Space Coast Area Transit

FY 2023–2032

Transit Development Plan

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1 Introduction

The Brevard County Board of County Commissioners (BOCC) provides public transportation in Brevard County, Florida, through Space Coast Area Transit. The agency was formed in 1985 to consolidate public transit services provided by two competing systems—Brevard Transportation Authority and Consolidated Agencies Transportation System. Today, Space Coast Area Transit provides fixed-route bus service, complementary demand-response service (as required under the Americans with Disabilities Act [ADA]), vanpools, and volunteer transportation for older adults.

As a recipient of Florida Department of Transportation (FDOT) Block Grant funding, Space Coast Area Transit must maintain a Transit Development Plan (TDP) to provide a vision for the transit system over the next 10 years. Space Coast Area Transit must complete a major update its 10-year TDP every 5 years; this major update covers the FY 2023–2032 planning horizon.

The TDP update was prepared in conjunction with a comprehensive operational analysis (COA) that will assess the transit system's performance and identify specific near-term improvements to improve effectiveness and efficiency, while also benefitting riders.

TDP Background and Objectives

The State of Florida Public Transit Block Grant Program was enacted by the Florida Legislature to provide a stable source of funding for public transit. The Block Grant Program requires public transit service providers to develop, adopt, and annually update a 10-Year TDP. This process helps to ensure that the provision of public transportation is consistent with the current mobility needs of the local communities. Under State legislation effective February 20, 2007, the TDP must undergo a major update every five years.

According to Florida Administrative Code (F.A.C.) Rule 14-73.001 – Public Transportation (commonly referred to as "the TDP Rule"), "The TDP shall be the applicant's planning, development and operational guidance document to be used in developing the Transportation Improvement Program and the Department's Five-Year Work Program." In addition, projects identified in the TDP will be incorporated in the Metropolitan Planning Organization's (MPO) Long Range Transportation Plan (LRTP). The Space Coast Transportation Planning Organization (TPO) is the designated MPO for the Palm Bay–Melbourne and Titusville urbanized areas.

Development of the TDP includes a review of related planning and policy documents, documentation of study area conditions and current transit services, incorporation of public input, development of potential transit improvements and vision, and creation of a 10-year financial and implementation plan. Major requirements of the TDP Rule include:

- A Public Involvement Plan (PIP) approved by FDOT or consistent with the TPO's approved public participation plan.
- An evaluation of factors, referred to as a situation appraisal, within and outside the public transit provider that affect the provision of transit services. This includes land use, State and

local transportation plans, other governmental actions and policies, socioeconomic trends, organizational issues, and technology.

- The public transit provider's vision, mission, goals, and objectives, taking into consideration the findings of the situation appraisal.
- Alternative services, projects, plans, and programs to achieve the provider's goals and objectives as well as the costs and benefits of each.
- Estimation of the community's demand for transit service (ridership projections) over the 10-year period.
- A 10-year financial and implementation plan, including a detailed list of the projects or services needed to meet the goals and objectives in the TDP. This includes both funded services and projects and those for which funding may not yet been identified.

The Florida Legislature added a requirement for the TDP in 2007 with the adoption of House Bill 985. This legislation amended Florida Statute (F.S.) § 341.071, requiring transit agencies to "… specifically address potential enhancements to productivity and performance which would have the effect of increasing farebox recovery ratio." FDOT subsequently issued guidance requiring the TDP and each annual update to include a summary report as an appendix to the major or annual TDP report on the farebox recovery ratio and strategies implemented and planned to improve it.

Report Overview

The first step in any strategic planning process is to understand the current situation. This technical memorandum uses local data to document and assess pertinent conditions in which Space Coast Area Transit currently operates; this process also supplies critical base data needed for subsequent tasks to prepare the agency's FY 2023–2032 TDP.

TDP Checklist

Space Coast Area Transit's FY 2023–2032 TDP meets the requirements for a TDP major update in accordance with Rule Chapter 14-73, F.A.C. Table 1-1 lists the TDP requirements under Rule 14-73.001 and indicates whether the item was accomplished and where it is documented in this report.

Table 1-1: TDP Checklist

	TDP Element	Report Section(s)
Public Involvement Process		
√	Public Involvement Plan (PIP)	Appendix A
√	PIP approved by FDOT	Appendix A
√	TDP includes description of Public Involvement Process	4
√	Provide notification to FDOT	Appendix A
√	Provide notification to Regional Workforce Board	4
Situation Appraisal		
√	Land use	6
√	State and local transportation plans	6
√	Other governmental actions and policies	6
√	Socioeconomic trends	6
√	Organizational issues	6
√	Technology	6
√	10-year annual projections of transit ridership using approved model TBEST	5, 8
√	Assessment of land uses/urban design patterns relative to transit service provision	6
√	Calculate farebox recovery	Appendix B
Mission and Goals		
√	Provider's vision	7
√	Provider's goals	7
√	Provider's objectives	7
Alternative Courses of Action		
√	Develop and evaluate alternative strategies and actions	8
√	Benefits and costs of each alternative	8
√	Financial alternatives examined	8
Implementation Program		
√	10-year implementation program	9
√	Maps indicating areas to be served	9
√	Maps indicating types and levels of service	9
√	Monitoring program to track performance measures	9
√	10-year financial plan listing operating and capital expenses	9
√	Capital acquisition or construction schedule	9
√	Anticipated revenues by source	9
Relationship to Other Plans		
√	Consistent with Florida Transportation Plan	6
√	Consistent with local government comprehensive plan	6
√	Consistent with regional transportation goals and objectives	6
Submission		
√	Adopted by Brevard County Board of County Commissioners	August 16, 2022
√	Submitted to FDOT	By September 1, 2022

Organization of This TDP

This report is organized into 10 major sections, including this **Introduction.**

Section 2 summarizes the **Baseline Conditions** or operating environment for transit services in Brevard County. This includes a physical description of the study area, population and employment profiles, and demographic and socioeconomic characteristics and trends that may impact transit services. Additionally, travel behavior and commuting trends also are reviewed, including vehicle ownership, modes of commuting, regional commute flows, and journey-to-work characteristics. Land use trends, major transit trip generators and attractors, existing roadway conditions, and tourist and visitor levels also are explored. The information compiled and presented provides the basis for more-detailed analysis in subsequent tasks of this 10-year TDP.

Section 3 summarizes the **Existing Transit Services Evaluation** conducted for the TDP. The analysis uses data for the current fixed-route services from Space Coast Area Transit and the National Transit Database (NTD), a national repository of validated transit data for all federally subsidized transit agencies across the U.S., presenting a detailed examination of operating performance for Space Coast Area Transit. In addition, a high-level review of the local demand-response services and transportation disadvantaged (TD) populations also is provided. A performance trend analysis presents a detailed examination over time of operating data for Space Coast Area Transit's fixed-route services and is followed by a peer agency review to provide an opportunity for Space Coast Area Transit to compare its system-wide effectiveness and efficiency indicators with selected US peer transit systems. This helps to determine how well transit service is performing locally compared to similar transit agencies elsewhere.

Section 4 presents the **Public Outreach Summary**, including a summary review of the outreach efforts completed and the associated findings. This includes soliciting input from stakeholders, the public (including current transit riders and non-riders), bus operators and agency staff, and local policy leaders and decision makers.

Section 5 presents the **Transit Demand Assessment** summarizing the various demand and mobility needs assessments conducted as part of the TDP. Included is a market assessment that provides an examination of potential service gaps and latent demand using GIS-based analyses. A transit accessibility assessment also is conducted to provide Space Coast Area Transit with an understanding of the reach of its existing services within a set time window. Results of the baseline 10-year transit ridership forecast for Space Coast Area Transit's existing system using the FDOT-approved estimation model is also documented.

Section 6 presents the **Situation Appraisal**, which reviews the current overall planning and policy environment within the county to better understand transit needs. A review of local plans and documents is presented; assessment of these plans helps to identify and evaluate applicable federal and state policies, as well as local community goals and objectives that relate to transit and mobility. Then, the appraisal examines the strengths and weaknesses of the system as well as any existing threats to the provision of service in the county and key opportunities for addressing those threats

and/or enhancing the transit-friendliness of the operating environment. Included in this section are detailed reviews of existing socioeconomic trends, travel behavior and trends, community feedback, land use and urban design efforts, organizational attributes, funding, and technology.

Section 7 identifies **Goals and Objectives** to serve as a policy guide for implementation of this TDP. A review and update of the goals and objectives outlined in the previous TDP major update was completed to remain consistent with the goals of Space Coast Area Transit and its local and regional community with respect to public transportation.

Section 8 discusses the **10-Year Transit Needs Development and Evaluation** process and results. The identified improvements for Space Coast Area Transit services represent the transit needs for the next 10 years that were developed without consideration for any funding constraints. The 10-year transit ridership forecast when considering these potential improvements is also documented. Finally, the identified service improvements were prioritized using an evaluation process developed to rank the transit service alternatives. The resulting ranking of alternatives were then used to develop the 10-year implementation plan.

Section 9 summarizes the **10-Year Transit Plan** developed for Space Coast Area Transit. The Plan shows the recommended service and capital/technology/policy improvements as well as unfunded needs; it also includes a discussion of the revenue assumptions and capital and operating costs. Thereafter, the 10-year phased implementation plan for the TDP is summarized. A set of service, capital/technology, and policy improvements are programmed for the 10-year period; some improvements may not be funded now but should be considered if additional funding becomes available, are also listed.

Section 10 summarizes the techniques and approaches to help facilitate **Plan Implementation and Coordination** after TDP adoption. This includes strategies to make use of the various relationships, tools, and outreach materials from the TDP process to continue building support for the implementation of the 10-Year TDP.

2 Baseline Conditions

The baseline conditions assessment provides context and insight into the transit agency's operating environment related to demographics, land use, and other factors that impact the provision of transit services in Brevard County.

Description of Space Coast Area Transit Services

This introduction to the Space Coast Area Transit system provides context for the baseline conditions assessment. A more detailed review of the agency's services and facilities is provided in Section 3

The **fixed-route network** includes 23 routes that serve about 1,100 bus stops and 3 park-and-ride facilities (Map 2-1). Its busiest transfer point is the Cocoa Transit Center, at which riders can transfer to four Space Coast routes—north to Mims, south to Melbourne, east to Merritt Island/Cocoa Beach, and west to West Cocoa. Other major transfer locations include Titus Landing in Titusville, Melbourne Square Mall in Melbourne, and Hammock Landing in West Melbourne.

Space Coast Area Transit offers shared-ride, door-to-door **demand-response service**, which provides transportation throughout the county for eligible residents or visitors with disabilities or who otherwise are unable to use the fixed-route system to transport themselves or purchase transportation and are, therefore, dependent on public transportation for medical, employment, educational/training, nutritional, and other life-sustaining trips.

Volunteers in Motion, a program serving individuals who are unable to use other Space Coast Area Transit services, is aimed at helping individuals live at home independently by offering transportation to medical facilities, pharmacies, and grocery stores. Vehicle operators and office support staff for the program are volunteer-based positions. Since its inception, Volunteers in Motion has assisted thousands of individuals; however, the demand for transportation trips exceeds what can be provided currently through this program.

Space Coast Area Transit has provided one of the longest-running vanpool programs in the U.S., with more than 25 years of service. Under the **Commuter Vanpool Program**, vans are leased by groups of commuters from Enterprise at a fixed monthly cost that covers leasing, maintenance, insurance, and roadside assistance; more than 45 commuter vans are on the road through this program. Through the **Agency Vanpool Program,** non-profit agencies can lease vans to provide transportation services for disadvantaged Brevard County residents. With the contracted lease costs including insurance and maintenance, this program offers transportation solutions that would otherwise be unaffordable to many agencies. Currently, 19 agencies are enrolled in the program.

Service Area

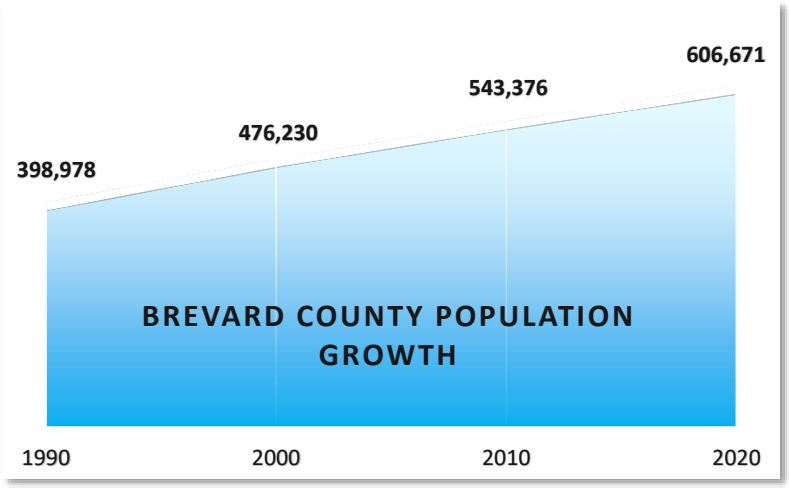
The study area for the TDP is Brevard County, also known as Florida's Space Coast (Map 2-1). Located in southeast Florida, it is bordered by over 70 miles of the Atlantic Ocean. Neighboring counties include Volusia to the north, Indian River to the south, Osceola to the southwest, and Orange to the west and includes the 16 cities and towns of Cape Canaveral, Cocoa, Cocoa Beach, Grant–Valkaria,

Indialantic, Indian Harbour Beach, Malabar, Melbourne, Melbourne Beach, Melbourne Village, Palm Bay, Palm Shores, Rockledge, Satellite Beach, Titusville, and West Melbourne. It also is home to two airports (Orlando Melbourne International and Space Coast Regional), Port Canaveral, Patrick Air Force Base, and a spaceport that includes Kennedy Space Center, Cape Canaveral Air Force Station, and the United States Space Force. The county's natural attractions, beaches, and cruise port make it a popular destination for visitors and a choice location for retirees. Five major roadways intersect Brevard County—I-95, US-1, US-192, SR-528, and SR-520.

Population Profile

600,000+ people live in Brevard County

In 2020, Brevard County was ranked the 10th most populated of Florida's 67 counties.[1] Florida and Brevard County experienced a higher-than-expected population growth due to a migration sparked by the COVID-19 pandemic beginning in March 2020; the accelerated growth is expected to continue, in part due to companies opening new offices and an increase in teleworking, which allows people to live and work in different states.[2] Population growth in permanent residents is only one consideration; the county also attracts a significant seasonal resident population and visitors.

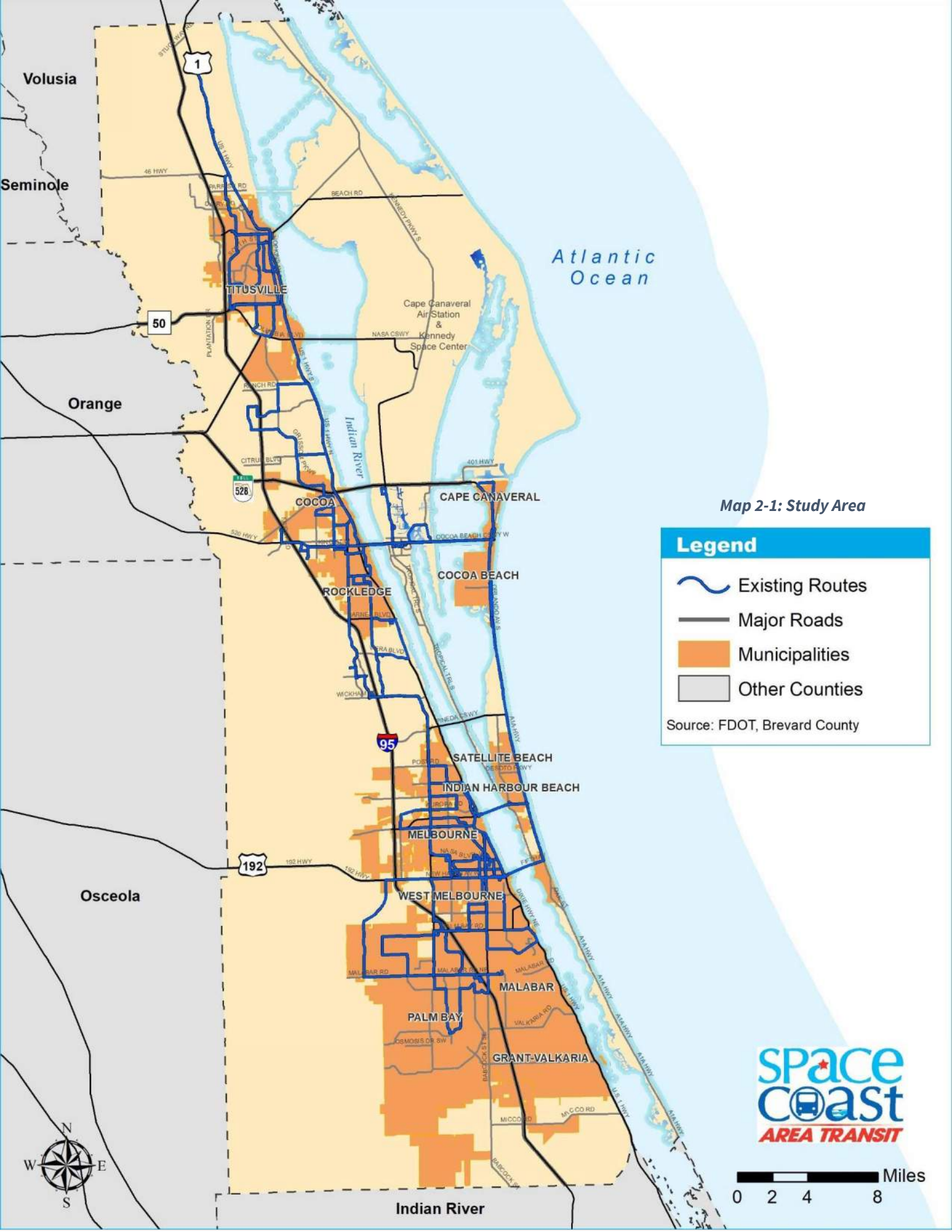


Source: BEBR Estimates of Population (2020)

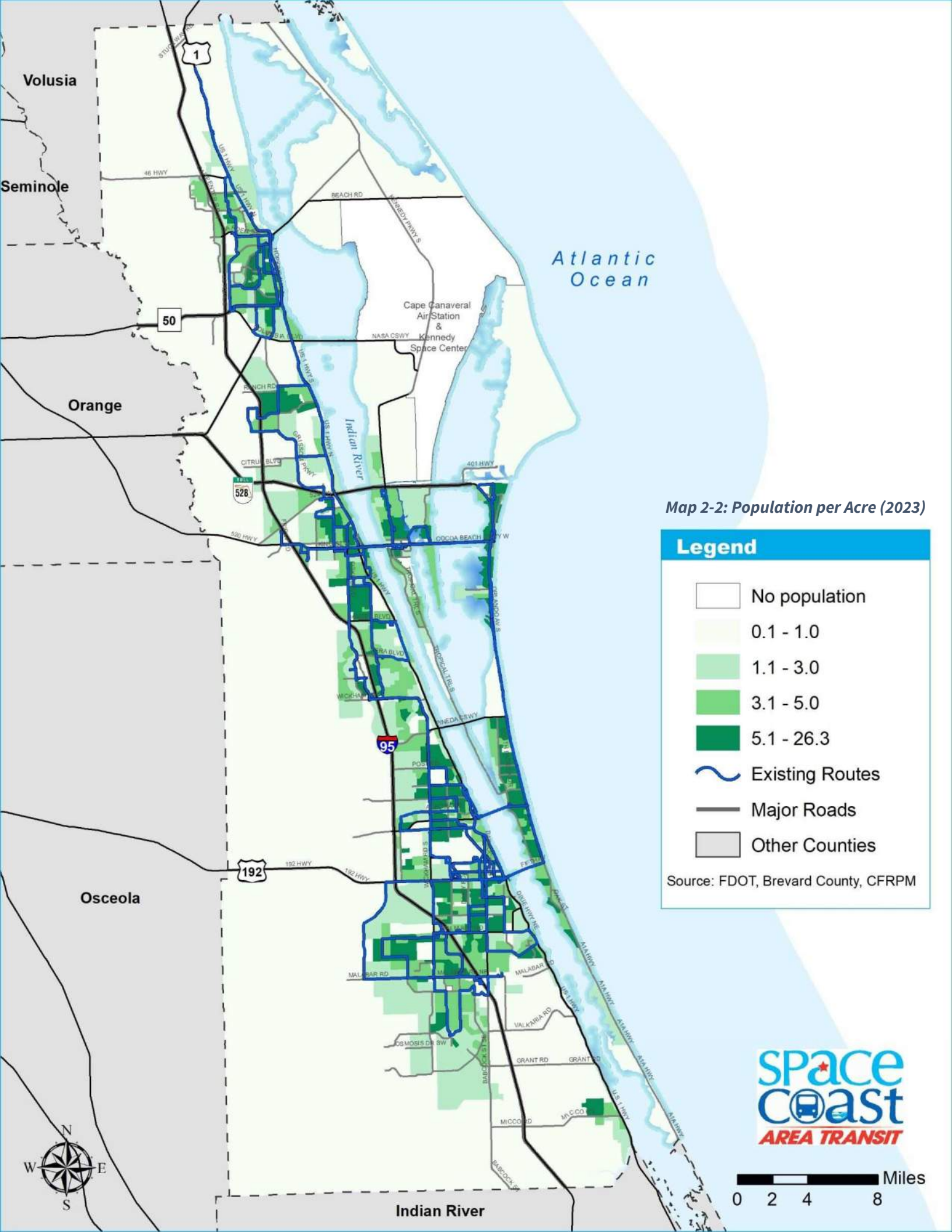
Map 2-2 shows the estimated population density by Census Block Group for the TDP base year of 2023. Areas with the highest density generally occur along major highways or arterial roadways such as I-95 or US-1. The barrier islands also have higher-density areas, especially Satellite Beach. Map 2-3 shows the forecasted population densities for the TDP horizon year of 2032, which generally mirror the current density levels. This indicates future population growth will be primarily due to infill and redevelopment.

[1] BEBR Estimates of Population (2020).

[2] Bank Rate (https://www.bankrate.com/real-estate/states-growing-most-during-pandemic/); Business Insider (https://www.businessinsider.com/florida-growth-jobs-economy-population-new-york-pandemic-employment-miami-2021-4?web=1&wdLOR=cEF7EA7AE-0432-44EA-A547-F6E74E9B50B1).

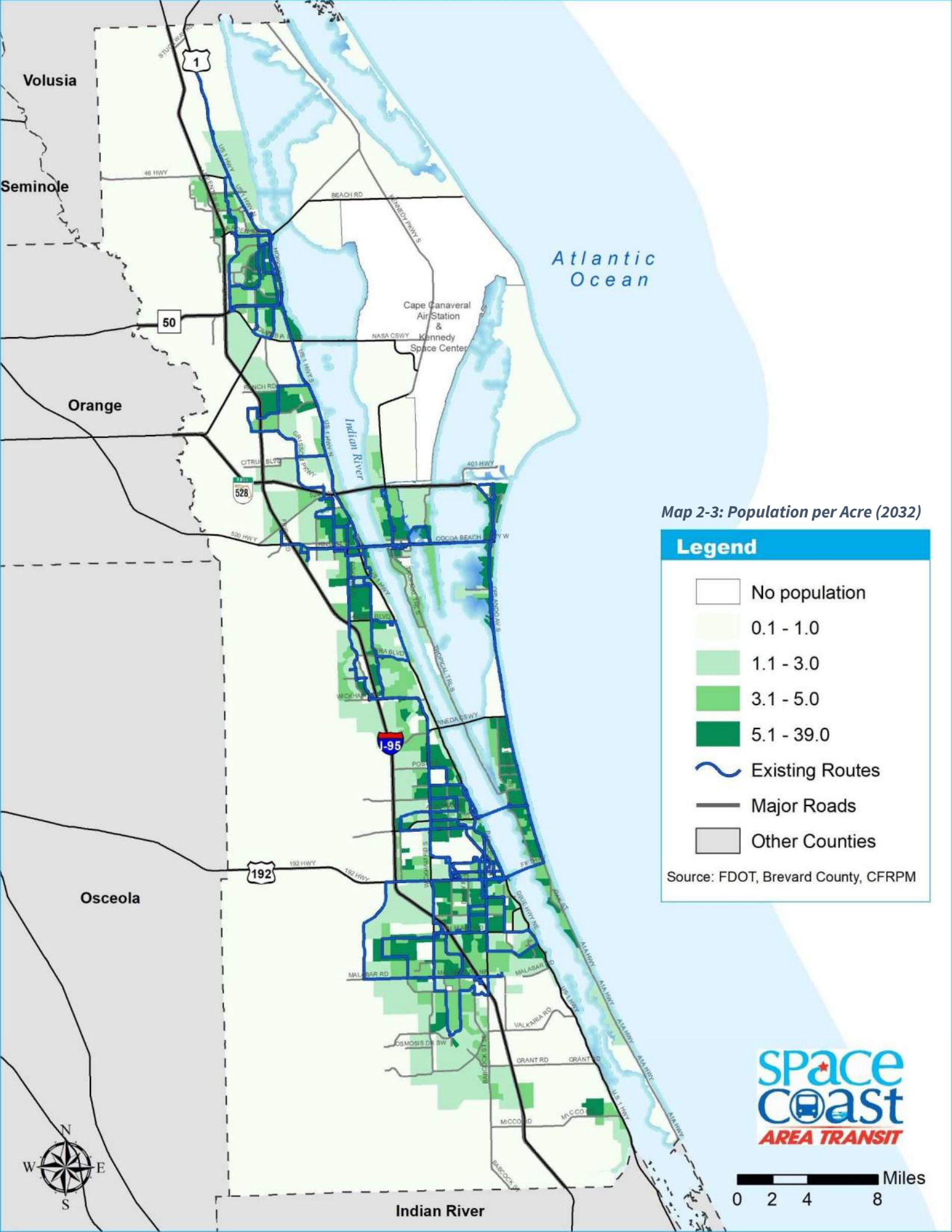


Map 2-1: Study Area



Map 2-2: Population per Acre (2023)

SPACE COAST AREA TRANSIT



Map 2-3: Population per Acre (2032)

SPACE COAST AREA TRANSIT

Demographics

Key demographics such as racial and ethnic origin, persons who have limited English proficiency, age, education attainment, and income were reviewed to better understand the communities served by Space Coast Area Transit.

