reappointed for another four years. JTA's Chief Executive Officer, National P. Ford Sr., has served in this capacity since 2012. Just prior to the last major TDP update, Mr. Ford spearheaded the development of JTA's strategic plan, the Blueprint for Transportation Excellence (BTE). In 2016, JTA was named the Outstanding Public Transportation System in North America for mid-size systems; the BTE was the guiding document that led to the transformation for which JTA received this recognition.

5.7 Technology

In response to an ever-changing mobility paradigm, JTA has been a demonstrated leader among its peer agencies in the adoption of innovative technologies and platforms to better serve its transit customers. JTA recognizes that its future must expand beyond fixed-route and paratransit bus services to include pedestrians, cyclists, ride sourcing, micromobility, parking and curbside management, and other "Mobility-as-a-Service" (MaaS) solutions in response to evolving consumer needs and expectations. Indeed, JTA leadership has fashioned a vision for the Authority that entails the deployment of autonomous vehicles and the use of artificial intelligence (AI) and data analytics. Moreover, JTA sees as its fundamental role

the preparation of its workforce to assess growing concerns around risk management and cybersecurity and the leveraging of technology and smart, data-driven decisions that will respond to the transportation landscape of the future.

In support of these initiatives, JTA's Technology and Innovation Department is preparing a Strategic Technology Plan that will supplement the Agency's overall Blueprint for Transportation Excellence master strategic plan. This document will outline the strategic technology planning methodology, objectives and specific elements to assist in accomplishing JTA's overall mission and business goals. The following summarizes the various priorities and technology applications, some of which are currently being utilized and/or under future development or consideration, to address dynamic mobility needs and compliance requirements. Consistent with JTA's mission, each is organized around the following primary categories: safety & security; customer satisfaction; transformative mobility solutions; and employee success.

5.7.1 Safety and Security

With the growing potential of terrorism, espionage or other internal/external threats, strong defense capabilities and security protocols will continue to be necessary to protect passengers and employees. Given the present reliance on information technology and intelligent transportation systems to provide real time information and enhance mobility delivery, there is a need to develop adequate cyber security as part of the use or implementation of technology solutions.

Cybersecurity

JTA's Technology Department presently provides oversight and is responsible for maintaining security, reliability and accuracy of the systems and the infrastructure for successful transit operations and business functions. To comply with security standards and best practices, JTA is implementing an enhanced, enterprise-wide cyber security program. This system will:

- Identify, classify and secure sensitive data in shared access locations.
- Implement Artificial Intelligence (AI)-based virus/malware/ransomware protection.
- Improve mobile device management.
- Attempt to "future proof" the JTA environment from ever-changing security threat landscape.

The integration of a digital security program and identity access management software, policies and procedures will better ensure that only authorized personnel have appropriate access to technology resources. Technologies such as facial-recognition can potentially be more effective than a password or a physical key. Beyond security uses, the facial-recognition technologies, which will be adopted incrementally, can also be used for fare collection/payment and mobile application purposes. Such programs respond to the growing number of people, including, potential third-party open source users, relying on JTA services and data and providing assurances to them that JTA systems meet or exceed security standards, including National Institute of Standards and Technology (NIST) 800-53 and Information Security Officer (ISO) 2701 over the next five years.

Sectors relevant for standardization are for instance network safety, device safety, communication protocols for vehicle to infrastructure and vehicle to vehicle communication, mobile application safety, etc. Standardization and the development of safety certificates are important. Cooperation with other transport operators, government and the industry will contribute largely to this ambition. On a regional level it simplifies cooperation with other transport operators, in offering cross border mobility services for instance, if they are based on the same standards. It will also reduce costs, in lowering the chance of a vendor having proprietary knowledge not available to competitors.

Training

On-going security training programs will also be implemented to develop more aware and capable employees. Such training and development are fundamental to establishing a culture of safety and could include several modules from mock phishing training to on-going vulnerability testing. In addition, these trainings can also become relevant in keeping pace with the rapid changes in technology and societal needs.

5.7.2 Customer Satisfaction

JTA will be able to not only sustain ridership, but grow it, through continuous improvement around the passenger experience and their overall satisfaction. Through its successful MyJTA mobile application, JTA customers currently can plan trips, track buses in real-time and pay for fares all in one location. The real time passenger information system was originally launched in late 2015 via NextBus to parallel the Route Optimization Initiative in support of growing customer demands around scheduling, reducing wait times and improving reliability.

"Super App"

The implementation of robust internal systems integration will be a major objective over the next few years, including the development of an "ultimate multimodal mobile app" that provides a real-time "one stop shop" for customers interfacing with JTA services. This would provide a regional, unified application (consistent across phone and website) driven with Bluetooth technology to provide several functions including, but not limited to:

- Elimination of the physical presentation of tickets to operators in combination with modified on-board mobile ticket readers.
- Potential facial recognition technology for account access and fare payments.
- A MaaS-based scheduling hub that enables single trip planning, booking and payments across several mobility vendors/services (i.e., single fixed route bus/bikeshare/Uber trip payment); such would greatly improve the original intent and relevancy of the existing Transportal[3] platform.
- Improved customer service capabilities via the use of mobile chatbots[4] and click-to-chat services enabling, for example, multilingual communication support and other needs to vulnerable populations.
- SMS texts and other multichannel direct messaging to improve customer services and push out information.
- True American Disability Act (ADA) compatibility across the platform.
- API Ecosystem: open-ended framework where third-party vendors/individuals can push data back and forth to leverage available JTA data and information to build new apps, for example.
- Text-to-Pay services.

Digital Content Management

A major point of emphasis by JTA is the seamless integration of digital content management and device location services. This would, for example, enable real-time information displayed at interactive kiosks or other JTA digital signage to be delivered directly to mobile devices. JTA customers with location services enabled on mobile devices can inform JTA of their locations and travel patterns to improve demand-responsive services. Additionally, JTA could leverage this technology to offer advertisements (i.e.,

[3] The JTA Transportal is a trip planner that stretches across a 12-county region. The user selects the button and then follows the prompts on the screen.
[4] A chatbot is a computer program that conducts conversation via auditory of textual methods.

targeted “Google Ads”) and rewards programs with customers who regularly use the app for trip scheduling and fare payments.

Social Media Analysis

Rather than viewing social media posts individually to engage with customers and provide feedback or address complaints, the use of predictive data analytics and “Social Media Sentiment Analysis” can provide JTA a way to more accurately address customer concerns and identify travel patterns.

5G

The anticipated launch of 5G is also a potential gamechanger for mobility providers. This next generation standard (anticipated between 2019 and 2020) for wireless communications to replace the current 4G network will vastly increase capacity, reduce latency and increase download speeds. The deployment of such a network on JTA fleets will provide enhanced Wi-Fi connectivity, thereby providing a richer experience to passengers who may want to stream entertainment or conduct work-related business that requires greater bandwidth. This can potentially increase the attractiveness of transit and expand the ridership market.

5.7.3 Transformative Mobility Solutions

Meeting the growing and diverse needs of the region’s service area and population will require staff to investigate, experiment and implement new mobility options and technologies that supplement its core transit services. Providing accessible choices, eliminating the barriers to ridership, and anticipating future trends will be integral to the success of the agency. Key strategies already identified by JTA staff include:

- The adoption of multiple fare collection methods.
- Launching connected/autonomous vehicles (CAV).
- Enhancing TSP/queue-jumping (Smart Roadway Technologies) on high frequency routes.
- Implementing big data analytics to improve services across the enterprise.

CAD/AVL/APCs

JTA currently uses Clever Devices as a framework for its Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system. This enables dispatchers to communicate directly with vehicles and manage routes in real-time, providing location and status of in-service fleets and the ability to manage service disruptions. JTA is continuing to incorporate efficiencies and improvements in this context to better address situational awareness, dispatcher efficiencies, improved communications, as well as event-driven and incident management. JTA’s fleet is also installed with Automatic Passenger Counters (APCs) to record boarding and alighting data linked with stop location. HASTUS scheduling software (by GIRO) is currently used to assist staff with designing/modifying bus routes, determining new stops, scheduling routes, assigning individual drivers into runs, and providing customer information about the network.

Fueling

For the past decade, the JTA has been moving toward a fleet with a smaller carbon footprint, incorporating Hybrid and Compressed Natural Gas buses. Through its innovative Public-Private Partnership (P3) arrangement with Clean Energy launched in 2016, JTA has offered a publicly-accessible compressed natural gas (CNG) fueling facility at its Myrtle Avenue operations campus. By allowing the public and other agencies 24-hour access to fuel their vehicles with CNG, the JTA has contributed to increasing the available supply of CNG in the region, which is in turn reducing and/or eliminating airborne pollutants. The Clean Energy station is easily accessible for public and private heavy-duty fleet trucks and passenger vehicles

This CNG project, one of the JTA's transformative Blueprint initiatives, also included a modification to the bus maintenance facility and a bus fueling facility; including one single hose dispenser, with the capability of adding an additional three dispensers. The fueling of CNG buses commenced with the rollout of the First Coast Flyer BRT Green Line. JTA has established an agency goal to have a fleet of 100 CNG buses over four years including the entire BRT fleet.

Over the long-term, JTA is looking to replace much of its diesel fleet with zero emissions-based buses. In 2017, the agency was awarded a $1 Million Low or No Emission (Low-No) Bus Program Project grant for new 40-foot battery electric Gillig buses and chargers for the Amazon expansion route. The new route serves a Park-n-Ride and a new Amazon distribution center that employs over 1,500 Jacksonville residents. The charging stations utilize Jacksonville Electric Authority's (JEA) Solar Smart Power program to support zero emissions. Future consideration includes the wholesale upgrade of diesel/hybrid-based technologies with fuel cells as part of its path toward zero-emissions.

Another option would be the introduction of speed charging stations, linked to the Solar Smart Power program, to enhance the use of clean technologies and improving the added value of them.

Traffic Signal Priority / Intelligent Transportation Systems

The implementation of TSP for the First Coast Flyer BRT and high frequency route network has been contemplated since the inception of JTA's high frequency services. While there is currently queue jumping and TSP-lite at several intersections (holds green lights, allowing buses to move through intersections without stopping) in the Downtown BRT Corridors, there is a need to further enhance the overall system across the region to support desired benchmarks around frequency and reliability (on-time performance) and Intelligent Transportation Systems (ITS) goals, particularly via dynamically coordinated signals. Ideally, through a phased approach, the full deployment of TSP could be achieved within the next five years; while between five and 10 years out, full preemption and TSM&O could potentially be realized. This would provide a direct linkage to the North Florida TPO's Smart Regions Master Plan and Integrated Data Exchange. This initiative focuses on collecting, analyzing and applying data from many sources to eliminate fatalities, improve travel time reliability, reduce greenhouse gas emissions, and provide economic opportunities. This program includes 33 projects developed in partnership with 30 stakeholder public, non-profit and private sector organizations.

Smart Roadway Technologies

Through its $44 million Bay Street Innovation Corridor Project (including $12.5 million in BUILD Grant support), JTA and its agency partners are transforming a major Downtown thoroughfare into an "incubator" for emerging technologies. Leveraging the TPO's Integrated Data Exchange. JTA specifically plans to deploy 15 CAVs along the 3.2-mile corridor with an expected ridership of 2,500 passengers a day. Other keystone projects include connected signals, smart lighting systems, pedestrian sensors, security cameras, solar-powered intersections (beginning with a few blocks of sidewalks), and smart parking and flood warning sensors. JTA is providing "dark fiber" communications infrastructure to support the effort. The City of Jacksonville is providing design oversight of the initial smart corridor elements. The Jax Chamber of Commerce will help facilitate companies interested in using their technology or software on the corridor.

Autonomous Avenues / Ultimate Urban Circulator

As part of the Skyway Modernization, the first phase of the U^{2}C CAV testing project is being developed between the future JRTC and the existing Jefferson Skyway Station. This will provide a potential understanding of operational needs and challenges associated with AV technology and ITS. Ultimately, this system will expand the existing Skyway with an at-grade CAV network connecting Downtown with surrounding neighborhoods.

Smart Hubs

Like New York, Copenhagen, and Rotterdam, Jacksonville is divided by waterways. In these cities, there is the opportunity to develop multimodal hubs, where autonomous or regular public transport, water-ferries, cycle infrastructure and facilities are brought together. The trend within urban areas is to transform unimodal parking facilities to multimodal hubs with facilities for carpools and vanpools, bike sharing, easy-to-navigate pedestrian walkways, charging stations for electric cars, and proper wayfinding that links to fast and high-frequency public transport and cycling infrastructure, especially on the edges of city centers.

Future Artificial Intelligent Deployment

There is a major emphasis upon the future use of AI to enhance business and transit operations. For example, to support objectives around dynamic scheduling, AI could leverage facial recognition/thermal imaging technologies to permit JTA operations staff to direct new on-demand services or schedule additional CAVs in locations where customers may be congregating and/or demanding mobility services (i.e., at events or at peak times near identified mobility hubs). The U^{2}C could serve as a laboratory for this type of on-demand services. Fare validation could also be executed via facial recognition technologies.

In the Rotterdam area of the Netherlands, a technology system will be introduced in 2019 that will enable passengers to communicate with the system to obtain geographic information (e.g., “tell me where the nearest restaurant is located”).

Big Data Analytics

The use of robust, data analytics functions will continue to be emphasized to improve services and drive operational efficiencies. This would be implemented for both the in-house Oracle Enterprise Resource Planning (ERP) and transit data. While this would greatly enhance staff’s ability to anticipate future trends and be more responsive to mobility needs, cybersecurity and proprietary considerations will need to be at the forefront to specifically address third party app vendors and screening data download requests, especially if such were to be provided in a Cloud-based environment.

5.7.4 Employee Success

The use of technology to enhance JTA’s workforce is a major goal of the agency. Equipping staff with the knowledge, abilities and tools to be productive, efficient and responsive to customers is fundamental in carrying out the Blueprint objectives. JTA has established performance management metrics via the JTA Enterprise Management Metrics System (JEMMS) to track and self-monitor individual and departmental progress towards meeting defined milestones. Continued workforce development and service delivery improvements will be supported through on-going, user-friendly Oracle enhancements and end user training. Future process improvements could include the previously discussed API Ecosystem to provide a single user interface to multiple internal and third-party API’s; the migration to a Cloud-based ERP and new collaboration software upgrades to enable remote workforce capabilities; as well as the potential use of Augmented Reality (AR) for more efficient training purposes (i.e., training maintenance staff how to change fleet tires or other mechanical tasks). The use of computer-based training classes will also be considered to enhance workforce development and career progression.

In summary, over the next 10-year TDP horizon, there will undoubtedly be new trends and innovative platforms, like competition between MaaS solutions, important steps in the implementation of autonomous driving resulting in new mobility patterns, a rise in shared mobility and the growing use of open-sourced data, that emerge and will shape or potentially redirect agency focus and priorities. Because of these rapid changes future visions have to be seen as desired paths that can develop or alter in time, not only because technology is changing, but also because society and its needs are changing.

Parallel to the technological developments there is a growing interest in the behavior of people as it relates to the rapid developments (e.g., do they keep pace? do they understand and accept these changes?). JTA's goal is to be responsive by anticipating these changes and to ultimately use available technology as a facilitator for what the agency needs to accomplish, as a means and not as a goal in itself.

One of the major initiatives that JTA will continue to build on is the use of mobile applications, in which transportation services and information to automate and combine various functions, can be integrated seamlessly. This development is primarily related to MaaS. It is, however, important for the JTA to keep in mind that MaaS is more than a new app. In Europe, for instance, MaaS leads to independent platforms offering space to a variety of mobility suppliers to use this integrative platform as a means to promote themselves and their services. For most mobility providers this necessary cooperation means a change in perception or even of paradigms, forcing them to redefine their services and their relationships with clients.

At the same time the JTA must consider that part of the population doesn't want or can't afford to use mobile devices. With rapid developments in the availability of open data, JTA can also profit from the innovative forces of a whole new group of start-ups and Small- and Medium-sized Enterprises that develop new information services and platforms, for instance for the mentioned MaaS services. Cooperation with these kinds of organizations may deliver the opportunity to develop the new services faster at a lower cost.

In general, the adoption of technology should lead to better services to our clients and increasing ridership and user satisfaction. It is relevant to be aware that increasing ridership also needs a good fit to spatial and infrastructure planning. What is done to improve travel times for public transportation, or the other way around to slow single occupancy vehicle travel times by prioritizing public transportation on bus lanes, or by crossings via smart traffic lights, or by proper embedding in new urban development's etc.

5.8 Transit-Friendly Land Use & Urban Design Efforts

The land use and urban design patterns in a transit agency's service area can support or hinder the efficient provision of transit service. This assessment identifies strengths and weaknesses in current conditions and in local policy that influence land use and development, as built by the private sector. It also recognizes policies identified by the City of Jacksonville to foster a more transit-friendly operating environment.

5.8.1 Assessment Framework

Transit-friendly environments support the traveler's choice to use transit over modal options. This choice is influenced not only by the availability of transit service from one's origin to destination, but also by the ability to reach transit services safely, integrate multiple trips into the journey easily, and avoid the inconvenience of parking. In addition to these functional characteristics, modal choice is also influenced by the qualitative experience of the trip, particularly from one's origin to the transit stop or station and again from the stop or station to the destination.

These characteristics are unique to each transit system and service area, and each community served may define and measure them differently. Additionally, each transit agency has its own thresholds for cost effectiveness. Thus, there is no standard for a transit-supporting land use pattern, only examples of completed local analyses and policy responses. Transit agencies can look to these examples for methods, policies, regulatory tools and incentives appropriate for the conditions and development culture of their service areas.

Studies in growing metropolitan regions are referenced for their land use assessment parameters:

- The **Lehigh and Northampton Transportation Authority (LANta)** based in Allentown, Pennsylvania prepared Moving LANta Forward, a Regional Public Transportation Plan, in 2010 following two decades of significant growth that outpaced expansion of its public transportation system. In conjunction with the Regional Public Transportation Plan, LANta prepared a Land Use Toolkit to help agency staff understand the community planning and development process and to better coordinate land use and public transportation system changes with the counties and the many local governments.[5] This toolkit highlighted the relevance of comprehensive plans, zoning and development regulations to a transit-friendly environment.
- The **Puget Sound Regional Council (PSRC)** is the regional planning agency for growth management, transportation and economic development within King, Pierce, Snohomish and Kitsap counties, Washington. Its transportation vision includes a multimodal transit system of light rail, commuter rail, express bus and local bus services among other land- and water-based mobility options. While development is naturally constrained by water and topography, PSRC recognizes that transit-friendly communities happen by design.

LANta and PSRC share these common parameters in their studies of a transit-supportive environment:

- **Density of Residential Use and Employment Use Areas**. Residential and employment uses are linked to the origin or destination of most trips. Concentrating residential and employment uses increases the number of people who want to move in and out of a given area quickly and who may seek alternatives to a vehicle for their personal or household mobility. Of the five parameters, density is the simplest to measure and compare.
- **Mixed Uses.** Multiple uses in a single building, on a single lot, or within a block enable people to accomplish multiple tasks (i.e., job, shopping, child care, and services) within one trip. Travel time to accomplish multiple tasks in one area is less than compared to dispersed single use destinations requiring multiple vehicular trips.
- **Pedestrian Connectivity.** Pedestrians need to be able to move safely and conveniently from their origin to the transit system to the desired uses at their destination. Continuous pedestrian facilities provide the dedicated space needed to ensure safety.
- **Parking Management.** The availability and convenience of parking at a person's destination influences their choice of travel mode. Limited parking options typically increase the time needed to find parking and/or parking cost, decreasing convenience and discouraging travel by personal vehicle.
- **Urban Design.** The quality and comfort of the pedestrian space makes time spent on foot less stressful and more desirable. Pedestrian spaces that are not only connected but also functional in terms of wayfinding and weather protection and designed with a sense of place are inviting spaces to traverse or to pause.

Density of Residential Use and Employment Use Areas

The referenced land use studies offer examples of residential and employment densities for bus, premium bus, and light rail transit services. LANta's guidance on land use density for its local bus and BRT services outlines as follows:

- 15-25 dwelling units per acre and 25-50 jobs per acre for *premium bus service* on transit or transit-planned corridors.

[5] LANta's Land Use Toolkit for the Lehigh Valley, 2009.

- 7-15 dwelling units per acre and 25 jobs per acre for *basic bus service* on transit or transit-planned corridors.

The Puget Sound Regional Council initiated its guidance for transit-supportive land use densities based on a literature review.[6] This research found:

- 16-60 dwelling units per acre to support light rail in the downtown urban core.
- 12-30 dwelling units per acre to support light rail in city centers.
- 8-20 dwelling units per acre to support light rail in suburban areas.

Subsequently, the PSRC developed guidance[7] for densities and land uses in the vicinity of planned light rail stations as 15-20 dwelling units per acre and 50+ jobs per acre for higher-capacity transit (i.e., light rail).

5.8.2 Current Conditions in the City of Jacksonville

The City of Jacksonville's 2018 land use data shows a higher density city center surrounded by a low-density suburban region around. Based on the predominant population density of 6-15 persons per acre shown in **Chapter 2: Baseline Conditions** and using the city's 2.59 persons per household (2013-2017 ACS), the estimated residential density across much of the city ranges from 2.32 to 5.79 households per acre, which is below the transit-supportive residential density ranges suggested by the referenced studies, even for basic bus service.