Race and Ethnicity

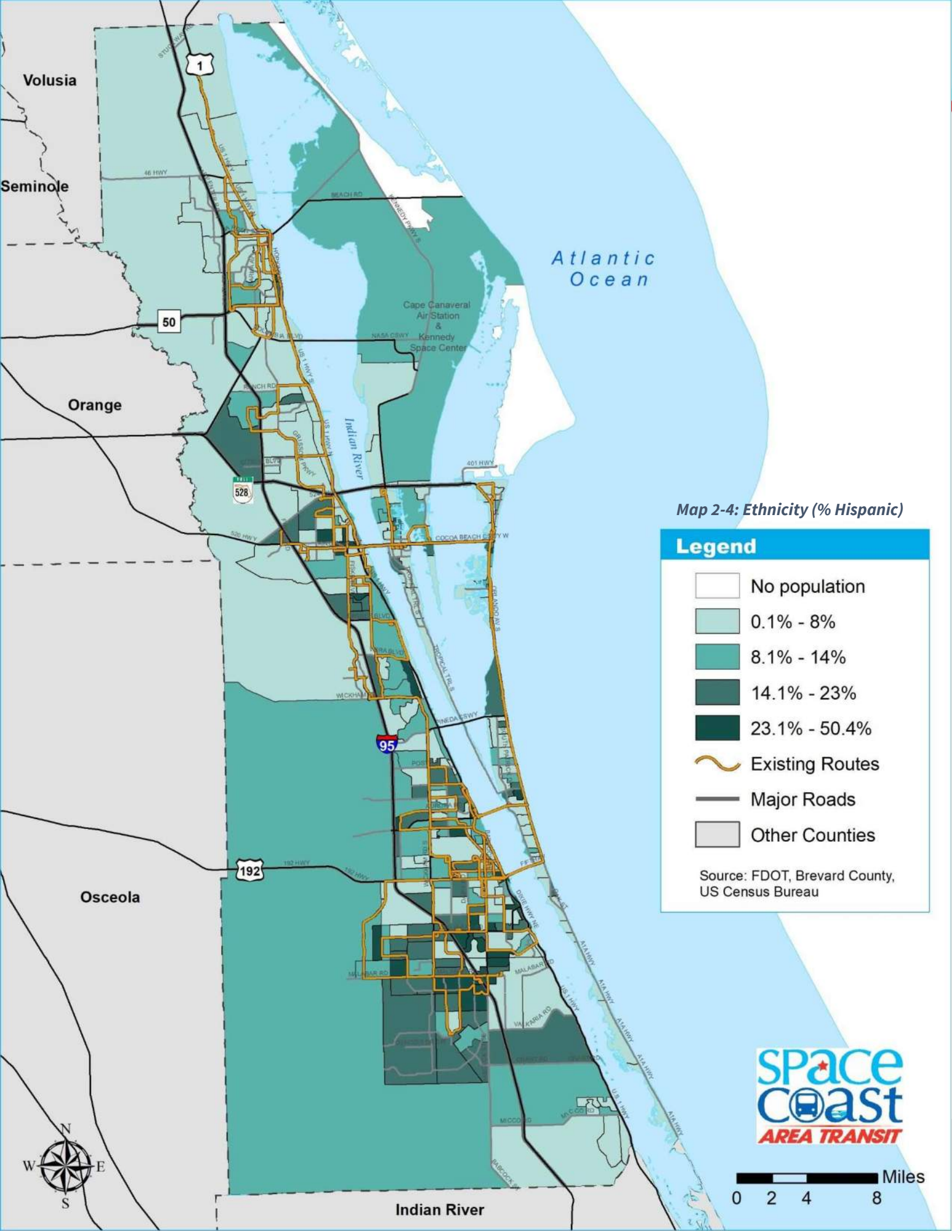
Brevard County's population is not experiencing large fluctuations in ethnic and racial diversity compared to past years. From 2010 to 2019, the number of residents identifying as Hispanic/Latino increased by 37%, representing a 2.2% net increase in this segment's proportion of the overall county distribution. The biggest change in racial distribution was an increase of those identifying as two or more races, almost 1%. Overall, the percentage distributions did not change significantly from 2010 to 2019, as shown in Table 2-1.

Table 2-1: Race and Ethnicity

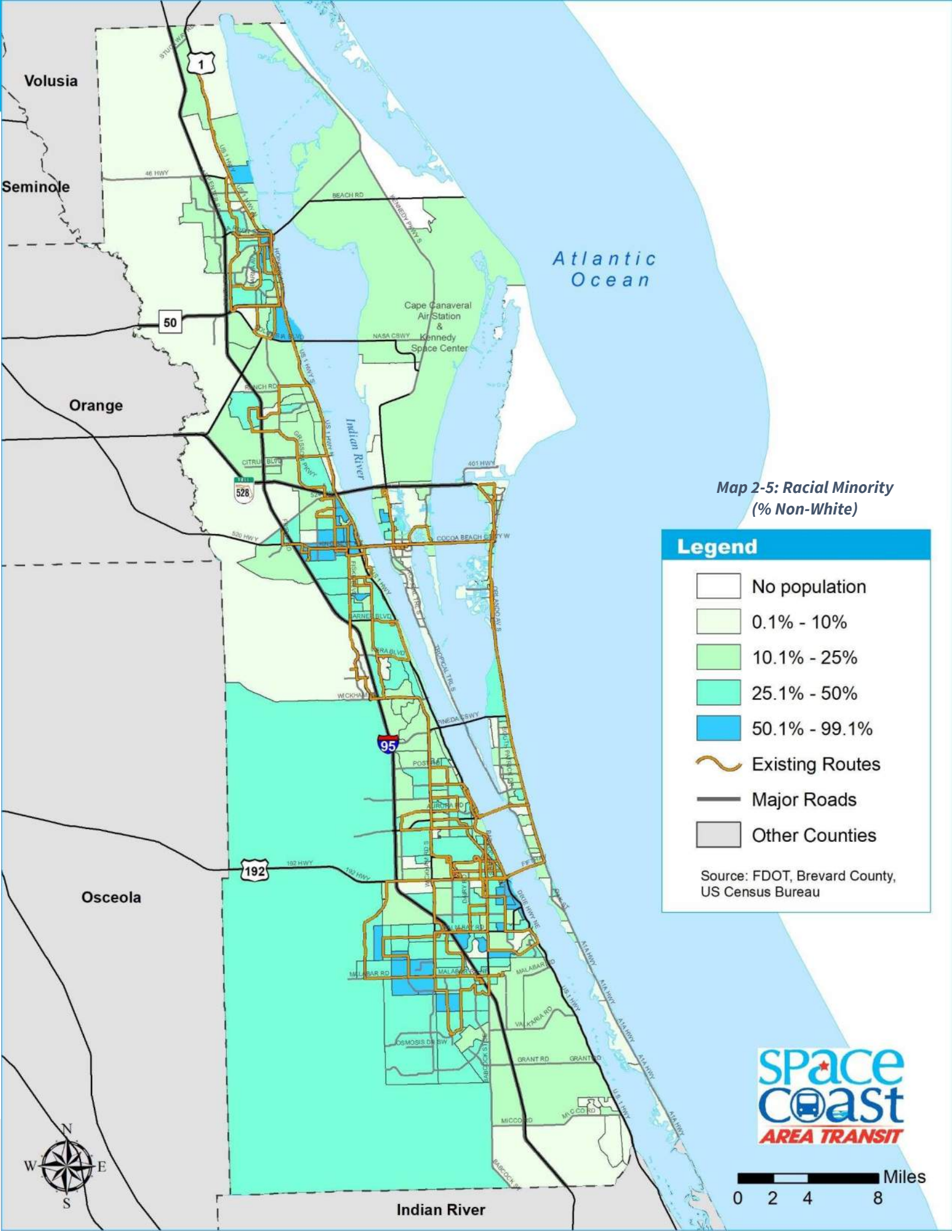
Race/Ethnicity	2010 Population	%	2019 Population	%	Change
Ethnicity					
Not Hispanic/Latino	499,433	91.9%	525,241	87.9%	-2.2%
Hispanic/Latino	43,943	8.1%	60,266	10.3%	2.2%
Race					
White	450,927	83.0%	482,985	82.5%	-0.5%
Black/African American	54,799	10.1%	56,493	9.6%	-0.4%
American Indian/Alaska Native	2,118	0.4%	1,961	0.3%	-0.1%
Asian	11,349	2.1%	13,854	2.4%	0.3%
Native Hawaiian/Other Pacific Islander	514	0.1%	524	0.1%	0.0%
Some other race	9,299	1.7%	9,013	1.5%	-0.2%
Two or more races	14,370	2.6%	20,677	3.5%	0.9%

Source: 2010 US Census and American Community Survey (ACS) 2019 5-Year Estimates

Maps 2-4 and 2-5 show the geographic distribution of persons who identify as an ethnic (Hispanic) or racial (non-White) minority in Brevard County, respectively. Areas with higher proportions of Hispanic and non-White individuals are heavily clustered in the southern part of the county near Palm Bay, on either side of I-95, and in Cocoa. Smaller pockets of populations with higher proportions of Hispanic and non-White individuals live on the barrier islands such as Satellite Beach and Indialantic.



Map 2-4: Ethnicity (% Hispanic)

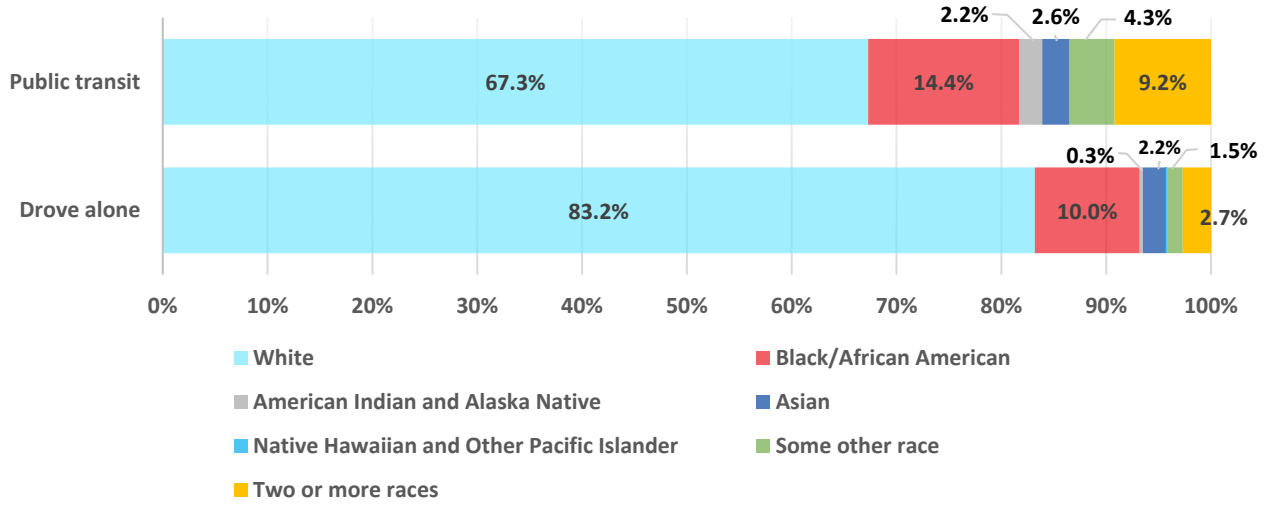


Map 2-5: Racial Minority (% Non-White)

SPACE COAST AREA TRANSIT

Figure 2-1 compares the racial makeup of workers (as defined by Census) who commute using public transit compared to driving alone and illustrates that minorities are more likely to use public transit to travel to and from work. The percentage of Black/African American workers who use public transit is 1.4 times greater than those who drive alone; the percentage of Hispanic/Latino workers of any race is also higher (by 4.4%) compared to those who drive alone. Conversely, non-minority (White non-Hispanic) workers are more than twice as likely to drive alone on their commute than take transit.

Figure 2-1: Transportation to Work by Race

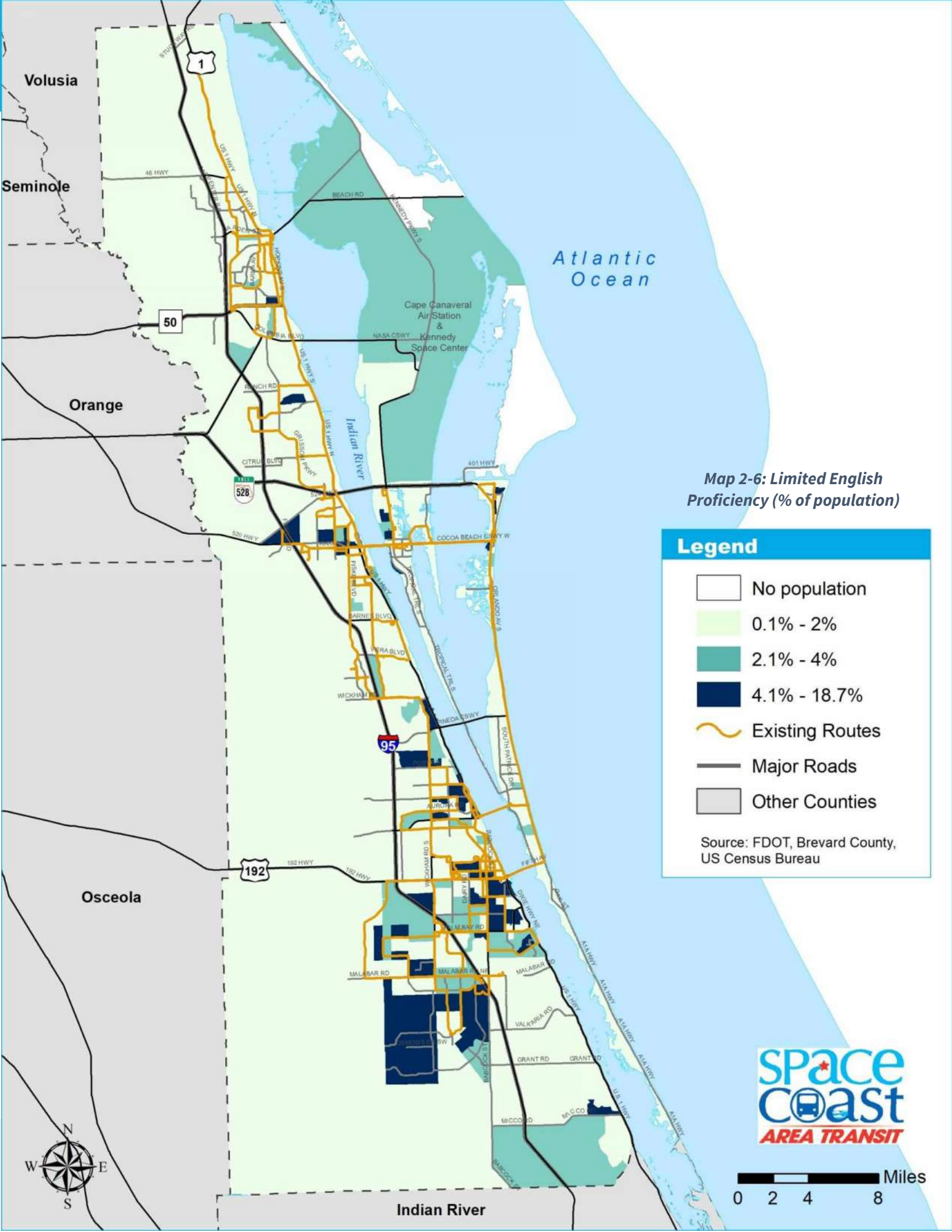


Source: ACS 2019 5-Year Estimates

Limited English Proficiency

1.7%
Brevard County Residents Age 5+ are LEP

Agencies that use federal dollars to fund public transit, such as Space Coast Area Transit, are required to ensure that minorities are not discriminated against in accordance with Title VI of the Civil Rights Act of 1964. The agency also must take reasonable steps to ensure meaningful access to its programs and activities by persons with limited English proficiency (LEP), defined by the US Census Bureau as persons who speak English "less than very well." LEP can include those who are limited in ability/unable to speak, read, and/or write in English without need for an interpreter. Understanding where minorities and LEP populations live helps to ensure that federal requirements in the planning process are met and that public outreach efforts are tailored to encourage participation of these population groups in the TDP process. Furthermore, understanding the overall minority profile of the community is important in identifying future transit needs, as minorities historically represent a higher percentage of transit riders than the overall population. For the worker segment of the county population, 3.1% of all workers in Brevard County are LEP; however, the percentage of workers who use transit to travel to/from their job is 5%. This indicates that transit is an important mode for LEP persons to access jobs and likely for other non-work-related travel. Concentrations of LEP populations are displayed in Map 2-6.



Map 2-6: Limited English Proficiency (% of population)

SPACE COAST AREA TRANSIT

Age

Age is an important factor when planning for public transit. Teenagers and young adults, for example, may not have an automobile and may have a higher need for transit. Older adults are more likely to experience age- and health-related obstacles to driving and are more reliant on other ways to get around other than driving themselves, including using public transit.

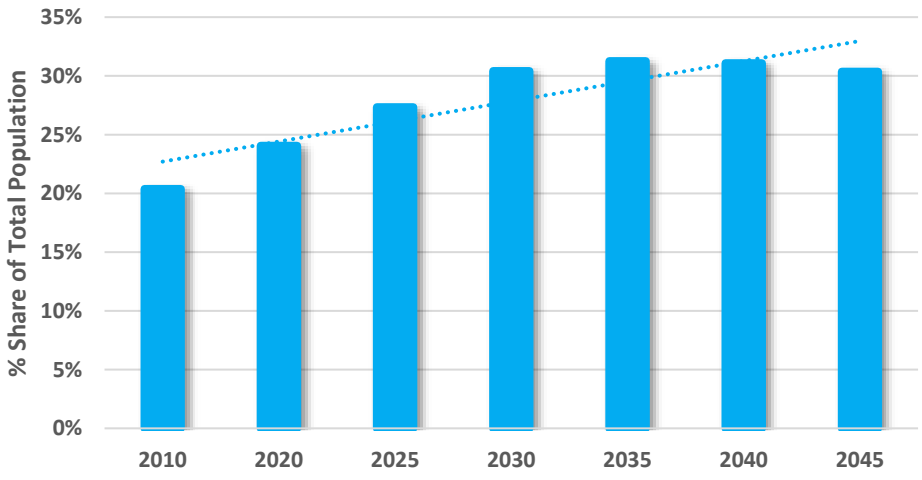
From 2010 to 2019, the total number and percentage of residents aged 65 and older increased the most of any age range; all other age ranges had slight decreases in their population share. This indicates that the proportion of Brevard County's older adults will continue to increase (Table 2-2). This is further evidenced in Figure 2-2, which shows the projected growth of the age 65 and older population over the next 20 years, peaking in 2035 at an estimated 31% of the total county population. Although public transit is needed by all age groups, addressing the mobility needs of the rapidly growing older adult population is a focal area for this TDP.

Table 2-2: Age Distribution

Age	2010 Population	2010 %	2019 Population	2019 %	Change in Population	Change %
Under 15	86,641	15.94%	87,966	15.02%	1,325	-0.92%
15–29	92,450	17.01%	96,471	16.48%	4,021	-0.54%
30–44	88,319	16.25%	92,154	15.74%	3,835	-0.51%
45–64	165,254	30.41%	171,755	29.33%	6,501	-1.08%
65+	110,712	20.37%	137,161	23.43%	26,449	3.05%

Source: Census 2010 and ACS 2019 5-Year Estimates

Figure 2-2: Age 65+ Share of Population Projection



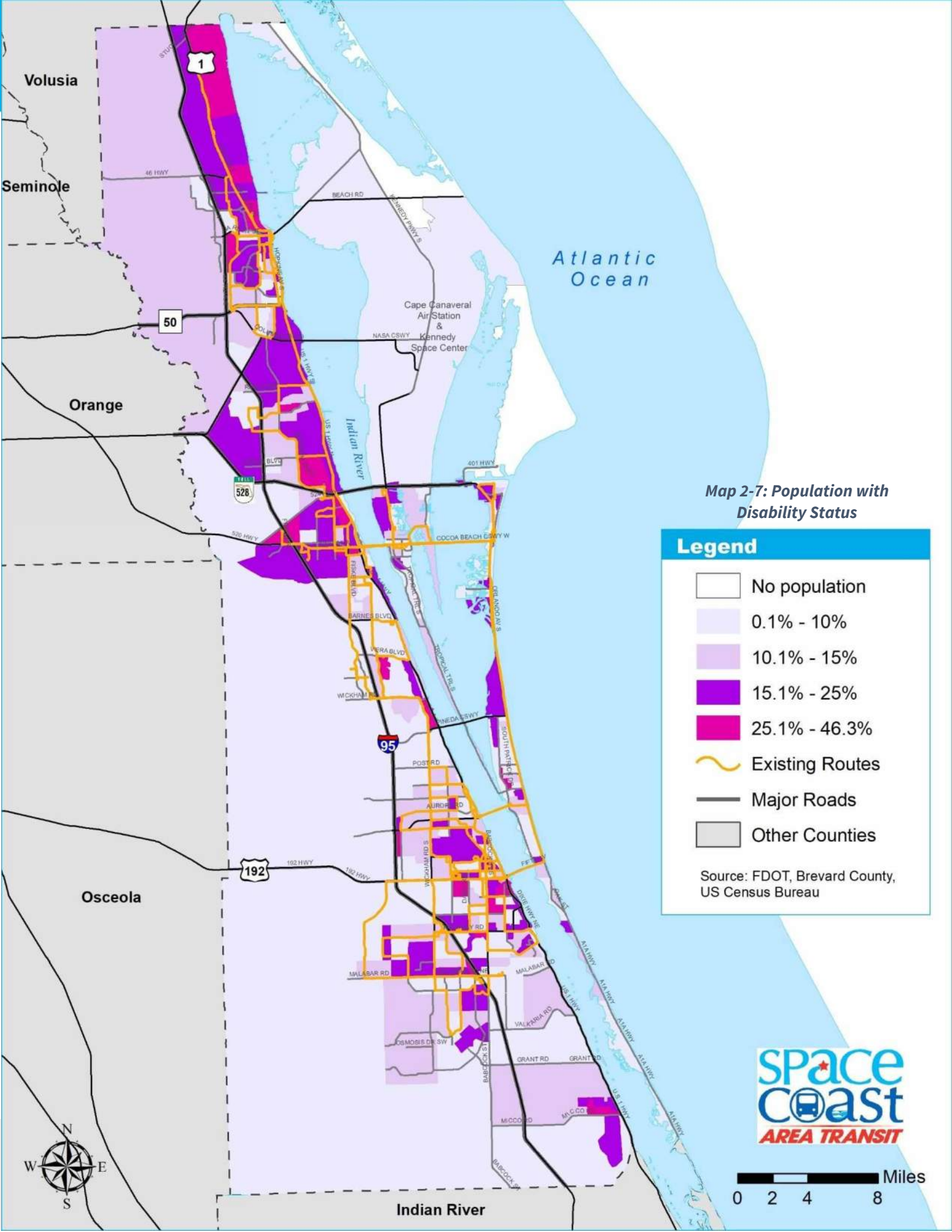
Source: University of Florida's Bureau of Economic & Business Research (BEBR) Estimates of Population (2020)

Persons with Disabilities

Individuals with serious hearing, vision, movement, cognitive, ambulatory, or self-care difficulties are considered to hold disability status by the U.S. Census Bureau's American Community Survey (ACS). Difficulties such as these present significant mobility challenges and may increase an individual's dependence on transportation services to fulfill daily needs; adults with disabilities are twice as likely to have inadequate transportation compared to those without disabilities.[3] This can affect quality of life for persons potentially left out of the work force, shopping, community activities, or social ties. Although Space Coast Area Transit offers demand-response and other special services to reach populations with disabilities, it is important to understand where these populations are more concentrated relative to fixed-route service.

Map 2-7 indicates the location of populations with disability status, showing numerous areas where over 25% of the population are persons with disabilities. These areas include along US-1 in Titusville, Cocoa, Cocoa West, Indian River Colony Club (age 55 and over community), Palm Bay, and Micco.

[3]"Equity in Transportation for People with Disabilities," American Association of Persons with Disabilities.