There are high density residential uses in the urban core. These residential uses reflect capacity, but population trends in **Chapter 2: Baseline Conditions** indicate that residents, and thus potential riders originating in the urban core, have declined. Beyond the urban core, higher density residential uses exist as relatively small neighborhoods or clusters scattered along the arterial routes. Their size and lack of contiguity diminishes their impact on transit-friendliness.

Medium density residential uses, while accommodating up to 20 dwelling units per acre, require full urban services to reach this transit-friendly density and are nominal in size and number.

The City's land use data also show commercial uses concentrated in the Central Business District, along the historic although irregular city grid in the urban core, and lining the arterial routes radiating outward from the urban core. Commercial use of the arterial corridors is narrow and there is no significant increase in size where an arterial and a collector intersect, with exceptions at University Boulevard at US 1, Route 202 at US 1, and the interchange of Routes 113 and 115. Employment density data in **Chapter 2: Baseline Conditions** shows several clusters of 16-30 jobs per acre and 31-60 jobs per acre as well as a few blocks of less than 60 jobs per acre in the downtown urban core. These higher-density job clusters are, however, relatively small and dispersed across the City.

Land-based industrial uses, which typically have a lower employment density than commercial uses but still employ tens of thousands of workers in the Jacksonville area, are clustered in three areas:

- Within the Northside-Imeson Park-Eastport area.
- Between I-95 and US 1 southeast of the city center.
- Between US 23 and US 90 west of the city center.

[6] Literature Review of Transit-Supportive Densities, an appendix to Implementing Equitable Transit Communities: Regional & local recommendations for the Central Puget Sound Region, 2013.
[7] Transit-Supportive Densities and Land Uses, a Puget Sound Regional Council Guidance Paper, 2015.

This pattern of a dense urban core and radiating commercial corridors easily supports radial routes, however connections between radial service lines may be needed to provide efficient mobility, i.e., local travel that doesn't require a trip into the city center on one line only to transfer to another line that serves an adjacent commercial corridor.

Regulatory Position on Density

The City's zoning regulations are the tool for fostering higher density development. The land use pattern in the Central Business District is managed more through site development plans, approved as part of the development order for the Downtown DRI(s), as through zoning. Yet zoning offers supportive principles for maximum development intensity of residential and employment uses through its build-to lines (no front yard) and no maximum for building height and lot coverage, which translates into the possibility of more usable space per floor in both use types.

High-density residential is defined by the City as 22 dwelling units per acre or more. This definition provides a transit-supportive residential density in line with the referenced studies. Additionally, mixed uses in a single building or property are permitted, further concentrating dwelling and employment units. At 45-60 feet, building heights are the most likely constraint to greater residential density, though as stated above, occupancy is likely a more pressing issue.

Low-density residential, defined as less than 8 dwelling units per acre, provides no meaningful support for transit.

Policy Direction Toward Transit-friendly Density

The City's growth management approach uses "development areas" indicated in the Comprehensive Plan, namely the Central Business District, Urban Priority Area, and Urban Area, to define large sectors where infill and redevelopment should occur. However, it is not obvious that the city's zoning regulations incorporate these areas targeted for higher density in ways that make is easy for investors to see and act upon. Furthermore, the regulation and mapping of these large areas offer no locations for transit facilities, which would attract investors to particular nodes. This lack of clarity may result in very limited impact on the current land use pattern.

As noted earlier, the City of Jacksonville's 2030 Comprehensive Plan (2018) and Mobility Plan (2011) define several policies toward creating a more transit-friendly environment. Themes of these policies include densifying town centers, concentrating new development near major roads, and identifying areas to target development that are synergistic with the JTA's plans and vice versa. For more information, refer to **Section 5.4**.

Mixed-Use Patterns

Current Condition

Mixed use patterns in Jacksonville exist in two forms, mixed-use buildings and mixed-use neighborhoods. Both are found almost exclusively in the urban core. In the Central Business District, mixed use buildings support an active pedestrian streetscape with commercial uses on the ground floor and additional office and residential uses on the upper floors. In the surrounding parts of the urban core, mixed use neighborhoods put varied uses in close proximity to one another even if not integrated in a single building. Either mix of residential, employment, and service activity concentrates trip origins and destinations.

Zoning Regulation for Mixed Use Development

The City's zoning code permits mixed use buildings, sites (multiple buildings on one site), and neighborhoods. In some districts, such as the downtown overlay and the traditional neighborhood

development district, the proportions of uses are prescribed to ensure a land use mix and avoid the appearance of a primary use and accessory use.

Policy Direction Toward Mixed-Use Patterns

Many of the same policies listed above address or inherently include principles for mixed land use patterns. These include:

- The creation of town and village centers in the Northwest, Southwest, and North Jacksonville areas (Mobility Plan). These centers would provide a locus for concentrated residential and commercial uses and may be served by transit.
- Incentives through the Planning and Development Department to encourage new transit-oriented development and redevelopment outside of the Urban Core (Future Land Use Policy 3.1.18). Transit-oriented development is by definition mixed-use in character.
- Identification of parcels of land where infill or redevelopment is appropriate, and specifically where transit-oriented development, or a similar development pattern, can be aligned with the JTA's proposed Rapid Transit System (Future Land Use Policy 6.3.1).

Pedestrian Connectivity

Sidewalks provide dedicated space for pedestrians, separating them from vehicular traffic. They should be continuous along transit-served corridors but should also extend into adjacent residential and employment areas to connect people to the transit corridor. Crosswalks and pedestrian signals, where warranted, should also be part of this pedestrian network to allow people to safely cross roadways at reasonable intervals. Finally, beyond the provision of sidewalks, the pedestrian network should be ADA-compliant, relatively free of obstructions (e.g., sign posts, utility poles, and temporary signage), and maintained in a state of good repair.

Current Condition

Sidewalks and crosswalks are inconsistent across the City. Many newer commercial corridors and residential areas have continuous pedestrian facilities while older corridors have significant gaps.

Regulations for Pedestrian Connectivity

The downtown overlay district's streetscape provisions address not only the sidewalk but other factors, such as paving, streetlights, and trees that define and enhance the functionality of the pedestrian space. These provisions would be an appropriate model for transit nodes or centers throughout the City. As a model, they could be customized to each node.

Policy Direction for Pedestrian Connectivity

The City's Comprehensive Plan specifies a number of policies related to pedestrian connectivity, including:

- Guide the provision and connectivity of pedestrian spaces, the quality of public space and streetscape, and the orientation of primary building entrances (Future Land Use Policy 6.3.1).
- Support alternative modes of transportation. Such measures may include, but are not limited to, the provision of sidewalks, bikeways, transit stops, or other facilities to support alternative modes, such as parking management systems and park-and-ride facilities (Future Land Use Policy 6.3.4).
- Require the use of an unobstructed pedestrian zone in between the roadway and the building façade along commercial corridors within the Urban Priority Area and Urban Area or some other alternative regulatory criteria that creates a safe and attractive pedestrian environment (Future Land Use Policy 6.3.6).

Parking Management

Current Condition

The City has used various parking management techniques in the Central Business District to encourage the use of the transit system. This has manifested itself in the discouragement of surface parking lots and the promotion of structured parking. But when parking is managed only in the city center and not in surrounding areas, residents and businesses may choose to avoid the inconvenience of the Central Business District.

Regulatory Approach to Parking Management

The downtown overlay district provides a model for application to other transit nodes across the City. Its provisions offer minimal to no off-street parking requirement, maximum allowable parking spaces, and a variety of incentives, (e.g., for designated carpool/vanpool spaces, designated short-term parking, etc.), to further reduce the parking supply.

Policy Direction for Parking Management

The City's Comprehensive Plan addresses parking management in its Future Land Use and Transportation Elements, including these policies:

- Support alternative modes of transportation. Such measures may include, but are not limited to, the provision of sidewalks, bikeways, transit stops, or other facilities to support alternative modes, such as parking management systems and park-and-ride facilities (Future Land Use Policy 6.3.4).
- Use the parking standards of the Downtown Zoning Overlay, as a part of the City's Land Development Regulations, for development/redevelopment projects within the CBD (Transportation Policy 1.6.6).

This second item demonstrates that the City sees value in the expansion of parking management throughout the CBD. A further expansion would apply the same or similar provisions to transit nodes throughout the City.

Urban Design

Character and functionality are what distinguish public spaces from public places. Building on a foundation of pedestrian safety and comfort, visual character, and functional features make public spaces enjoyable, memorable, and desirable in ways that invite people to return for similar experiences.

Current Conditions

The Central Business District is the only part of the City that displays elements of urban form. This is due, in part, to historic development patterns as well as to the downtown overlay district. Its buildings have a consistent physical relationship to sidewalk with the exception of public plazas; are varied in finishes and materials; and incorporate a basic level of transparency into ground floor uses.

Regulations and Guidance for Urban Design

The downtown overlay district and associated design guidance aims to retain urban form and establish a desirable standard for the quality of public spaces within its boundaries. Its provisions address the functionality of the public streetscape for pedestrians and those bound for transit as well as the visual forms and finishes of buildings, including:

- Barrier-free pedestrian access.
- Streetscape, including maintenance agreement.
- Transit shelters.
- Architectural design of buildings, including transparency (windows) on the ground floor.

Policies for Urban Design

The City's Comprehensive Plan specifies a number of policies related to pedestrian connectivity, including:

- Guide the provision and connectivity of pedestrian spaces, the quality of public space and streetscape, and the orientation of primary building entrances (Future Land Use Policy 6.3.1).
- Require the use of an unobstructed pedestrian zone in between the roadway and the building façade along commercial corridors within the Urban Priority Area and Urban Area or some other alternative regulatory criteria that creates a safe and attractive pedestrian environment (Future Land Use Policy 6.3.6).

These policies are not as specific as many others identified in this assessment as transit-friendly, however they provide a basis for the expanded and tailored use of the existing provisions and guidance for the downtown in other transit nodes.

In summary, the City of Jacksonville has a strong foundation for transit-friendly policies and regulations, particularly in the Central Business District or downtown. Current conditions and existing policies generally foster higher residential and employment densities, mixed land use patterns, pedestrian connectivity, parking management, and quality urban design.

Beyond the urban core, development patterns and development regulations continue to serve the automobile. Transit is acknowledged in policies but has not yet become a competitive driver of development location, density, and use, and the associated public infrastructure and parking.

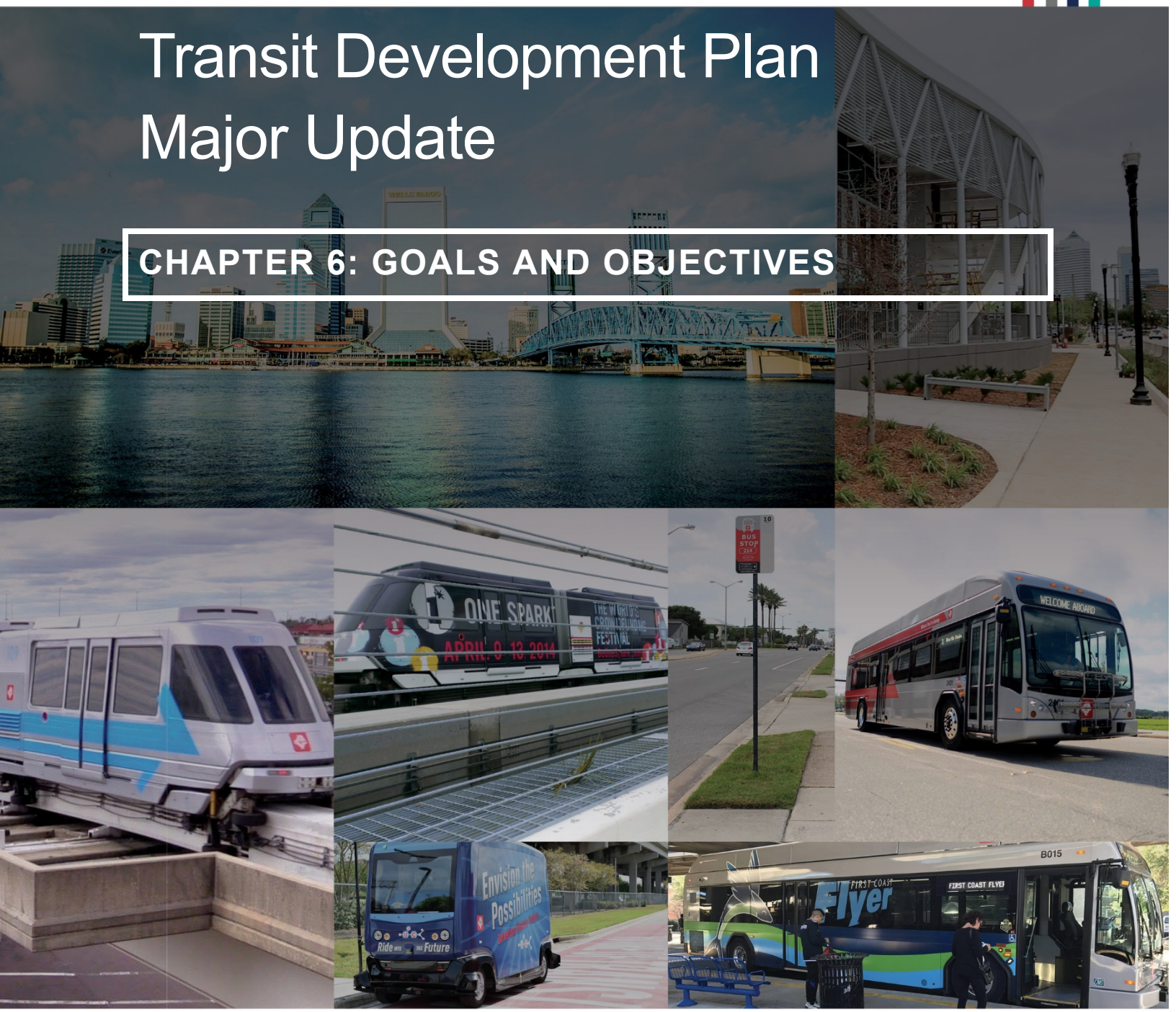
5.9 10-Year Ridership Projections

One of the requirements for a situation appraisal is an estimation of the community's demand for transit service using the planning tools provided by FDOT, or a Department-approved transit demand estimation technique with supporting demographic, land use, transportation, and transit data. The TBEST model was validated for the year 2015 and forecasts were conducted for the year 2030. The GTFS files reflecting the current system were obtained from the JTA while the socioeconomic data was obtained from the North Florida TPO. **Appendix G: Transit Demand Estimation with TBEST** documents the validation process of the TBEST model.

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 6: GOALS AND OBJECTIVES



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6 GOALS AND OBJECTIVES

The vision, mission, core values, and goals articulated below lay forth the parameters and aspirations for the strategic direction of the JTA. These statements of the Agency's values, refined most recently for the Blueprint for Transportation Excellence (2018), serve as a roadmap for the JTA to implement the specific initiatives outlined throughout the rest of this document. Each of these four elements aligns with the needs of the community because they are defined by the needs of the community, as elicited in the Public Involvement Plan (2019) and in the review of state, regional, and local plans undertaken for this TDP.

The statements in this section are taken verbatim from JTA's Blueprint for Transportation Excellence (2018), the Authority's latest strategic plan. A comparison to other agencies' missions and goals affirmed that JTA's mission and goals are consistent in their focus on providing access to a range of affordable transportation options, communicating transparently with their customers, stewarding fiscal and environmental responsibility, and offering opportunities for employee success. Some of the peer plans that were consulted include:

- North Florida TPO's 2040 Long Range Transportation Plan.
- Northeast Florida Regional Council's 2014 Strategic Regional Policy Plan.
- North Florida TPO's 2016 Duval County Transportation Disadvantaged Service Plan.
- City of Jacksonville's 2030 Mobility Plan & 2030 Comprehensive Plan.
- Clay County's 2040 Comprehensive Plan.
- St. Johns County 2016 TDP.

JTA's previous Major and Minor Updates to its TDP were also consulted to ensure internal consistency and progress toward its goals.

6.1 Vision Statement

Universal access to dynamic transportation solutions.

6.2 Mission Statement

To improve Northeast Florida's economy, environment, and quality of life by providing safe, reliable, efficient, and sustainable multimodal transportation services and facilities.

6.3 Core Values

JTA exists to serve its customers and community. JTA is a strategic, market-driven, innovative, and results-focused organization, and we succeed as a team through:

- Professional excellence.
- Personal integrity.
- Fiscal responsibility.
- Accountability for our work.
- A safe work environment.
- Transparency to the public.
- Continuous improvement.

JTA: *We treat our customers and colleagues with dignity and respect.*

6.4 Goals and Objectives

- **Safety and Security:** Ensure safety and security throughout the transportation system and in the Authority work environment.
- **Employee Success:** Strengthen workforce through professional development opportunities that enhance knowledge, skills, and leadership abilities.
- **Customer Satisfaction:** Deliver a superior and reliable customer experience.
- **Financial Stability:** Ensure long-term financial sustainability.
- **Organizational Efficiency and Effectiveness:** Attain the highest level of agency performance.
- **Sustainability:** Advance transportation solutions that support environmental goals and are mindful of the context of our community.
- **Transformative Mobility Solutions:** Deliver innovative transportation choice providing accessible mobility throughout the community.

6.5 Tracking and Monitoring

In order to ensure that JTA fully lives and breathes the above mission and goals, the Agency is well-prepared to track key performance indicators (KPIs) to ensure that these goals are being realized. The JTA Enterprise Metrics Management System (JEMMS), introduced in 2016, is a process that monitors KPIs at agency-wide and individual scales. JEMMS was developed as a customized management tool that aligns numerous metrics to each of the KPIs. The annual performances of each division and of individuals across the Authority are reflected in a scorecard on JEMMS. This scorecard, and metrics tracked therein, help employees identify areas of concern and develop strategies to enhance performance. Tracking and monitoring efforts related to the recommendations of this Transit Development Plan are provided in **Chapter 9: Implementation Plan**.

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 7: SERVICE FRAMEWORK: LONG-TERM SYSTEM CONCEPT

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7 SYSTEM FRAMEWORK: LONG-TERM SYSTEM CONCEPT

7.1 Introduction

This chapter documents the process to develop alternatives for the Jacksonville Transit Authority's (JTA) transit system, proposes implementation recommendations across the Transit Development Plan's (TDP) 10-year horizon, and suggests long-term concepts for further exploration and consideration. Taken together, these recommendations address opportunities to strengthen the agency's existing fixed route services, develop new modes of service including regional rail and automated vehicles, and integrate the agency's many offerings for the benefit of JTA's customers.

Full recommendation details for fixed-route and demand response services are provided in **Appendix J: Recommendation Route Profiles**. Specific route and demand-response zone recommendations are further evaluated, prioritized, and phased into service in **Chapter 8: 10-Year Transit Plan** and the Phasing Plan of **Chapter 9: Implementation Plan**.

7.2 Recommendation Development Process

Recommendations to improve JTA's fixed-route network were developed through a process of detailed route performance evaluation, peer review, fieldwork, outreach to the public and stakeholder engagement, and workshops with JTA employees. This holistic review identified performance highlights and shortcomings among existing routes, opportunities to implement new transit services, and long-term concepts for the future of the system. Methods used to develop recommendations are summarized below.

7.2.1 Route Performance Evaluation

The Comprehensive Operational Analysis associated with this TDP (**Appendix E. Comprehensive Operational Analysis**) evaluated routes against JTA's performance standards, helping to identify opportunities to modify routes to increase their performance. For each fixed route and other JTA services, the project team reviewed the route's performance against JTA standards for metrics such as passengers per revenue hour and farebox recovery rate. Runtimes by timepoint and boarding and alighting patterns by time of day and location were also examined. Route-level summaries of this data and the strengths and weaknesses of each route are documented in **Appendix F: Route Profiles**.

7.2.2 Peer Comparison and Trend Analysis

A peer comparison and trend analysis (**Chapter 3: Existing Transit and Service Evaluation**) compared the service performance of JTA over time and among peer agencies. JTA performs above the peer average in key performance measures such as passengers per revenue mile and passengers per revenue mile with operating expenses consistent with its peer agencies. Notably, the agency has a high number of revenue miles for each vehicle and a lower rate of passenger trips per capita, reflecting the Jacksonville metropolitan area's relatively low density and long travel distances. Over the last three years, productivity of Jacksonville service has declined with a nationwide decrease in transit ridership. However, JTA has seen a smaller percent decrease in systemwide ridership than all but one of its peers. This peer comparison and trend analysis highlighted the need to attract new customers to JTA services or remain an attractive transportation service for existing customers.

7.2.3 Public and Stakeholder Engagement

Project team staff conducted multiple phases of outreach with the public: two initial phases to assist with defining the goals of transit service improvements and a final phase to review draft recommendations. This outreach effort utilized a variety of means to engage with the public, from pop-up events at major transit stations to online surveys to dialog with advisory boards such as the Jacksonville Transportation Advisory Committee (JTAC). Comments from these sources led to the development of service concepts and the refinement of draft recommendations.

The Phase 3 survey asked respondents to rank their support for each recommendation on a Likert scale from 1 (Not Supportive At All) to 5 (Very Supportive). **Table 7-1** shows the average support score for each recommendation. Most recommendations received positive support, with 57 percent receiving an average score of 3.5 or above and 94 percent receiving an average score of 3 or above.