Map 2-7: Population with Disability Status

Legend

- No population
- 0.1% - 10%
- 10.1% - 15%
- 15.1% - 25%
- 25.1% - 46.3%
- Existing Routes
- Major Roads
- Other Counties

Source: FDOT, Brevard County, US Census Bureau

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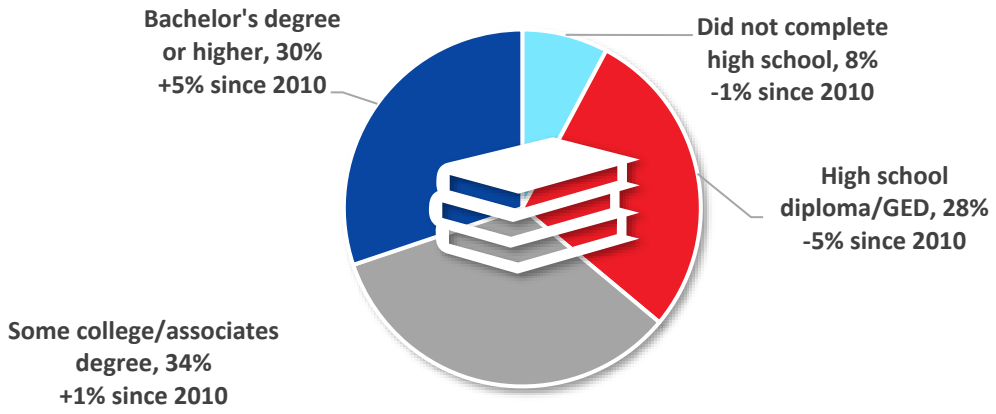
Education

Education is an important factor in understanding an area's characteristics and transportation mode of choice. Level of education has been shown to correlate with income, which may influence the use of public transit. Brevard County's education attainment has increased slightly in the last 10 years. Since 2010, the number of people who hold a bachelor's degree or higher has increased by over 32,000 (5%). Figure 2-3 shows the level of educational attainment for Brevard County residents and the percent change since the 2010 Census.

Figure 2-3: Education Attainment



Source: ACS 2010 1-Year Estimates and 2019 5-Year Estimates

Income

Household Income

Income is an important aspect to consider when evaluating a community's public transit needs. Although dependent on several factors, including household size and expenses, lower-income households are more likely to have less money available to spend on vehicle ownership and maintenance or for making non-essential trips, thereby increasing reliance on public transit. Brevard County is among the top quarter of average annual income in Florida. In 2019, household annual income distribution of Brevard County was very similar to that of Florida. Despite this, 19% (44,392) of Brevard County households earn less than $25,000 annually, and another 10% earn $25,000–$34,999 (Table 2-3).

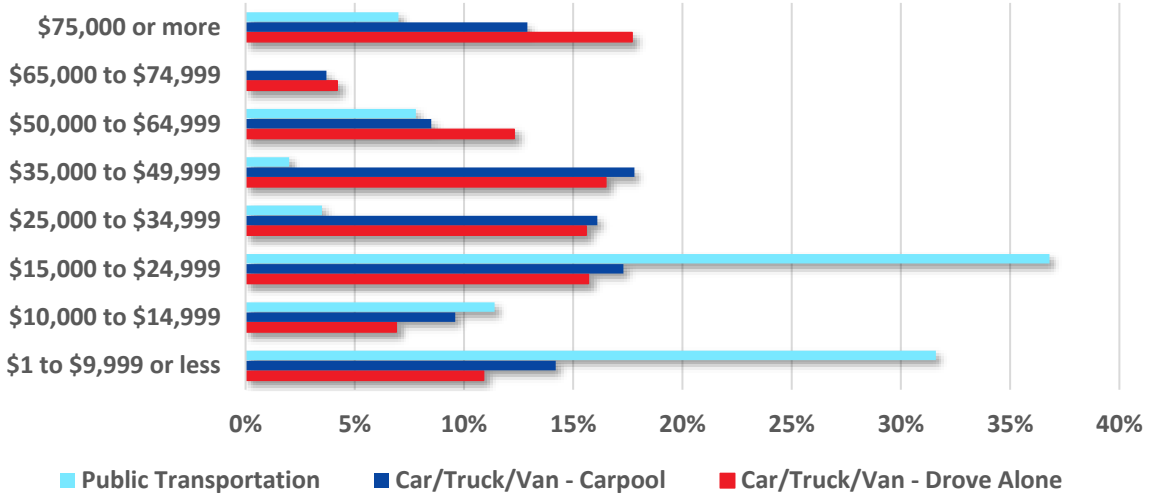
As Figure 2-4 shows, income among workers who commute using public transit skews lower compared to those who drive alone, indicating a high dependence on public transit to travel to work. Nearly 80% of commuters using public transit earn less than $25,000 annually, and 31.6% earn less than $10,000 annually. Comparatively, only one-third of workers who drive alone on their commute earn less than $25,000 annually, with 17.7% earning $75,000 or more.

Table 2-3: Annual Household Income Distribution

Annual Household Income	Brevard County				Florida	
	2010	2010 %	2019	2019 %	2019	2019 %
Less than $10,000	13,333	6%	11,448	5%	501,668	6%
$10,000 to $14,999	11,596	5%	10,251	4%	336,220	4%
$15,000 to $24,999	25,638	12%	22,693	10%	769,463	10%
$25,000 to $34,999	25,125	11%	23,208	10%	793,382	10%
$35,000 to $49,999	35,691	16%	32,682	14%	1,078,566	14%
$50,000 to $74,999	42,822	19%	44,806	19%	1,417,046	18%
$75,000+	66,666	30%	85,329	37%	2,839,966	37%

Source: ACS 2010 and 2019 5-Year Estimates

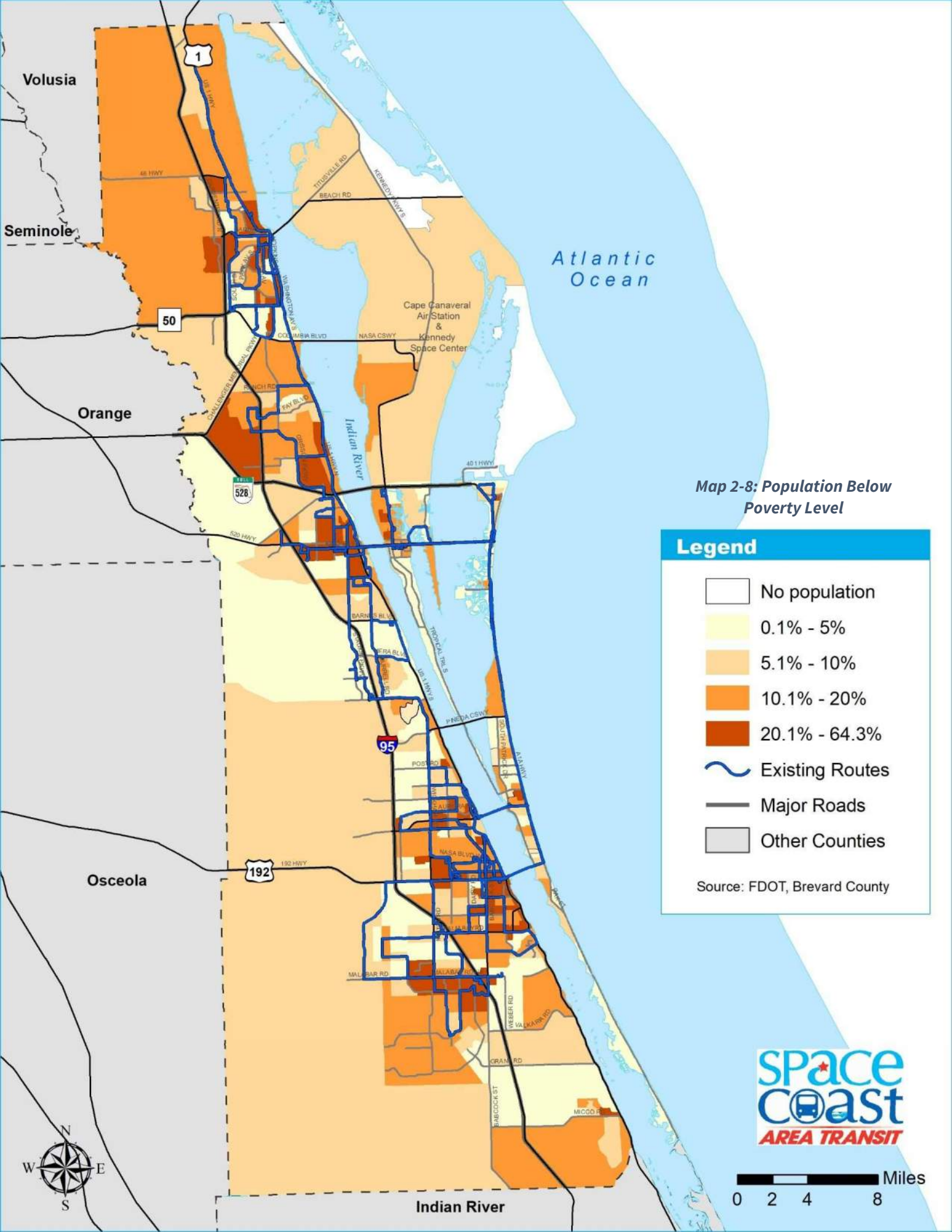
Figure 2-4: Annual Household Income by Commute Type



Source: ACS 2019 5-Year Estimates

Poverty

Individuals living in poverty are assumed to have the highest propensity to use transit. The US Census Bureau defines the poverty threshold in 2021 as under $27,479 annual income for a family of four with two children. Brevard County's poverty rate of 11.8% is slightly lower than Florida's rate of 14% (2019 ACS 5-Year Estimates). Map 2-8 shows the distribution of individuals living under the federal poverty level by Block Group. There are notable populations living in poverty along US-1/Dixie Highway and along I-95 in areas such Melbourne and West Malabar. On the northern end of Brevard County, Cocoa West and Titusville also display clusters of individuals below poverty.



Map 2-8: Population Below Poverty Level

Travel Behavior and Commuting Trends

Automobile Ownership

The cost of owning a vehicle can be a high percentage of a household budget, particularly for those already near or below the poverty line. Households that do not own a vehicle are considered "zero-vehicle households" and are more likely to be dependent on public transit for work, health, shopping, education, and recreation purposes, either by choice or out of financial necessity. In Brevard County, 4.8% of all households are zero-vehicle (lower than the 6.3% for Florida), 39.6% of households have one vehicle available, and the remaining 55.5% have two or more vehicles available (2019 ACS 5-Year Estimates). This has stayed relatively stable since 2010, with the largest decrease in the percentage of households with two vehicles (Table 2-4).

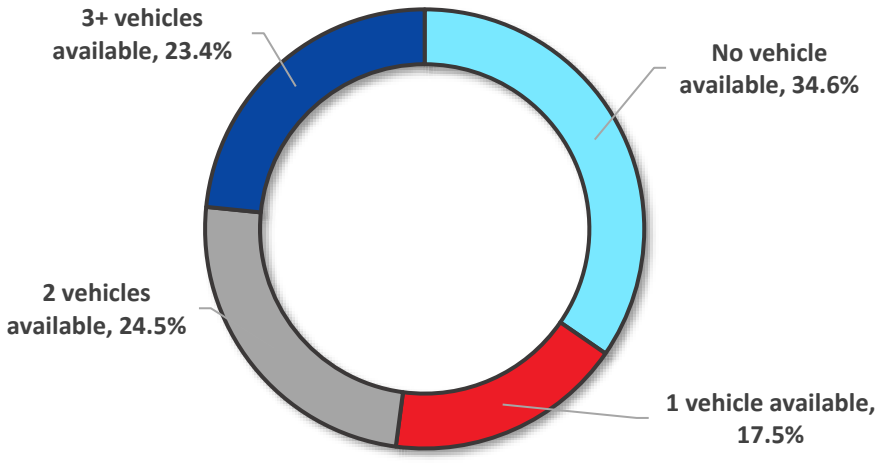
Table 2-4: Household Vehicle Availability

Vehicles Available	2010	2019	Change
No vehicle	4.5%	4.8%	0.3%
1 vehicle	38.8%	39.6%	0.8%
2 vehicles	40.5%	39.3%	-1.2%
3+ vehicles	16.1%	16.2%	0.1%

Source: ACS 2010 and 2019 5-Year Estimates

Figure 2-5 shows that, among workers who commute using public transit, the share with no available vehicle (34.6%) is much higher than the proportion of zero-vehicle households (4.8%). This further indicates that workers using transit are more dependent on it to get to work and other places due to lack of vehicle availability.

Figure 2-5: Vehicle Availability for Workers Commuting by Public Transportation



Source: ACS 2010 and 2019 5-Year Estimates

Mode Split

Table 2-5 shows that the most popular commute choice in Brevard County is driving alone (82.9%). The proportion of workers who carpool decreased slightly between 2010 and 2019; those teleworking increased from 4.2% to 6.3%, and commuters using public transit stayed the same.

Table 2-5: Commuting Characteristics

Mode	2010	2019	Change
Drive alone	82.7%	82.9%	0.2%
Carpool	9.0%	6.8%	-2.2%
Use public transit	0.4%	0.4%	0.0%
Walk	1.2%	1.3%	0.1%
Bike	0.6%	0.7%	0.1%
Use taxicab, motorcycle, or other means	1.8%	1.5%	-0.3%
Work from home	4.2%	6.3%	2.1%

Source: American Community Survey 2010 and 2019 5-Year Estimates

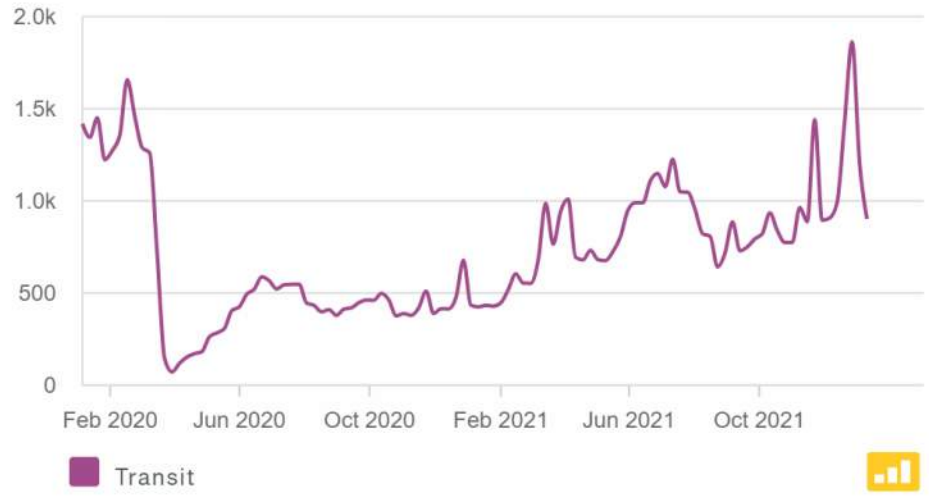
COVID-19 Impacts on Travel Behavior

The ongoing global COVID-19 pandemic that began in March 2020 has touched nearly every aspect of life. Public health and safety concerns driven by the pandemic have dramatically changed travel behavior. The most significant reduction in travel occurred in the early months of the pandemic due to CDC guidelines and local stay-at-home orders. Eighteen months later, travel patterns have not yet fully returned to pre-pandemic levels, as people generally continue to stay home more and travel differently due to increased teleworking, distance learning, increased online shopping/delivery services, and other behavioral changes. Collectively, this is expected to have a permanent effect on where, how, and how often we travel.

To understand the potential impacts of the COVID-19 pandemic on travel patterns, trends in weekly mode splits of trips originating in Brevard County were assessed using Replica, a data platform that estimates travel trends based on data sources such as road traffic, cellular data, and financial transactions. The impacts of the pandemic on transit ridership began in March 2020, when sampled transit trips starting in Brevard County dropped from over 1,500 daily trips to around 100. In the months following the initial lockdown in March 2020, transit trip trends have slowly recovered. As of late 2021, transit travel trends seemed to more align with pre-COVID levels (Figure 2-6).

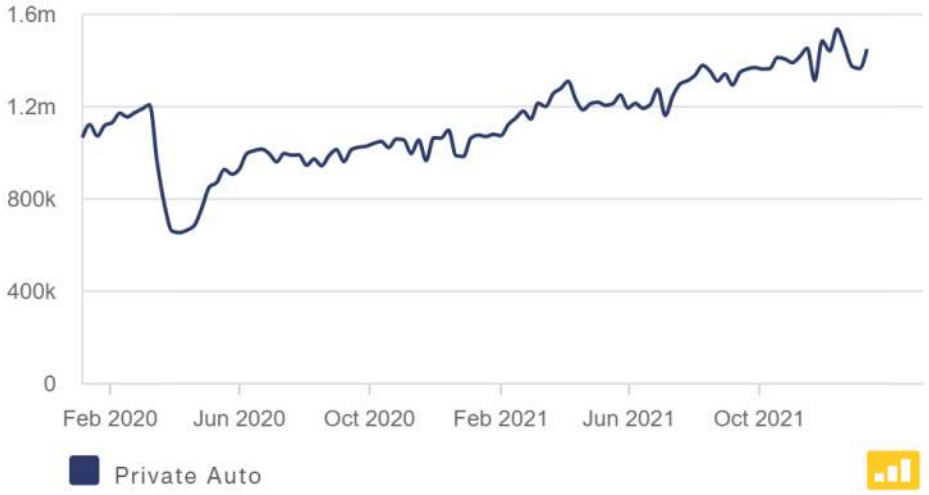
Meanwhile, samples of private automobile trips originating in Brevard County initially dropped by a few hundred thousand trips in March 2020 but consistently climbed since June 2020 to pre-COVID levels as of late 2021 (Figure 2-7). Both transit and private automobile modes saw a jump in trips at the end of 2021. Although trips have slowly increased, the long-term impacts of the pandemic will take time to unfold. (*Note*: Although rideshare trips are included in these trip volumes, they are not tracked separately and, therefore, cannot be analyzed.)

Figure 2-6: Number of Transit Trips (Average Weekday)



Source: Replica Brevard County Mode Split Data from 1/6/2020 to 1/10/2022

Figure 2-7: Number of Private Auto Trips

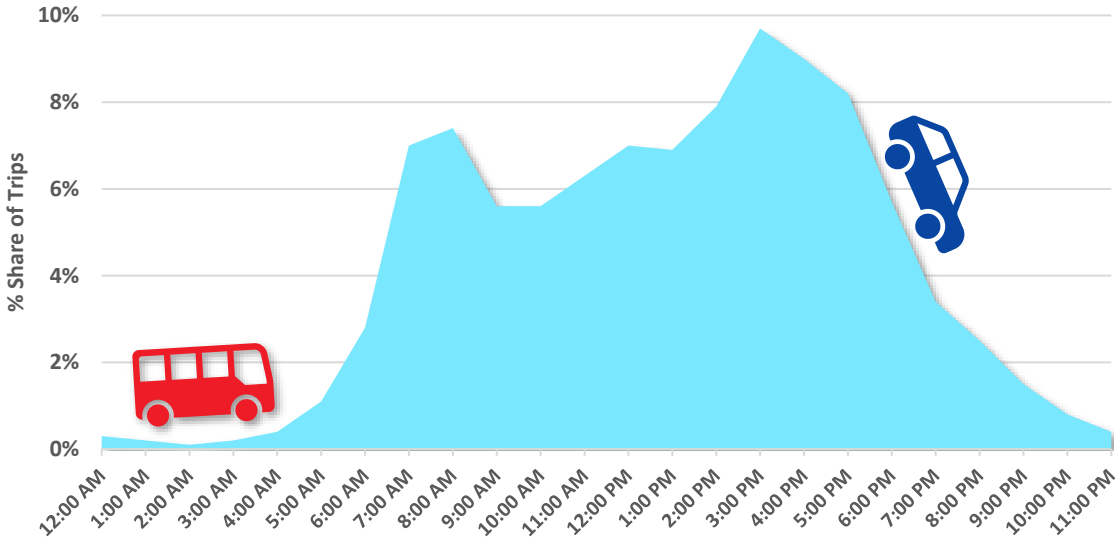


Source: Replica Brevard County Mode Split Data, 1/6/2020 to 1/10/2022

Trip Departure and Commute Times

Insight into trip departure times is essential for understanding the community's transportation needs and how Space Coast Area Transit can meet them. Figure 2-8 illustrates the distribution of trip start times for an average weekday for all trips originating in Brevard County using January 2022 data from Replica. Although traditionally peak travel periods occurred in the morning and evening peak commute periods, the data show that a high number of mid-day trips were sustained, with demand for travel remaining high.

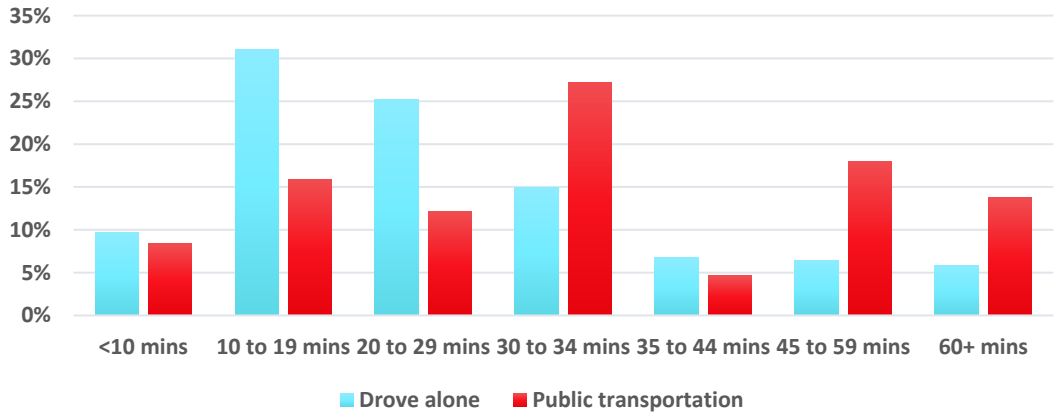
Figure 2-8: Trip Start Time for Average Weekday



Source: Replica Average Weekday Trip Start Time – Brevard County, week of January 10, 2022

Figure 2-9 compares the commute times of workers using public transit and driving alone. The data show that those who drive alone tend to have shorter commute times. Conversely, workers who take public transit are more likely to have a longer commute time, with over 60% experiencing a 30-minute or longer commute. The average commute time is 10 minutes longer for public transit users compared to those who drive alone—35 minutes vs. 25 minutes, respectively.

Figure 2-9: Travel Time to Work by Commute Mode

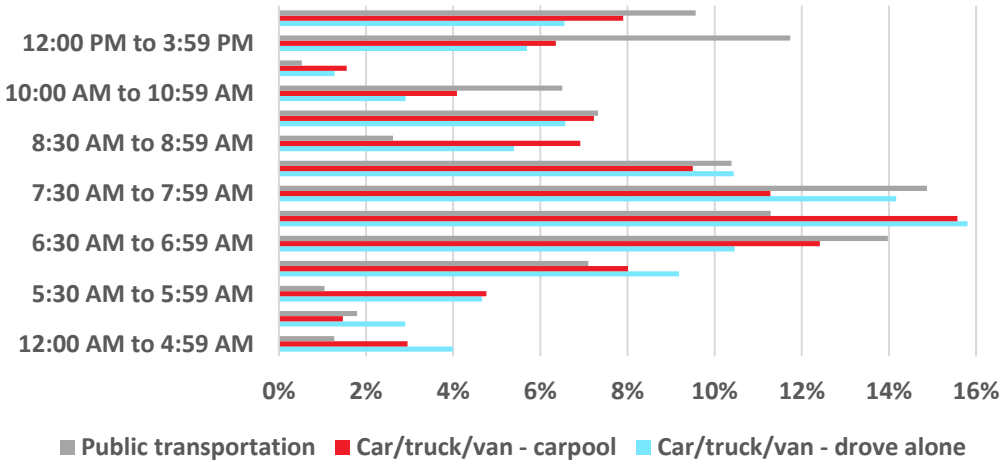


Source: ACS 2019 5-Year Estimates

Figure 2-10 shows the difference in time of departure among commute types, which is directly affected by the length of the commute to work. Of workers using public transit, 30% leave for work between 6:30 AM and 7:59 AM, whereas 30% who drive alone leave between 7:00 AM and 7:59 AM. Additionally, 22% of transit commuters report leaving for work during the afternoon and evening. This

is reflective of a high number of commuters working in industries such as hospitality and retail that operate 2nd or 3rd shifts outside of typical daytime business hours.