Table 7-1: Average Support Score for Each Recommendation (Phase 3 Survey)

Service Class	Route	Average Score	Sample
First Coast Flyer	Blue Line	3.80	5
Frequent Routes	Route 1 - FSCJ North to Downtown	3.43	14
	Route 3 - Dunn Avenue to Downtown	3.57	14
	Route 5 - No Proposed Changes	1.00	1
	Route 8 - UNF to Downtown	3.20	15
	Route 50 - St. Augustine Road to University Club Estates	3.60	15
Mainline Routes	Route 4 - Soutel Transit Hub, Edward Waters College, Downtown	3.46	13
	Route 10 - Regency Square Mall to South Beach Parkway	3.27	15
	Route 11 - Downtown to Gateway Plaza via Phoenix Avenue	3.55	11
	Route 12 - Downtown to Soutel Transit Hub	3.63	8
	Route 14 - Downtown to Roosevelt Square	3.69	13
	Route 15 - Downtown, Herlong Road, Cecil Airport, Amazon Fulfillment Center	3.50	12
	Route 16 - 103rd Street, Roosevelt Square, Downtown	3.40	15
	Route 17 - Downtown to Marbon Park & Ride	3.75	12
	Route 18 - Eliminated	---	0
	Route 19 - Downtown to Regency Square Mall	3.25	12
	Route 51 - FSCJ Kent to Gateway Mall	3.67	9
	Route 53 - 103rd Street, Cecil Airport, Downtown	3.46	13
Connector Routes	Route 21 - Downtown to Gateway Plaza	3.44	9
	Route 22 - Downtown to Soutel Transit Hub	3.15	13
	Route 23 - Arlington/Merrill Road, Southside/Avenue Mall	3.83	12
	Route 24 - Jacksonville Beach to Mayport Village	3.73	11
	Route 26 - Oakleaf to Avenues	3.89	9
	Route 27 - Avenues to Downtown	3.50	10
	Route 28 - Mandarin to FSCJ South	3.36	11

Service Class	Route	Average Score	Sample
	Route 30 - Eliminated (Cecil Field to Ricker Road)	3.00	12
	Route 31 - Downtown to Edward Waters College via Talleyrand Avenue	3.58	12
	Route 32 - Downtown to Paxon School	3.67	12
	Route 33 - Art Museum Drive to Parental Home Road	3.23	13
Limited Connector Routes	Route 80 (NAS Shuttle)	3.57	7
	Route 82 (Amazon Shuttle)	3.40	5
	Route 84 (Philips)	3.80	5
	Route 85 (Highlands)	3.67	6
	Route 86 (Northside)	2.29	7
Express Routes	Route 200 - Downtown to Julington Creek	3.29	7
	Route 201 - Black Creek Park & Ride to Downtown	1.00	1
	Route 202 - Mayport Naval Station, Regency Square Mall, Downtown	3.17	6
	Route 205 - Downtown to South Beach	3.00	9
	Route 206 (new) - Downtown to Jacksonville Int'l Airport	3.20	5
Clay Community Transportation (CCT) Routes	Blue - Pier Station, Green Cove Springs, Orange Park, NAS Jacksonville	3.80	5
	Red - St. Vincent's Medical Center (Clay County), 103rd Street	3.80	5
ReadiRide	Argyle Forest	4.00	7
	Eastside - South	3.86	7
	Fleming Island	3.86	7
	Golden Glades - The Woods	3.57	7
	Jacksonville Heights	3.57	7
	Middleburg	3.86	7
	Sandalwood	3.86	7
	Sherwood Forest	3.71	7
	Southside	3.43	7

Some of the recommendations modified as a result of public feedback include:

- Increasing the span of service on the realigned Route 28 to match the span of service for the Route 8 segments it replaces.
- Introducing a local service underlying First Coast Flyer Red.
- Adding adjacent ReadiRide zones to reduce walk distances to transit along Beach Boulevard.

Figure 7-1: Outreach on Route Recommendations at Gateway Transit Hub, June 2019

7.2.4 Workshops with JTA Employees

The project team held a workshop for JTA employees on March 28 and March 29, 2019, to review initial recommendations for service and develop additional service concepts. This exchange of ideas proceeded throughout the project, with additional JTA employees and customer service staff providing feedback on the strengths and weaknesses of existing routes to identify opportunities to improve service. A follow-up workshop was conducted with JTA staff on May 1, 2019, to review draft final recommendations before the final phase of public outreach.

7.3 Principles for Recommendations

To guide the development of recommendations, the project team solicited input from the public and JTA staff on priorities for transit improvements. Based on this input and best practices in transit service planning, the project team developed its recommendations for fixed-route services based on the following principles:

- **Integrate transportation modes:** Recommendations should take advantage of frequent service to be provided by the Ultimate Urban Circulator (U^2C) system within and around Downtown Jacksonville. After expansion of the U^2C system, it will be appropriate to truncate certain crosstown routes at the U^2C stations rather than continuing service through downtown and to Jacksonville Regional Transportation Center (JRTC). Routes should also provide options for customers to transfer to the First Coast Flyer network, ReadiRide services, and forthcoming commuter rail services for even faster service to major destinations.
- **Use innovative methods to serve customers:** Neighborhoods may be served more efficiently and effectively by demand-response services like ReadiRide and Beachside Buggies than fixed route buses. Customers should be provided opportunities to use new mobility modes such as demand-response service or automated vehicles to meet their first- and last-mile needs.
- **Match levels of service to demand:** In areas with higher ridership potential, short-turns (trips on a route that do not travel the route's full extent) with more frequent service should be layered onto existing routes. Feedback from Phase 1 of public outreach indicated a desire to increase frequency on existing routes rather than expand coverage, though customers were also wary of removing service from corridors that already enjoyed transit service.

- **Simplify services:** Routes should be readily understood by customers. This can be achieved by maintaining the directness of routes and limiting the use of branching patterns, where alternating trips of a route use different alignments to serve low-demand areas with less frequent service. Routes should also be simplified by minimizing deviations, which also has the benefit of improving a route's runtime. Where service on a corridor must address several travel markets, such as commuters at peak hour and students or shoppers traveling at midday, overlapping local and express services may be warranted.
- **Improve connections to jobs:** Job centers outside of Downtown Jacksonville should be served by both radial and crosstown routes to maximize access to jobs. Industrial areas may require trips timed to meet common shift start times or flexible on-demand service. Additional Express Select routes can address markets for transit service from Duval's neighboring counties into job centers in downtown Jacksonville.
- **Provide stronger crosstown connections:** To provide greater accessibility to jobs and destinations in the Jacksonville region, crosstown routes should make connections to First Coast Flyer routes where possible. In Jacksonville's urban core, new east-west service along 8th Street and 21st Street should provide additional opportunities for dense neighborhoods to connect to First Coast Flyer Green and major job centers like UF Health Jacksonville.
- **Add new all-day service when appropriate:** Additional midday and evening service can reach customers whose workdays start or end outside of traditional hours while providing greater access to transit-dependent customers who make trips during the day. Existing underlying service should have spans matching that of First Coast Flyer service to ensure the local underlying service remains available whenever First Coast Flyer service is operating. Express and Limited Connector routes with only peak service should be further evaluated for all-day service where no local service exists.

7.4 10-Year TDP Alternatives

Fixed-route and demand-response recommendations were developed through a series of service planning sessions and workshops which utilized the qualitative and quantitative inputs developed through earlier project task work and other recent planning and development efforts. These unconstrained recommendations, which were vetted through additional public outreach and stakeholder input, will be phased into service over a 10-year period based upon expected ridership and performance impacts and subject to JTA budget constraints. The maps that follow summarize the alignments and levels of service provided by these recommendations at the systemwide level. These tables and maps represent service if all recommendations were implemented within the plan's 10-year implementation horizon.

Figure 7-2 through **Figure 7-7** illustrate alignments of routes by service type. Given the frequency improvements proposed, several routes have changed categories (e.g., from "Mainline" to "Frequent"). **Figure 7-8** highlights locations of existing and proposed ReadiRide services. **Figure 7-9** depicts headways by route and branch, illustrating where more frequent service can be found. Characteristics of each fixed-route service are presented in **Table 7-2**, with headways and spans of service shown in **Table 7-3** and **Table 7-4**, respectively. Additional detail and justifications for route proposals may be found in **Appendix J: Recommendation Route Profiles**.

Figure 7-2: Frequent Routes

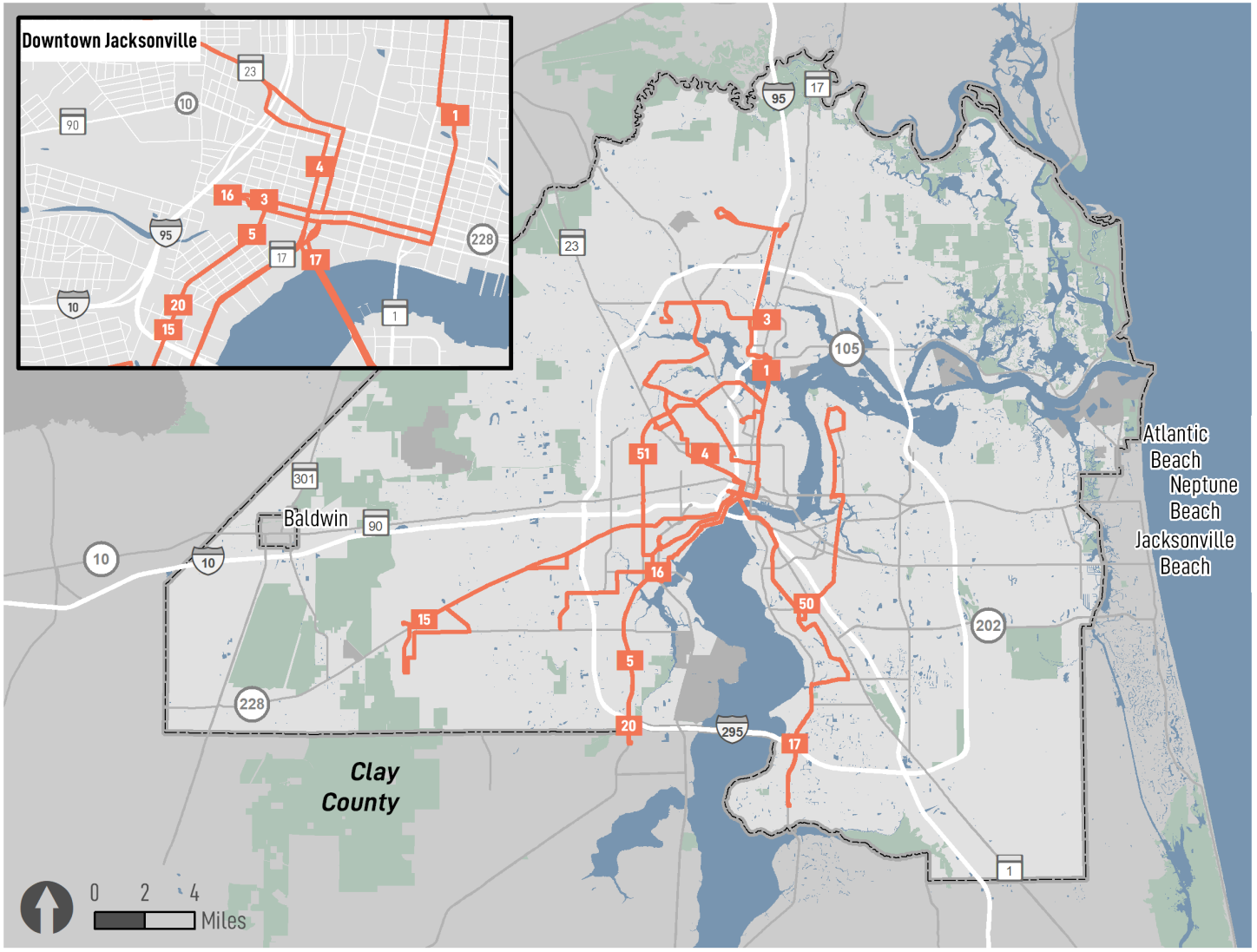
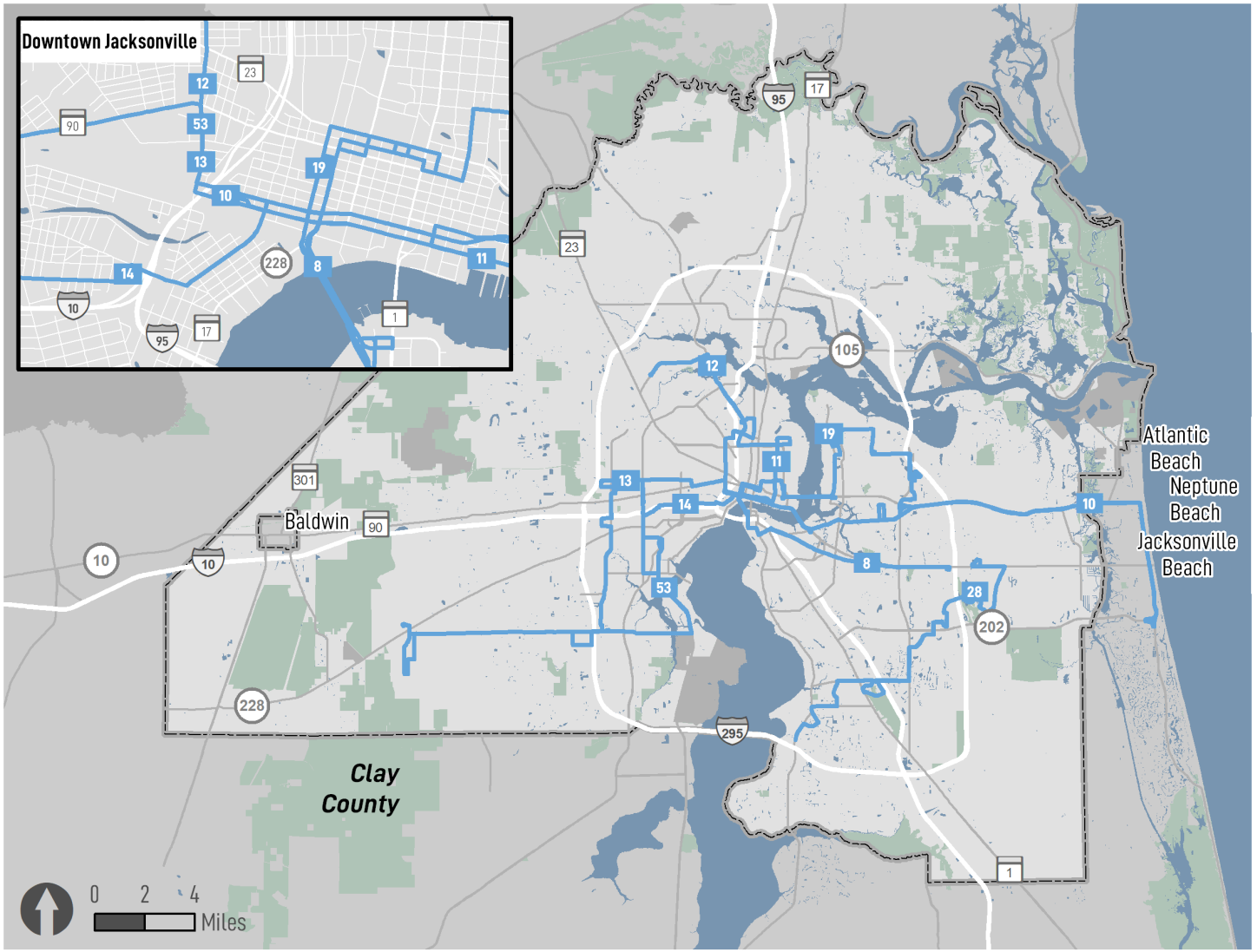


Figure 7-3: Mainline Routes



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Mainline Route

8 - Beach/Town Center
10 - Atlantic
11 - A Phillip Randolph
12 - Myrtle/Lem Turner
13 - Commonwealth/Lane
14 - Edison
19 - Arlington
28 - Sunbeam/Southside
53 - Commonwealth/Cassat

Route Type Characteristics:
Frequency: 30 min
Service Days: Every day
Span: 6:00 a.m. to 10:30 p.m.
Stop Spacing: 5 - 7 per mi.

Figure 7-4: Connector Routes

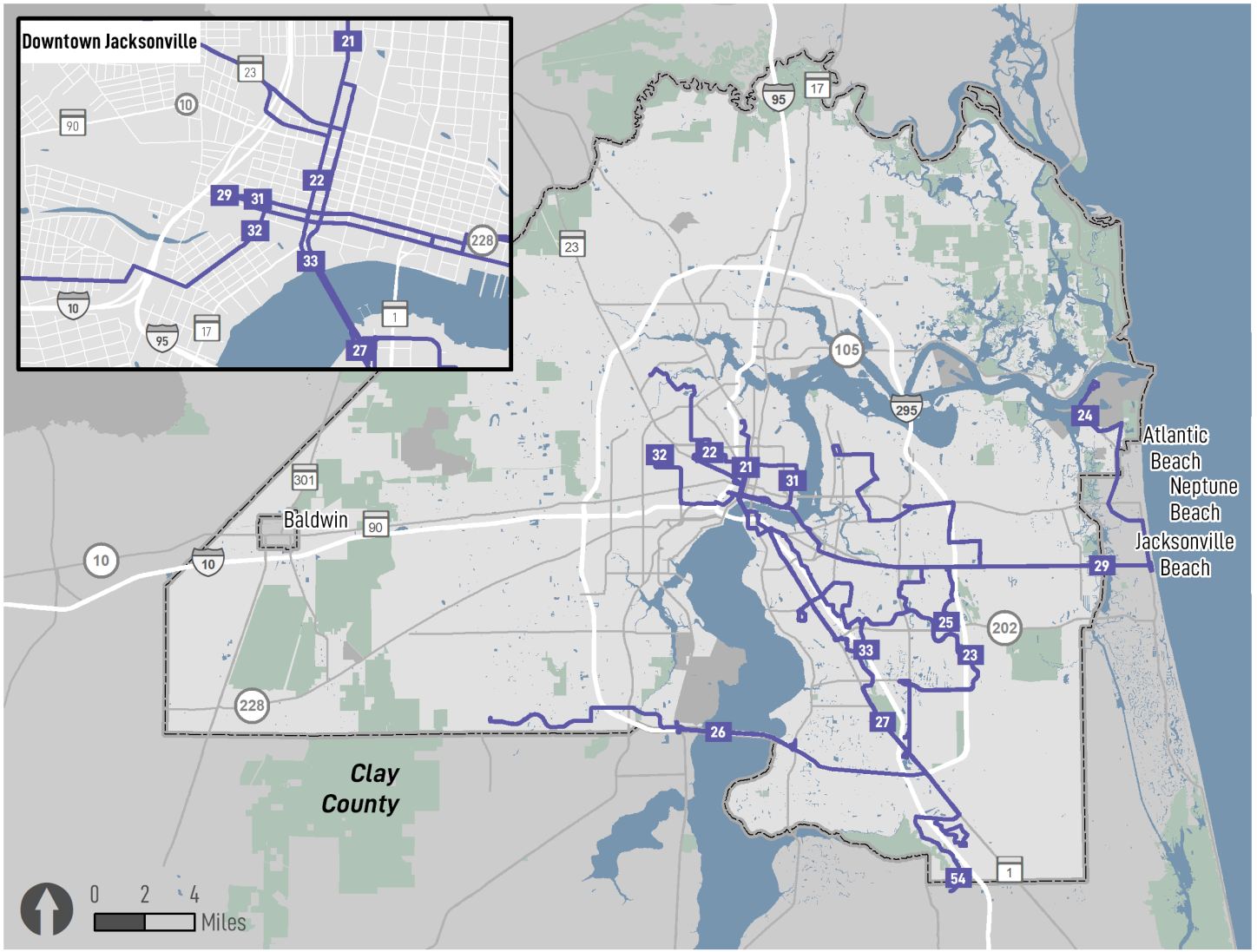
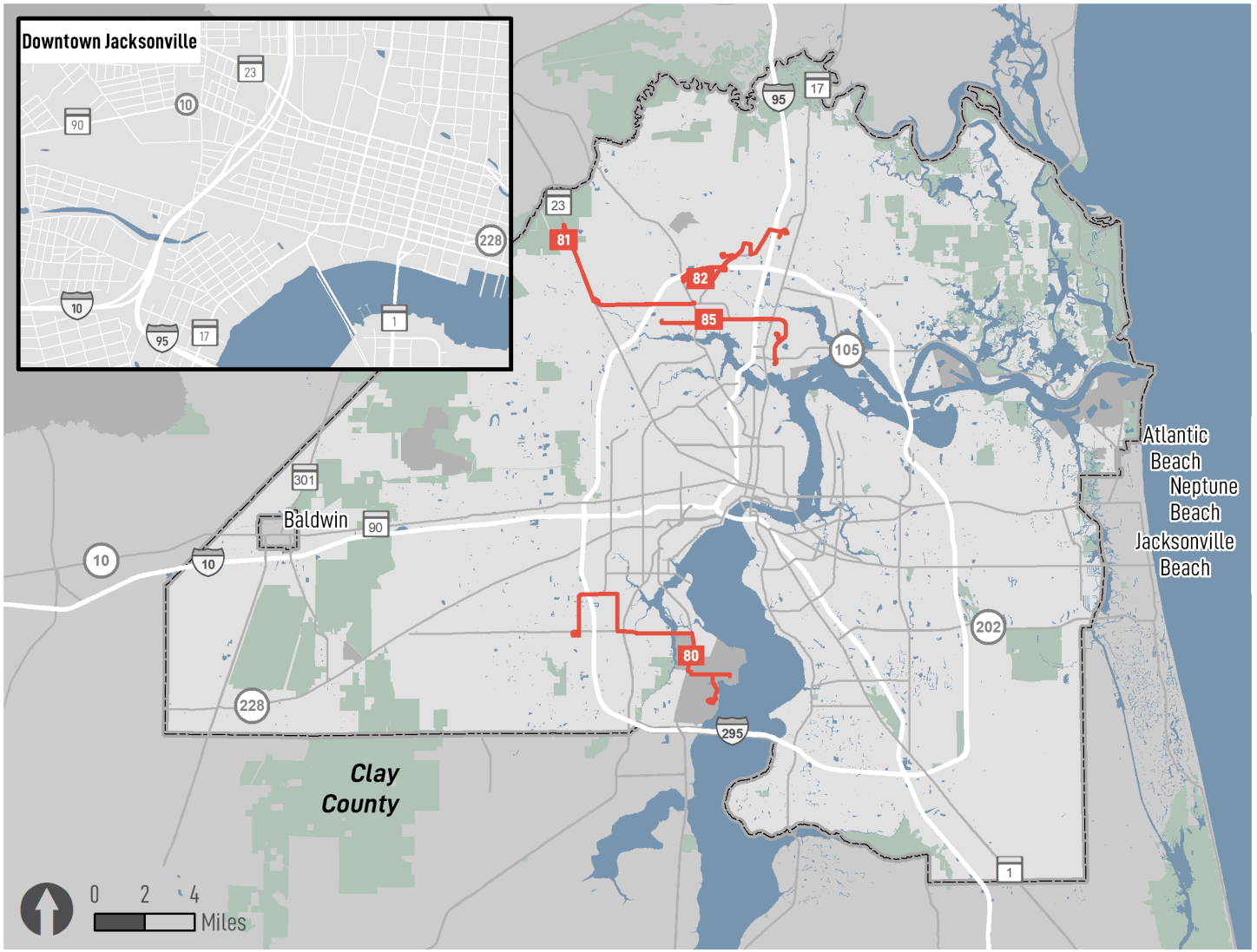


Figure 7-5: Limited Connector Routes



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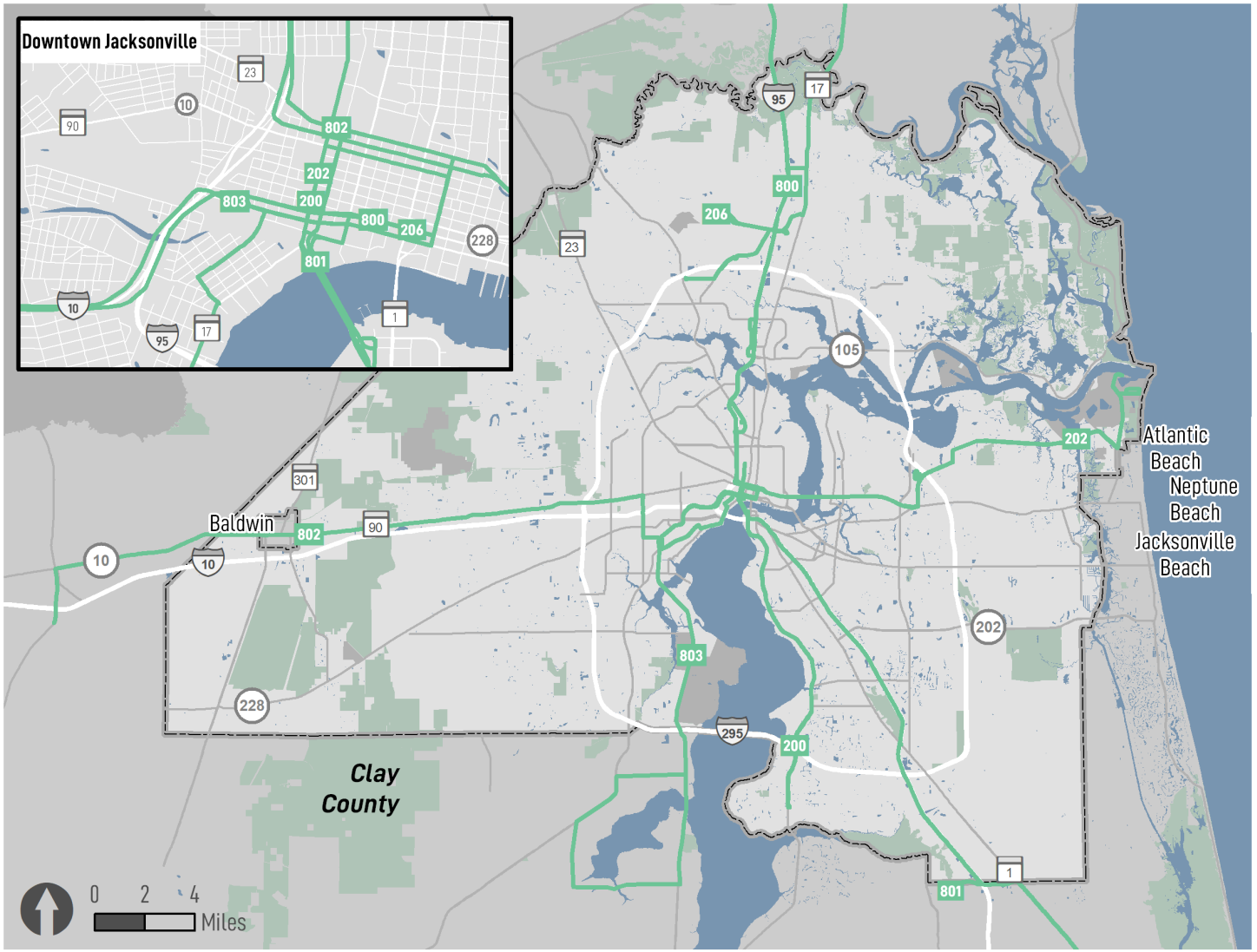
Limited Connector Route

80 - NAS Shuttle
81 - Dinsmore Shuttle
82 - Amazon Shuttle
85 - Highlands/Busch Dr.

Route Type Characteristics:
Frequency: 4 - 5 trips per day
Service Days: Weekday only
Span: Peak hours only
Stop Spacing: Limited stops

Figure 7-6: Express and Express Select Routes



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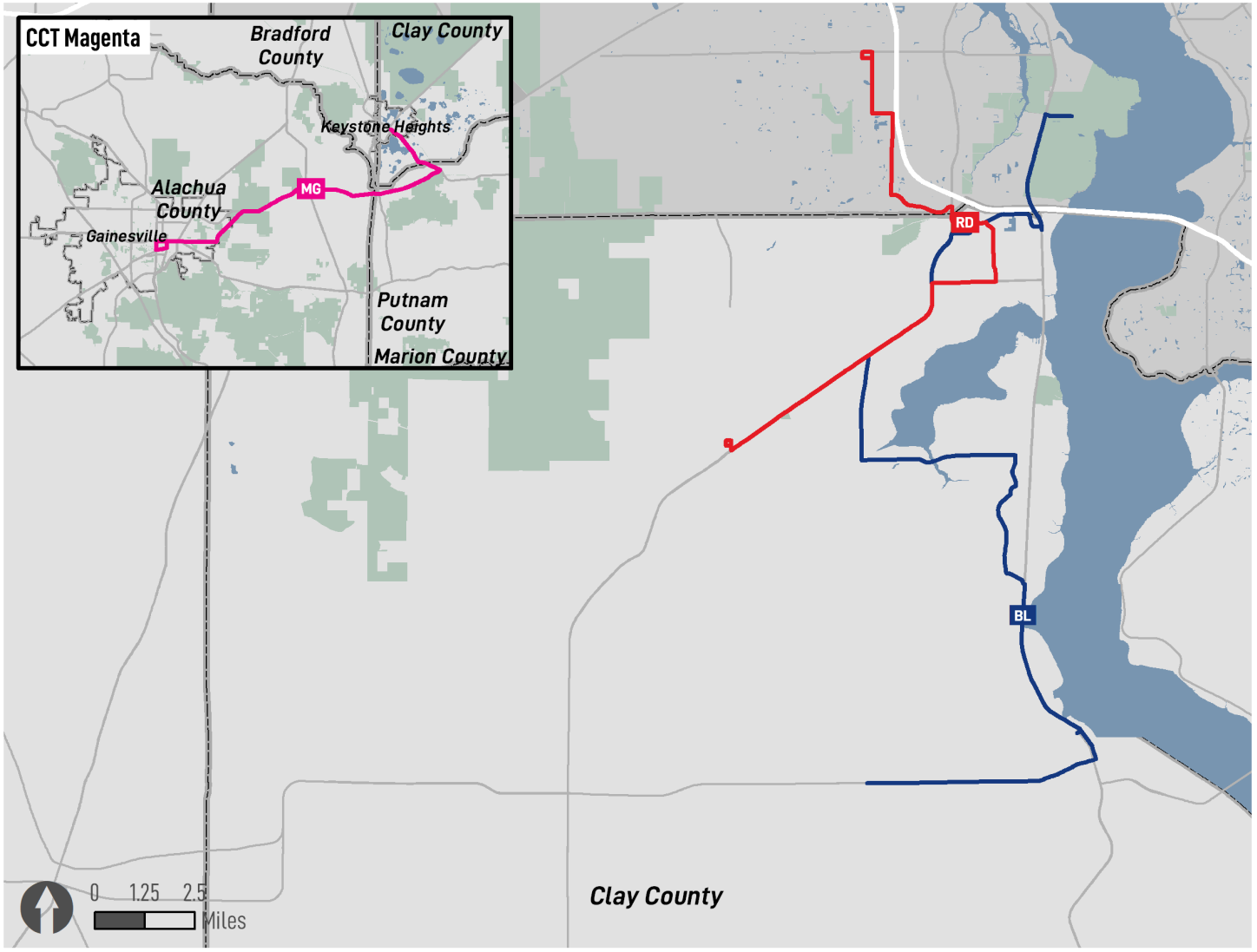
Express and Express Select Route

200 - Mandarin Express
202 - Mayport Express
206 - Airport Express
800 - Nassau Express Select
801 - St. John's Express Select
802 - Baker Express Select
803 - Clay Express Select

Route Type Characteristics:
Frequency: 4 - 5 trips per day
Service Days: Weekday only
Span: Peak hours only
Stop Spacing: Limited stops

Figure 7-7: Clay Community Transportation Routes



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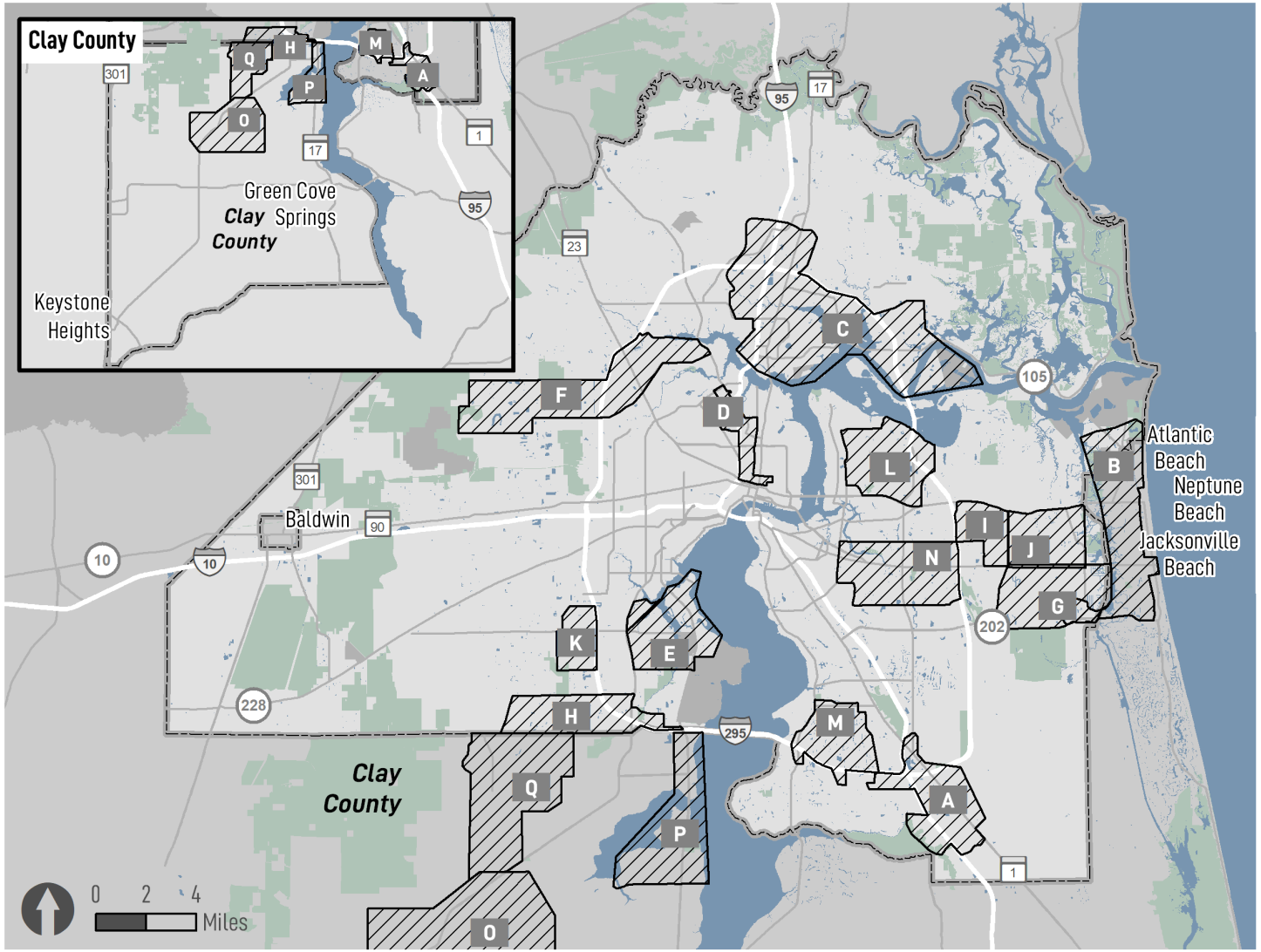
Clay Community Transportation Routes

RD - Red
BL - Blue
MG - Magenta

Route Type Characteristics:
Frequency: 60 min*
Service Days: Weekdays only
Span: 5:45 a.m. to 7:00 p.m.
Stop Spacing: 1 - 2 per mi.

*CCT Magenta only makes select weekday trips

Figure 7-8: ReadiRide Zones



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ReadiRide Zones

A - Southeast Zone
B - Beaches Zone
C - Highlands Zone
D - Northside Zone
E - Ortega Zone
F - Northwest zone
G - Eastside - South Zone
H - Argyle Forest Zone
I - Sandalwood Zone
J - Golden Glades - The Woods Zone
K - Jacksonville Heights Zone
L - Arlington Zone
M - Mandarin Zone
N - Southside Zone
O - Middleburg Zone
P - Fleming Island Zone
Q - Oakleaf Plantation Zone

Route Type Characteristics:
Frequency: By reservation
Service Days: Monday - Saturday
Span: 6:00 a.m. - 7:00 p.m.
Stop Spacing: By zone

Figure 7-9: Peak-Hour Headways by Route and Branch, Proposed Services

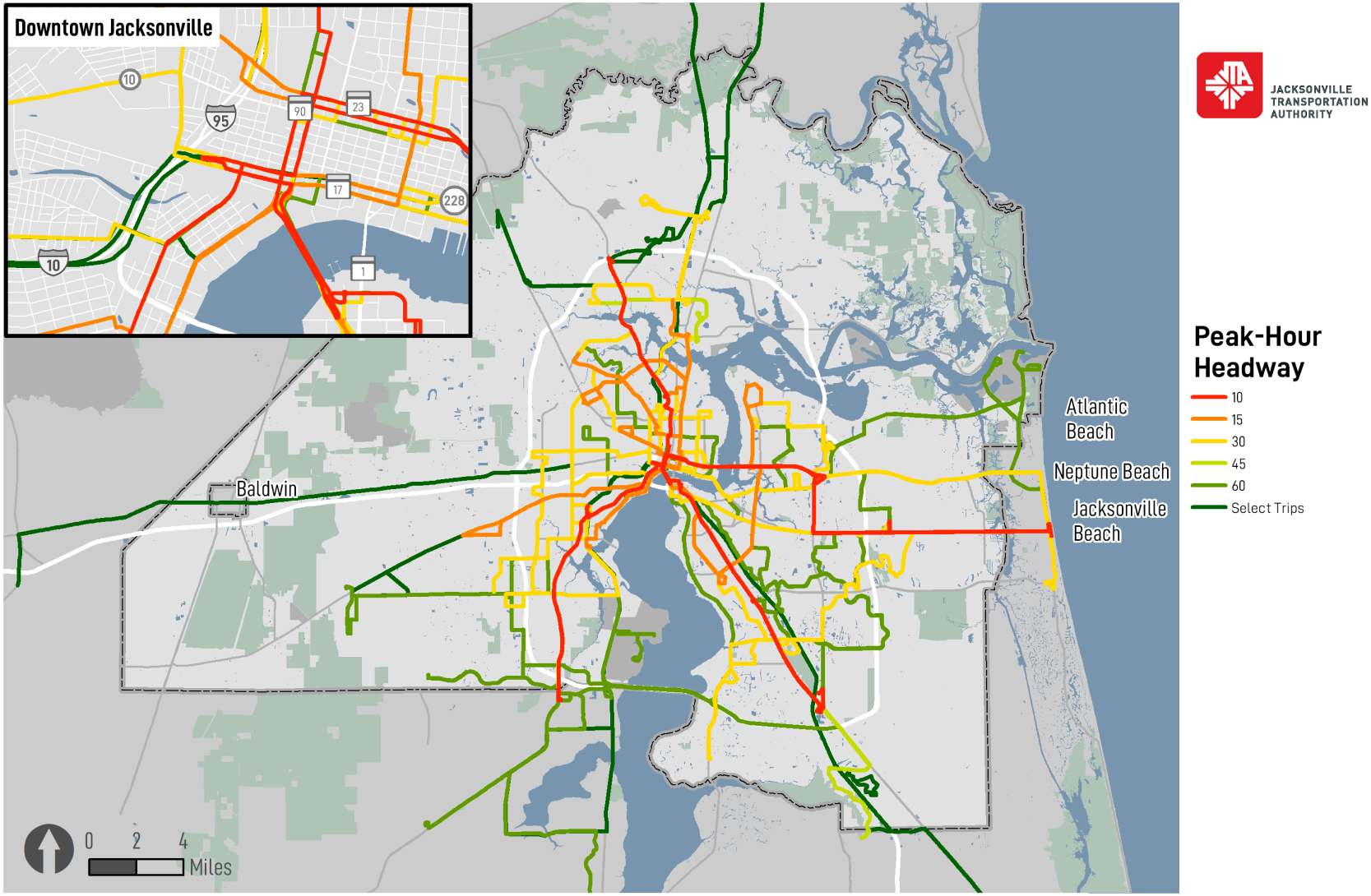


Table 7-2: Route Characteristics

Service Class	Route	Route Name	Destinations
First Coast Flyer	Green	Green Line	Downtown, Armsdale Park & Ride
	Blue	Blue Line	Downtown, Avenues Mall, Convention Center
	Red	Red Line	Downtown, A - Regency Square, B - Jax Beach
	Orange	Orange Line	Downtown, Orange Park Mall
Frequent Routes	1	North Main	Downtown, FSCJ North, Airport
	3	Moncrief	Downtown, Dunn Avenue
	4	Kings	Downtown, Soutel Transit Hub, Edward Waters College
	5	Park/Blanding	Downtown, A - Orange Park Mall, B - 103rd Street
	15	Post/Normandy	Downtown, Herlong Road, Cecil Airport, Amazon Fulfillment Center
	16	Riverside/Wilson	Downtown, 103rd Street, Roosevelt Square
	17	St. Augustine	Downtown, Marbon Park & Ride
	50	University	St. Augustine Road, University Club Estates
	51	Edgewood	FSCJ Kent, Amtrak, Gateway Mall
Mainline Routes	8	Beach/Town Center	Downtown, St. Johns Square
	10	Atlantic	Downtown, Regency Square Mall, Atlantic Boulevard, South Beach Parkway
	11	A Philip Randolph	Downtown, Gateway Plaza via Phoenix Avenue
	12	Myrtle/Lem Turner	Downtown, Soutel Transit Hub
	13	Commonwealth/Lane	Downtown, 103rd Walmart
	14	Edison	Downtown, FSCJ Kent, Roosevelt Square
	19	Arlington	Downtown, Regency Square Mall, Woodland Acres
	28	Sunbeam/Southside	Mandarin, St. John's Town Center, UNF, FSCJ South
	53	Commonwealth/Cassat	Downtown, 103rd Street, Cecil Airport
Connector Routes	20	Park/Blanding	Downtown, Orange Park Mall
	21	Boulevard/Gateway	Downtown, Gateway Plaza
	22	Avenue B	Downtown, Soutel Transit Hub
	23	Townsend/Southside	Arlington/Merrill Road, Southside/Avenue Mall
	24	Mayport	Jacksonville Beach, Mayport Village
	25	San Jose	Southpoint, St. John's Square
	26	Oakleaf/Buckman	Oakleaf, Avenues
	27	Philips/Avenues	Downtown, Avenues Mall
	29	Beach	Downtown, South Beach
	31	Talleyrand	Downtown, Edward Waters College via Talleyrand Ave.
	32	McDuff	Downtown, Paxon School
	33	Spring Park/Philips	Downtown, Southpoint
	54	Philips/Gran Bay	Avenues Mall, Flagler Center, Durbin Park