Figure 2-10: Worker Time of Departure



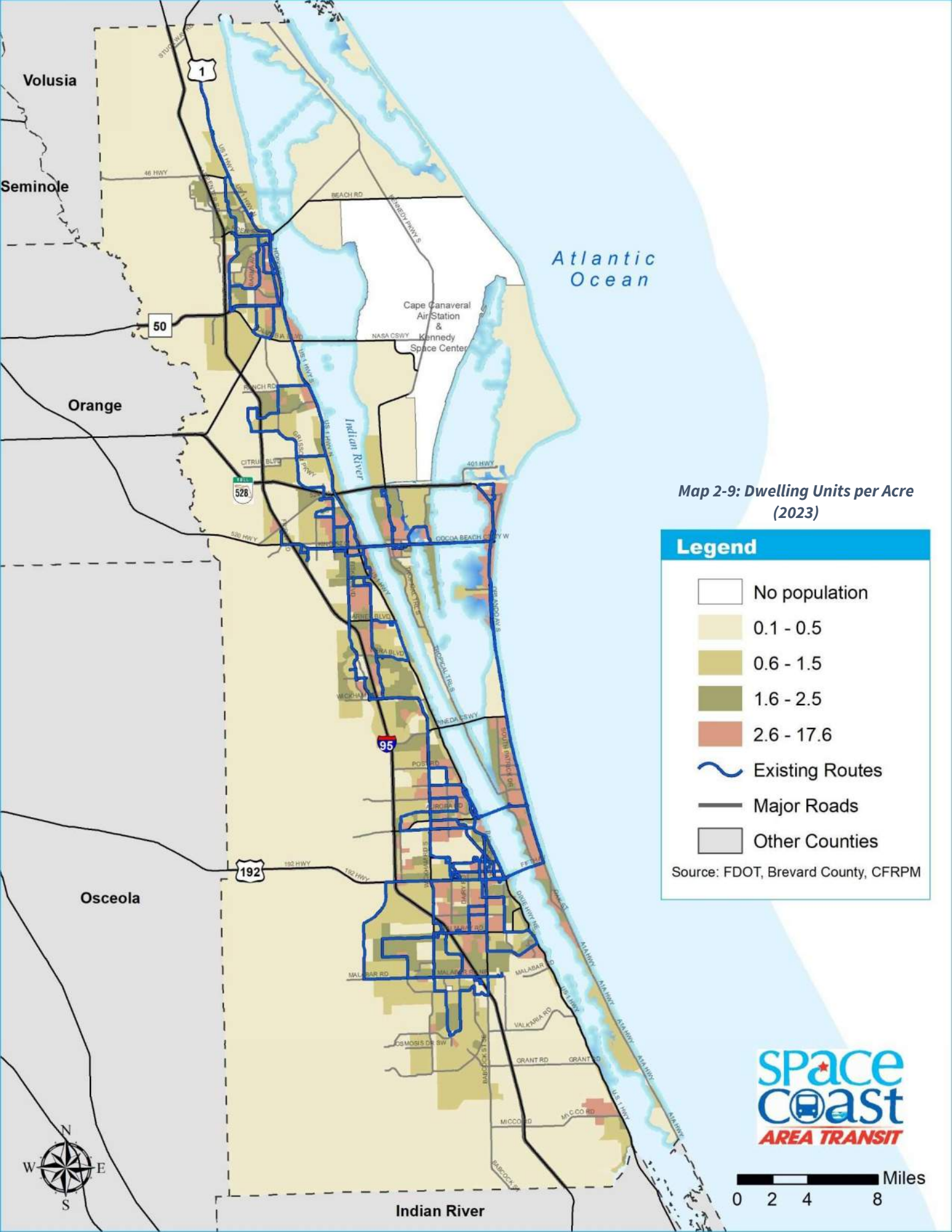
Source: ACS 2019 5-Year Estimates

Housing

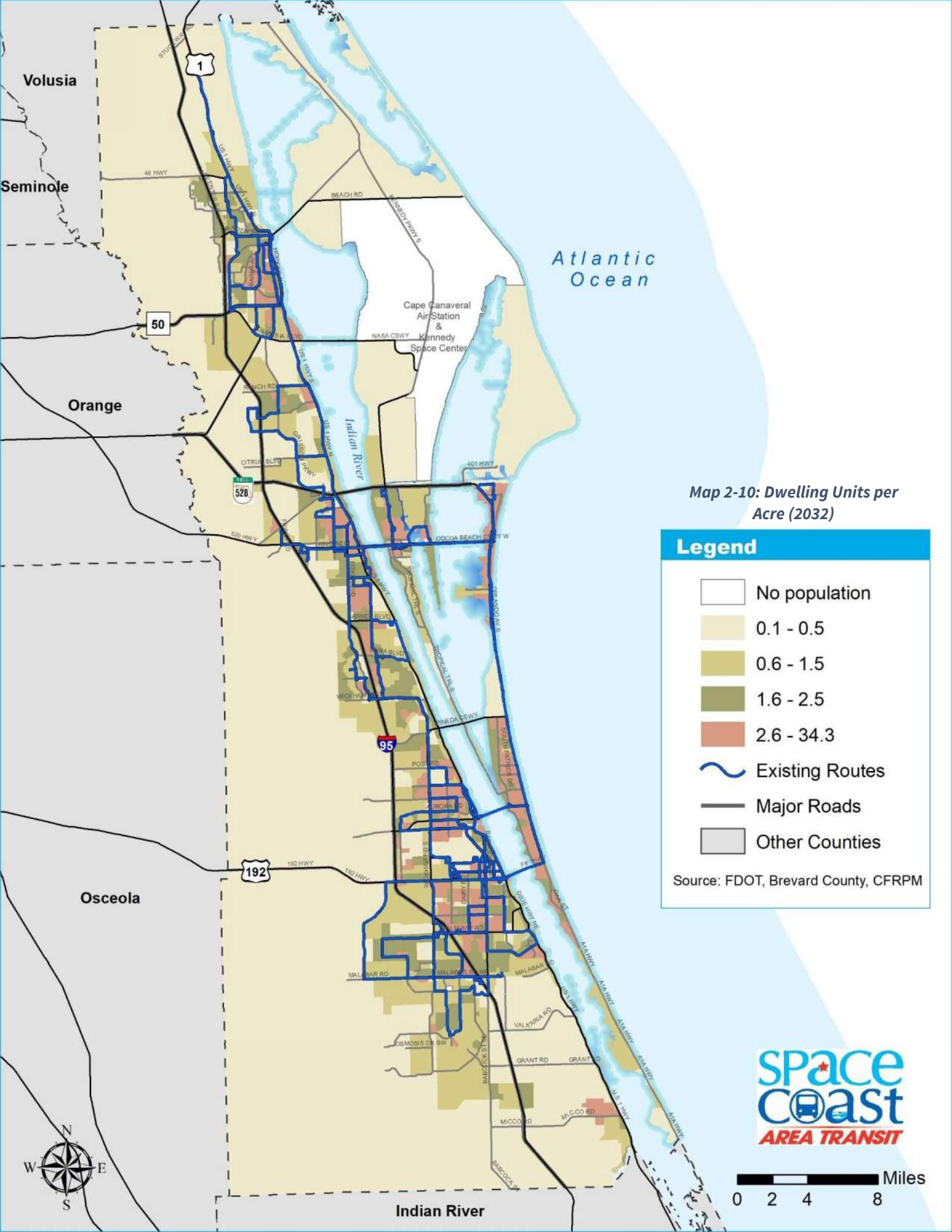
Housing Density

The greater the housing density of an area, the greater likelihood that transit service can provide an attractive alternative to personal vehicle travel. This is due to factors such as limited parking supply, higher cost of living due to more limited land supply, and the number of potential transit users and trip generators in each geographic area. In turn, less density requires longer trips and more travel time per potential rider. Although indicators such as dwelling unit density can provide insight into a transit-supportive environment, other factors also play a role. For example, limited roadway connectivity due to land use such as gated subdivisions and housing built around geographical barriers such as lakes or canals can adversely affect the use of transit. In addition, lack of transit frequency, transit infrastructure, and pedestrian/bicycle facilities are common barriers to transit use.

Map 2-9 illustrates the projected 2023 and 2032 dwelling unit densities in Brevard County. Housing densities are highest between I-95 and US-1 and between SR-528 and Malabar Road. Densities are also high on the barrier island areas of Merritt Island, Cocoa Beach, and Satellite Beach. Density decreases generally west of I-95. As shown in Map 2-10, housing densities are expected to generally increase by 2032 in areas where housing already exists throughout the county, such as along the coastlines and along major roads such as I-95.



Map 2-9: Dwelling Units per Acre (2023)



Map 2-10: Dwelling Units per Acre (2032)

Legend

- No population
- 0.1 - 0.5
- 0.6 - 1.5
- 1.6 - 2.5
- 2.6 - 34.3
- Existing Routes
- Major Roads
- Other Counties

Source: FDOT, Brevard County, CFRPM

Space Coast Area Transit

Miles
0 2 4 8

Affordable Housing

A combination of federal and local programs provides funding assistance for subsidized and affordable housing for populations including older adults, families, farmworkers, the homeless, and those who are low-income or have disabilities. Table 2-6 summarizes the 5,920 assisted units among 60 properties in Brevard County by program funding source as of January 2022; their locations are illustrated in Map 2-11.

Affordable housing properties throughout Brevard County are well-served by transit; all inventoried properties are within ¾ mile to one or more Space Coast Area Transit bus routes.

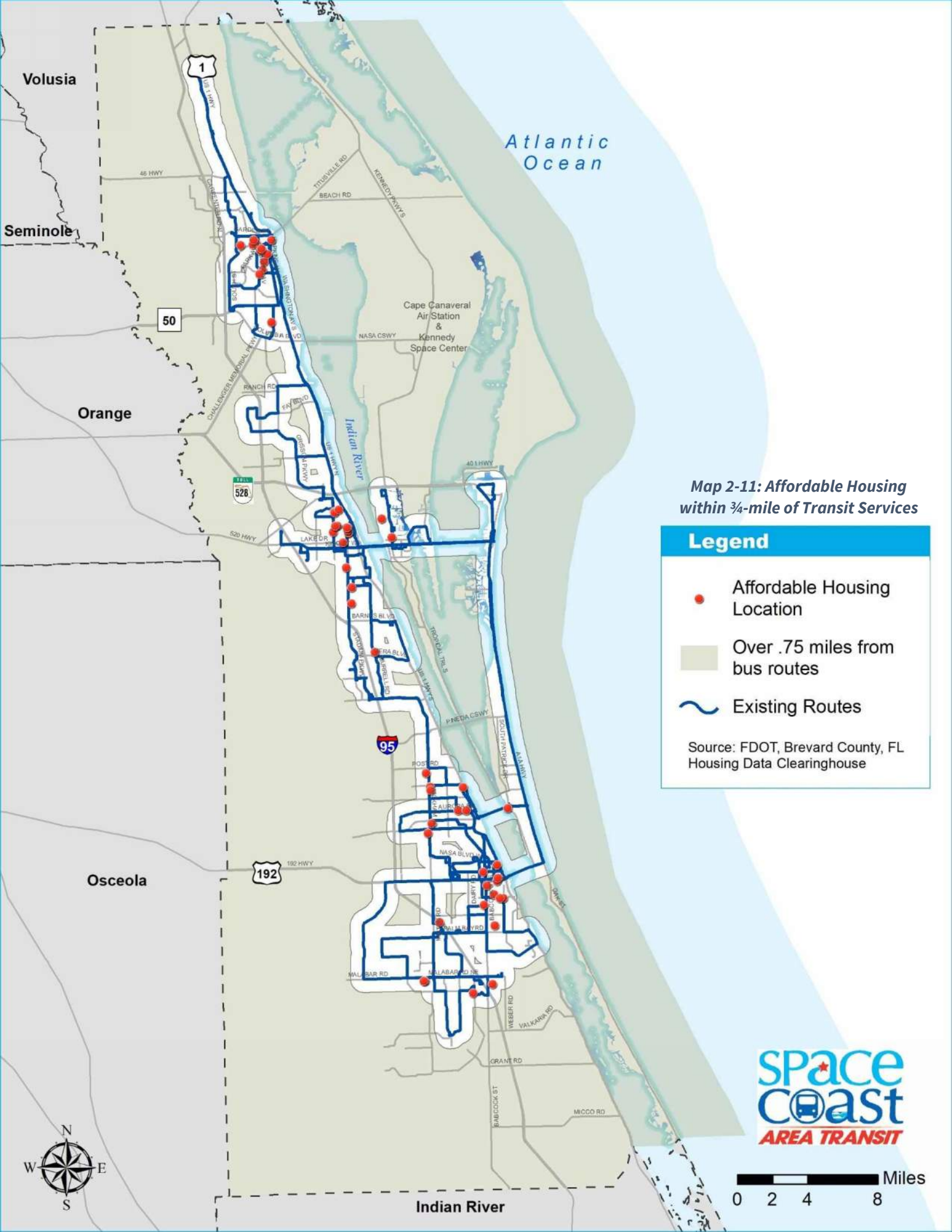
Table 2-6: Assisted Properties in Brevard County by Funding Source

Funding Program	# of Properties	# of Assisted Housing Units	# of Total Housing Units
Florida Housing Finance Corporation	38	4,381	4,595
HUD Multifamily	28	2,390	2,438
Local Housing Finance Authority	7	901	923
HUD Public Housing	5	804	811
Total*	60	5,920	6,180

HUD = US Department of Housing and Urban Development

*Many properties receive funding from more than one agency, so property and units may appear in more than one funding program in this table; therefore, the total number of properties and units is not a summation of those shown by funding program.

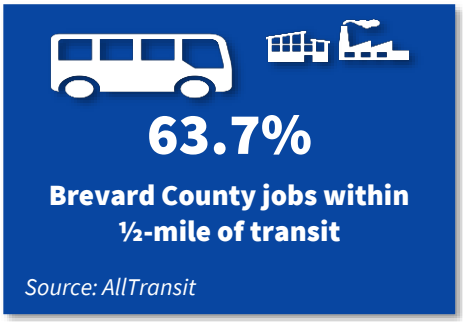
Source: Florida Housing Data Clearinghouse.



Map 2-11: Affordable Housing within ¾-mile of Transit Services

Employment

Job access via transit can ensure that workers get to their employment locations, thereby providing essential benefits to the economy.



Employment Density

As with housing densities, areas with higher employment densities are more likely to support transit service as an attractive alternative to personal vehicle travel. Map 2-12 illustrates 2023 employment densities in Brevard County. It is also important to understand where the jobs in the county are most concentrated. Employment can be found along major roadways, with notable clusters at Melbourne, Viera, Cocoa, Titusville, and Cocoa Beach. Note that because the employment density is calculated per acre, areas with high acreage may skew the appearance of the employment density. For example, the area near Kennedy Space Center will have more than 11,000 estimated employees in 2023, but due to the high acreage, the density appears low.

Map 2-13 shows the projected 2032 employment densities in the county. Employment density is generally projected to increase where there is already employment or adjacent to it.

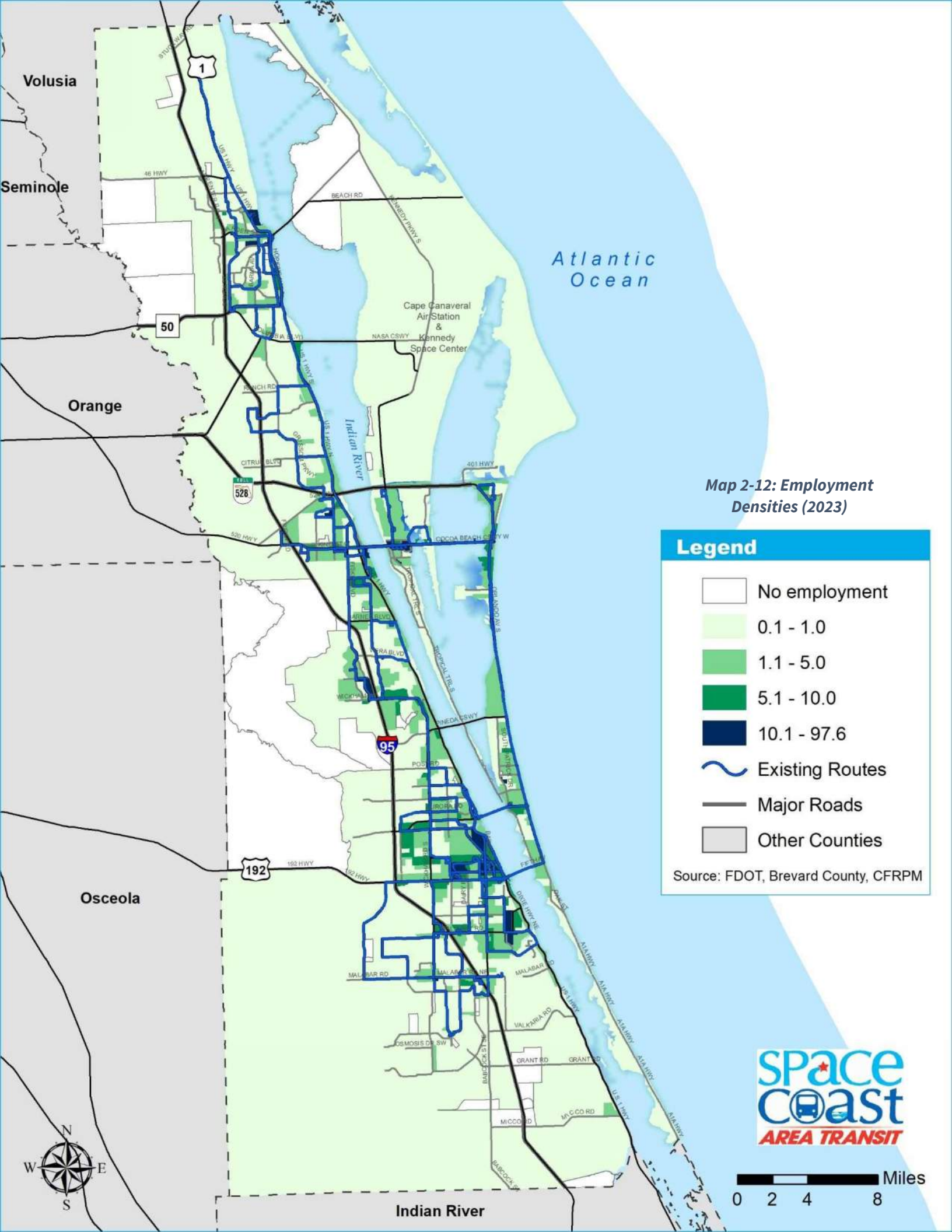
Major Employers

The top 10 employers by number of employees are shown in Table 2-7. Several of these employers coincide with the areas with a high employment density, such as Health First and Northrop Grumman in Melbourne and L3Harris Technologies on Palm Bay Road. Some large employers also operate countywide, with employees traveling to multiple locations, such as Brevard Public Schools. As the 11th largest school district in Florida, serving more than 67,000 students, and the largest employer in Brevard County, it has about 9,500 employees located at schools and facilities throughout the county.

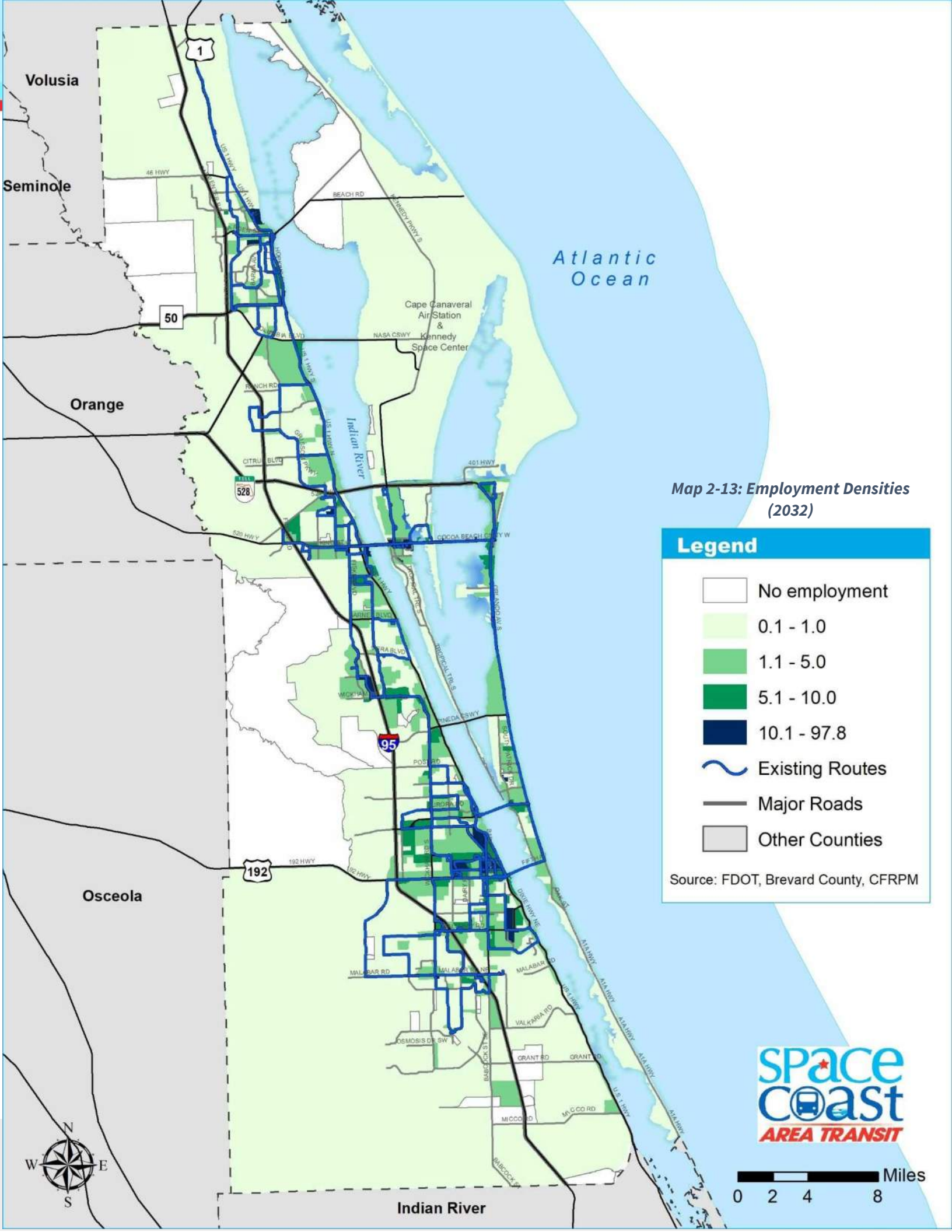
Table 2-7: Top 10 Employers

Rank	Employer	Employees
1	Brevard Public Schools	9,500
2	Health First Medical Group, LLC	8,500
3	L3Harris Technologies, Inc.	7,500
4	Publix Super Markets, Inc.	3,500
5	Wal-Mart Associates, Inc.	3,500
6	Northrop Grumman Systems Corp.	3,500
7	Brevard County BOCC	2,500
8	NASA	2,500
9	New Rockwell Collins, Inc.	1,500
10	TTEC Services Corp.	1,500

Source: Brevard County Comprehensive Annual Financial Report for Year Ending September 30, 2020



Map 2-12: Employment Densities (2023)



Map 2-13: Employment Densities (2032)

Land Use

Transportation and land use have a very symbiotic relationship. The type and placement of transportation systems strongly affects land use patterns, and the types and mix of land uses affect travel patterns and how well various alternative modes to driving, including transit, can be supported. A review of existing and future land use can help determine where land uses that are conducive to transit use are located or will be located. Some examples of transit-supportive land uses include high-density/multi-family residential, mixed-use, high-density commercial, and certain community facilities like hospitals and recreational facilities.

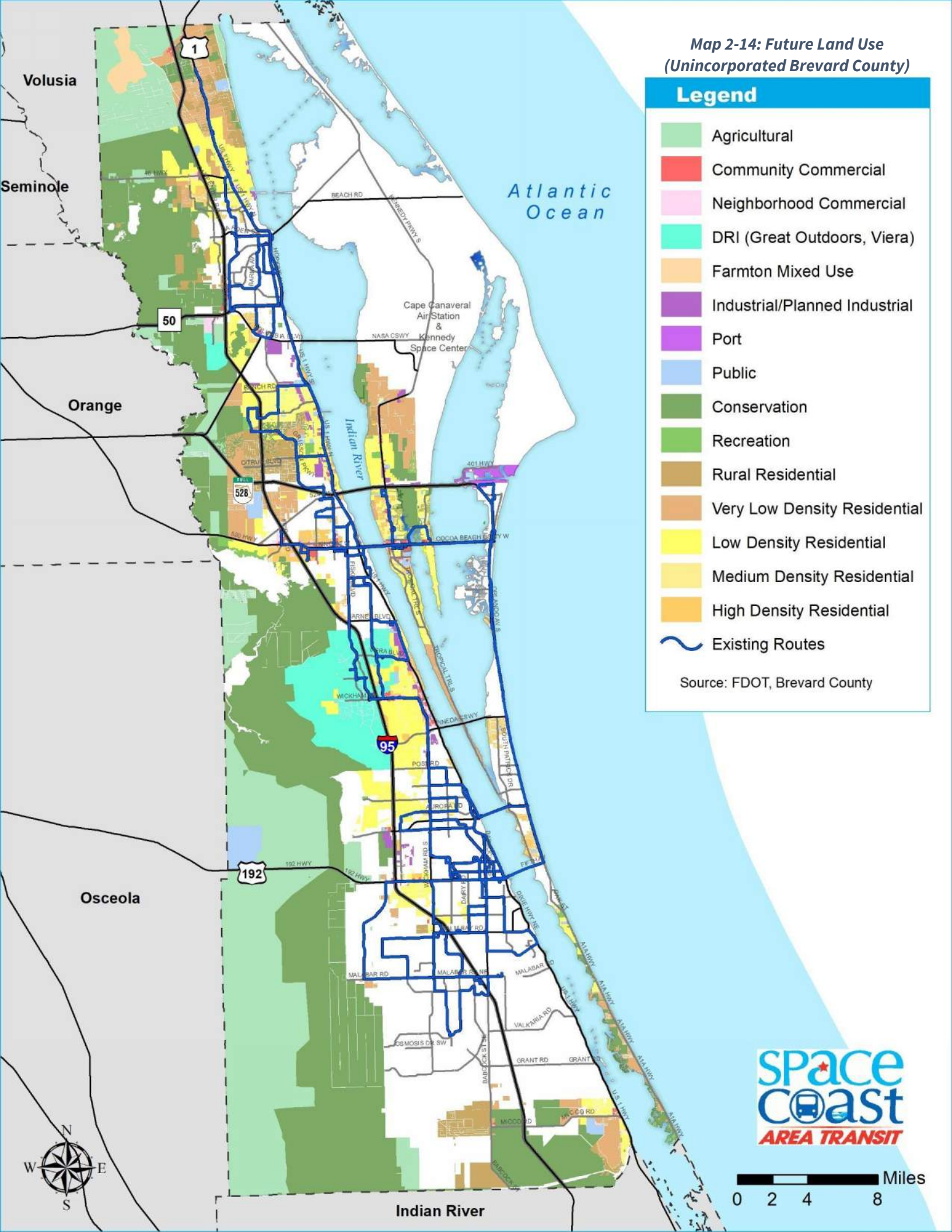
In Brevard County, local governments are responsible for land use decisions, including establishing zoning regulations and setting future land use policies in their incorporated areas. Using existing and future land use and future dwelling unit, population, and employment densities previously reviewed provides valuable insight into where future development is planned and where projected population and employment growth is anticipated to occur as a result. Continued monitoring of growth and land use patterns is needed to better plan for service expansions into new areas or investments in more frequent service for existing service areas.