Service Class	Route	Route Name	Destinations
Limited Connector Routes	80	NAS Shuttle	103rd Street, NAS Jacksonville
	81	Dinsmore Shuttle	Dunn Avenue, Old Kings Road
	82	Amazon Shuttle	Amazon, Armsdale, River City Marketplace
	85	Highlands/Busch Dr	Zoo, FSCJ North
Express Routes	200	Mandarin Express	Downtown, Julington Creek
	202	Mayport Express	Downtown, Mayport Naval Station, Regency Square Mall
	206	Airport Express	Downtown, Jacksonville International Airport
Express Select Routes		Nassau Express Select	Downtown, Armsdale Road, Yulee
		St. John's Express Select	Downtown, St. John's County Government Complex, Durbin Park
		Baker Express Select	Downtown, Macclenny, Baldwin, FSCJ Kent
		Clay Express Select	Downtown, Black Creek Park & Ride, Orange Park
Clay Community Transportation (CCT) Routes		CCT Red	St. Vincent's Medical Center (Clay County), 103rd Street
		CCT Blue	Pier Station, Green Cove Springs, Orange Park, NAS Jacksonville
ReadiRide		Southeast Zone	Avenues, Flagler Center
		Beaches Zone	Jacksonville Beach Area
		Highlands Zone	Jacksonville Airport Vicinity, Zoo
		Northside Zone	Gateway Transit Hub, FSCJ Downtown
		Ortega Zone	Ortega
		Northwest Zone	Sherwood Forest, Westside Industrial Park
		Eastside - South Zone	Mayo Clinic
		Argyle Forest Zone	Argyle Forest, Chimney Lakes
		Sandalwood Zone	Sandalwood
		Golden Glades - The Woods Zone	Golden Glades – The Woods
		Jacksonville Heights Zone	103rd Street, Jacksonville Heights
		Arlington Zone	Arlington
		Mandarin Zone	Mandarin
		Southside Zone	Beach Boulevard, Brooks Rehabilitation Hospital, St. Johns Plaza
		Middleburg Zone	Middleburg, St. Vincent’s Medical Center Clay County
		Fleming Island Zone	Fleming Island
		Oakleaf Plantation Zone	Oakleaf Plantation, St. Vincent’s Medical Center Clay County

Table 7-3: Headways for JTA Services as Proposed

Service Class	Route	Weekday Peak	Weekday Off-Peak	Saturday Core	Sunday Core
First Coast Flyer	Green	10 / 15	15 / 30	30	30
	Blue	10 / 15	15 / 30	30	30
	Red	10 / 15	15	30	30
	Orange	10 / 15	15 / 30	30	30
Frequent Routes	1	15 / 30	15 / 30	30 / 60	30 / 60
	3	15 / 30	15 / 30	30	30
	4	15 / 30	30 / 60	60	60
	5	15 / 30	15 / 30	30 / 60	30 / 60
	15	15 / Select Trips	15 / Select Trips	30	30
	16	15 / 30	15 / 30	30 / 60	30 / 60
	17	15 / 30	15 / 30	30 / 60	30 / 60
	50	15	15	30	30
	51	15 / 30	15 / 30	30 / 60	30 / 60
Mainline Routes	8	30	30	30	30
	10	30	30	60	60
	11	30	30	60	60
	12	30	30	60	60
	13	30	30	60	60
	14	30	30	60	60
	19	30	30	45	45
	28	30	30	60	60
	53	30 / 60	30 / 60	60	60
Connector Routes	21	60	60	60	60
	22	60	60	60	60
	23	60	60	60	60
	24	60	60	60	60
	25	60	60	60	60
	26	60	60	60	60
	27	60	60	60	60
	29	60	60	60	60
	31	60	60	60	
	32	60	60	60	
	33	60	60	60	
	54	45 / Select Trips	60	60	

Service Class	Route	Weekday Peak	Weekday Off-Peak	Saturday Core	Sunday Core
Limited Connector Routes	80	60	60		
	81	4 trips	8 trips	7 trips	2 trips
	82	10	60	Peak: 10 Off-Peak: 60	Peak: 10 Off-Peak: 60
	85	45	45	45	
Express Routes	200	60	60		
	202	60	60	60	
	206	30	30	60	60
Express Select Routes	Nassau Express Select	5 trips			
	St. John's Express Select	5 trips			
	Baker Express Select	5 trips			
	Clay Express Select	5 trips			
Clay Community Transportation (CCT) Routes	CCT Red	60	60		
	CCT Blue	60	60		
	CCT Magenta	4 trips	2 trips		
ReadiRide	Southeast Zone	By reservation	By reservation	By reservation	
	Beaches Zone	By reservation	By reservation	By reservation	
	Highlands Zone	By reservation	By reservation	By reservation	
	Northside Zone	By reservation	By reservation	By reservation	
	Ortega Zone	By reservation	By reservation	By reservation	
	Northwest Zone	By reservation	By reservation	By reservation	
	Eastside - South Zone	By reservation	By reservation	By reservation	
	Argyle Forest Zone	By reservation	By reservation	By reservation	
	Sandalwood Zone	By reservation	By reservation	By reservation	
	Golden Glades - The Woods Zone	By reservation	By reservation	By reservation	
	Jacksonville Heights Zone	By reservation	By reservation	By reservation	
	Arlington Zone	By reservation	By reservation	By reservation	
	Mandarin Zone	By reservation	By reservation	By reservation	
	Southside Zone	By reservation	By reservation	By reservation	
	Middleburg Zone	By reservation	By reservation	By reservation	
	Fleming Island Zone	By reservation	By reservation	By reservation	
	Oakleaf Plantation Zone	By reservation	By reservation	By reservation	

Table 7-4: Approximate Spans of Service for JTA Services as Proposed

Service Class	Route	Weekday	Saturday	Sunday
First Coast Flyer	Green	4:10 a.m. - 1:00 a.m.	5:10 a.m. – 1:00 a.m.	5:10 a.m. – 11:00 p.m.
	Blue	4:10 a.m. - 1:00 a.m.	5:10 a.m. – 1:00 a.m.	5:10 a.m. – 11:00 p.m.
	Green	4:10 a.m. - 1:00 a.m.	5:10 a.m. – 1:00 a.m.	5:10 a.m. – 11:00 p.m.
	Orange	4:10 a.m. - 1:00 a.m.	5:10 a.m. – 1:00 a.m.	5:10 a.m. – 11:00 p.m.
Frequent Routes	1	4:15 a.m. - 12:45 a.m.	4:30 a.m. - 1:00 a.m.	5:00 a.m. - 10:45 p.m.
	3	4:30 a.m. - 12:30 a.m.	5:45 a.m. - 12:45 a.m.	4:45 a.m. - 10:30 p.m.
	4	4:15 a.m. - 12:30 a.m.	5:15 a.m. - 12:45 a.m.	5:00 a.m. - 9:45 p.m.
	5	4:00 a.m. - 1:00 a.m.	5:00 a.m. - 12:30 a.m.	4:45 a.m. - 10:45 p.m.
	15	4:15 a.m. - 1:00 a.m.	4:30 a.m. - 1:15 a.m.	5:00 a.m. - 10:00 p.m.
	16	4:45 a.m. - 11:00 p.m.	5:45 a.m. - 11:45 p.m.	6:30 a.m. - 10:15 p.m.
	17	4:45 a.m. - 12:00 a.m.	5:45 a.m. - 11:45 p.m.	5:00 a.m. - 9:45 p.m.
	50	4:15 a.m. - 12:15 a.m.	6:15 a.m. - 12:00 a.m.	5:15 a.m. - 9:45 p.m.
	51	4:45 a.m. - 11:00 p.m.	6:00 a.m. - 11:45 p.m.	5:45 a.m. - 10:30 p.m.
Mainline Routes	8	4:15 a.m. - 1:00 a.m.	5:00 a.m. - 12:45 a.m.	4:45 a.m. - 11:15 p.m.
	10	4:00 a.m. - 12:00 a.m.	4:15 a.m. - 1:30 a.m.	5:45 a.m. - 11:15 p.m.
	11	5:15 a.m. - 11:30 p.m.	5:45 a.m. - 11:30 p.m.	6:30 a.m. - 10:30 p.m.
	12	4:30 a.m. - 12:45 a.m.	5:00 a.m. - 12:45 a.m.	6:15 a.m. - 10:30 p.m.
	13	4:15 a.m. - 1:00 a.m.	5:00 a.m. - 1:00 a.m.w	6:00 a.m. - 11:00 p.m.
	14	5:00 a.m. - 11:30 p.m.	5:30 a.m. - 12:15 a.m.	6:15 a.m. - 10:30 p.m.
	19	4:15 a.m. - 1:00 a.m.	5:15 a.m. - 1:00 a.m.	5:30 a.m. - 11:00 p.m.
	28	4:15 a.m. - 1:00 a.m.	5:00 a.m. - 12:45 a.m.	4:45 a.m. - 11:15 p.m.
	53	4:30 a.m. - 12:00 a.m.	6:00 a.m. - 12:00 a.m.	4:45 a.m. - 10:00 p.m.
Connector Routes	21	5:45 a.m. - 9:30 p.m.	6:00 a.m. - 9:30 p.m.	6:30 a.m. - 7:15 p.m.
	22	4:45 a.m. - 11:45 p.m.	5:45 a.m. - 12:00 a.m.	6:00 a.m. - 11:00 p.m.
	23	4:30 a.m. - 11:30 p.m.	5:30 a.m. - 11:30 p.m.	5:30 a.m. - 9:15 p.m.
	24	6:15 a.m. - 9:00 p.m.	6:30 a.m. - 8:30 p.m.	7:15 a.m. - 6:00 p.m.
	25	5:15 a.m. - 10:45 p.m.	5:30 a.m. - 11:00 p.m.	6:00 a.m. - 10:45 p.m.
	26	5:30 a.m. - 9:15 p.m.	6:30 a.m. - 9:15 p.m.	7:30 a.m. - 8:15 p.m.
	27	5:45 a.m. - 10:15 p.m.	7:30 a.m. - 10:15 p.m.	7:30 a.m. - 8:15 p.m.
	29	4:15 a.m. - 1:00 a.m.	5:15 a.m. - 1:00 a.m.	5:15 a.m. - 11:00 p.m.
	31	6:30 a.m. - 9:15 a.m.; 2:30 p.m. - 6:15 p.m.	6:30 a.m. - 9:30 a.m.; 2:30 p.m. - 6:30 p.m.	
	32	6:15 a.m. - 8:15 p.m.	6:15 a.m. - 8:15 p.m.	
	33	5:45 a.m. - 7:45 p.m.	6:45 a.m. - 6:30 p.m.	
	54	6:00 a.m. - 6:00 p.m.	6:00 a.m. - 6:00 p.m.	
Limited Connector Routes	80	6:00 a.m. - 9:00 a.m.; 3:00 p.m. - 6:00 p.m.		
	81	5:00 a.m. - 7:30 p.m.	5:45 a.m. - 6:45 p.m.	5:45 a.m. - 6:00 a.m.; 6:15 p.m. - 6:30 p.m.

Service Class	Route	Weekday	Saturday	Sunday
	82	4:30 a.m. - 7:30 a.m.; 11:00 a.m. - 1:00 p.m.; 5:30 p.m. - 6:30 p.m.	4:30 a.m. - 7:30 a.m.; 11:00 a.m. - 1:00 p.m.; 5:30 p.m. - 6:30 p.m.	4:30 a.m. - 7:30 a.m.; 11:00 a.m. - 1:00 p.m.; 5:30 p.m. - 6:30 p.m.
	85	6:30 a.m. - 10:45 a.m.; 1:30 p.m. - 6:30 p.m.	6:30 a.m. - 10:45 a.m.; 1:30 p.m. - 6:30 p.m.	
Express Routes	200	6:00 a.m. - 7:00 p.m.		
	202	4:45 a.m. - 6:00 p.m.	6:30 a.m. - 5:15 p.m.	
	206	6:00 am - 9:30 am; 3:00 pm - 7:30 pm		
Express Select Routes	Nassau Express Select	6:10 a.m. - 8:15 a.m.; 4:20 p.m. - 7:20 p.m.		
	St. John's Express Select	6:10 a.m. - 8:15 a.m.; 4:20 p.m. - 7:20 p.m.		
	Baker Express Select	6:10 a.m. - 8:15 a.m.; 4:20 p.m. - 7:20 p.m.		
	Clay Express Select	6:10 a.m. - 8:15 a.m.; 4:20 p.m. - 7:20 p.m.		
Clay Community Transportation (CCT) Routes	CCT Red	5:45 a.m. - 7:00 p.m.		
	CCT Blue	5:45 a.m. - 7:00 p.m.		
	CCT Magenta	6:15 a.m. - 7:15 p.m.		

Service Class	Route	Weekday	Saturday	Sunday
ReadiRide	Southeast Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Beaches Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Highlands Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Northside Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Ortega Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Northwest Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Eastside - South Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Argyle Forest Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Sandalwood Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Golden Glades - The Woods Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Jacksonville Heights Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Arlington Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Mandarin Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Southside Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Middleburg Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Fleming Island Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	
	Oakleaf Plantation Zone	6:00 a.m. - 7:00 p.m.	6:00 a.m. - 7:00 p.m.	

7.5 Long-Term System Concepts

This TDP includes many recommendations to improve the performance of JTA's fixed-route bus service, which forms the core of the transit network. In the next 10 years, additional transportation improvements in the region and continued evolution of transportation technology will further change the landscape of transportation in greater Jacksonville. This TDP envisions a range of long-term concepts for the evolution of the JTA transit system, from expansion of the First Coast Flyer system to a new JTA vanpool program. Many of these concepts will require further study to develop and implement, and others may not be implementable within the 10-year horizon of this TDP.

In the next 10 years, JTA seeks to evolve from a transit, ferry, and road agency to a transportation mobility integrator. In this role, JTA will provide customers with seamless trips across a variety of modes, be it a U^2C automated vehicle, BRT, local bus, ferry, rail, demand-response service, or another mode. If implemented, these concepts and related recommendations enable JTA to become a more effective provider of transit and further integrate the growing range of services it provides. The analysis below reviews existing JTA service concepts and forthcoming investments and proposes strategies to advance these long-term system concepts over the next decade.

7.5.1 Expand First Coast Flyer

First Coast Flyer services not only provide fast and frequent service along major corridors but also generate systemwide benefits. Services connecting to First Coast Flyer routes can provide customers with a faster trip to major destinations than infrequent routes with one-seat rides. In a shared mobility future, customers may use First Coast Flyer and fixed route transit for the majority of a trip while making first- or last-mile connections on U^{2}C, ReadiRide, with ridehailing services, by bike, on foot, or via some other modal choice.

Additional corridors in the Jacksonville region may warrant higher speed, high frequency bus service; an additional study should be undertaken to identify these corridors and the capital improvements required to provide BRT service on them. In the interim, JTA can continue to increase frequencies on its existing First Coast Flyer routes per the recommendations of this TDP. JTA Frequent Routes with the highest levels of service should be studied in detail for possible conversion to First Coast Flyer service.

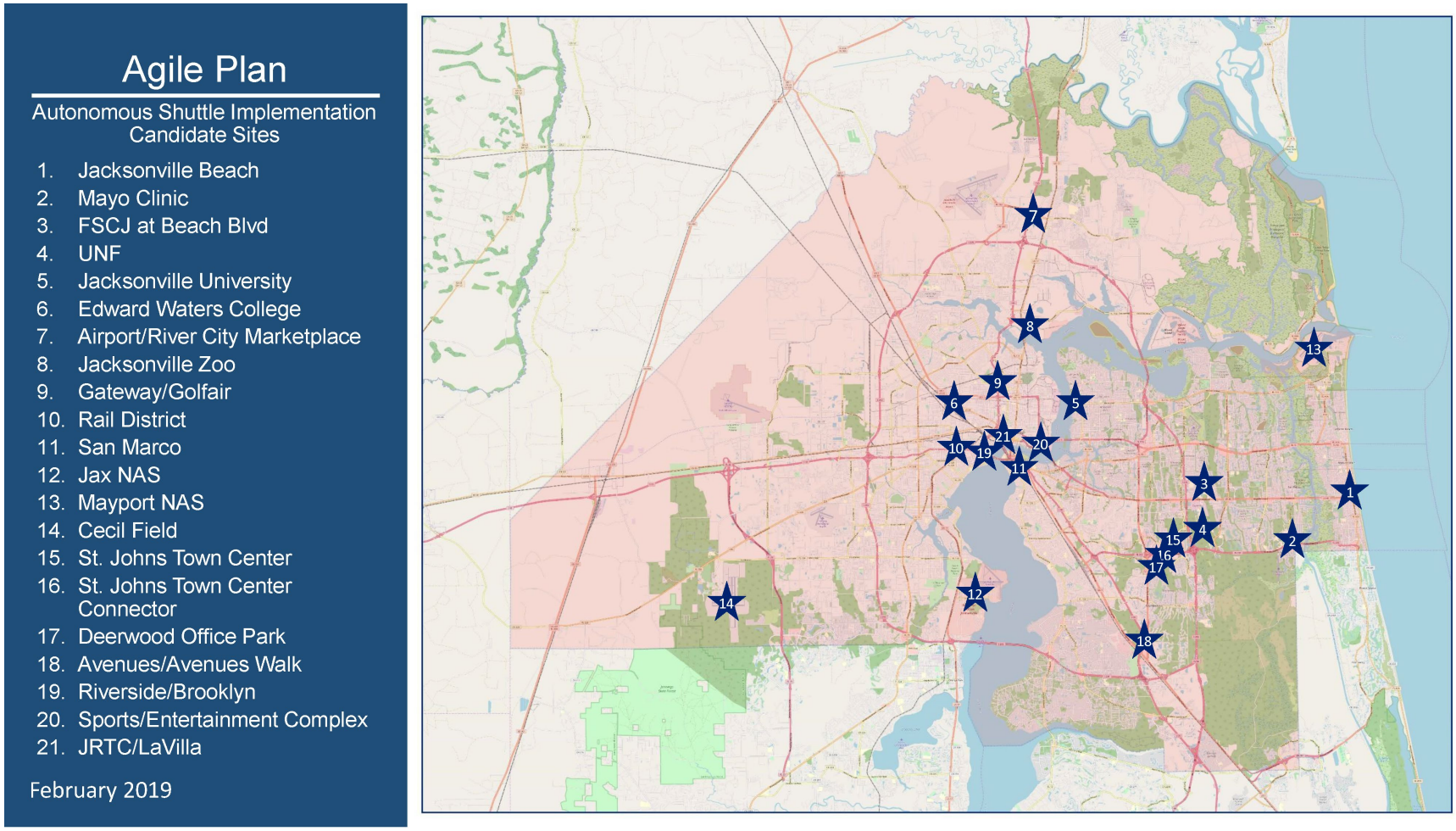
7.5.2 Continue the Transformation of the Skyway into the Ultimate Urban Circulator and Testing of Autonomous Vehicle Concepts

The Skyway Modernization Program and related U^{2}C investments will provide new connectivity within downtown Jacksonville and its immediate vicinity on modern, autonomous shuttles. An early phase of these improvements will create a corridor for autonomous vehicles to travel between the Sports Complex along Bay Street to the JRTC along a mix of ground-level and elevated transitways.

As study of U^{2}C opportunities continues, JTA should continue to refine its estimates of phasing, operating and capital costs and ensure these estimates are reflected in future TDP Annual Updates. Following the extension of U^{2}C service to new stations such as the Entertainment and Sports Complex, JTA should truncate services such as Route 11 and Route 31 at the U^{2}C alignment to avoid duplicating service on Bay Street.

Beyond the U^{2}C program, JTA is continuing to seek out opportunities to make use of autonomous vehicles in other areas of the region. The in-development JTA Agile Plan is identifying candidate sites where short alignments for autonomous vehicle routes could address mobility needs, such as on the campuses of University of North Florida or between major destinations at St. Johns Town Center. The routes are intended to be implemented with minimal infrastructure investment and only two vehicles. As it analyzes opportunities for autonomous vehicle deployment, JTA should continue to prioritize service concepts that provide a first and last mile connection between transit services and major destinations. Possible locations for Agile Routes are shown in **Figure 7-10.**

Figure 7-10. Agile Plan – Autonomous Shuttle Implementation Candidate Sites



7.5.3 Rebuild the Foundation for Transit Service in Clay County

In early 2019, the Florida Department of Transportation (FDOT) reassigned Clay County's transportation disadvantaged services from the Clay County Council on Aging (COA) to JTA. Services previously operated by COA were restructured as the Clay Community Transportation (CCT) Red and Blue routes, which replace substantial portions of the service previously provided in Clay County. JTA's role as both the Community Transportation Coordinator (CTC) for Clay County and a regional transit agency provides new opportunities to create regional connections for work, medical, and other trips.

JTA should work to connect CCT routes into Duval County, connecting workers in either county to job centers across the border, such as the Naval Air Station and 103rd Street in Duval County and Orange Park Mall in Clay County. The CCT Red and Blue routes as proposed in this TDP serve areas of sufficient population and job density, such that the routes could provide all-day, fixed route service without deviations. Removing deviated service would improve travel times for CCT routes, which cover a considerable area. Remaining portions of northeastern Clay County such as Middleburg, Fleming Island and Oak Leaf Plantation would be better served by demand-response ReadiRide and paratransit service given their land use patterns. For areas of Clay County such as Keystone Heights, modes such as vanpool, paratransit, or other demand-response services are potentially suited for the work and medical trips to Gainesville, FL and northeastern Clay County previously served by CCT Magenta and Teal routes.

7.5.4 Begin a Vanpool Program

Jacksonville is the largest city in the continental United States by area, with a size of almost 875 square miles. As growth continues in Duval County's neighboring counties, services that meet the needs of long-distance commuters traveling from these lower density areas into Jacksonville will become more necessary. In addition, workers at Jacksonville's industrial parks and major activity centers may have shift start and end times outside the span of service for typical transit services.

For workers with unique commuting challenges that are not easily addressed by fixed route transit, a vanpool program administered by JTA may be the solution. Vanpool programs administered by transportation agencies help commuters find others who are traveling to the same destination. These commuters then share a ride in a van driven by a member of the group and split the costs of fuel and maintenance. To further lower the cost to participants, the vehicle used in the vanpool is leased at a subsidized rate through a vanpool program or from an employer.

Such a program would also benefit other commuters in the Jacksonville area and JTA itself. A vanpool program may be a more cost effective alternative than fixed route transit to JTA for small groups of commuters. These services may also be more readily implemented for commuters whose trips begin far from Duval County, such as individuals in Keystone Heights (Clay County) traveling to Gainesville (Alachua County). Other regional commuters would benefit as vanpools remove single-occupancy vehicles from the road, lessening congestion.

In analysis for this TDP, Jacksonville-area workforce development programs have expressed an interest in using vanpools to connect participants in workforce development programs with jobs at major regional employers. Suggested origin and destinations for vanpools based on the home residences of workforce development program clients and major employers are suggested in **Table 7-5.** Once a vanpool program is established, a ridematching program would help to determine which pairs of origins and destinations could support a vanpool.

Table 7-5. Origin and Destinations for Vanpool Programs (Suggested)

Residential Origin Locations (Zip Codes)	Workplace Destination Locations
Urban Core (32206, 32208, 32209)	JAX Airport and Vicinity
Northside (32218)	Westside Industrial Park
Westside (32210, 32244)	Commonwealth/Lane Industrial Parks
Arlington (32211, 32225, 32246)	Cecil Airport and Vicinity
Southside (32216, 32256)	Memorial Hospital
	Southpoint
	St. Johns Town Center
	Mayo Clinic
	The Avenues
	Baptist Medical Center / Flagler Center

JTA should conduct a follow-up study to design a vanpool program to be administered by the agency. Such a program should partner with area workforce development agencies, major employers, and commuters at large to match commuters into vanpools and consider leasing vehicles with a subsidy to vanpool participants.

7.5.5 Leverage the Benefits of Commuter Rail

JTA continues to analyze opportunities for commuter rail to address rising congestion and provide an efficient and cost-effective addition to its transportation services. A 2009 study by JTA identified three preferred service corridors for commuter rail into downtown Jacksonville: a North Corridor to Yulee, a Southwest Corridor to Green Cove Springs, and a Southeast Corridor to St. Augustine. JTA continues to study the Southeast corridor, which would address travel needs between Jacksonville and St. Augustine in St. Johns County along the congested I-95 corridor.

While study of the service continues, service plans for commuter rail on this southeast rail corridor are reflected in systemwide ridership estimates for 2030. Proposed stations at major activity centers along I-95 such as the Avenues, Baymeadows Road, and at the JRTC already enjoy nearby service by First Coast Flyer Blue and other JTA routes, but additional effort will be required to connect commuter rail into the JTA system. As it continues its efforts to launch commuter rail service, JTA should undertake efforts to develop a feeder bus plan that leverages these new transportation investments.

7.5.6 Expand ReadiRide Services in Coordination with Fixed Route Services

Introduced in December 2018, ReadiRide services provide dial-a-ride demand-response service within each of several zones. Four of the initial five ReadiRide zones (Beaches, Highlands, Northside, and

Southeast) overlay at least some portion of the flex zones covered by deviated fixed route services that were converted to fixed routes in December 2018. A fifth zone, Noriega (also named Southwest), began without previous deviated service existing in the area. In April 2019, JTA's three Coastal Cab (subsidized taxi fare) zones in Arlington, Mandarin, and Southside were converted to ReadiRide zones.

At the time of the TDP analysis, data was not yet available to evaluate these services. Instead, the TDP recommends continuing to evaluate ReadiRide services while phasing in expansions of ReadiRide service to other portions of Clay and Duval counties. In addition, JTA should continue to position ReadiRide as a means of first- and last-mile connections to transit service. To do so, the agency will need to develop technology and dispatch systems that ensure rides are consistently available on demand with a short wait time through a mobile app or phone call, rather than primarily through advance reservation. Such investments in technology and dispatch would support the agency's transformation as a mobility integrator across multiple modes.

7.5.7 Continue to Maintain and Improve the St. Johns River Ferry

JTA assumed ownership of the St. Johns River Ferry in March 2016 as well as the responsibility to operate, maintain, repair, and improve the service over time. JTA has made several capital improvements since acquiring the ferry, including visual improvements to the Fort Meyers and Mayport Village landings, slip wall improvements, the removal and replacement of aging terminal bridges and bulkheads, installation of a high security fence, and others. JTA also introduced mobile ticketing through the myJTA app and the ferry has seen steady growth in ridership since the acquisition. The ferry provides an essential connection between the north and south ends of Florida State Road A1A,a major highway in Northeast Florida, creating a 0.9-mile voyage across the St. Johns River out of an otherwise 24-mile detour to Interstate 295 and the Dames Point Bridge. JTA wants to reduce the headway of the service from 30 minutes to 20 minutes to improve this connection. Doing so would require an additional ferry but could also improve reliability of the service if unintended maintenance is needed on the only vessel currently in operation.

7.5.8 Develop Additional First- and Last-Mile Services

JTA provides several different existing transit options as first- and last-mile solutions, including the Skyway system in the Downtown area, several specialty shuttle options, and the recently implemented ReadiRide on-demand service. Shortly, the U^{2}C service will also be implemented, providing a driverless first-/last-mile transit option also in the Downtown area. However, there are a number of other solutions that JTA should explore in an effort to provide and market transit services for the first-/last-mile of existing and potential passengers' transit trips. Some of the following concepts are services that can be considered for implementation in the Jacksonville region, some are capital investments aimed towards increasing access to transportation, while others are marketing or policy strategies that will help to increase the attractiveness of transit as a modal alternative.

7.5.8.1 Organization Solutions

Transportation Management Association

A Transportation Management Association (TMA) is a public-private partnership that strives to support and promote transit and transportation solutions. Many of the larger metropolitan areas throughout the country support multiple regionally located TMAs in an effort to combat transportation congestion and to increase transit usage, while informing the public about readily available options for both. Often, TMAs offer first-/last-mile transit solutions, such as private shuttles or community bus routes, that provide connections to other transit services or connections to other local transit generators. Additionally, TMAs offer tailored transit solutions for their partners, including offering informative transportation expos, vanpool and carpool service administration, and marketing and education options.

JTA should explore the possibility of developing several TMAs throughout its entire service area in an effort to improve the communication of transportation options and to further develop first-/last-mile transit solutions.

7.5.8.2 Service Solutions

Private Shuttles

Private shuttles, typically operated by one company or a group of organizations located in proximity to one another, are cost-effective solutions that extend transit service coverage without impacting JTA's operating budget. These shuttles can be established either through the interest of the partnering organizations or through the administration of a third party (often a TMA or a for-profit service provider), with the costs split between each of the partnering organizations. The private shuttle routes will match the explicit need of each partner organization and should be established to provide point-to-point service between existing transit options and each company's front door.

JTA could consider marketing private shuttles to the larger companies that exist in the region and should consider incentivizing the concept.

Community Bus Routes

Community bus routes are fixed-route services that operate during non-peak service periods (often during the midday period, between 9:00 AM and 4:00 PM) and provide connections between residential communities and commercial properties which typically wouldn't be provided by an agency of the size of JTA. These services, often operated by a regional TMA or a local municipality, are far more circuitous in nature as their design and intent is to meet the specific needs of the communities within which they operate.

Door-to-Bus Shared-Ride Services

A door-to-bus shared-ride service is an app-based transit solution that picks up a passenger from their origin point and takes them to a fixed-route transit service (i.e., a bus or rail service). Trips are scheduled through the app, and passengers are grouped by proximity to each other and their desired transit stop destination. JTA would need to develop this technology internally or work with a third-party provider to develop the app and the service parameters.

Transportation Network Companies

Transportation Network Companies (TNCs) include app-based, on-demand ride-hailing platforms such as Uber and Lyft. At their core, TNCs facilitate the matching of individuals in search of transportation with drivers willing to provide the service for a fee. TNCs are already broadly used in Jacksonville, with hundreds of trips taken and provided by private citizens daily. However, other communities have shown that TNCs can support the goals of public transit agencies as well.

Partnerships between TNCs and transit agencies are an area of emerging practice whereby a subsidy is paid to lower the cost to end users. Based on a recent Transit Cooperative Research Program (TCRP) study, transit agencies are partnering with TNCs for a variety of reasons, including the following:

- Providing a first/last mile connection to other transit services.
- Improving the customer experience.
- Supplementing an existing service.
- Providing same-day mobility options for paratransit customers.
- Reducing the cost of providing paratransit.
- Providing service at a new time.
- Providing service to transit deserts or to transit-dependent riders.

- Providing connections to activity centers such as health and human services, education/training facilities, employment centers, and more.
- Improving healthcare outcomes.
- Demonstrating innovation.

TNC partnerships can be structured in a variety of ways, and since public money is being used, the subsidy's use is usually restricted to a handful of promising use cases. Generally, applicable use cases are those where fixed-route service is not available (e.g., late-night service), and can be classified in the following ways:

- **Geofenced fixed subsidy:** An agency provides a fixed subsidy for TNC trips within a defined zone or area only. As the subsidy is fixed, the total price to the passenger may vary by trip.
- **Geofenced fixed price:** An agency provides a subsidy to ensure a fixed price for TNC trips within a defined zone or area. As the trip price is fixed, the subsidy paid by the agency may vary by trip.
- **Fixed price to specific hubs:** An agency provides a subsidy to ensure a fixed price for TNC trips connecting to transit centers or other key activity centers.
- **Time-bounded subsidy:** An agency provides a subsidy for TNC trips during specific time periods only (e.g., late-night or off-peak), when fixed-route service is limited or not available (**Figure 7-11**).

Figure 7-11: Example of Time-Bound TNC Subsidy Program (Detroit, MI)

TNCs can also be used to supplement paratransit service. Eligible paratransit users can be given the option of using a TNC for a medical appointment or other approved trip purposes, rather than scheduling a ride on a paratransit vehicle. For JTA, subsidized TNC service could offer the following benefits:

- Expand service coverage to relatively low-density residential neighborhoods.
- Provide late-night service for job access.
- Replace poorly performing fixed-route service.
- Reduce paratransit costs.

7.5.8.3 Microtransit

Microtransit is a form of on-demand transit service that mimics the interface of TNC service, but operates with a fixed fleet of transit vehicles. These transit vehicles are typically vans or cut-away-style buses and

can be operated by a transit agency or a third-party vendor (**Figure 7-12**). Microtransit service has a variety of applications including the following:

- Service in a dense urban area where larger transit coaches cannot easily maneuver.
- Service in a suburban area lacking the density or pedestrian environment to support fixed-route service.
- Service in a university environment during time periods when demand is relatively low and diffused (i.e., weekend, evening, and/or late-night service).
- Service in a rural area where TNCs do not operate.
- Paratransit service with updated technology.

Figure 7-12: Example of Microtransit Service (Sacramento, CA)

Microtransit services can be generally grouped into either turnkey service or a technology platform:

- **Turnkey service:** An all-in contract to provide a given level of service based on parameters dictated by the agency. In this model, the vendor would provide the vehicles, drivers, and operations, in addition to the microtransit booking and dispatching platform.
- **Technology platform:** Model in which an agency pays for a software license from a company that improves vehicle dispatch on the back end and provides for ride requests via a smartphone app. The agency would retain control and responsibility for operations, include providing vehicles and drivers.

To be most effective, microtransit service requires more than one vehicle operating in a defined zone simultaneously. With at least two vehicles, the technology platforms used for microtransit service can determine which vehicle to assign to each trip request, with the aim of optimizing routing and minimizing wait times both for passengers waiting for a ride and those already onboard the vehicles. Some microtransit services operate “corner-to-corner” rather than “curb-to-curb.” This approach requires passengers to walk out to the end of their block to meet a transit vehicle rather than having the vehicles spend time serving each individual address.

7.5.8.4 Capital/Policy Solutions

Sustainable Amenities

A developer-oriented carrot like a zoning incentive can encourage property developers to install items that encourage the exploration of transportation alternatives, such as:

- Secure bike parking and storage facilities.
- Transit displays and information kiosks.
- Showers for business and industrial use.
- Tourist- and event-specific signage.
- Electric vehicle charging stations.

Bicycles, Scooters, Pedestrians, and Others

The City of Jacksonville can develop policies that encourage the exploration of alternative modes of transportation while increasing the visibility of transit as an option. As people become more comfortable with one form of alternative transportation, other forms become easier to explore.

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 8: 10-YEAR TRANSIT PLAN

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8 10-YEAR TRANSIT PLAN

8.1 Introduction

Evaluation and forecasting for Jacksonville's transit system was performed for all proposed changes to JTA's transit services within the 10-year horizon of this plan. This chapter addresses the estimation of ridership, service hours and miles, and other productivity metrics for the current and proposed JTA system.

8.2 Scenarios Overview

Recommendations were evaluated by comparing the 2030 future year scenario, which included all of the TDP recommendations, against a 2018 base year scenario with the existing JTA transit services. These scenarios were modeled using the Transit Boardings Estimation and Simulation Tool (TBEST) software, which produces estimates for ridership, revenue hours and miles, costs, and other service and service area metrics using a land use model. The Northeast Regional Planning Model (NERPM) employment estimates for 2015 and 2030 were used to configure the model for the 2018 base year and 2029 recommended system, respectively. Thus, ridership estimates are reported for 2030 instead of the 2029 TDP horizon year. The characteristics of the base year and future year scenarios are described below.

TBEST cannot model ridership for non-fixed-route transit services, such as JTA's ReadiRide demand-response service and Connexion paratransit service. Instead, ridership for these modes were forecast using separate methodologies described in the following section.

8.2.1 Base Year Scenario

The base year scenario uses 2015 population and employment data to model JTA's August 2018 fixed-route transit system. This system includes all fixed routes, from First Coast Flyer Blue and Green to local bus routes, along with the Skyway and St. John's Ferry. The TBEST model was constructed using JTA's General Transit Feed Specification (GTFS) data and was validated at the route level using observed ridership data from the August 2018 service period, which began on Monday, August 6, 2018 and ended Sunday, December 2, 2018.

8.2.2 2030 Future Year Scenario

The 2030 future year scenario is based on 2030 population and employment data and includes all proposed changes to the fixed-route transit system to be implemented between 2019 and 2029. These changes include:

- Relocating the termini for many JTA bus services from Rosa Parks Transit Station to the Jacksonville Regional Transportation Center (JRTC).
- First Coast Flyer Orange service from Downtown Jacksonville to Orange Park Mall.
- New Express Select routes to St. Johns, Baker, and Clay Counties.
- All other recommended changes to fixed-routes implemented by 2029.
- Implementation of the U^{2}C autonomous vehicle system, which will modernize the Jacksonville Skyway and provide additional ground-level service. All U^{2}C extensions, including those to UF Health, the Sports Complex, and other proposed destinations, were included in the 2030 future year scenario, with the exception of a proposed bridge between The District and the Sports Complex.
- The Southeast Rail corridor, which will provide commuter rail service between Jacksonville and St. Augustine.

8.3 Estimating Transit Demands

Three methods of estimating transit demand were used to forecast ridership, revenue hours and miles, and operating costs for JTA's transit system. Fixed-route demand was estimated in TBEST, ReadiRide demand-response demand was estimated using methodology developed by the National Center for Transit Research (NCTR), and paratransit demand was estimated with a spreadsheet tool developed by the Center for Urban Transportation Research (CUTR) for jurisdictions in Florida. Future year U^{2}C and Southeast Rail service are incorporated into TBEST to reflect the integration of bus service with these modes, but preliminary estimates of costs and ridership for these planned services are cited from forecasts made by other JTA planning studies.

8.3.1 Fixed-Route Bus Service

Ridership for fixed-route bus service was estimated using TBEST, a land use-based ridership estimation program developed by the Florida Department of Transportation (FDOT). TBEST allows the user to build a detailed model of a fixed-route transit network, including route alignments, stops, running times, and complete schedules including headways and span of service. Ridership is then estimated at the stop level for weekdays by time period, Saturdays, and Sundays based on the number of jobs, land uses, and the population characteristics of residents with access to each fixed-route stop. Details on model development are described in **Appendix G: Transit Demand Estimation with TBEST**.

TBEST ridership estimates must be calibrated for each route so that the model produces results for the existing system that are consistent with observed ridership. Once the model is validated against existing conditions and adjustment factors are in place, future transit demand can be estimated. Estimates for routes in the future year scenario are adjusted according to the route's validation factor in the base year. In the case of new routes implemented in the future, validation factors are applied according to the average adjustment for routes with the same classification. Application of validation factors to future year routes may result in inaccurate ridership estimates when future year routes differ significantly in segments served, available transfers, land uses served, or levels of service. For example, major segment transfers from Route 8 to Route 28, which has a lower route-level validation factor, may result in ridership estimates that are biased downward.

Revenue hour and peak vehicle estimates produced by the TBEST model were manually calibrated to existing conditions. Revenue hours for routes in the August 2018 JTA fixed-route system ranged from 66 percent higher to 31 percent lower than raw TBEST estimates. Similar to how TBEST model ridership estimates are adjusted to match observed data, base year revenue hour and peak vehicle estimates from TBEST were calibrated to existing conditions. The difference between existing conditions and TBEST estimates are largely attributable to the extensive use of interlining in JTA's system, which reduces the amount of recovery time needed for routes and the number of peak vehicles to operate service. Operating costs for fixed-routes were estimated using these adjusted revenue hours. In **Chapter 9: Implementation Plan**, annual cost estimates and peak vehicle needs are based on the proposed changes effective in each year.

8.3.2 ReadiRide

ReadiRide ridership demand was forecast using NCTR's methodology for estimating ridership for demand-response services. The model assumes that demand-response ridership will depend on the size of transit-oriented populations (such as seniors and people without access to a vehicle), regional variation in land use and ridership behavior, as well as service characteristics such as fares and the presence of other transit options. Model parameters were estimated using data from 731 rural demand-response services across the United States. This equation was used to calculate ridership estimates for each of the

17 existing and proposed ReadiRide zones in Duval and Clay Counties. Details on the methodology, data sources, and limitations can be found in **Appendix H: ReadiRide Ridership Estimation**.

8.3.3 Paratransit

Paratransit ridership demand was forecast using CUTR's methodology for estimating paratransit demand for counties in Florida. The model predicts demand for paratransit services by estimating the size of transportation-disadvantaged populations and applying an estimated average number of trips per person to find the total number of potential paratransit trips. These estimates were calibrated to observed 2017 ridership for Duval and Clay counties and scaled according to county-level population growth forecasts to predict demand for the years 2019 through 2029. Details on the methodology, data sources, and limitations can be found in **Appendix I: Paratransit Ridership Forecasting**.

8.4 Future Network Summary

This section reviews the estimated ridership, costs, and performance of the 2030 future year system by comparison to the 2018 base year system. Additional forecasts for the St. Johns Ferry, ReadiRide, paratransit, modernized Skyway and U^{2}C system, and commuter rail are also presented.

8.4.1 System Summary

8.4.1.1 Fixed-route Bus

TBEST estimates average daily ridership for each fixed-route as the sum of direct boardings and transfer boardings. **Table 8-1** shows the fixed-route bus annual ridership and revenue hours for both scenarios on weekdays, Saturdays, and Sundays. Between 2018 and 2030, fixed-route bus ridership is forecast to increase by 41 percent on weekdays, surpassing 12.4 million annual boardings. Annual fixed-route bus ridership is forecast to reach 1,243,800 on Saturdays and 1,025,200 on Sundays, improving by 31 percent and 56 percent, respectively.