A review of future land uses, as illustrated in Map 2-14, was conducted for the unincorporated county and the following observed:

- Much of the western portion of the county is categorized as Agriculture, Recreation, or Conservation.
- There are no significant Mixed-Use districts.
- Industrial use is concentrated along major roads such as US-1 as well as the Port land use at Port Canaveral.
- Residential use is concentrated along the eastern portion of the county and is mostly low-density.
- A pattern of commercial use is present along most major arterial roads in the county, such as King Street and US-1.
- Incorporated municipalities follow their own future land use plans and are not shown on the map.

Further review of land use policies with possible implications for public transit for the larger incorporated municipalities will be discussed in the plans and policy review conducted for this TDP.

Map 2-14: Future Land Use
(Unincorporated Brevard County)



Travel Flow Analysis

Understanding travel patterns at local and regional levels is critical to defining transit markets. This section examines several data sources to understand both local and regional work-related commute flows and more general weekday travel patterns.

Worker Travel Analysis

Travel data from the U.S. Census Bureau were used to analyze general geographic patterns of worker residential and employment locations to understand the demand for both local and regional work-related travel. This data source quantifies job location in relation to residence and not daily commuting destinations; therefore, this analysis may reflect job-home trip patterns that occur infrequently or not at all due to telecommuting, for example. A separate travel flow analysis based on real trips using Replica data is discussed in the next section.

In 2019, of the 242,145 job-residence pairs starting in Brevard County, the majority (159,308 or 65.8%) stayed within the county. The remaining 82,837 pairs were between a residence in Brevard County and a job in another county, most notably Orange County (9.2%) and "all other locations" (10.8%), which may be attributed to telecommuting or infrequent travel from Brevard County for work. These flows, illustrated in Figure 2-11, reflect general trends of workers commuting from their residence to their job location depending on work/home location.

Figure 2-11: Brevard County Inflow/Outflow

Source: US Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) OnTheMap 2019

A smaller number of workers living elsewhere work in Brevard County (59,913), suggesting that Brevard County residents mostly work within the county or leave the county for work. Of those who live elsewhere and work in Brevard, 9,274 (15.5%) live in Orange County.

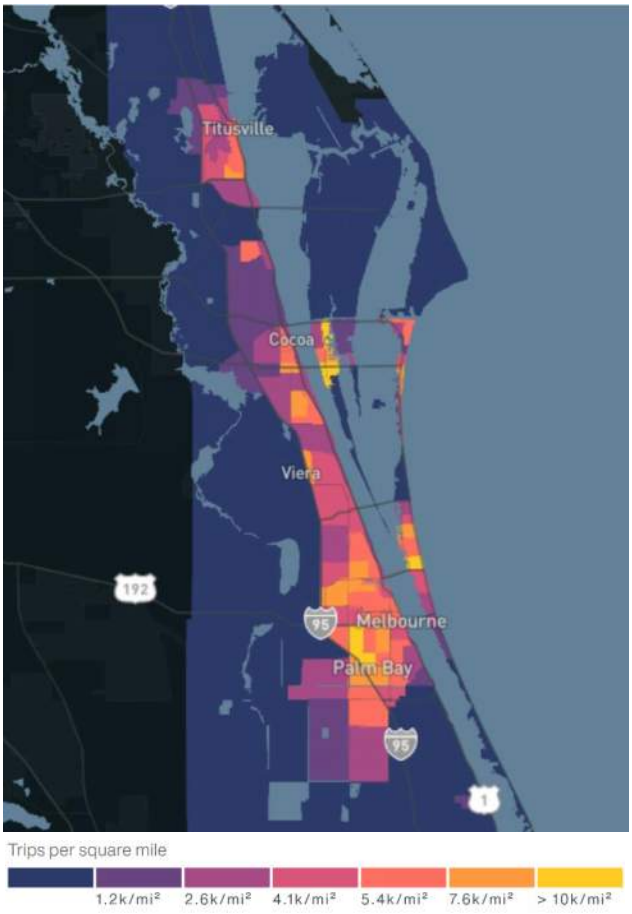
Origin-Destination Analysis (All Trips vs. Transit)

A more detailed origin-destination analysis was conducted using Replica Trends, a national model that uses data derived from road traffic, mobile phone data, and financial transactions to model mobility trends. The analysis provides an understanding of the magnitude of all average daily trips between surrounding areas that can be helpful in planning future transit services tailored to regional travel, such as express bus service.

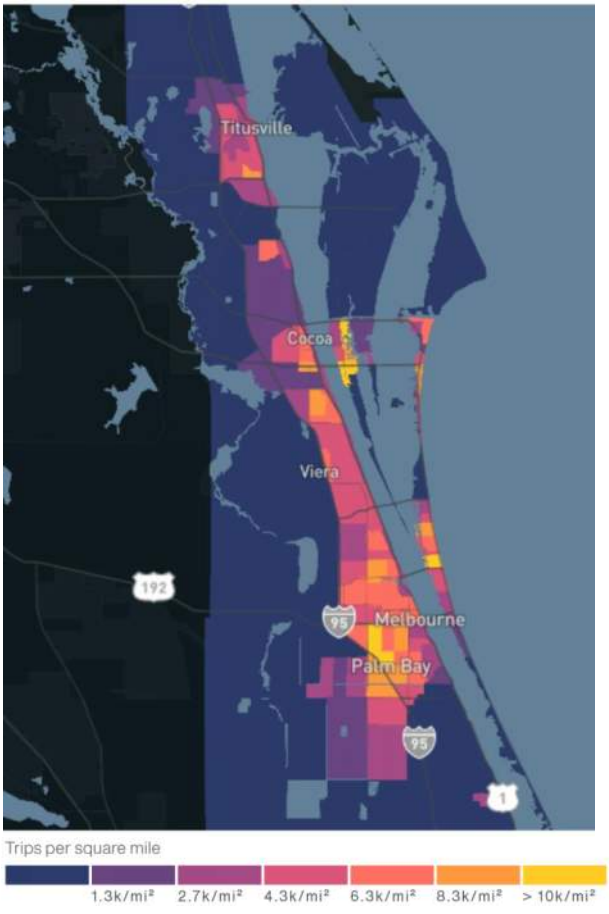
Figure 2-12 shows the average weekday trips per square mile for trips originating and ending in Brevard County in January 2022. Most trips originated within the urbanized, eastern area of the county, with sporadic concentrations coming from the barrier islands such as Cocoa Beach and Satellite Beach. The regional destinations in Brevard County are nearly identical to the travel origins.

Figure 2-12: Trip Origins and Destinations Per Square Mile (All Trips)

Trip Origins



Trip Destinations



Source: Replica January 2022

Tourism

Tourism is one of the top drivers of revenue in Central Florida, and the Space Coast is no different, offering destinations such as Kennedy Space Center, Port Canaveral, and the beaches. In 2019, Orlando–Melbourne International Airport had 241,289 airplane passengers and Port Canaveral had 4.6 million cruise passengers.[4] These sectors support tourism-related businesses such as hotels, restaurants, stores, attractions, transportation services, and others.

Image Source: Florida's Space Coast Office of Tourism, 2022

The Kennedy Space Center generally hosts more than one million visitors per year, and spacecraft launches can draw crowds more than 100,000 to watch astronauts be propelled into space. In addition to these large attractions, the Space Coast has large natural features such as the Indian River Lagoon and Merritt Island Wildlife Refuge. Water-based activities such as kayaking and surfing near Cocoa Beach are popular.

Tourists are an important group of riders to consider when identifying local and regional transportation needs. For example, tourists flying or cruising into Brevard County will benefit if transit is a convenient way to get from the airport/port to where they are staying and to other destinations in the county as well as around the region, as transit costs less than renting a car or hiring a car service. Tourists making day trips around the region will also benefit if transit is a convenient option as opposed to driving, and residents will benefit if fewer cars are on the road. The influx of tourists to the county, particularly during peak season (generally from October to April), places a high demand on county and Central Florida roadways and increases traffic congestion levels. However, the peak tourism season in Central Florida and the Space Coast area is becoming more ubiquitous year-round. Transit options that are safe and convenient will serve to further reduce peak season road congestion and strengthen the attractiveness of the Space Coast as a place to visit.

A significant percentage of the jobs supported by tourism in Brevard County are hotels, restaurants, and stores along the coast where parking is limited and can be expensive. Safe and reliable transit for service industry workers, including those who work early morning/late evening (or the "third-shift"), is also an important consideration.

[4] "2045 Long Range Transportation Plan," Space Coast Transportation Planning Organization, Figures 8-4 and 8-5 (December 2020).

3 Existing Services Evaluation

This section provides an in-depth review of Space Coast Area Transit's services, ridership trends, fare polices, operating facilities, and other key characteristics to provide context of the environment in which the agency operates.

Space Coast Area Transit Services

The Brevard County BOCC provides public transportation in Brevard County through Space Coast Area Transit. The agency was formed in 1985 to consolidate public transit services provided by two competing systems: Brevard Transportation Authority and Consolidated Agencies Transportation System. Space Coast Area Transit provides services daily through its fixed-route bus system, demand-response, vanpool, and Volunteers in Motion programs. Space Coast Area Transit directly operates its fixed-route bus service.

Fixed-Route Services

Space Coast Area Transit currently operates 23 bus routes that serve approximately 1,100 bus stops. The fixed-route system serves all major destinations in Brevard County like coastal attractions in Port Canaveral, Kennedy Space Center, and the beaches. Service also reaches mainland attractions such as the up-and-coming Eau Gallie Arts District and shopping malls in Melbourne. There are three park-and-ride facilities in Brevard County. Major transfer centers include the main hub at the Cocoa Transit Center, Titus Landing, Shepherd Park, Melbourne Airport, Melbourne Square Mall, and Hammock Landing.

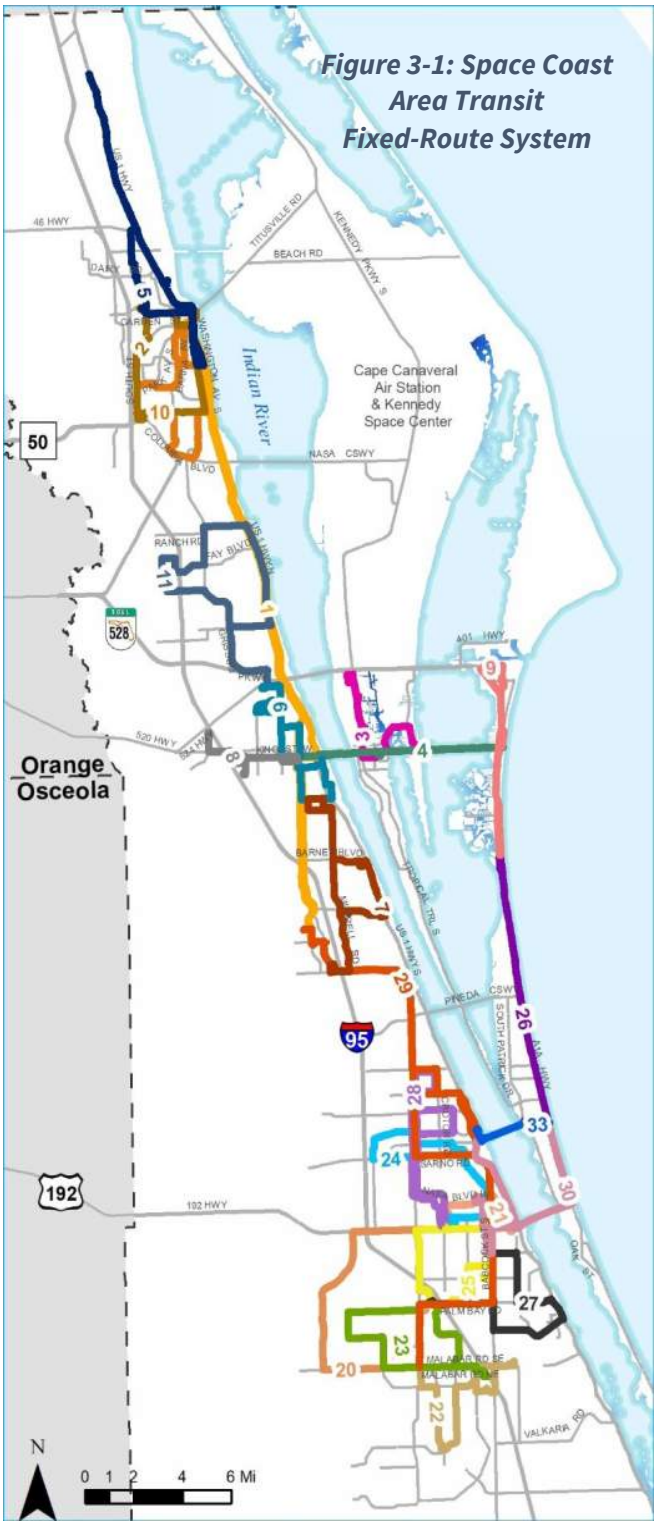


Figure 3-1: Space Coast Area Transit Fixed-Route System

Source: Space Coast Area Transit, FGDL

On average, routes operate from approximately 6:45 AM to 7:50 PM on weekdays with 60-minute headways; the highest ridership routes operate at 20- or 30-minute headways during peak demand. Reduced services are provided on weekends and some holidays. The earliest weekday service begins at approximately 5:10 AM on Route 1, and the latest service ends at 11:35 PM on Route 4.

Most routes are in the eastern urbanized area of the county closer to the coastline. Route 1 is the longest north-south route, operating along US 1 from Titusville to Viera. Route 4 is the longest east-west route connecting Cocoa Beach to Cocoa Transit Center via Highway 520.

Space Coast Area Transit Special Services

Space Coast Area Transit provides special services such as demand-response service or vanpool for eligible individuals unable to ride the fixed-route bus. Numerous types of special services are provided by Space Coast Area Transit:

- **ADA demand-response service**, also referred to as "complementary ADA service" is for persons with disabilities who are unable to use fixed-route service due to the inability to access or ride the bus, access bus stops or other transit facilities, or independently navigate the fixed-route system. As required under the ADA, Space Coast Area Transit must provide complementary demand-response service, also known as ADA service, during the same days and times as fixed-route service is provided. ADA service must be provided within ¾-mile of each side of a fixed bus route as well as a ¾-mile radius at the end of each fixed-route. To be eligible for this service, individuals must first apply to become registered as ADA demand-response certified.
- **Transportation disadvantaged (TD) demand-response service** is for customers who, because of physical or mental disability, income status, or age, are unable to transport themselves or to purchase transportation and have no other means of transportation. The TD Program is sponsored by the State of Florida Transportation Disadvantaged Trust Fund. The Florida Commission for the Transportation Disadvantaged (CTD), which oversees the TD Trust Fund, has designated Space Coast Area Transit as the local Community Transportation Coordinator (CTC). As the CTC, Space Coast Area Transit is responsible for coordinating and providing transportation services to eligible TD individuals in the county. TD demand-response service is provided throughout Brevard County during the same hours and days as fixed-route bus service. To become eligible for TD service, applicants must submit a TD Demand-response Certification Form.

Source: Space Coast Area Transit Ride Guide

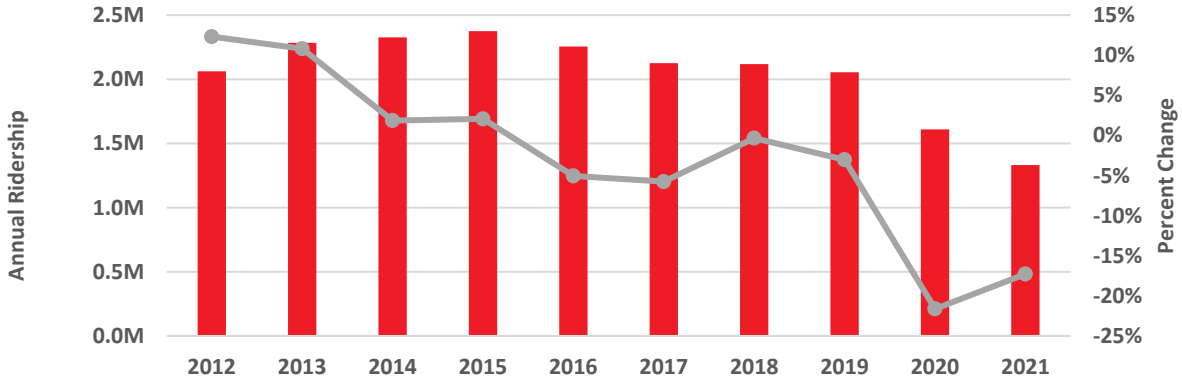
- **Volunteers in Motion** is a volunteer-based program that serves individuals who are unable to use other Space Coast Area Transit services. The program operates Monday through Friday and is aimed primarily at transporting people who would otherwise be unable to live independently at home to grocery stores, medical appointments, and pharmacies. Clients can register by calling Volunteers in Motion and providing their contact, medical, grocery, and pharmacy information. Clients can then schedule a ride by calling in during business hours and requesting a trip. Trips are preferably scheduled with as much advance notice as possible.
- **Contracted routes** serve several not-for-profit agencies with demand-response service. These agencies include social service organizations, senior services, disability services, and vocational training centers.
- A **vanpool service** is also overseen by Space Coast Area Transit and is managed under a contract with Commute with Enterprise for two separate programs. For the commuter program, the vans are leased to individuals for use in commuter vanpools. For the agency program, the vans are leased to non-profit human service agencies to provide transportation services to the mobility disadvantaged.

Space Coast Area Transit Ridership Trends

Fixed-Route Ridership Trends

Figure 3-2 illustrates Space Coast Area Transit's fixed-route ridership over the last 10 years. During this period, ridership peaked in FY 2015, with 2.4 million passenger trips. Since the COVID-19 pandemic began in March 2020, ridership has been greatly impacted due to public health and safety concerns that have dramatically changed general travel behavior. In March/April 2020, Space Coast Area Transit reduced fixed-route schedules to Saturday service levels with service hours extended to 8:15 PM and suspended all fares. During this period, passengers showing symptoms of illness or those making non-essential trips were discouraged from using transit. Fares were reintroduced on October 1, 2020.

Figure 3-2: Space Coast Area Transit Annual Fixed-Route Ridership, 2012–2020

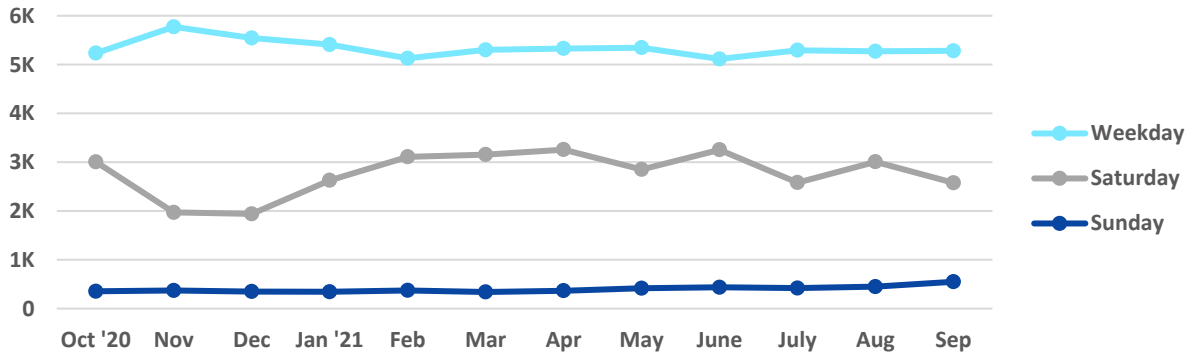


Sources: Space Coast Area Transit and the National Transit Database

Figure 3-3 illustrates the average daily ridership for fixed-route services from October 2020 to September 2021. Weekday daily average ridership is higher than both Saturday and Sunday average

daily ridership, likely due to more frequent and longer service hours on weekdays compared to weekends.

Figure 3-3: Fixed-Route Average Daily Ridership, October 2020–September 2021

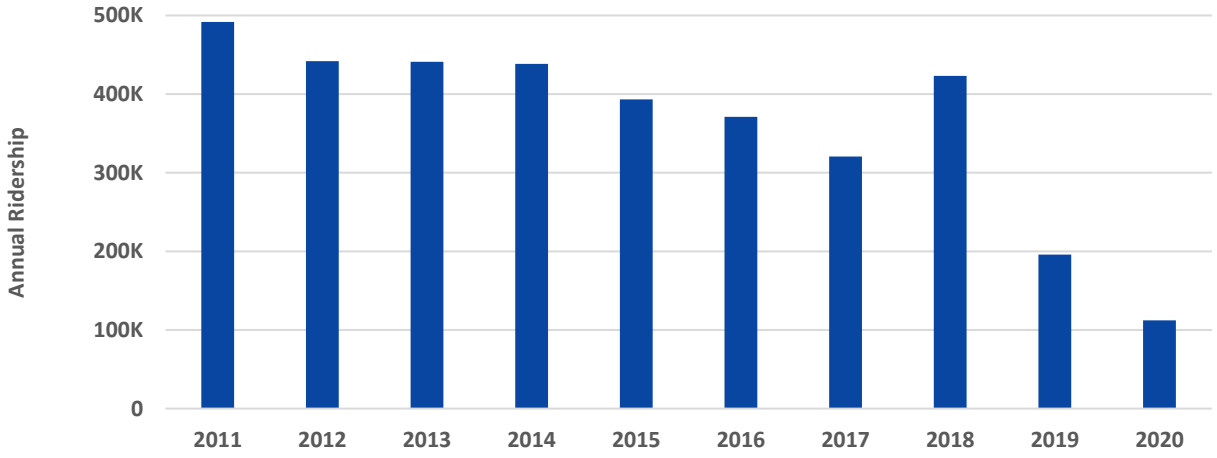


Source: Space Coast Area Transit

Space Coast Area Transit Special Services Ridership Trends

Figure 3-4 illustrates Space Coast Area Transit demand-response ridership trends over the last 10 years. Demand-response services include TD and ADA demand-response. Overall ridership saw a surge pre-pandemic to accommodate the increased demand, largely due to the growing aging population. Vanpool trips have shown a steady decline in ridership since 2013 with 2020 ridership reported at 48,649 passenger trips in 2020 by the National Transit Database (NTD).

Figure 3-4: Space Coast Area Transit Demand-Response Ridership 2011–2020



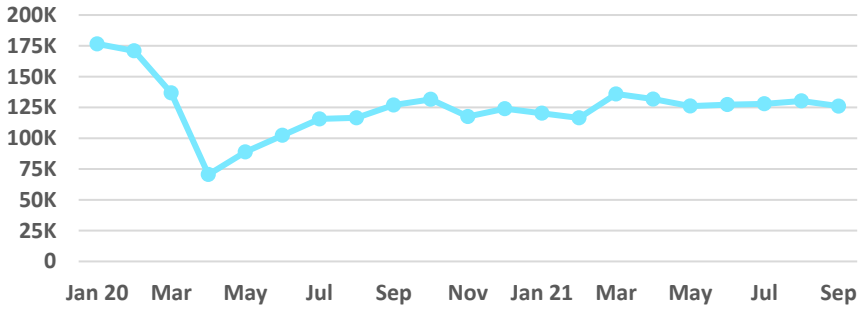
Source: National Transit Database

COVID-19 Impacts

The COVID-19 global pandemic that began in March 2020 impacted ridership across all Space Coast Area Transit services. Between April 6 and September 30, 2020, Space Coast Area Transit adjusted service schedules and suspended fare collections in response to fluctuating service demand, staff

resources, and health concerns. Ridership fell to its lowest level in April 2020, coinciding with the 30-day statewide stay-at-home order. Fixed-route passenger trips declined 49% in March/April 2020. Although the pandemic is still ongoing, the most significant ridership impacts were recorded from March to June 2020. As shown in Figure 3-5, after the initial drop in April 2020, ridership has slowly recovered and stayed relatively steady since October 2020.

Figure 3-5: Monthly Fixed-Route Ridership, January 2020–September 2021



Source: Space Coast Area Transit

Fixed-Route Operating Characteristics

Operating Characteristics by Route

Table 3-1 summarizes annual ridership by route for FYs 2019, 2020 and 2021 and operating headways and spans based on the full-service weekday schedule. Route 4 has the highest ridership to date, providing over 193,000 trips in 2021, nearly 15% of Space Coast Area Transit's total fixed-route ridership. Route 6 has the second highest ridership, serving over 152,000 trips. Route 33, which serves the Eau Gallie Arts District and Canova Beach Park, has the lowest annual ridership, with approximately 300 passenger trips; however, this short route operates for a five-hour span only.