Table 8-1: Fixed-Route Bus Average Daily Ridership

Metric	2018			2030		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Annual Passenger Trips	8,808,200	946,500	655,900	12,458,300	1,243,800	1,025,200
Annual Revenue Hours	552,670	65,312	57,176	677,083	77,391	67,869

The base year and future year scenarios were compared at the annual level based on ridership, population and employment capture, revenue miles, revenue hours, average speed, average headway, and operating cost. **Table 8-2** contains a summary of these metrics for each scenario. Annual ridership for the proposed 2030 fixed-route bus network was estimated by TBEST at 14,727,300 boardings, over 4 million more than the base year. The 2030 system will capture 37 percent of the population in Duval and Clay Counties, a three-percentage point increase over the base year, and 51 percent of employment, a two-percentage point decrease. In part, this small decline in employment may be the result of converting some areas with fixed-route service in Clay and Duval counties into ReadiRide zones that can more readily serve low-density industrial employment. The forecasted increase in ridership is greater than the increase in population, as evidenced by the increase in passenger trips per population served from 27.3 trips per person in the base year to 31.0 trips per person in 2030.

Annual revenue miles as calculated by TBEST increased by 30 percent to 11,721,632 miles in 2030. Adjusted TBEST estimates for annual revenue hours increased by 22 percent to 822,343 hours in 2030, resulting in an increase in average system speed from 13.4 miles per hour in the base year to 14.3 miles

per hour with all proposed changes in 2030. Average system headway improved from 50 minutes to 41 minutes. Overall productivity for fixed-route bus also improved, with an increase in passengers per revenue mile from 1.15 to 1.26 and passengers per revenue hour from 15.4 to 17.9 in 2030. Annual operating costs were calculated using fixed rates per revenue hour for each category of standard fixed-routes, Express Select routes, and Clay Community Transportation routes. In 2018 dollars, the total fixed-route operating cost per service mile and per passenger decreased from the base year to $8.09 and $6.44, respectively. Further details on operating costs can be found in **Chapter 9: Implementation Plan**.

Table 8-2: Fixed-Route Bus Annual Summary

Metric	Base Year Scenario: 2018 Existing System	Future Year Scenario: 2030 Proposed Changes
Estimated Annual Ridership	10,410,600	14,727,300
Total Population	1,109,482	1,278,862
Service Area Population[1]	381,029	474,813
Percent Population Served of Total Population	34%	37%
Passenger Trips per Population Served	27.3	31.0
Total Employment	559,784	710,247
Total Employment Served[1]	296,544	365,444
Percent Employment Served of Total Employment	53%	51%
Estimated Annual Revenue Miles	9,029,508	11,721,632
Estimated Annual Revenue Hours	675,158	822,343
Average System Speed (MPH)	13.4	14.3
Average System Headway (minutes)[2]	50	41
Passengers per Revenue Mile	1.15	1.26
Passengers per Revenue Hour	15.4	17.9
Estimated Annual Operating Cost (2018 $)	$79,191,000	$94,800,000
Estimated Operating Cost per Service Mile	$8.77	$8.09
Estimated Operating Cost per Passenger	$7.61	$6.44

Note: This table does not represent a direct output from TBEST. Values have been recalculated to report only fixed-route bus figures and avoid double-counting of population and employment.

8.4.1.2 Ferry

The forecasted ridership and revenue hours for St. Johns Ferry are summarized in **Table 8-3**. Ferry ridership was forecast according to the average annual growth rate for Duval County. No changes in level of service were proposed, resulting in zero change in annual revenue hours.

[1] Service area population and employment include both Duval and Clay counties.
[2] Average system headway is the average of the individual average headway for each route.

Table 8-3: Ferry Annual Summary

Metric	2019			2030		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Annual Passenger Trips	314,700	92,900	62,800	351,400	103,700	70,100
Annual Revenue Hours	3,497	742	742	3,497	742	742

8.4.1.3 ReadiRide

ReadiRide ridership and revenue miles are forecasted to increase significantly from 2019 to 2030, as shown in **Table 8-4**. Ridership and revenue miles will increase in part due to the implementation of the proposed new ReadiRide zones: one new zone is proposed to begin service in 2020, one new zone will begin service in 2021, and seven additional zones (including three in Clay County) will begin service in 2023. Population growth over the 10-year period is also expected to result in higher ridership. Changes to ReadiRide service provision, such as app-based ride-hailing or improved first- and last-mile connections to other transit services, may result in even higher ridership than the forecast shown below. ReadiRide operating costs are based on the number of revenue miles of service provided. Revenue miles are expected to grow with the number of passenger trips based on the current rate of revenue miles per passenger trip as calculated from December 2018 ReadiRide data.

Table 8-4: ReadiRide Forecasting Summary

Metric	2019		2030	
	Weekday	Saturday	Weekday	Saturday
Annual Passenger Trips	36,500	3,600	81,500	8,200
Annual Revenue Miles	155,151	15,515	346,663	34,666

8.4.1.4 Paratransit

Paratransit ridership and revenue hours are forecasted to increase with the populations of Duval and Clay Counties from 2019 to 2030, as summarized in **Table 8-5**. Paratransit operating costs are based on the number of revenue hours of service provided. Revenue hours are expected to grow with an increase in passenger trips based on the current rate of revenue hours per passenger trip. Ridership figures for 2019 include a full-year estimate for Clay County services.

Table 8-5: Paratransit Forecasting Summary

Metric	County	2019			2030		
		Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Annual Passenger Trips	Duval	323,900	30,200	24,400	374,900	34,900	28,300
	Clay	76,800	7,100	5,800	93,600	8,700	7,100
Annual Revenue Hours	Duval	210,786	19,624	15,898	243,929	22,710	18,398
	Clay	49,974	4,653	3,769	60,892	5,669	4,593

8.4.1.5 Skyway and U²C

Over the past several years, several possible extensions of the current Skyway system and technologies have been analyzed in the downtown area. The scenarios tested for the Skyway have focused on individual extension as well as a full system. For these different systems, operational plans have been developed and analyzed using the Federal Transit Administration's Simplified Trips on Project Software

(STOPS). Recent studies have developed various operational plans based on different frequencies and route structures in each scenario and conducted extensive analysis of development patterns within the downtown area. Each of the Skyway extensions was studied individually, including the Brooklyn Station extension and the Sports Complex extension. The recently completed Transit Concept and Alternatives Review: Skyway Modernization and Brooklyn Extension report (TCAR 1) estimated an average annual operations and maintenance cost of $8.25-$9.50 million for alternatives that modernized the existing Skyway system and included an extension of service to Brooklyn. The Brooklyn Station extension was submitted for a Build Grant. In the TCAR 1 study, the ridership estimates for the modernized Skyway system with a Brooklyn extension were estimated to be around 8,000 on an average weekday in 2030.

Analysis of a full system expansion continues. The full system has several extensions as shown in **Figure 8-1**. The estimates for the full system are preliminary as the technology for the system is still being analyzed. In order to develop the preliminary estimates, assumptions about the frequency, vehicle size, vehicle speed, etc. had to be made. The full system was tested in the STOPS model and the preliminary estimates range between 10,000 and 20,000 daily riders. As JTA is getting closer to choosing a technology, the model assumptions will be updated, and new estimates will be developed.

Figure 8-1: Existing and Potential Skyway Stations Under Full System Expansion

8.4.2 Performance of 2030 System Relative to 2018 System

Under the proposed 2030 system, JTA will serve more customers with more frequent service and higher levels of productivity. The system will also serve a greater proportion of the populations of Duval and Clay counties, with new connections from surrounding counties into job centers in Jacksonville. Much of this increase in access will come as a result of ReadiRide zones, which will cover large portions of the region not served by fixed route transit. **Table 8-6** summarizes the annual ridership, population served, and employment served by the existing and proposed JTA transit systems. Due to a lack of refined cost, ridership, and service level information for proposed U²C and Southeast Commuter Rail services, operational and cost efficiency measures are not available at the systemwide level.

Table 8-6: Systemwide Annual Summary

Metric	2018 Existing System	2030 Proposed System
Estimated Annual Ridership[3]	12,185,200	19,647,100
Total Population	1,109,482	1,278,862
Service Area Population[4]	381,029	776,993
Percent Population Served of Total Population	34%	61%
Passenger Trips per Population Served	32.0	25.3
Total Employment	559,784	710,247
Total Employment Served[4]	296,544	471,405
Percent Employment Served of Total Employment	53%	66%

Forty-eight total routes will provide fixed-route service, as shown in **Table 8-7**. The frequent bus network in the JTA system will expand to include eight routes by 2030, with four mainline routes receiving new 15-minute service on weekdays. In addition to these routes, First Coast Flyer service will expand to southwestern Duval County and Clay County and continue to provide frequent connections across the metropolitan area. Express service from Downtown Jacksonville to the Jacksonville International Airport will provide a faster option during peak hours, and Express Select service will add routes to Baker, Clay, and St. Johns Counties. The Community Shuttle service class was eliminated after reclassifying those routes as Limited Connector (Route 85) or Connector (Route 54) services according to proposed service changes. Four routes (Route 18, 30, 83, and 86) will be replaced by pieces of new routes, extensions of other routes, or ReadiRide service to provide more efficient connections throughout Duval County. The new Jacksonville Regional Transportation Center will serve as the central connection for 33 JTA routes. In Clay County, deviated-fixed-routes will be converted to fixed-routes with fixed local bus stops, greater coverage, and improved connections to other JTA transit services.

After entering service in 2018 with four demand-response zones, ReadiRide will continue to expand to include 17 zones by 2023 with increasing ridership as the population of the region grows. Demand for paratransit ridership is also forecast to increase by 2030. Other new services will support the growth of

[3] JTA's paratransit services provide coverage across all of Duval and Clay counties. Therefore, paratransit estimates are omitted from service area and ridership estimates in this table.
[4] Service area population and employment include both Duval and Clay counties.

ReadiRide, paratransit, and fixed-route transit, including the Ultimate Urban Circulator system of autonomous vehicles and the southeast commuter rail corridor.

Table 8-7: Number of Routes or Zones by Service Class

Service Class	2018 Existing System	2030 Proposed System
First Coast Flyer	3	4
Frequent Routes	5	8
Mainline Routes	13	10
Connector Routes	12	12
Limited Connector Routes	4	4
Community Shuttles	3	--
Express Routes	4	3
Express Select Routes	1	4
Clay Community Transportation Routes	2	3
ReadiRide Zones	8	17
Other Major JTA Services	Ferry, Skyway, Paratransit	Ferry, Skyway/U^{2}C, Paratransit, Southeast Rail

As service grows to match demand, average headways and wait times will decline. **Table 8-8** illustrates average fixed-route bus system headways for the peak and off-peak periods in 2018 and 2030. Additional high-frequency service on U^{2}C routes will further reduce wait times for many passengers. Figures for average headways are unweighted and represent the average of route-level average headways.

Table 8-8: Average Headways

	2018		2030	
	Peak	Off-Peak	Peak	Off-Peak
Average Headway	43.0	44.8	34.3	33.2

Note: PM Peak headways shown for Peak, Midday headways shown for Off-Peak

Over time, the recommended service improvements reflect a steady increase in resources for First Coast Flyer, Frequent, and Express routes, while the share of resources are held steady in the Connector and Limited Connector categories (**Table 8-9**). After the addition of Frequent service on four Mainline routes, the Mainline category will represent a reduced share of fixed-route services. As the Jacksonville region grows, ReadiRide demand-response services are expected to provide an increasing share of coverage service that might have otherwise been provided by infrequent Community Shuttle services. As JTA continues to evolve from a provider of fixed-route transit to a mobility integrator spanning several modes, other services such as automated vehicles and rideshare could also address these first- and last-mile needs.

Table 8-9: Revenue Hours by Service Class

Service Class	2019		2030	
	Annual Revenue Hours	Share	Annual Revenue Hours	Share
First Coast Flyer	123,469	18%	166,651	22%
Frequent Routes	185,320	27%	189,164	25%
Mainline Routes	239,157	35%	228,870	30%
Connector Routes	99,761	15%	116,836	15%
Limited Connector Routes	5,120	1%	8,796	1%
Community Shuttles	6,814	1%	--	--
Express Routes	6,756	1%	21,406	3%
Express Select Routes	2,142	0.3%	10,251	1%
Clay Community Transportation Routes	8,759	1%	19,259	3%

JACKSONVILLE TRANSPORTATION AUTHORITY

Transit Development Plan Major Update

CHAPTER 9: IMPLEMENTATION PLAN

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9 IMPLEMENTATION PLAN

9.1 Introduction

The Transit Development Plan's implementation plan identifies the phasing and financial planning strategies necessary to implement the constrained 10-Year Transit Plan improvements described in Chapter 8. The Phasing Plan sets a proposed schedule of implementation for improvements that will support planned capital projects, constrain operating cost growth, and prioritize the most effective recommendations for implementation. The Financial Plan forecasts JTA's costs and revenues for operating and capital needs and includes strategies to implement the recommended 10-Year Transit Plan.

9.2 Phasing Plan

9.2.1 Implementation Strategy

Implementation of the TDP recommendations is anticipated to take place in phases beginning in FY2020. Changes will be implemented during the operator "pick," when operators select the routes they wish to operate in order of seniority. Like many transit agencies, JTA typically implements service changes during these times.

The timing of recommendations is guided by several principles:

- **Support planned JTA service changes and capital improvements:** Implementation will be timed to leverage or otherwise implement existing JTA plans. Coming improvements include:
  - **Spring 2020:** Opening of the Jacksonville Regional Transportation Center (JRTC) Phase II, which involves the relocation of the termini for many fixed-route bus services from Rosa Parks Station to the JRTC bus bays.
  - **March 2020:** Introduction of new Select Express services in St. Johns County.
  - **Fall 2020:** Introduction of new Select Express service in Baker County.
  - **December 2020:** Beginning of First Coast Flyer Orange service from JRTC to Orange Park Mall in Clay County.
  - **2021:** Introduction of a new Select Express service in Clay County.
  - **2022 to 2024:** Initial implementation of U²C transformation of the JTA Skyway system. The U²C BUILD grant Phase 1 identifies a new corridor between JRTC and the Sports/Entertainment District.
  - **2025 to 2028:** Introduction of Southeast Rail service.

  Because the timing and scope of U²C and Southeast Rail improvements remain under study, the phasing plan does not assume service changes related to those projects will occur in a particular year. However, TDP recommendations envision feeder bus and network improvements to ensure integration of JTA fixed-route transit, automated vehicle, and rail services (**Chapter 7: System Framework: Long-Term System Concept**).

- **Constrain phasing plan to reasonable increases in costs:** The phasing of proposals is sensitive to existing JTA service proposals, including the introduction of First Coast Flyer Orange service and new Express Select service in FY2021. The first two years of the phasing plan (FY2020 and FY2021)

include only cost-neutral recommendations and existing plans by JTA. From FY2022 onward, increases in operating costs are limited to an additional $2 million each year plus expected inflation of operating costs.

- **Implement related improvements at the same time:** Routes that have related recommendations will be implemented at the same time. For instance, the realignment of Route 10 and Route 19 and the increase in the span of service for Route 202 will occur at the same time that Route 18 is eliminated. In this way, the access to transit enjoyed by JTA customers will not be interrupted by changes. Moreover, JTA will be able to focus its resources in outreach and service planning in a particular area to ensure smoother implementation of proposals.

- **Prioritize improvements based on ridership potential, cost, and productivity of recommendations:** Overall, the proposals recommended in this TDP are anticipated to increase JTA annual fixed-route bus ridership from approximately 10.4 million trips in 2018 to 14.7 million by 2029, with other modes also seeing ridership growth. Some proposals are less costly to implement, while others have a higher ridership benefit. For prioritization of improvements, groups of recommendations with higher improvement to passengers per revenue hour are implemented in the early years of the TDP, subject to cost constraints. More costly improvements such as frequency increases on select routes and short-turns are implemented in later plan years. The recommendations also make efforts to ensure geographic equity in the phasing of improvements, such that improvements in early years of the plan are not limited to only a single area of Jacksonville.

9.2.2 Phases of Changes

Based on the implementation strategy, recommendations for fixed route bus and ReadiRide services will be implemented in several phases:

- **FY20:** Relocation of service to JRTC and Northside changes related to First Coast Flyer Green and Soutel Hub.
- **FY21:** Implementation of First Coast Flyer Orange and related improvements in Jacksonville's Westside.
- **FY22:** Improvements along Atlantic Boulevard in Arlington and additional cross-town service through Jacksonville's Urban Core.
- **FY23:** Service improvements in Southside Jacksonville along Beach Boulevard and San Jose Boulevard, modifications to service in Clay County, and additional ReadiRide zones.
- **FY24**: New connectivity to the Jacksonville airport and the Northside.
- **FY25:** Modifications to service in Jacksonville's Southside.
- **FY26:** Additional frequent service along Riverside and St. John's Avenue.
- **FY27:** Additional frequent service along Edgewood Avenue and connections into St. John's County.
- **FY28:** Additional frequent service along St. Augustine Road.
- **FY29:** Additional frequent service along Normandy Boulevard.

Under this plan, all proposed improvements identified in **Chapter 7: System Framework: Long-Term System Concept** will be implemented within the 10-Year TDP horizon. Details of service improvements are presented in **Table 9-1**.

Table 9-1: Service Improvement Phasing

Implementation FY	Location	Route	Description
2020	Systemwide	Existing Fixed Routes	Relocate termini from Rosa Parks Station to JRTC
	Regional	Baker Express Select	Implement new fixed-route service
		St. Johns Express Select	Implement new fixed-route service
	Northside	3	Eliminate service to Amtrak
		4	Realign route to serve Amtrak and end service at the Soutel Transit Hub.
		22	Realign to Soutel Hub
		Northwest Zone	Implement new ReadiRide zone
2021	Westside	FCF Orange	Implement Southwest BRT Service in late 2020
		20	Convert Route 5 to Underlying Service to Southwest BRT in late 2020
		53	Extend hourly to Cecil area, replacing Route 30
		80	Realign to 103rd Street
		ReadiRide Jacksonville Heights Zone	Implement new ReadiRide zone
	Regional	Clay Express Select	Implement new fixed-route service replacing Route 201
2022	Arlington	10	Realign route onto Atlantic Boulevard, increase frequency and span of service
		19	Extend route to serve Kona Avenue (includes elimination of Route 18)
		23	Realign route
		202	Extend to downtown, increase span and frequency
	Urban Core	11	Extend route to serve Gateway Plaza.
		12	Extend route to serve Soutel Transit Hub.
		21	Realign route and increase span
		31	Extend to Edward Waters
		32	Realign to Paxon School
2023	Arlington / Southside	8	Eliminate service to UNF, adjust frequency
		24	Extend route
		25	Realign route
		27	Increase span of service
		28	Extend to FSCJ South, realign
		29	Realign to serve Art Museum Drive, replacing existing 205
		33	Extend to Southpoint/Belfort Road

Implementation FY	Location	Route	Description
		Eastside–South Zone	Implement new ReadiRide zone
		Sandalwood Zone	Implement new ReadiRide zone
		Golden Glades–The Woods Zone	Implement new ReadiRide zone
	Clay County / Westside	CCT Blue	Modify service
		CCT Red	Modify service
		Argyle Forest Zone	Implement new ReadiRide zone
		Fleming Island Zone	Implement new ReadiRide zone
		Middleburg Zone	Implement new ReadiRide zone
		Oakleaf Plantation Zone	Implement new ReadiRide zone
2024	Airport	206	New express service
		82	Extend span, extend alignment (net increase)
		85	Realign to FSCJ North
	Regional	St. Johns Express Select	Increase service to include midday trips and extended peak period service
2025	Southside	17	Realign route to serve Old Kings Road South
		28	Increase weekday frequency on extended alignment
		50	Eliminate 50B, increase frequency
		200	Increase span and frequency
2026	Southside	16	Increase frequency on short-turn
2027	Northside	51	Increase frequency on short-turn
	Westside / Southside	26	Extend route to connect with FCF Blue
2028	Southside	17	Increase frequency on short-turn
2029	Westside	14	Extend route to FSCJ Kent Campus and eliminate service along Normandy Boulevard
		15	Extend trips to Amazon with increased frequency of service

9.3 Financial Plan

The TDP Financial Plan describes the specific funding strategies used to implement the Phasing Plan. The TDP Financial Plan is guided by the FDOT Financial Plan template, which is completed for JTA in **Appendix K: Financial Plan**. The primary inputs to and conclusions of this financial plan are described in the sections below.

The financial plan should be adjusted in future years as the scope and funding of major capital projects such as U^{2}C and First Coast Commuter Rail services are refined and as regional priorities are reevaluated.

9.3.1 Assumptions

The Financial Plan estimates financial needs for the proposed 10-Year Transit Plan based on the recommended improvements and the assumptions described in this section. The timing and cost of major improvements such as Southeast Rail and Skyway modernization are not included as these projects are still in development. As a consequence, the financial plan should be adjusted in future years as the scope and funding of major capital projects such as U²C and First Coast Commuter Rail services are refined, funding availability and ridership demand changes, and as regional priorities are reevaluated.

Current year costs and expected growth rates are shown in **Table 9-2**. Additional assumptions regarding Operating and Capital Revenues are provided in **Table 9-3.**

Table 9-2: Operating and Capital Cost Assumptions

Assumption	2018 Figure	Notes/Source
Fixed-Route Operating Cost per Revenue Hour	$118.36	FY18 actual expenditures and revenue hours
Paratransit Operating Cost per Revenue Hour (Duval)	$35.50	2019 Contract Cost
Paratransit Operating Cost per Revenue Hour (Clay)	$35.03	2019 Contract Cost
Skyway Operating Cost per Revenue Hour	$441.59	FY18 actual expenditures and revenue hours
ReadiRide Operating Cost per Revenue Mile	$2.50	2019 Contract Cost
Express Select Operating Cost per Revenue Hour	$42.00	2019 Contract Cost
Ferry Operating Cost per Revenue Hour	$581.64	FY18 actual expenditures and revenue hours
Clay Community Transportation Cost per Revenue Hour	$36.09	2019 Contract Cost
Gameday Xpress Cost per Revenue Hour	$215.55	FY18 actual expenditures and revenue hours
Duval County Population Growth	0.92%	Avg. ann. growth rate for 2015-2020, Florida BEBR
Clay County Population Growth	2.38%	Avg. ann. growth rate for 2015-2020, Florida BEBR
Operating Costs Inflation Rate	3.00%	20-year cashflow analysis
Unallocated Operating Costs	1%	See details below on how unallocated expenses are forecasted
Capital Cost Inflation Rate	3.00%	FDOT Construction Cost Index

Table 9-3: Operating and Capital Revenue Assumptions

Revenue Name	Assumption	Notes/Sources
Federal Formula Funds (e.g. 5307, 5337, 5339)	2% annual growth	Escalation factor based on long-term annual year-over-year growth in the Federal Formula Funding program nationwide.
State Block Grant	0% growth	Assumes a fixed sum through the planning horizon of the TDP
State Trip and Equipment Grant	0% growth	Assumes a fixed sum through the planning horizon of the TDP
Discretionary Grants	N/A	No additional discretionary grants are included in our forecast beyond those that have been already awarded.
Bi-Annual Fare Increase Assumption	5.00%	Based on JTA fare increase formula
Revenue per Passenger	$1.32	Fare revenue divided by 2019 ridership
Non-Fare Directly Generated Revenue	2% year over year growth	Includes a variety of non-fare revenue such as advertising. Assumption that this revenue will track with inflation
Real Estate Sales	N/A	One-time revenue source.
City of Jacksonville Paratransit Contribution	2%	Assume revenue will track with inflation
Transfer to JTA Funds	2%	Revenue source represents internal fund transfers from bus to other modes. Will track with inflation.
Gas Tax	1%	Assume state gas tax revenue will track with projected increases in annual Vehicle Miles Traveled nationwide (FHWA)
Sales Tax	3%	Input from JTA staff. Rate below state forecast of sales tax revenue.

9.3.1.1 Unallocated Costs

Most operating costs are allocated to specific modes and directly relate to the amount of service being provided. Approximately one-fifth of JTA's budget are unallocated costs, i.e., costs not related to modal operations. Examples of unallocated costs include shared administrative costs, contingency funds, and research/innovation initiatives. In FY2020 unallocated costs equal the net revenue after all other costs are accounted for. After FY2020, costs are inflated at a constant 1 percent annual rate.

9.3.2 Operating Costs

The operating budget is divided into three types of expenses (**Table 9-4**). The first are the baseline cost represents the operating cost of maintaining current service over the next 10 years. The baseline costs will grow over time due inflation and escalating operating costs.

The second type of costs are the net costs associated with future service improvements. Compared to the cost of operating JTA's current service, the service improvements in the TDP will result in $144 million of additional operating costs over the next 10 years. These costs include the expansion of paratransit in Clay County, bus route re-alignments to the new Jacksonville Regional Transportation Center, and the recommendations for new or re-aligned routes in this TDP.

The final type of cost are unallocated costs, which include all agency functions not tied to a specific mode, along with JTA's operating contingency. It should be noted that the TDP does not include any changes in operating costs due to the JTA Skyway replacement/U^{2}C project. As planning and design are still ongoing, the TDP does not have costs yet for these improvements.

9.3.2.1 Planning Expenses

For the purpose of this TDP, the cost of planning at JTA has been separated out from the operating budget. Planning expenses (**Table 9-5**) are equal to the value of 5307 funds dedicated to planning activities at JTA and therefore do not impact the overall budget balance.

Table 9-4: Operating Cost Forecast (figures in thousands)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Ten-Year Total
Baseline Operating Costs											
Bus	$84,455	$86,989	$89,599	$92,287	$95,055	$97,907	$100,844	$103,869	$106,985	$110,195	$968,185
ADA Paratransit	$9,015	$9,285	$9,564	$9,851	$10,146	$10,451	$10,764	$11,087	$11,420	$11,762	$103,346
Skyway	$7,526	$7,752	$7,985	$8,224	$8,471	$8,725	$8,987	$9,256	$9,534	$9,820	$86,279
Ferry	$3,073	$3,165	$3,260	$3,358	$3,459	$3,563	$3,670	$3,780	$3,893	$4,010	$35,232
ReadiRide	$483	$497	$512	$527	$543	$560	$576	$594	$611	$630	$5,533
Baseline Subtotal	**$104,552**	**$107,689**	**$110,920**	**$114,247**	**$117,675**	**$121,205**	**$124,841**	**$128,586**	**$132,444**	**$136,417**	**$1,198,575**
Net New Service Operating Costs											
ADA Paratransit	$2,042	$2,103	$2,166	$2,231	$2,298	$2,367	$2,438	$2,511	$2,586	$2,664	$23,406
Fixed-Route Bus	$1,180	$4,127	$6,134	$7,986	$10,345	$13,297	$15,236	$18,041	$20,123	$23,976	$120,446
Skyway											
Proposed Service Sub-Total	**$3,222**	**$6,230**	**$8,300**	**$10,217**	**$12,643**	**$15,664**	**$17,674**	**$20,552**	**$22,709**	**$26,640**	**$143,851**
Other											
Unallocated Operating Expenses	$28,997	$29,287	$29,580	$29,875	$30,174	$30,476	$30,781	$31,088	$31,399	$31,713	$303,370
Total Operating Costs	**$136,771**	**$143,206**	**$148,800**	**$154,339**	**$160,491**	**$167,344**	**$173,296**	**$180,227**	**$186,552**	**$194,771**	**$1,645,796**

Table 9-5: Planning Expenses (figures in thousands)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Ten-Year Total
Planning Expenses	$1,306	$1,332	$1,358	$1,386	$1,413	$1,441	$1,470	$1,500	$1,530	$1,560	$14,296

9.3.3 Operating Revenues

JTA receives operating revenue from three key sources (**Table 9-6**). The first category of funding is federal and state grants. A portion of the Federal Formula funds received by JTA can be used for Preventative Maintenance (PM) expenditures, which falls under the operating budget. JTA receives additional federal operating money for FTA section 5310, which is reserved for transit servicing seniors and people with disabilities. Beyond federal formula funding, JTA receives additional grant funding from the State of Florida.

The second category of funding is revenue directly generated by JTA. This includes farebox revenue, advertising/concession revenue, and the sale of assets (including real-estate). Farebox revenue is the single largest component of funding in this category. The improvements outlined in this TDP will indirectly impact farebox revenue by impacting ridership. Moreover, JTA has a policy of increasing its fares every two years according to a formula based on inflation and average increase in operating costs.

The third source of operating funds are Local and Other funding. This category includes dedicated gas tax and sales tax revenue, the largest source of operating funding for the entire agency. Additional sources of money include internal transfers between modal funds and a City of Jacksonville paratransit contribution.

As sales and gas tax revenue is a critical component of agency funding, JTA is heavily impacted by macro-economic and consumer trends that impact these revenue sources. A drop-in consumer spending would impact sales tax revenue, while greater fuel efficiency, reduction in vehicle miles travelled, or transition to electric vehicles would reduce gas tax revenue.

9.3.4 Capital Costs

The TDP capital budget (**Table 9-7**) includes investments in vehicles, technology, facilities, safety, equipment, Mobility Works road projects, and fixed-guideway infrastructure. These investments can be divided into three categories: investments in the existing system, fleet expansion to support the service recommendations of this TDP, and investment in new fixed-guideway infrastructure (e.g., replacement of the Skyway).

Over the next 10 years, maintaining the existing system will require $132 million in funding. Buses to support service expansion will require an additional $19.5 million.

Table 9-6: Operating Revenue Forecast (figures in thousands; excludes planning 5307 revenue)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Ten-Year Total
State and Federal											
FTA 5310	$342	$348	$355	$362	$370	$377	$385	$392	$400	$408	$3,740
FTA 5307 PM	$5,409	$5,518	$5,628	$5,741	$5,855	$5,972	$6,092	$6,214	$6,338	$6,465	$59,232
State Block Grant	$4,076	$4,076	$4,076	$4,076	$4,076	$4,076	$4,076	$4,076	$4,076	$4,076	$40,758
State Trip and Equipment Grant	$1,597	$1,597	$1,597	$1,597	$1,597	$1,597	$1,597	$1,597	$1,597	$1,597	$15,970
Other Federal/State Assistance Grants	$572	$584	$595	$607	$619	$632	$644	$657	$670	$684	$6,266
Sub-Total - State and Federal	**$11,996**	**$12,122**	**$12,251**	**$12,383**	**$12,517**	**$12,654**	**$12,794**	**$12,936**	**$13,081**	**$13,230**	**$125,966**
Direct Revenue											
Farebox Revenue	$13,599	$14,279	$14,279	$14,993	$14,993	$15,743	$15,743	$16,530	$16,530	$17,356	$154,046
Directly-Generated (non-fare)	$1,323	$1,349	$1,376	$1,404	$1,432	$1,460	$1,489	$1,519	$1,550	$1,581	$14,482
Sub-Total - Direct Revenue	**$14,922**	**$15,628**	**$15,655**	**$16,397**	**$16,425**	**$17,203**	**$17,232**	**$18,049**	**$18,080**	**$18,937**	$168,528
Local and Other											
City of Jacksonville Paratransit	$1,472	$1,502	$1,532	$1,563	$1,594	$1,626	$1,658	$1,691	$1,725	$1,760	$16,123
Transfers to JTA funds	$19,181	$19,565	$19,956	$20,356	$20,763	$21,178	$21,601	$22,033	$22,474	$22,924	$210,032
Gas Tax	$19,266	$19,459	$19,653	$19,850	$20,048	$20,249	$20,451	$20,656	$20,862	$21,071	$201,566
Sales Tax	$69,956	$72,055	$74,217	$76,443	$78,736	$81,098	$83,531	$86,037	$88,618	$91,277	$801,970
Sub-Total - Local and Other	**$109,876**	**$112,581**	**$115,358**	**$118,211**	**$121,141**	**$124,151**	**$127,242**	**$130,418**	**$133,680**	**$137,031**	**$1,229,691**
Expansion Funding											
Farebox Revenue from Service Expansion	-$23	$604	$1,184	$2,582	$3,516	$3,761	$4,047	$4,524	$4,753	$5,107	$30,053
	$136,771	**$140,936**	**$144,449**	**$149,572**	**$153,599**	**$157,769**	**$161,316**	**$165,927**	**$169,594**	**$174,305**	**$1,554,238**

Table 9-7: Capital Expenditures by Year (figures in thousands)

Investment	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Ten-Year Total
Vehicles											
Fixed-route Bus	$6,962	$8,160	$9,106	$11,543		$9,950	$7,883	$18,676	$19,236	$12,922	$104,439
Clay County Express	$1,084	$625	$1,088	$746	$346	$1,148	$602	$757	$1,124	$134	$7,654
CTC Paratransit	$1,129	$2,907	$691	$1,140	$4,090	$1,309	$3,474	$694	$1,322	$4,741	$21,497
Non-Revenue Fleet Replacement	$202	$197	$156	$2,237	$691	$222	$168	$2,707	$227	$904	$7,712
Technology											
IT Infrastructure	$517	$517	$517	$517	$517	$517	$517	$517	$517	$517	$5,168
Fareboxes	$50	$50									$100
Facilities											
Bus Stops	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$20,000
Bus Shelter and Passenger Amenities	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$5,000
Facility Improvements	N/A										
Fixed Guideway											
U^{2}C / Skyway Replacement	N/A										
BRT Southwest Corridor											
Ferry Improvements	N/A										
Service Expansion											
Additional Fixed-Route Buses		$10,192		$370				$2,385	$1,628	$5,000	$19,574
Other											
Mobility Works Road Projects	N/A										
Miscellaneous	N/A										
Total	**$12,444**	**$25,149**	**$14,058**	**$19,053**	**$8,143**	**$15,646**	**$15,144**	**$28,235**	**$26,555**	**$26,717**	**$191,144**

9.3.5 Capital Revenues

JTA, as most other transit agencies, relies on a mix of revenues and one-off discretionary grants to fund capital improvements (**Table 9-8**). In 2019, one-off grants and proceeds from real-estate sales represent over 80 percent of the capital budget. These types of funds are essential for major capital expansion projects such as new transit centers and fixed-guideway service. For the sake of the TDP update, no additional discretionary grants were included in the financial projection that have not already been awarded to the agency. This results in a large unfunded capital investment balance.

JTA receives an annual allocation of capital funding from the FTA through formula funding. Formula funds are based on the amount of service being provided and population of the Jacksonville metropolitan area; as such, formula funding is fairly predictable. Formula funds are most often used for state of good repair investments such as replacing buses, investing in core technology, and renovating passenger facilities. Formula funds generally do not produce enough revenue to cover the full cost of a major capital investment. FTA requires transit agency recipients to cover at least 20 percent of the cost of a project will a local match. JTA's match contribution is covered by toll revenue credits and incorporated into all formula fund figures presented in this chapter. Federal formula grants are broken into several sections, each with specific restriction on funding eligibility:

- **5307 Urbanized Area:** 5307 funding represents the largest share of formula funding to JTA. These funds can be used on any capital expenditure. There are a few subsets to 5307 funding at JTA, including funding for planning and an FHWA contribution for ferries.
- **5337 Fixed-Guide State of Good Repair:** 5337 funding can be used only on state of good repair investments on fixed-guideway modes such as skyway.
- **FTA 5339 Bus and Bus Facility:** 5339 funding is reserved for procurement of new revenue vehicles and bus-related maintenance facilities.

One source of capital revenue not reflected in this plan are transfers from JTA's contingency fund. Unspent operating revenue at the end of the year go into the agency's contingency fund balance and can be utilized for both future years operating or capital expenses. These funds would likely be utilized as a local match for future discretionary grants.

Table 9-8: Capital Revenue (figures in $ thousands)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Ten-Year Total
FTA 5307	$7,010	$7,150	$7,293	$7,439	$7,587	$7,739	$7,894	$8,052	$8,213	$8,377	**$76,753**
FTA 5337	$857	$874	$891	$909	$927	$946	$965	$984	$1,004	$1,024	**$9,382**
FTA 5339	$1,853	$1,899	$1,947	$1,995	$2,045	$2,096	$2,149	$2,202	$2,257	$2,314	**$20,758**
5307 SU NFTPO	$1,020	$1,040	$1,061	$1,082	$1,104	$1,126	$1,149	$1,172	$1,195	$1,219	**$11,169**
5307 FHWA Transfer for Ferry	$325	$331	$338	$344	$351	$358	$365	$373	$380	$388	**$3,553**
FTA 5310	$974	$993	$1,013	$1,033	$1,054	$1,075	$1,097	$1,119	$1,141	$1,164	**$10,663**
LowNo and Emissions Grant	N/A										**$0**
Capital Investment Grant	N/A										**$0**
Passenger Ferry Grant	N/A										**$0**
Real Estate Sales	N/A										**$0**
Total	**$12,038**	**$12,288**	**$12,543**	**$12,803**	**$13,069**	**$13,341**	**$13,618**	**$13,901**	**$14,191**	**$14,486**	**$132,278**

9.3.6 Unfunded Balance

The TDP recommendations result in a significant unfunded operating and capital budget. The operating budget deficit totals $92 million over 10 years (**Table 9-9**). Starting in FY2021, the TDP recommendations were constrained and phased in to limit the increase in costs due to service expansion to approximately $2 million. Unit operating cost escalation and the expansion of paratransit service in Clay County also contribute to an increase in operating costs. Some of the deficit could be accommodated by reducing the amount of the JTA budget dedicated to contingencies (see unallocated operating expenses). Moreover, JTA's budget is highly sensitive to changes in sales and gas tax revenue. If these sources outperform the TDP's revenue growth assumption, they could fund a large portion of the recommended service expansion.

The unfunded capital balance is substantial, at nearly $58.8 million (**Table 9-10**). The factor driving the large unfunded balance is that the Capital revenue forecast does not include any discretionary funding, bond revenue, or additional local contributions toward Capital. JTA has historically relied on these sources to fund large projects and they will likely be available to support some of the agency's capital needs.

Table 9-9: Net Operating Balance (figures in $ thousands)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Ten-Year Total
Operating Revenue	$136,771	$140,936	$144,449	$149,572	$153,599	$157,769	$161,316	$165,927	$169,594	$174,305	$1,554,238
(-) Existing Transit Service	$133,549	$136,976	$140,499	$144,122	$147,849	$151,681	$155,622	$159,675	$163,843	$168,130	$1,501,945
Remaining Funding Balance	**$3,222**	**$3,960**	**$3,950**	**$5,450**	**$5,750**	**$6,088**	**$5,694**	**$6,253**	**$5,751**	**$6,175**	**$52,293**
(-) Expansion Service	$3,222	$6,230	$8,300	$10,217	$12,643	$15,664	$17,674	$20,552	$22,709	$26,640	$143,851
Net Operating Balance	**$0**	**-$2,270**	**-$4,351**	**-$4,767**	**-$6,892**	**-$9,576**	**-$11,980**	**-$14,300**	**-$16,958**	**-$20,465**	**-$91,559**

Table 9-10: Net Capital Balance (figures in $ thousands)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Ten-Year Total
Capital Revenue	$12,038	$12,288	$12,543	$12,803	$13,069	$13,341	$13,618	$13,901	$14,191	$14,486	$132,278
(-) Existing System Expenditures	$12,444	$14,957	$14,058	$18,684	$8,143	$15,646	$15,144	$25,850	$24,927	$21,717	$171,570
Remaining Funding Balance	**-$406**	**-$2,669**	**-$1,515**	**-$5,880**	**$4,926**	**-$2,305**	**-$1,526**	**-$11,949**	**-$10,736**	**-$7,232**	**-$39,292**
(-) Service Expansion Expenditures	$0	$10,192	$0	$370	$0	$0	$0	$2,385	$1,628	$5,000	$19,574
Remaining Balance	**-$406**	**-$12,861**	**-$1,515**	**-$6,250**	**$4,926**	**-$2,305**	**-$1,526**	**-$14,334**	**-$12,364**	**-$12,231**	**-$58,866**
(-) Fixed Route Expansion	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Capital Operating Balance	**-$406**	**-$12,861**	**-$1,515**	**-$6,250**	**$4,926**	**-$2,305**	**-$1,526**	**-$14,334**	**-$12,364**	**-$12,231**	**-$58,866**

9.4 Action Plan

JTA's *Blueprint for Transportation Excellence FY18-22* identifies strategies to implement the agency's goals and objectives. The agency monitors progress towards these objectives using its performance management system JTA Enterprise Metrics Management System (JEMMS). The action plan (**Table 9-11**) identifies the necessary steps that should be taken to implement the recommendations of the TDP. As the agency responsible for these action items, JTA should incorporate these items into its JEMMS system where appropriate and continue to report progress on these items in future TDP Annual Updates.

Table 9-11. Summary of TDP Action Items

	Action Item	Related TDP Section
1	Make Intelligent Transportation System (ITS) investments to improve calculations of revenues by route	3.2.2 Duval County Fixed-Route Transit Service Profile
2	Develop a three-variable cost model for the agency:	3.2.2 Duval County Fixed-Route Transit Service Profile
3	Modify services to increase performance	3.2.2 Duval County Fixed-Route Transit Service Profile
4	Revise performance standards to match performance	3.2.2 Duval County Fixed-Route Transit Service Profile
5	Continue strategies to improve the farebox recovery ratio.	3.5 Farebox Report
6	Expand First Coast Flyer	7.5 Long-Term System Concepts
7	Continue the Transformation of the Skyway into the Ultimate Urban Circulator and Testing of Autonomous Vehicle Concepts	7.5 Long-Term System Concepts
8	Rebuild the Foundation for Transit Service in Clay County	7.5 Long-Term System Concepts
9	Begin a Vanpool Program	7.5 Long-Term System Concepts
10	Leverage the Benefits of Commuter Rail	7.5 Long-Term System Concepts
11	Expand ReadiRide Services in Coordination with Fixed Route Services	7.5 Long-Term System Concepts
12	Develop Additional First and Last Mile Services	7.5 Long-Term System Concepts
13	Phase in 10-Year Transit Plan Recommended Improvements	8 10-Year Transit Plan
14	Make facility and bus stop improvements required to support 10-Year Transit Plan implementation	9 Implementation Plan
15	Make new and replacement vehicle purchases required to support 10-Year Transit Plan	9 Implementation Plan
16	Prepare Annual TDP Updates and monitor progress towards completing TDP Action Items.	9 Implementation Plan
17	Maintain operation of JTA Paratransit services	9 Implementation Plan

	Action Item	Related TDP Section
18	Maintain operation of Skyway services	9 Implementation Plan
19	Maintain operation of St. Johns Ferry	9 Implementation Plan
20	Maintain customer facilities at Park-and-Rides and major transportation hubs such as JRTC.	9 Implementation Plan