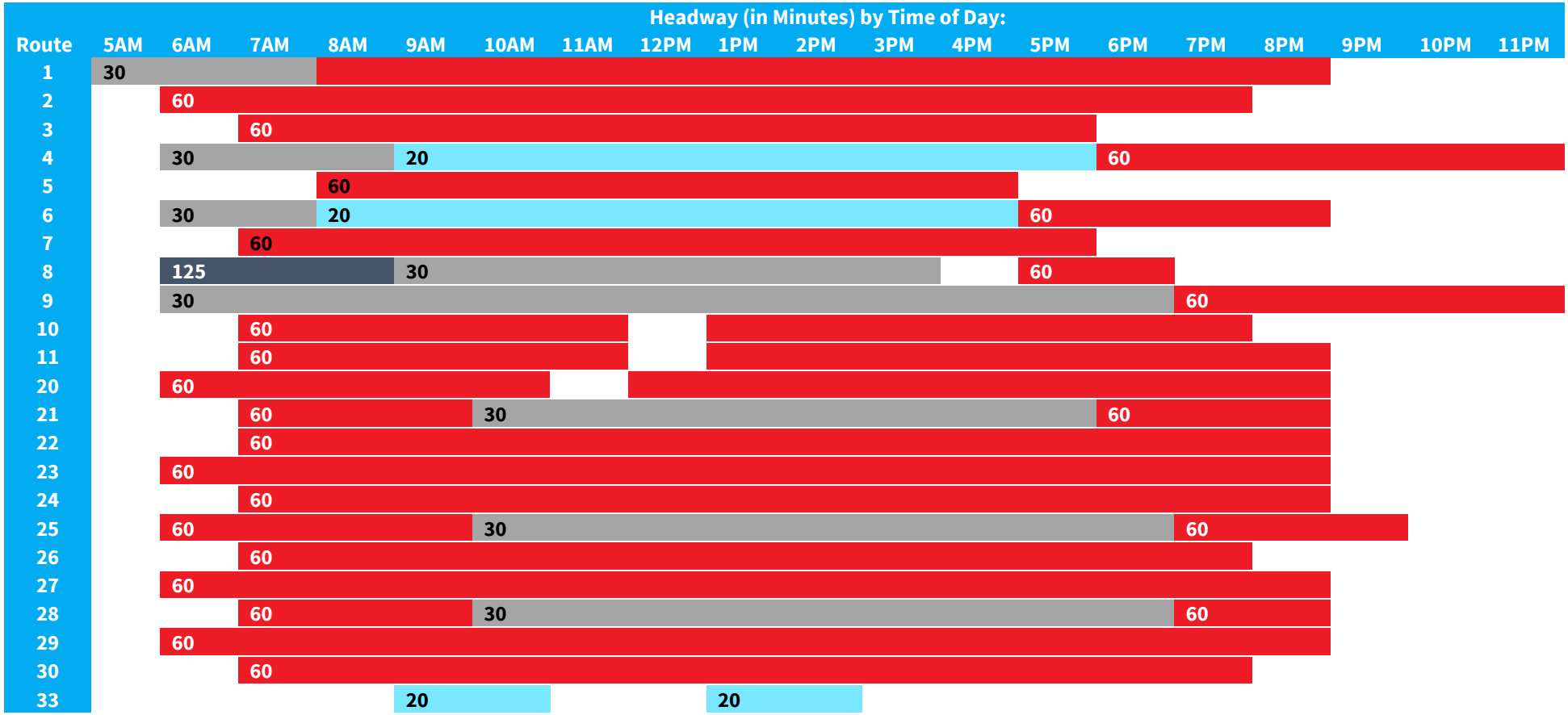
Figure 3-6 illustrates the weekday service spans and headways by route based on bus schedules for February 2022. As shown, all current route headways are 20 minutes or longer, with 14 of the 23 (61%) routes having a 60-minute headway. Many routes start service before 7:00 AM. During morning peak hours (6:00–9:00 AM), all routes in the system except Route 33 are in operation to provide riders with connections to work and other destinations. Routes 4, 6, and 33 operate at 20-minute headways. Route 4, which is the highest-ridership route, has a 17-hour span. The only route whose headway exceeds 60 minutes at any time is Route 8, which operates with 125-minute headways during morning peak hours before increasing to 30-minute headways for midday times. Frequencies tend to decrease system-wide during evening hours, with most evening headways being 60 minutes.

Table 3-1: Fixed-Route Frequency, Service Days and Ridership, by Route

Route	Area/ Corridor	Weekday:			Service Days	Annual Ridership:			
		Start Time	End Time	Peak Headway* (min)		FY 2019	FY 2020	FY 2021	Change 2020–2021
1	Titusville / Viera	5:10 AM	8:30 PM	30	Mon-Sat	176,280	144,130	128,123	-11.11%
2	Titusville	6:15 AM	7:55 PM	60	Mon-Sat	76,704	68,806	57,747	-16.07%
3	Merritt Island	7:11 AM	5:22 PM	60	Mon-Sat	50,369	32,360	31,113	-3.85%
4	520 Connector	6:20 AM	11:35 PM	20	Mon-Sun	264,460	215,755	193,953	-10.10%
5	Titusville / Mims	8:00 AM	4:55 PM	60	Mon-Sat	38,422	31,300	26,539	-15.21%
6	Cocoa / Rockledge	5:50 AM	8:17 PM	20	Mon-Sun	195,059	158,641	152,750	-3.71%
7	Rockledge / Viera	7:29 AM	5:55 PM	60	Mon-Sat	35,814	23,123	22,275	-3.67%
8	West Cocoa	6:45 AM	6:19 PM	30	Mon-Sat	25,779	28,278	23,186	-18.00%
9	Cape Canaveral / Cocoa Beach	6:00 AM	11:13 PM	30	Mon-Sun	203,360	145,158	132,236	-8.90%
10	Central Titusville*	5:55 AM	10:10 PM	60	Mon-Sun	N/A	N/A	6,436	N/A
11	Port St. John*	7:07 AM	8:04 PM	60	Mon-Sat	N/A	N/A	2,563	N/A
20	Heritage / West Melbourne	6:25 AM	8:20 PM	60	Mon-Sat	20,017	17,313	15,836	-8.53%
21	Downtown Melbourne	7:15 AM	8:19 PM	30	Mon-Sun	101,033	74,590	62,104	-16.74%
22	South Palm Bay	7:35 AM	8:30 PM	60	Mon-Sat	50,278	44,141	34,912	-20.91%
23	West Palm Bay	6:35 AM	8:30 PM	60	Mon-Sat	64,915	43,276	41,355	-4.44%
24	Melbourne / Eau Gallie	6:55 AM	8:50 PM	60	Mon-Sat	68,506	45,904	41,488	-9.62%
25	Melbourne / Palm Bay	6:07 AM	9:07 PM	30	Mon-Sat	119,784	91,405	88,769	-2.88%
26	South Beach	7:30 AM	7:25 PM	60	Mon-Sat	34,170	25,540	18,171	-28.85%
27	East Palm Bay	6:35 AM	8:30 PM	60	Mon-Sat	82,557	65,480	62,698	-4.25%
28	North Melbourne	6:55 AM	8:50 PM	30	Mon-Sat	97,861	73,536	67,496	-8.21%
29	Melbourne / Viera	5:57 AM	8:02 PM	60	Mon-Sat	104,383	93,939	107,655	14.60%
30	South Beach Connector	7:00 AM	7:55 PM	60	Mon-Sat			14,256	
33	Eau Gallie Arts District	9:30 AM	2:20 PM	20	Mon-Fri	719	596	302	-49.39%

Notes: * Indicates route began service in 2021.Reflects the bus operating schedules at the time this analysis was completed (February 2022).
Source: 321Transit.com

Figure 3-6: Space Coast Area Transit Fixed-Route Weekday Spans and Headways



Note: Reflects the bus operating schedules at the time this analysis was completed (February 2022).
Source: Space Coast Area Transit

Fare Structure

Fare revenues are directly generated by Space Coast Area Transit riders. Although not a significant source of revenue in relation to the agency's overall operating costs, fare revenue contributes to Space Coast Area Transit's ability to provide its services to the community and offsets the amount of local, state, and federal operating assistance needed. In FY 2020, $530,134 in fare revenue was generated by Space Coast Area Transit fixed-route riders. This amount is historically low due to ridership impacts from the COVID-19 pandemic. In the five years prior, annual fixed-route fare revenue fluctuated $0.76–$1.2 million, as reported to the NTD. This section discusses the current fare structure for the different Space Coast Area Transit services.

Current Fares

The current regular one-way adult cash fare for fixed-route bus or trolley service is $1.50, purchased with cash (no change provided) or on the Token Transit mobile ticketing application. Reduced fare tickets can be purchased the same way as full fare; however, a reduced fare ID card must be issued prior to purchasing a pass. A reduced fare 1-Ride Pass is half the price of full fare at $0.75. Other fare specials include the 10-Ride and 30-Day Passes which must be purchased in advance. Advance purchase options are offered in-person at select Brevard County libraries, via mail, online, over the phone, or via the Token Transit mobile ticketing app (requires a smart phone). The full fare cost of a 10-Ride Pass is $12, and a reduced fare 10-Ride Pass is $6. A full-fare 30-Day Pass is $42 and a reduced fare is $21.

Reduced fare purchases must be verified for eligibility prior to being issued by acquiring a Reduced Fare ID card in advance. Those eligible for reduced fares include active/inactive military, seniors aged 60 or above, students, and TD/ADA demand-response users. Children under the age of five are fare-free. There is no additional charge for transfers. Eastern Florida State College (EFSC) students can get a free Class Pass sticker placed on their student ID to verify their current student status. The Class Pass sticker and student ID allow EFSC students to ride free on any Space Coast Area Transit route. Lastly, a grant from the City of Melbourne allows Melbourne residents with a valid ID to ride free within the Melbourne city limits, which includes Routes 21, 24, and 29.

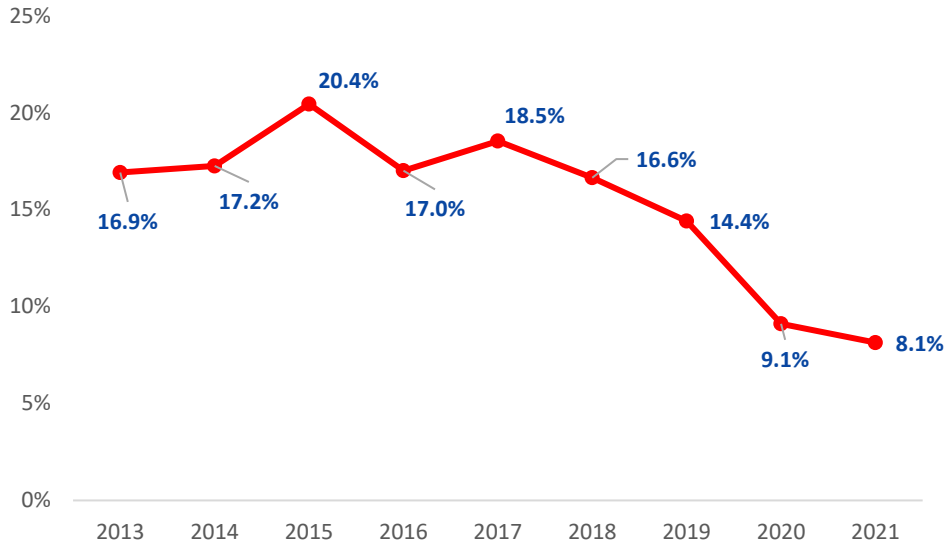
As described in the Special Services section of this document, both ADA and TD demand-response passengers must complete an eligibility application before being able to ride demand-response or receive reduced fares on other bus/trolley services. ADA demand-response and TD fare values are the same—$1.50 for 1-ride reduced fare or $15 for a 10-ride pass. If purchasing a 1-ride reduced fare on board, it must be paid in cash (exact change), as the drivers do not provide change. All 10-ride passes must be purchased in advance either in-person at the Space Coast Area Transit terminals in Cocoa or Melbourne, online, by phone, or by mail. Demand-response riders can be accompanied by a personal care attendant or child under the age of 15 at no extra charge.

Farebox Recovery

A new requirement for the TDP added by the Florida Legislature in 2007 when it adopted House Bill 985 was a closer look at a transit agency's farebox recovery ratio so it can address "potential

enhancements to productivity and performance which would have the effect of increasing farebox recovery ratio." FDOT subsequently issued guidance requiring the TDP major update to provide a summary report on the farebox recovery ratio. Figure 3-7 illustrates the farebox recovery trend for Space Coast Area Transit using NTD data reported for all modes: bus, demand response, and vanpool. A farebox recovery analysis and recommendations to improve the farebox recovery is provided in Appendix A.

Figure 3-7: Farebox Recovery Trend



Source: NTD Agency Profiles

Space Coast Area Transit Facilities

Space Coast Area Transit operates out of two FTA-funded maintenance facilities, one of which also houses the main administrative offices. These facilities, along with park-and-ride facilities available throughout the county, are illustrated in Map 3-1.

North Terminal

Space Coast Area Transits' North Terminal facility, located at 401 S. Varr Avenue in Cocoa, was built in the 1990s and consists of a main administration/maintenance building, a fuel island, a garage/bay, and a training center. Some upgrades have been made in the past five years, including interior remodeling, floor repairs, repainting, and recently an expanded parking lot. Another property immediately north of the main building is located at 1125 W. King Street in Cocoa and is also part of the North Terminal.. The North Terminal is the main administrative area for Space Coast Area Transit and is also the location of the Cocoa Transit Center, an important transfer hub.

Map 3-1: Space Coast Area Transit Facilities

South Terminal

Space Coast Area Transit's South Terminal facility, located at 460 Harbor City Boulevard in Melbourne, was constructed in the 1990s and consists of a garage/tire building, offices, a fuel island, and a garage/bay. The offices were refurbished in 2011 and remodeled in 2020. The garage/bay underwent a full electrical, lighting, floor coating, and paint refurbishment in 2019. Upgrades to the South Terminal parking lot were just completed.

Park-and-Ride Facilities

There are three park-and-ride locations in the Space Coast Area Transit service area—Viera, Palm Bay, and Melbourne. Park-and-ride lots are free of charge and provide connections to fixed-route buses as well as other transportation opportunities such as carpool or vanpool. No park-and-ride locations are owned by Space Coast Area Transit or Brevard County; these facilities are made possible by partnerships with private and public organizations.

Transfer Sites

There are four major transfer locations for Space Coast Area Transit. Titus Landing in Titusville, Melbourne Square Mall in Melbourne, and Hammock Landing in West Melbourne operate under agreements with the owner of each site. The busiest transfer point is the Cocoa Transit Center co-located at the North Terminal.

Space Coast Area Transit Organizational/Management Structure

Space Coast Area Transit is a department of the Brevard County BOCC and is also referred to as the Brevard County Transit Services Department. It is structured into two primary divisions—Administration and Operations. The Operations Division has the most employees, with over 100 positions, most of whom are vehicle operators.

Existing Transportation Provider Inventory

This section summarizes other transportation providers operating within and connecting to Space Coast Area Transit's service area and provides a complete picture of available services from a regional perspective. The information compiled and presented in this section provides the basis for more-detailed performance analysis in subsequent tasks of the TDP.

Greyhound is a national over-the-road bus service that serves longer trips between communities and states. As such, it provides regional connections from Brevard County to other areas throughout Florida and the U.S. Destinations include Miami, Orlando, and longer-distance destinations such as Chicago are possible through transfers. Greyhound stops at several locations in Brevard County, including Rockledge, Melbourne, and Titusville.

Palmland Bus Lines is a private regional bus company with destinations as far south as Miami and as far north as Chicago. The route operates along I-95 within Florida and stops at Miami, West Palm Beach, Vero Beach, Melbourne,

Daytona Beach, St. Augustine, and Jacksonville, from south to north respectively. Palmland Bus Lines is partnered with OurBus, a managed marketplace for bus travel in the United States.

Brightline is a private, regional high-speed rail service between Miami and West Palm Beach, with expansion to the new intermodal center at the Orlando International Airport underway. Brightline's expansion plans include a new station in Palm Beach County (Boca Raton) and two new stations in Miami-Dade County (Aventura, construction of which is underway, and PortMiami). Brightline's longer-term geographic expansion plan will connect service from the Orlando International Airport to Tampa. It is currently not known if Brightline will open a station in Brevard County; however, there is speculation that Cocoa may be a potential stop location.

The Florida Institute of Technology (FIT) in Melbourne provides its students and staff with a non-fare trolley route called the **Panther Express Trolley** that serves the Main Campus, Panther Dining, Florida Tech Commons, and Nathan Bisk College of Business. The trolley runs from 7:40 AM to 3:30 PM Monday through Friday. In addition, the **Panther Shuttle** allows students to travel between the Emil Buehler Center (Flight Line), Center for Aviation and Innovation at Melbourne Airport, Panther Dining Hall at Florida Tech, and student housing locations. The shuttle runs hourly seven days per week with a slightly shorter span on weekends. Generally, the weekday service runs from 5:00 AM to 10:30 PM.

Micro-mobility technology includes a range of lower-speed transportation devices such as bikes or scooters that are often self-operated by the user. Micro-mobility is regarded as a viable solution for short-distance trips and first/last mile connections, particularly in higher-density areas, although there often are safety and infrastructure challenges. Dockless devices provide great flexibility to users, but they also carry the potential to become sidewalk and ADA obstacles. The Cocoa Beach area has numerous bike rental shops that require the equipment to be returned to the shop location. Prior to the COVID-19 pandemic, Cocoa Beach partnered with a docked bike-share service that has since gone out of business.

Transportation Network Companies (TNCs), such as Uber and Lyft, provide similar services to a taxi except they connect drivers to consumers strictly using a mobile app. Consumers use their smartphone to make a trip request, which is then routed to the nearest driver. The drivers then use their personal car to transport consumers to their destination. These types of TNCs have grown in popularity, especially among young adults and in many locations complement gaps in transit services by helping riders complete the last leg of their trip or by providing late service when transit is not operating. The American Public Transportation Association (APTA) reported that Uber and Lyft users are more likely to use public transit more frequently. Uber and Lyft both operate in Brevard County and provide service to major destinations such as the Melbourne Orlando International Airport.

Table 3-2: Other Regional Charter and Taxi Transportation Providers

Name	Service Type	Fare	Vehicles/Passengers	Service Area
Go Port Canaveral	Charter	$25+ per person one-way	Van, mini-bus, bus, motor coach	Orlando Airport to Port Canaveral
Cortrans Shuttle Service	Charter	$20+ per person one-way	Mini-bus	Orlando Airport to Port Canaveral
Port Canaveral Quick Shuttle	Charter	$25+ per person one-way	Mini-bus	Orlando Airport, Sanford Airport, Port Canaveral, Orlando Area Hotels, Cocoa Beach Area Hotels
Melbourne Shuttle & Taxi Service	Charter, Taxi	Varies	Mini-bus, car, van	Brevard and Indian River Counties, Orlando Airport, long-distance options available
Cocoa Beach Shuttle	Charter	Varies	Mini-bus, car, van, sedan, motor coach	Orlando Airport, Sanford Airport, Port Canaveral, Orlando Area Hotels, Cocoa Beach Area Hotels
Mears Transportation	Charter, Taxi	Varies	Mini-bus, car, van, sedan, motor coach	Orlando Airport, Sanford Airport, Port Canaveral, Orlando Area Hotels and Attractions, Cocoa Beach Area Hotels
888 Transportation	Charter, Taxi	Varies	Mini-bus, car, van	Orlando Airport, Sanford Airport, Port Canaveral, Orlando Area Hotels, Cocoa Beach Area Hotels
Around the Clock Transportation	Charter	$100+ two people one-way	Mini-bus, shuttle, sedan, SUV, van	Orlando Airport to Port Canaveral, Cocoa Beach Hotels
Port Canaveral Connection	Charter	$25+ per person one-way	Bus, sedan, SUV, van	Port Canaveral, Orlando Hotels and Resorts
Treasure Coast Limo Service, Inc.	Charter	$85+ per hour	Sedan, SUV, van	Serves seaports and airports including Melbourne Airport, Orlando Airport, and Port Canaveral Seaport

Source: Compiled from various internet sources.

Brevard County is home to Port Canaveral and is located near Orlando International Airport, major regional and international destinations especially relating to tourism. As a result, various companies offer **taxi or charter transportation services** for specific client groups. These providers include taxis and shuttles that provide service for tourists and residents in Brevard County. Current rates for these providers vary based on the type of service, including one-way travel per person, group packages, flat rate per vehicle, and tour packages. The most common service is providing transportation from major airports to the cruise line terminals located in Port Canaveral. The inventory of vehicles for each provider varies depending on the services provided. Table 3-2 provides an inventory of transportation providers and general information about their services. Note that this table is for informational purposes only and should not be considered an exhaustive list of all private transportation service providers in Brevard County.

Regional Coordination

Long Range Transportation Planning

Space Coast Transportation Planning Organization (SCTPO) operates as the MPO and is responsible for preparing LRTPs (also referred to as Metropolitan Transportation Plans or MTPs) for Brevard County, which includes the Palm Bay–Melbourne–Titusville urbanized area. A small portion of the Sebastian–Vero Beach South–Florida Ridge urbanized area falls within Brevard County, so the SCTPO must coordinate with the Indian River MPO to ensure consistency among planning efforts. Brevard County is unique in that it has a multimodal system comprising roadways, airports, a seaport, a spaceport, and a rail system. The SCTPO works with its Board of elected officials, committee members, government agencies, multimodal organizations, and the public to identify and advance transportation needs.

Space Coast Area Transit works closely with the SCTPO to generate long-range transportation planning efforts. The SCTPO's *Voice Your Vision 2045* LRTP provides a common vision for the community's future transportation needs and guides the investment of public funds in transportation facilities over the next 20 or more years. The Plan is centered around four goals:

1. Improve safety and security for all users.
2. Improve economic development with a connected multimodal system.
3. Enhance mobility and reliability.
4. Preserve and provide a resilient transportation system.

Peer and Trend Analysis

This section includes a review of selected service performance trends for Space Coast Area Transit's fixed-route and demand-response service using validated National Transit Database (NTD) data. Various performance measures were used to review the overall system performance over the last five years; however, most performance measures are difficult to review in isolation without any context for interpretation. Thus, a comparison with similar transit providers serving similar markets was made to compare Space Coast Area Transit's performance at a given point in time with other transit systems.

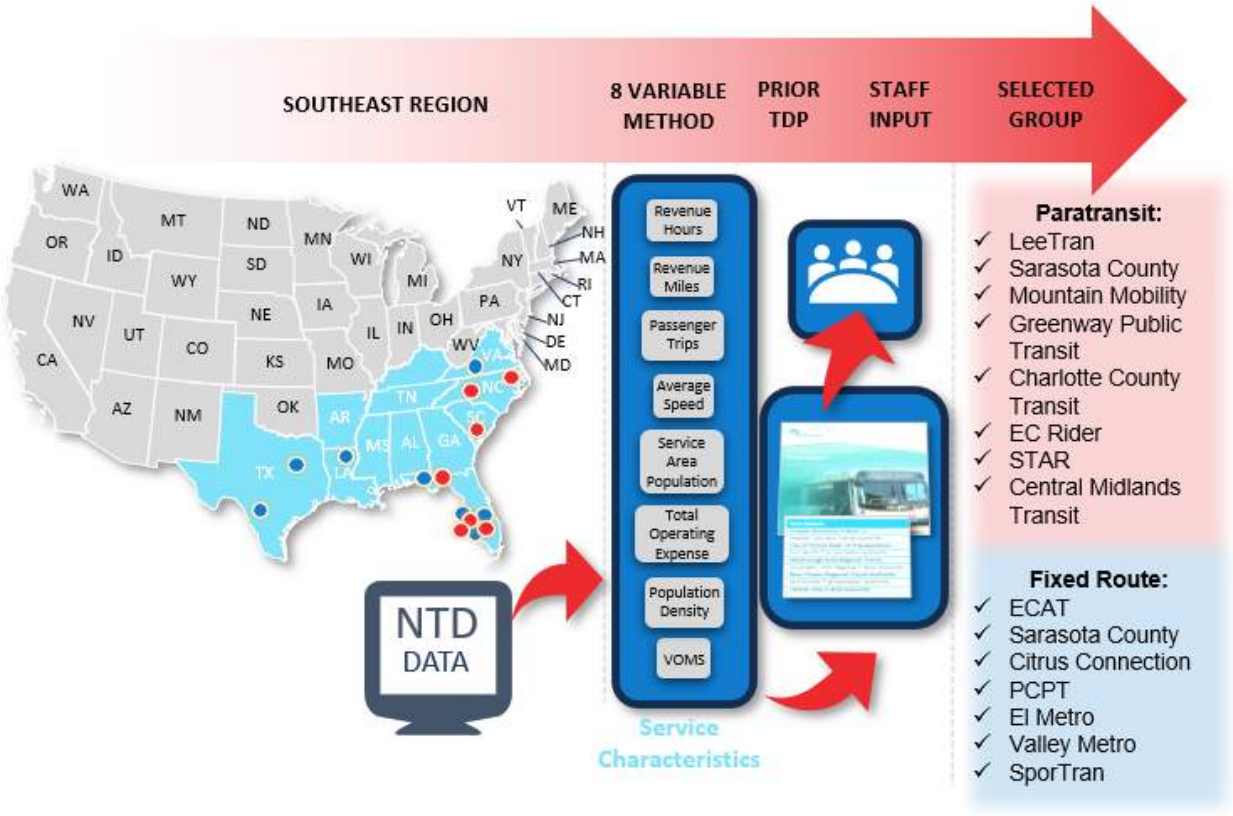
The performance indicators included in this analysis help evaluate and benchmark the effectiveness and efficiency of the agency's services.

Peer Selection Methodology

The peer selection methodology in Figure 3-8 was used to identify fixed-route transit and demand-response systems with similar operating characteristics to that of Space Coast Area Transit based on:

- Assessment of national transit agencies with similarities to Space Coast Area Transit's operating service characteristics using an 8-variable comparison method.
- Whether the agency was included as a peer during the last TDP.
- Input from Space Coast Area Transit staff.

Figure 3-8: Peer Agency Selection Process



From this process, a set of peer agencies was selected for the fixed-route and demand-response services (also listed in Table 3-3).

Table 3-3: Fixed-Route Service and Demand-Response Peer Agencies

Fixed-Route Peer Agencies	Demand-Response Peer Agencies
Escambia County Area Transit (FL)	Central Midlands Transit (SC)
Sarasota County Area Transit (FL)	STAR Transit (TX)
Valley Metro (VA)	Escambia County Area Transit (FL)
Citrus Connection (FL)	Charlotte County Transit (FL)
GoPasco (FL)	GreenWay Public Transit (NC)
El Metro (TX)	Mountain Mobility (NC)
SporTran (LA)	LeeTran (FL)

To conduct the trend analyses, 2020 fixed-route bus and demand-response data were obtained from the Florida Transit Information System (FTIS), a comprehensive data repository of historical and the most recent validated NTD data for transit agencies in the U.S.

To assess how efficiently Space Coast Area Transit supplies its fixed-route and demand-response service and how effectively those services meet the needs of the community, the trend and peer review analyses used key performance indicators/measures categorized as follows:

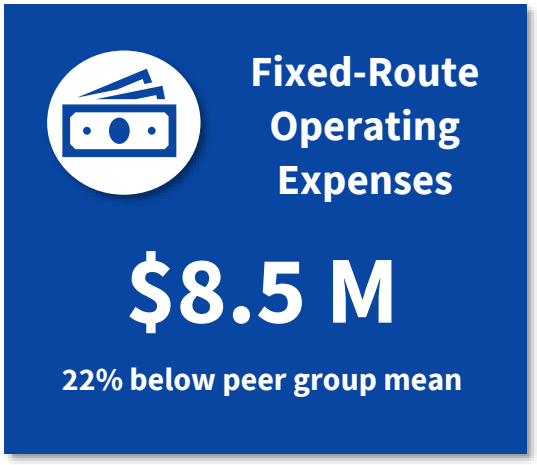
- **General indicators** to assess quantity of service supply, passenger and fare revenue generation, and resource input
- **Effectiveness measures** to assess the extent to which the service is effectively provided
- **Efficiency measures** to assess the extent to which cost efficiency is achieved

Fixed-Route Peer and Trend Analysis

This section highlights findings from the fixed-route peer and trend analysis. Results of the full analysis of are provided in Appendix B.

General Indicators

- Space Coast Area Transit experienced a 28.6% decrease in passenger trips between 2016 and 2020. This matches the national trend of decreasing ridership due to many factors, including the improved economy following the Great Recession, low unemployment rates, increased use of TNCs, and increased automobile ownership.
- Space Coast Area Transit provides, on average, less service supply with respect to revenue hours and routes miles and has significantly less total employee FTEs compared to the peer group mean but still ranks second in passenger trips.
- Revenue miles, vehicle miles, vehicle hours and route miles have increased 8–10% in the five-year period.

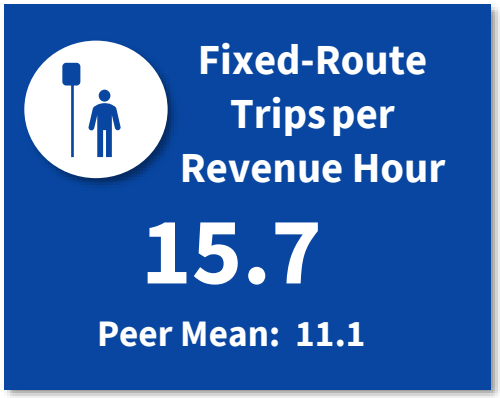


- A large increase in the number of vehicles operating in maximum service occurred between 2019 and 2020, from 29 to 39 vehicles in the five-year period.
- Space Coast Area Transit is 22.0% below the peer mean for total operating expenses and has gradually increased since 2016 when accounting for inflation.

Effectiveness Measures

- Space Coast Area Transit's declines in passenger trips per capita, passenger trips per revenue mile, and passenger trips per revenue hour mirrored the regional and national trends for service effectiveness over the past five years, largely driven by the decrease in passenger trips. The agency, however, lies 12% above the peer mean for passenger trips per revenue mile and 41% above the peer mean for passenger trips per revenue hour.
- The number of revenue miles between failures decreased slightly, driven by an increase in the number of vehicle system failures. Space Coast Area Transit performed better in number of vehicle system failures compared to most of its peers and was 106% over the peer mean for revenue miles between failures.

Efficiency Measures



- Space Coast Area Transit's cost efficiency has decreased with respect to operating expense per capita (21.2%), operating expense per passenger trip (79.6%), operating expense per revenue mile (82.5%), and operating expense per revenue hour (17.9%) due to the rise in total operating expense.
- Space Coast Area Transit performed better than or near the peer mean in several cost efficiency measures, including operating expense per capita, operating expense per passenger mile, and operating expense per revenue mile. Scoring below the peer mean in most metrics related to operating expenses suggests that the agency is providing more service while spending less than its peers and may be more efficient at controlling its costs.
- Space Coast Area Transit's farebox recovery—the percent of fares paid by passengers contributing to the overall operating expenses—has declined 47.6%. This is directly linked to the decline in ridership.
- Space Coast Area Transit's average fare is 51.5% below peer mean, indicating a need to revisit fare prices to better match peer agencies.
- Over the five-year period, the average fare has fluctuated, with an overall change of $0.35 to $0.33, indicating that riders who are using the service could be making better use of multi-day pass options and/or paying reduced fares.

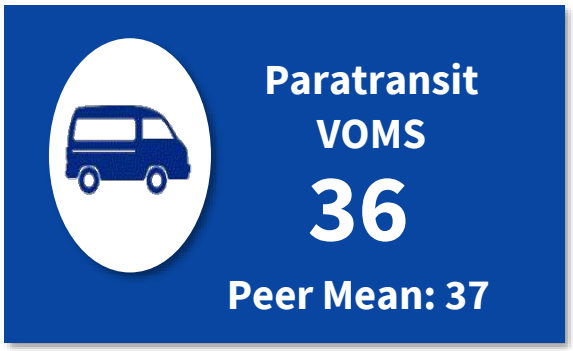
Table 3-4: Fixed-Route Trend and Peer Analysis Summary, 2016–2020

	Indicators	Trend Change	Desired Trend	Trend Status	Percent from Peer Mean
General	Service Area Population	5.8%	·		52.7%
	Service Area Size (sq. mi.)	494.3%	·		322.7%
	Passenger Trips	-28.6%	·		25.2%
	Passenger Miles	-29.7%	·		37.5%
	Vehicle Miles	9.3%	·		8.9%
	Revenue Miles	10.4%	·		12.8%
	Vehicle Hours	8.6%	·		-13.1%
	Route Miles	8.8%	·		-17.5%
	Total Operating Expense	-13.3%	·		-22.0%
	Revenue Hours	28.2%	·		-11.3%
	Vehicles Operated in Maximum Service	18.9%	·		5.8%
	Total Gallons Consumed	30.7%	·		-26.9%
			·		
Effectiveness	Vehicle Miles per Capita	3.3%	↗	Improving	-51.1%
	Passenger Trips per Capita	-32.6%	↗	Not Improving	-48.0%
	Passenger Trips per Revenue Mile	-35.4%	↗	Not Improving	12.5%
	Passenger Trips per Revenue Hour	-34.4%	↗	Not Improving	41.3%
	Number of Vehicle System Failures	17.5%	↘	Not Improving	-77.5%
	Revenue Miles Between Failures	-6.0%	↗	Not Improving	106.3%
			·		
Efficiency	Operating Expense per Capita	21.2%	↘	Not Improving	-63.2%
	Operating Expense per Passenger Trip	79.6%	↘	Not Improving	-40.0%
	Operating Expense per Passenger Mile	82.5%	↘	Not Improving	-46.7%
	Operating Expense per Revenue Mile	16.1%	↘	Not Improving	-29.5%
	Farebox Recovery (%)	-47.6%	↗	Not Improving	-25.2%
	Revenue Miles per Total Vehicles	5.5%	↗	Improving	-18.6%
	Vehicle Miles per Gallon	14.8%	↗	Improving	39.6%
	Average Fare	-5.8%	↗	Not Improving	-51.5%

*Desired trends are noted to evaluate the effectiveness and efficiency measures, and not general indicators.

Demand-Response Peer and Trend Analysis

This section highlights findings from the demand-response peer and trend analysis. Results of the full analysis are provided in Appendix B.



General Indicators

- Passenger trips between 2016 and 2020 have seen a decrease by nearly 70%.
- Space Coast Area Transit served more passenger trips (112,270 trips) than the peer group mean (99,847 trips) while supplying fewer vehicle miles, revenue miles, vehicle hours, and revenue hours than the peer group mean. Space Coast remained 12.4% above the peer mean for passenger trip.
- Space Coast Area Transit's total operating expense is close to the peer group mean of $4.1 million.
- Space Coast Area Transit has 36 vehicles operating at maximum service (VOMS), similar to the peer mean of 37 VOMs.

Effectiveness Measures

- Driven by the decrease in passenger trips, Space Coast Area Transit's demand-response service experienced a 30.7% decrease in passenger trips per revenue mile and a 42.7% decrease is passenger trips per revenue hour, indicating a decline in effectiveness.
- Despite the general declines in demand-response service effectiveness, Space Coast Area Transit ranked the highest among its peer group for passenger trips per revenue mile, and passenger trips per revenue hour.
- Although the number of vehicle system failures have decreased from 28 to 17 in the five-year period, revenue miles between failures decreased 28%, indicating a potential need for improvement in that measure.

Efficiency Measures:

- Space Coast Area Transit's demand-response service experienced significant increases over the five-year period in several cost efficiency measures such as operating expense per passenger trip (up 149.47%), operating expense per passenger mile (up 123.7%), operating expense per revenue mile (73.0%) and operating expense increase per revenue hour (42.72%), indicating a decline in overall cost efficiency.

- Although these measures increased over the five-year period, Space Coast Area Transit's demand-response service performed below the peer group average for operating expense per revenue mile and operating expense per revenue hour.
- Farebox recovery rate has decreased by 56.9% over a five-year period, but among the peer group, Space Coast Area Transit was 22.9% below the peer group.

Space Coast Paratransit Farebox Recovery Ratio

8.1%

Peer Mean: 10.5%

Table 3-5: Demand-Response Trend and Peer Analysis Summary

	Indicators	Trend Change	Desired Trend	Trend Status	Percent from Peer Mean
General	Service Area Population	5.8%	·		41.3%
	Service Area Size (square miles)	494.3%	·		80.4%
	Passenger Trips	-69.7%	·		12.4%
	Passenger Miles	-66.3%	·		48.6%
	Vehicle Miles	-53.1%	·		-19.0%
	Revenue Miles	-56.4%	·		-27.2%
	Vehicle Hours	-41.0%	·		-15.7%
	Route Miles	n/a	·		n/a
	Total Operating Expense	-24.5%	·		-5.3%
	Revenue Hours	-47.1%	·		-24.1%
	Vehicles Operated in Maximum Service	-53.8%	·		-3.3%
	Total Gallons Consumed	-38.6%	·		48.4%
			·		
Effectiveness	Vehicle Miles per Capita	-55.7%	↗	Not Improving	-52.0%
	Passenger Trips per Capita	-71.4%	↗	Not Improving	-32.6%
	Passenger Trips per Revenue Mile	-30.7%	↗	Not Improving	49.7%
	Passenger Trips per Revenue Hour	-42.8%	↗	Not Improving	42.7%
	Number of Vehicle System Failures	-39.3%	↘	Improving	-73.1%
	Revenue Miles Between Failures	-28.1%	↗	Not Improving	29.1%
			·		
Efficiency	Operating Expense per Capita	-28.7%	↘	Improving	-40.7%
	Operating Expense per Passenger Trip	149.5%	↘	Not Improving	-17.9%
	Operating Expense per Passenger Mile	123.7%	↘	Not Improving	-38.1%
	Operating Expense per Revenue Mile	73.0%	↘	Not Improving	28.0%
	Farebox Recovery (%)	-56.9%	↗	Not Improving	-22.9%
	Revenue Miles Per Total Vehicles	-50.5%	↗	Not Improving	-69.4%
	Vehicle Miles Per Gallon	-23.7%	↗	Not Improving	-51.6%
	Average Fare	7.5%	↗	Improving	-33.6%

4 Public Outreach Summary

Conducting public outreach during development of the 10-year TDP is critical to understanding the community's vision for transit and using it to shape the 10-year plan. This section summarizes the public outreach activities undertaken as part of the Space Coast Area Transit 10-Year TDP and the associated findings.

Outreach associated with this TDP update engaged 1,769+ people through various activities conducted by Space Coast Area Transit and Space Coast TPO.

Public Involvement Plan

One of the first activities was preparing a Public Involvement Plan (PIP) to describe the activities planned to be undertaken during the development of this TDP. Outreach activities included in the PIP provide numerous opportunities for involvement by the public, agency personnel, local policy leaders, and stakeholders representing various local agencies and organizations.

The PIP was prepared and submitted for FDOT review and approval prior to implementing the TDP outreach activities. The approved PIP and FDOT's approval letter are provided in Appendix C.

To encompass a wide range of community stakeholders to engage and actively participate in the development of this TDP, a range of public involvement techniques were employed:

- *Direct involvement* included activities that allow engagement with the public and stakeholders directly, including public workshops, stakeholder interviews, small group discussions, transit rider and non-rider surveys, and presentations directed to elected officials and other interested parties.
- *Indirect involvement* included information and educational materials that provided details and project information to the public and stakeholders through email communications, social media outreach, website content, and media statements.

The public outreach process was supplemented by recent public outreach conducted by the Space Coast TPO focusing on transit needs and priorities in Brevard County.

Review Committee

A Review Committee of representatives from Space Coast Area Transit, CareerSource Brevard (the Regional Workforce Board), the Space Coast TPO, Brevard County Public Works, FDOT District 5, and Transit One (a local transit advocacy group) was formed to help guide the TDP development process. An initial meeting was held to review the steps of the TDP update, and the Review Committee was also provided the opportunity to review and comment on the draft TDP report before it was presented to the Brevard County BOCC for adoption.

Public Outreach Activities

The remainder of this section summarizes the outreach activities conducted to engage the community in the transit planning process and to incorporate public opinion into development of the 10-year TDP. Copies of the materials developed for these activities are included in Appendix D.

As outlined in the PIP, the public outreach process to engage the public, including current transit riders and non-riders, stakeholders, policy leaders, and agency personnel, included activities such as online surveys and engagement, in-person public workshops, and interviews with local stakeholders, policy leaders, and agency personnel. Overall, 1,769+ people were engaged in this process, either through TDP-specific activities or supplemental activities conducted by the TPO.

Figure 4-1: TDP Public Outreach Summary

TPO Transportation Resiliency Master Plan Forums

As part of its Transportation Resiliency Master Plan, branded "Ride the Wave to Resiliency," the Space Coast TPO held forums with representatives from various community organizations and other external stakeholders to get input on critical community services and infrastructure in Brevard County, including public transportation.

The first forum was the Transportation Disadvantaged (TD) Community Conversation held on May 12, 2021. This discussion focused on topics such as:

- Understanding the impacts/shocks/stressors and transportation barriers for TD populations
- Identifying key community/TD services currently available
- Identifying other community leaders to engage in specific areas

The second forum was an Economic Stakeholders Work Session held on March 26, 2021, and focused on topics such as

- Challenges business/economic stakeholders face in bringing in new potential employers

- Importance of connectivity between mainland and the beaches
- Reduced congestion as a critical element for enhancing quality of life
- Public transportation needs and relationship to economic growth potential

Table 4-1 lists the organizations represented at these forums. Input provided by these representatives was reviewed for integration into the TDP public outreach process

Table 4-1: Transportation Resiliency Master Plan Participants

Agency/Organization
TD Community Conversation Participants
Brevard Schools
Brevard Alzheimer's Foundation
Brevard Achievement Center
Aging Matters Brevard
Brevard County
United Way of Brevard
Economic Stakeholders Work Session Participants
Cocoa Beach Regional Chamber of Commerce
Space Coast Office of Tourism
weVENTURE Women's Center at Florida Tech's Bisk College of Business
Melbourne Regional Chamber
Titusville Chamber of Commerce
Florida Small Business Development Center

Stakeholder Interviews

Receiving input that reflects local conditions is a vital aspect of the TDP, and the inclusion of community leaders and decision-makers should be accounted for throughout the public involvement process. To achieve this stakeholder input, 10 community decisionmakers and policy leaders were interviewed part of the involvement process. These interviews were structured using a script that provided a list of topics and question to guide the interview.

The purpose of the interviews was explained to the stakeholders to ensure that the planning documents being produced accurately identified and responded to community needs and provided direction for future planning initiatives. Each stakeholder was asked to provide their opinions and perspective as a community leader regarding the transit services and operations provided by Space Coast Area Transit surrounding four areas of discussion—existing service conditions, direction of future planning, strategies needed to achieve increased success in the future, and priorities needing to be made to accomplish the next steps in planning. Table 4-2 lists the stakeholders interviewed as a part of this public involvement activity and is followed by stakeholder input and comments.

Table 4-2: Stakeholder Interview Participants

Name	Agency	Title
Rita Pritchett	Brevard County Council	District 1 Commissioner
Kristine Zonka	Brevard County Council	District 5 Commissioner
Jim Leisenfelt	Brevard County	Assistant County Manager
Cindy Dittmer	City of Melbourne	Community Development Officer
Courtney Barker, AICP	City of Satellite Beach	City Manager
Stockton Whitten	City of Cocoa	City Manager
Charlene Neuterman	City of Cocoa	Director of Community Services
Christy Fischer	City of West Melbourne	Director of Planning & Economic Dev.
Tim Rhode	City of West Melbourne	Assistant City Manager
Wendi Bost	Brevard County	Director of Library Services

Where Are We Today?

In general, interviewees expressed positivity toward Space Coast Area Transit and indicated support for the role of transit within the community.

- **Awareness** – Subjects interviewed unanimously indicated that there is significant awareness and support for transit in the Space Coast community; none commented about any change in the awareness/support for transit in recent years. Some interviewees indicated they were new to their positions or to the area.
- **Perception** – The role of transit in the community was viewed primarily for helping older adult and low-income individuals. Transit was not viewed as a viable alternative to driving to work, although there were mentions that there could be merit to transit tied specifically to large employers.
- **Accessible Information** – All interview subjects believe that information about Space Coast Area Transit services is readily available in the community. There were no suggestions for how it could be improved.
- **Responsiveness** – Consensus was that Space Coast Area Transit is as responsive to community needs as funding allows but that financial support hinders providing more for the community in the form of more frequent buses and more routes.
- **Branding** – While all interviewees stated that Space Coast Area Transit has a clear and recognizable brand, it was agreed that a rebranding initiative should be considered.
- **Transit Participation** – No interviewee used Space Coast Area Transit services regularly, although two stated that they had been on a bus at least once. All interviewees favored some sort of volume pass over individual ride fares, and the 30-day pass was mentioned most often.

Where Do We Want To Go?

- **Transit Vision** – The consensus among those interviewed was that the vision for public transit in the community was to increase service scope, reduce wait time, and gain transit ridership by promoting transit and improving perception of transit services.
- **Transit Goals** – All agreed that goals implemented by Space Coast Area Transit should aim to provide more bus routes and shorter wait times and enhance transit infrastructure.
- **Regional Transit Connections** – Interviewees did not know if there were adequate regional transportation connections between Brevard and surrounding counties, but they also did not know how much demand for such connections exist. All agreed that the connection to Orange County would be the highest priority, but some believed that internal county needs should be considered first.
- **Impacts of Continued Growth** – Interviewees indicated that many apartment buildings are being built in the community and that development continues throughout the Space Coast area. As an increasing number of new residents are moving into the area, it is important to address the needs of the communities experiencing this growth, such as Titusville and North Brevard and redevelopment in Melbourne. Cocoa was also identified as an area expected to increase by nearly 2,200 new housing units within the next year. Palm Bay and South Melbourne were also mentioned as areas experiencing rapid growth.
- **Improved Marketing and Education** – Suggestions surrounding the rebranding of Space Coast Area Transit included a name change that points to a strong feeling of potential success as a result.
- **Premium Service Types** – Interviewees advocated for increasing coverage of transit services using first/last-mile connections and enhancing mobility-on-demand services for riders outside existing service areas.

How Do We Get There?

- **Focus for the Next 10 Years** – The most prominent suggestions were that increasing the number of routes and shortening wait times are most important factors. Interviewees were also consistent in suggesting infrastructure and technology improvements.
- **Increased Service Connections** – Cocoa, particularly northwest Cocoa, was mentioned as an area of the county believed to be underserved and in need of higher priority from Space Coast Area Transit. Other areas of concern were the central part of Brevard County (courthouse, government centers) the less populated areas, and Palm Bay.
- **Enhanced Infrastructure and technology** – Improvements at bus stops, including shelters to protect riders from the elements were noted, as were multiple mentions of improving technology at bus stops, including dynamic message boards indicating bus arrival times and Wi-Fi connectivity on-board and at bus stops. Using technology, such as the "321Transit" app for further transit branding and advertising was mentioned, as was enhancing the use and scope of the mobile app capabilities.

- **Constraints** – Interviewees all indicated that significant change is not expected without a bigger commitment to funding within the community. Funding was the only perceived barrier, with no indication of potential issues otherwise such as in policy or practice.

Bus Operator Survey

Additional efforts to obtain public input included a survey distributed to Space Coast Area Transit bus operators to gauge their opinions regarding existing transit services and operations, future improvements, general safety, and ridership interactions and perception. Bus operators can provide valuable input based on their frequent first-hand interactions with riders.

The survey was distributed to 22 Space Coast Area Transit bus operators based out of the North Terminal in Cocoa or the South Terminal in Melbourne. The survey consisted of 10 questions to identify their perceived challenges and needed improvements. Survey results included the following:

- **Concerns frequently expressed by riders** – From a provided list, bus operators selected the most common concerns expressed by riders. These included buses often being late/behind schedule, riders needing more frequent bus service, the need for service to offer later operating hours, and the need to increase the number benches and shelters at existing bus stops.
- **Compliments frequently provided by riders** – Bus operators also provided insight to the most received compliments from riders, including friendly interactions with bus operators, helpful assistance from bus operators regarding mobility needs, cleanliness of Space Coast Area Transit buses, and appreciation for provided demand-response services.
- **Service improvements for consideration** – Bus operators provided their opinion on the types of service improvements that should be considered by Space Coast Area Transit. Reponses included the need for increased frequency and extended service hours along most routes. Extending the service area was also suggested, specifically expansions into the Melbourne Beach area. Additional comments included general bus stop improvements along service routes.
- **Bus operator challenges** – Bus operators identified the biggest challenges Space Coast Area Transit faces with hiring and retaining new bus operators, including unanimous comments that higher wages are desired and would increase bus operator employment/retainment.
- **Technology improvements** – Bus operators commonly identified that upgrades to wheelchair tiedown systems for quick loading/unloading are among the most needed technology advancements. Additional responses included enhanced communication capabilities between operators and dispatchers/support staff, such as video calling.

Space Coast TPO Transit Surveys

As the TDP update effort was starting, the Space Coast TPO conducted two surveys in September/October 2021 to gather input from current riders on-board buses and from the public through an online survey.

On-Board Survey

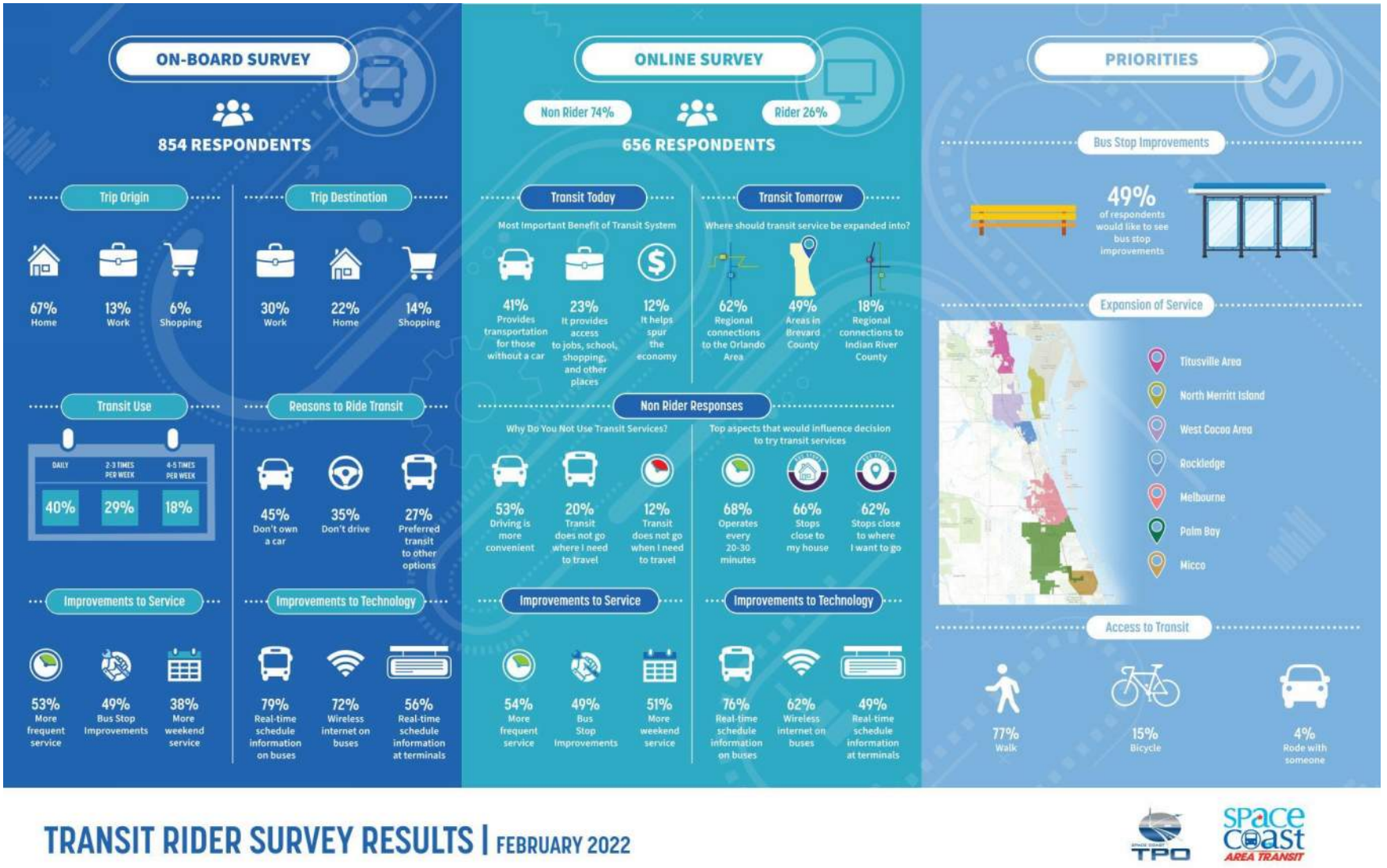
The on-board survey effort covered 50% of Space Coast Area Transit's fixed-route bus service to ensure validity of the sample size. The survey consisted of 19 questions that gathered demographic information including race, household income, and English proficiency and inquired about travel patterns, trip purpose, mobility options, and general transit usage of riders. Survey questions also collected information on the service expansions and improvements most desired by riders.

Online Survey

The online survey was distributed via social media "boosting" to reach an expanded target audience. Platforms such as Facebook, Twitter, and Nextdoor were used to distribute the online survey in both English and Spanish. The purpose of the survey was to identify levels of support for the upcoming TDP and to establish demographic information and customer satisfaction and service ratings. The survey consisted of 27 questions and was used to gather information regarding the perception of transit services and why residents choose to use—or not use transit—as well as what could improve their perception of transit services. Demographic information such as race, income, and English proficiency was also collected.

Figure 4-2 shows the participation and results from both surveys.

Figure 4-2: Space Coast TPO Transit Survey Summary of Results



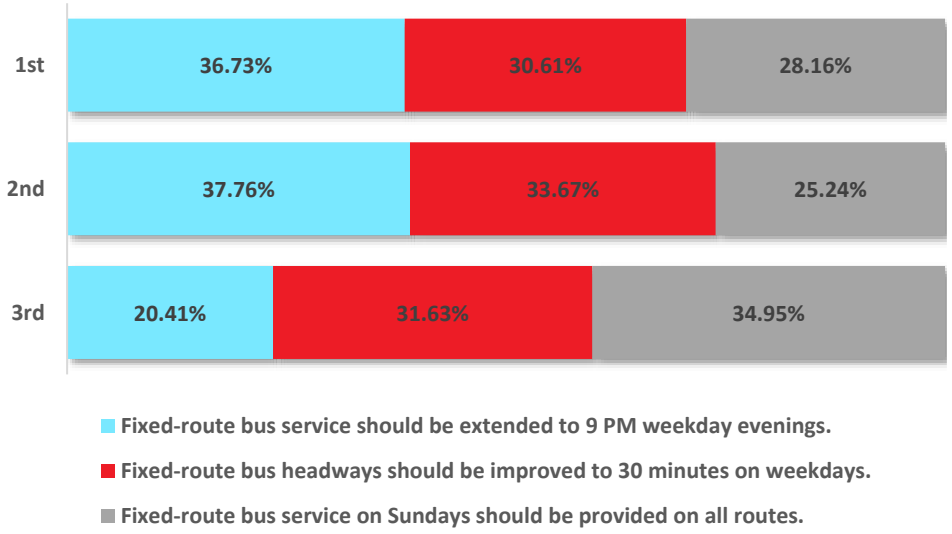
Source: Space Coast TPO

Transit Priorities Survey

Using preliminary information collected from the TPO online survey, a second survey was administered later in the TDP process to confirm the potential service alternatives and improvements identified and help confirm priorities regarding transit services in the Space Coast region. The transit priorities survey was offered online and promoted through the agency website and social media and was emailed to key stakeholders. The survey was also made available at public workshops through interactive maps and display boards. In total, 117 surveys were collected to supplement the initial information collected from the survey efforts led by the TPO.

Respondents were asked to rank their level of support for potential service improvements for Space Coast Area Transit. The top-rated service improvement was extension of weekday fixed-route bus services to 9:00 PM, with 36.73% of top priority responses. Improving all fixed-route bus headways to 30 minutes on weekdays was most frequently selected as the second highest priority, at 37.46%, followed by the addition of Sunday service for all fixed-route services at 34.95%.

Figure 4-3: Space Coast Service Improvement Priorities



Respondents were asked to identify the existing routes within Space Coast Area Transit's fixed-route service area that have the highest priority for extending evening service to 9:00 PM; the most frequently service route identified was Route 22, followed by Route 23 and Route 25. Respondents also were asked to identity existing service routes that have the highest priority for 30-minute headways. Responses indicated Route 22 , followed by Route 23 and Route 27. The survey also asked which service routes were among the highest priority to receive Sunday service on all routes. Responses showed the highest priority route for receiving expanded Sunday services was Route 22, followed by Route 25 and Route 27.

Respondents were asked to rank which of five potential service additions were among the highest interest on a scale of 1 to 5, with 5 being the highest priority. A new beach route along A1A from Cape

Canaveral to Melbourne Causeway received the overall highest interest, with an average ranking of 4.32 5, followed by a new connection between Melbourne Square Mall and the Melbourne Orlando International Airport, with an average ranking of 4.21. Remaining service additions included connection between Palm Bay and Micco, at 3.95, and a new north-south route between Eastern Florida State College and Melbourne Orlando International Airport at 3.77. The service addition with the least amount of interest was the east-west route connecting US-192 to west of I-95, with an average ranking of 3.4.

Figure 4-4: Potential Service Additions

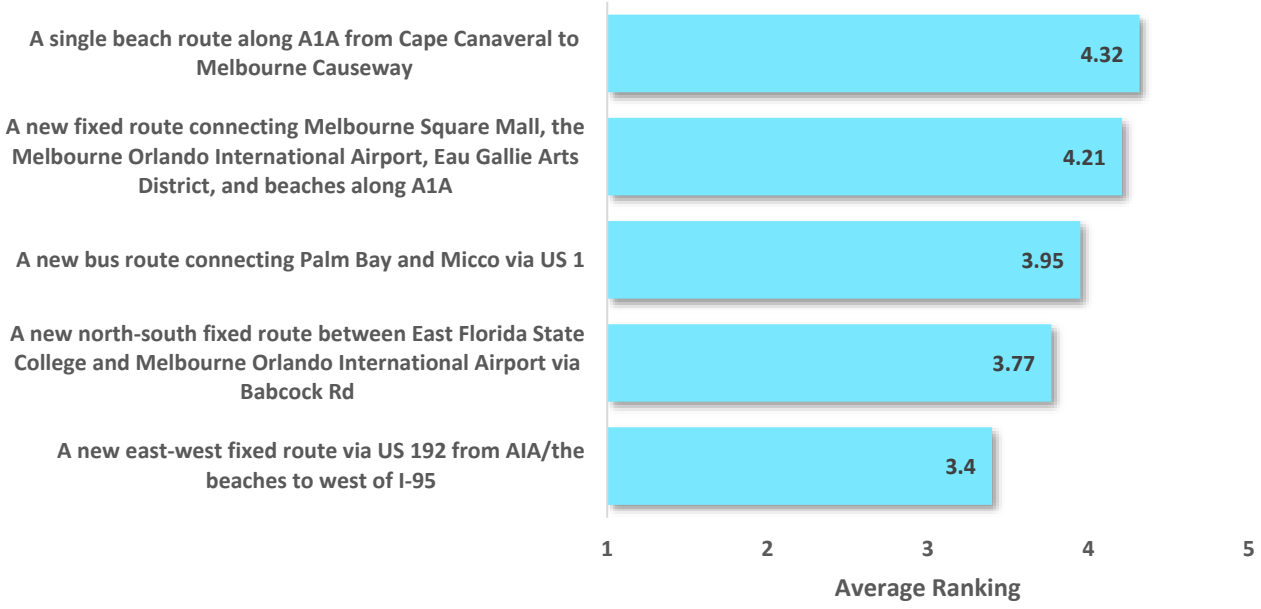
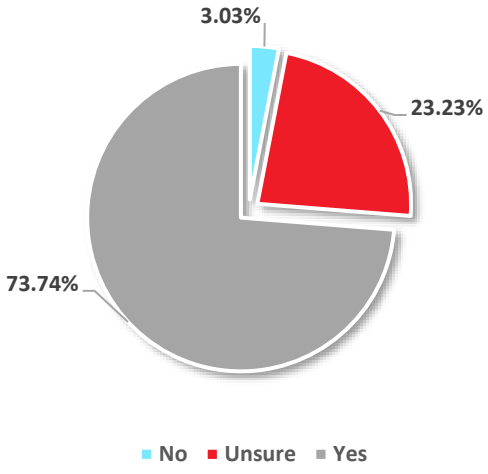


Figure 4-5: Support for Mobility on Demand

Mobility on demand (MOD) service is a door-to-door flex service within a defined service zone, further described in Section 8. Respondents were asked their opinion on whether Space Coast Area Transit should explore emerging technology. Most responses (73.74%) said yes; only 3% indicated they did not support these services, and 23.23% were unsure.



Survey respondents were asked to report their interest in personally using on-demand service. Overall, 77.78% of responses reported interest in using these types of services; 16.16% were unsure, and 6.06% did not have interest in using these services, as shown in Figure 4-6.

The final question asked respondents to rank potential MOD service areas on scale of 1 to 5, with 5 indicating the most interest. West Palm Bay received the most interest, with an average ranking of 4.23, followed by South Palm Bay at 3.98. Areas with the least amount of interest for potential MOD service areas were Port St. John at 2.74, and South Brevard County at 2.67, as shown in Figure 4-7.

Figure 4-6: Interest in Using MOD Services

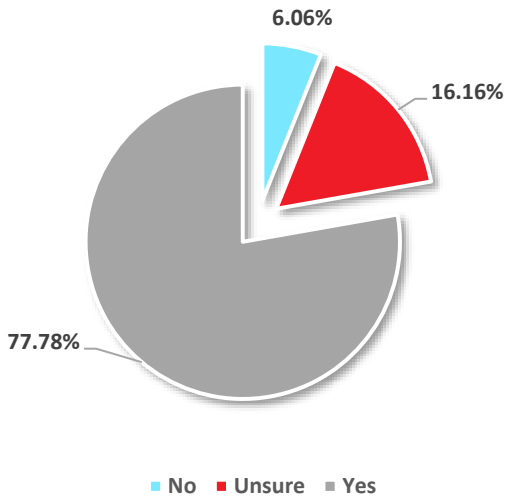
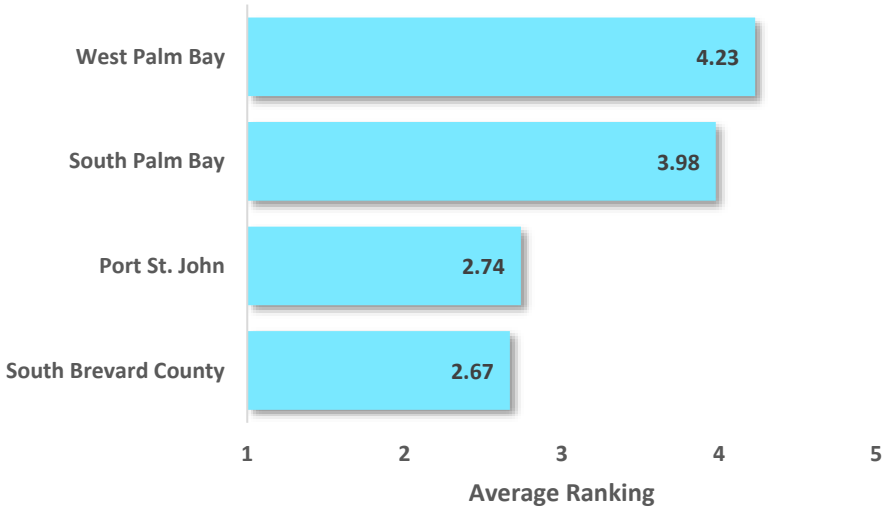


Figure 4-7: Potential MOD Service Zones



Public Workshops

Five public workshops were held to interact with the public regarding public transit needs and identify recommendations and improvements for the 10-year TDP. The first four public workshops were held on May 24, 2022, and engaged transit riders at Melbourne Square Mall, Hammock Landing, Cocoa Transit Center, and Titus Landing. Each workshop lasted around two hours. Transit riders were encouraged to engage in conversations regarding their transit priorities and to share their opinions on potential improvements illustrated on various display boards. Riders were also given the opportunity to participate in the transit priorities survey. Open-ended comment cards were available for participants to submit thoughts, comments, and opinions regarding Space Coast Area Transit.

The fifth public workshop was held on June 2, 2022, in Pelican Park at a Satellite Beach Farmers Market. The workshop and materials used in Satellite Beach were consistent with the previous workshops, but with participants mostly offering a non-rider perspective.

Input collected during the public workshops was done primarily through interactive boards and was combined with the online transit priorities survey results.

Website/Social Media Outreach

Additional outreach methods were used online to inform the public of the TDP process, distribute surveys, and provide resources on how to share transit opinions or obtain additional information. Emails were sent to stakeholders and the public in further pursuit of opinions, suggestions, and comments regarding Space Coast Area Transit services.

Website

Space Coast Area Transit operates a website that provides information to the community regarding transit services, including comprehensive route information, fares, schedules, and trip planning tools. The website also provides further information to the public regarding the TDP process and public outreach events. A link provided through Space Coast Area Transit's main website directed users to participate in ongoing surveys being conducted by the agency.

Source: Space Coast Area Transit

Social Media

Space Coast Area Transit operates and maintains social media accounts on Facebook, Instagram, and Titter to further engage with transit riders throughout the community. Social media engagement includes service adjustment announcements, promotion of transit services and programs, and maintaining transparency to the public.

Source: Space Coast Area Transit

Space Coast Area Transit used social media platforms to further advertise the TDP process and encourage participation in the online survey. Several posts were shared on Facebook, Instagram, and Twitter that directed followers to participate in the survey and share their comments.

Post-Adoption Outreach Program

A proposed plan for ongoing annual outreach by Space Coast Area Transit to build and maintain momentum during the implementation of the TDP recommendations after TDP adoption is outlined below. The program is intended to be implemented within existing time and resource constraints.

Leverage the TDP Executive Summary

A concise and user-friendly summary document with key information from the TDP rather than a large report with technical details could be effective for soliciting support from the public and/or stakeholders. Space Coast Area Transit's TDP Executive Summary should be used as a promotional tool and an effective medium to continue generating support for the TDP's recommendations.

Motivate Using the Annual Progress Report

The TDP Annual Progress Report (APR) is another tool that can help the TDP major update be a "living document." As an FDOT requirement, the APR can be used for each of the next four years to keep this TDP fresh in the minds of the governing board and others in the community and to provide the needed motivation to reiterate the benefits of the recommended alternatives.

Building on TDP Efforts/Relationships

Throughout the TDP public outreach process, members of the general public and numerous stakeholders were targeted by Space Coast Area Transit, which identified various advocates while educating the public. These relationships should be leveraged to continue building support for the implementation strategies. These individuals could serve as facilitators for a "grassroots" outreach program or could become transit cheerleaders/ambassadors that can provide a foundation/support network for future outreach. These future efforts can build upon the tools and lessons afforded by the TDP and aid in prioritizing specific target markets to engage.

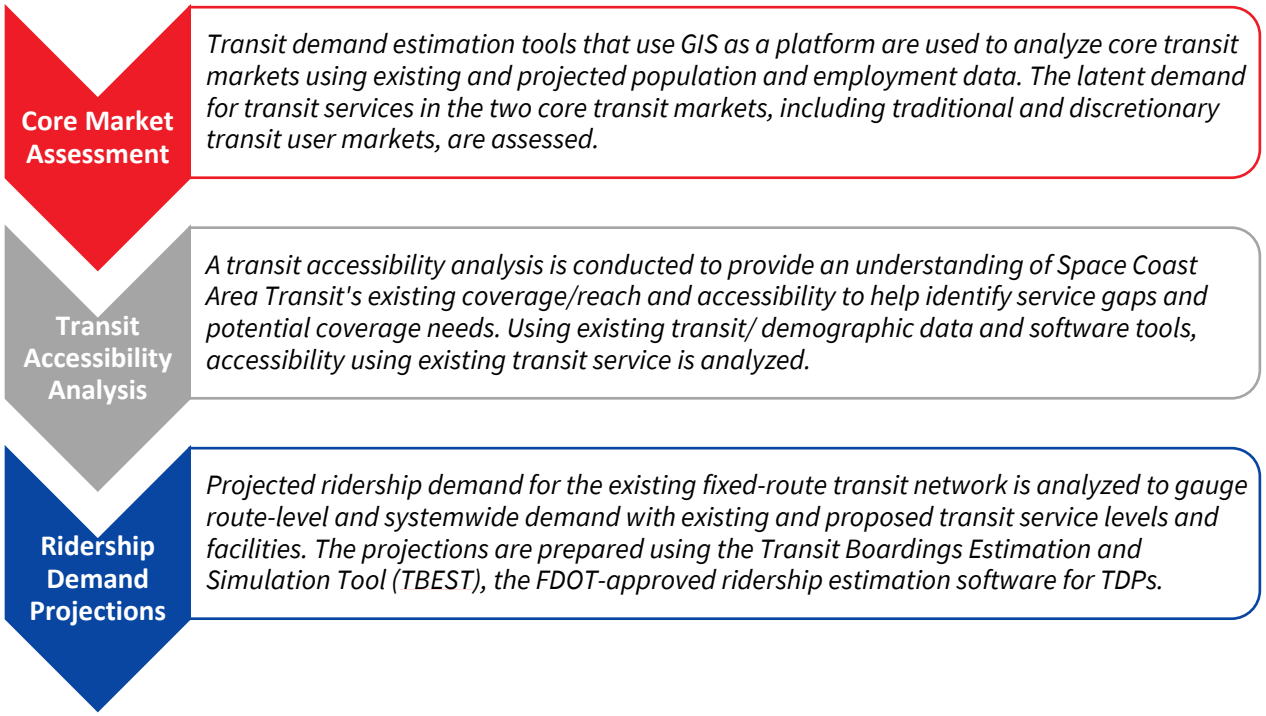
Continued Marketing/Outreach

A carefully crafted plan to promote the TDP after adoption will improve the likelihood of achieving the implementation plan. During the TDP process, Space Coast Area Transit has conducted extensive public outreach that can be leveraged and expanded to market other planning efforts, such as service initiation efforts, marketing programs and campaigns, and budget plans. Conversely, outreach efforts conducted regularly by Space Coast Area Transit to engage riders and stakeholders, such as social media posts, pop-up events at transit facilities, and the annual Transit Summit, could be used to continually market the TDP and gain feedback on the community's transit needs.

5 Transit Demand Assessment

A transit demand assessment was conducted to gain an understanding of existing and potential travel needs relative to Space Coast Area Transit's service area (Figure 5-1). These latent demand assessments are a key component of assessing public transit needs when combined with other efforts in the TDP such as the baseline conditions assessment, public outreach, and relevant plan reviews.

Figure 5-1: Demand Assessment Methodologies/Tools



Core Market Assessment

An important part in assessing potential transit demand is examining the two predominant transit rider markets that comprise the core market—traditional vs. discretionary riders. Analytical tools used to conduct these market analyses included a Density Threshold Assessment (DTA) to evaluate the discretionary rider market and a Transit Orientation Index (TOI) analysis to evaluate the traditional transit rider market. These tools are used to determine whether existing transit routes are serving appropriate areas that include locations with transit-supportive characteristics. These analyses help identify gaps in the current service that will be used to propose transit improvements.

Discretionary Rider Markets

The discretionary transit market consists of potential riders residing in higher-density areas of Brevard County who may choose to use transit as a commuting or transportation alternative. The analysis was conducted using industry-standard density thresholds to identify those areas that exhibit transit-supportive residential and employee density levels today as well as in the future. Socioeconomic data

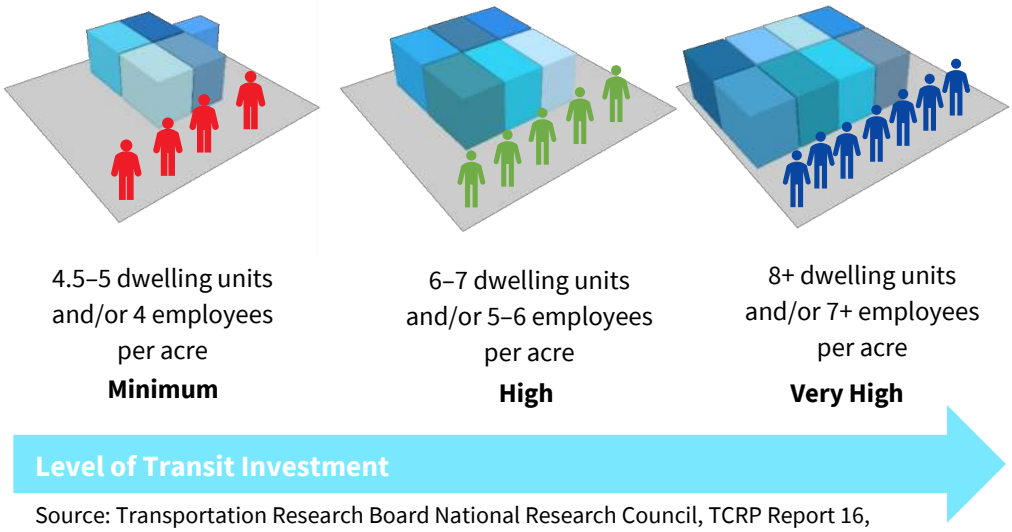
for Brevard County, including dwelling unit and employment data based on information developed for the Central Florida Regional Planning Model (CFRPM) 7, were used to develop the DTA for 2023 and 2032.

Three density thresholds, developed based on industry standards/research, were used to indicate whether an area contains sufficient density to sustain some level of fixed-route transit operations:

- *Minimum Investment* – reflects minimum dwelling unit or employment densities to consider basic fixed-route transit services (i.e., local fixed-route bus service).
- *High Investment* – reflects increased dwelling unit or employment densities that may be able to support higher levels of transit investment (i.e., more frequent service, longer service span, etc.) than areas meeting only the minimum density threshold.
- *Very High Investment* – reflects very high dwelling unit or employment densities that may be able to support more significant levels of transit investment (i.e., very frequent services, later service hours, weekend service, premium modes, etc.) than areas meeting the minimum or high-density thresholds.

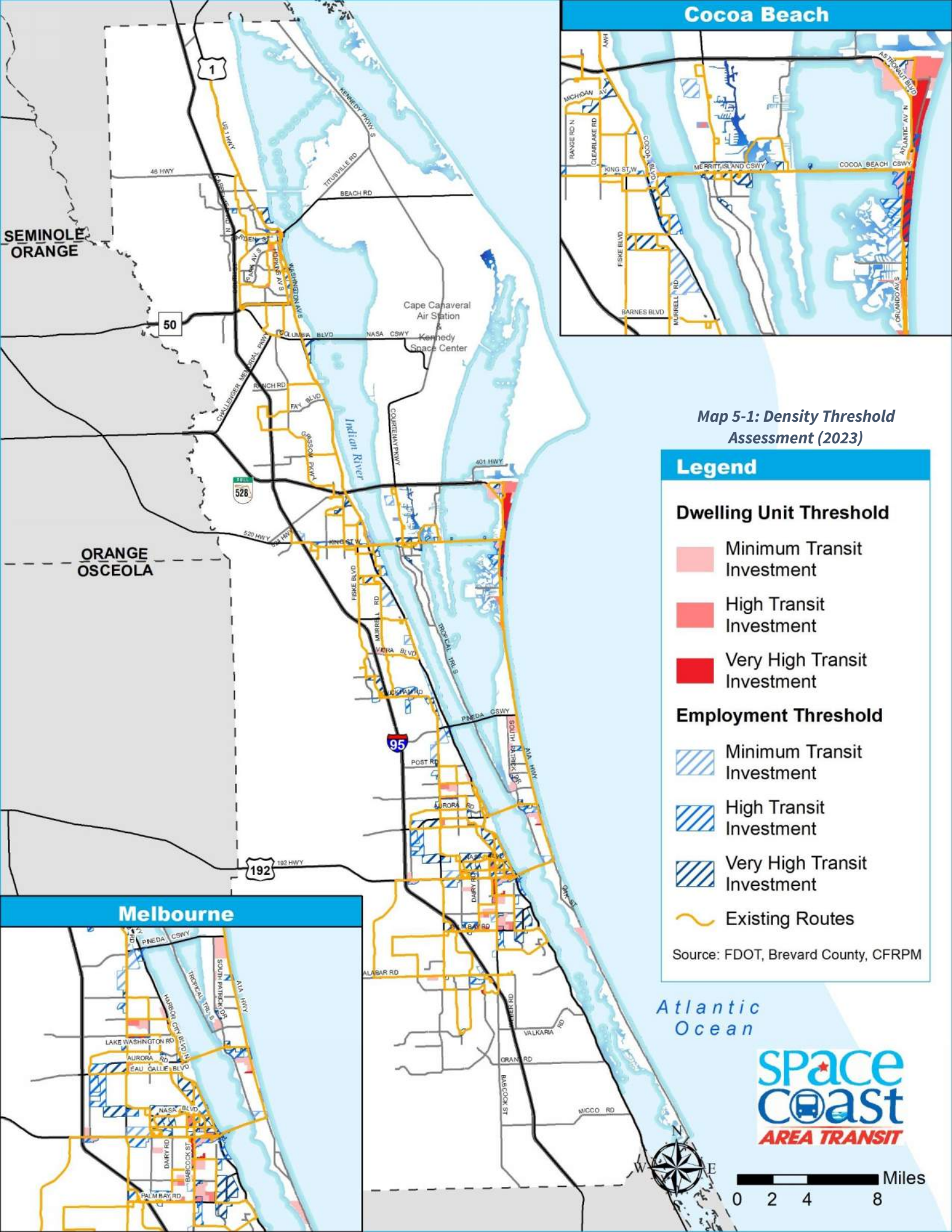
Figure 5-2 shows the dwelling units and employment densities associated with each level of transit investment described above.

Figure 5-2: Transit Service Density Thresholds

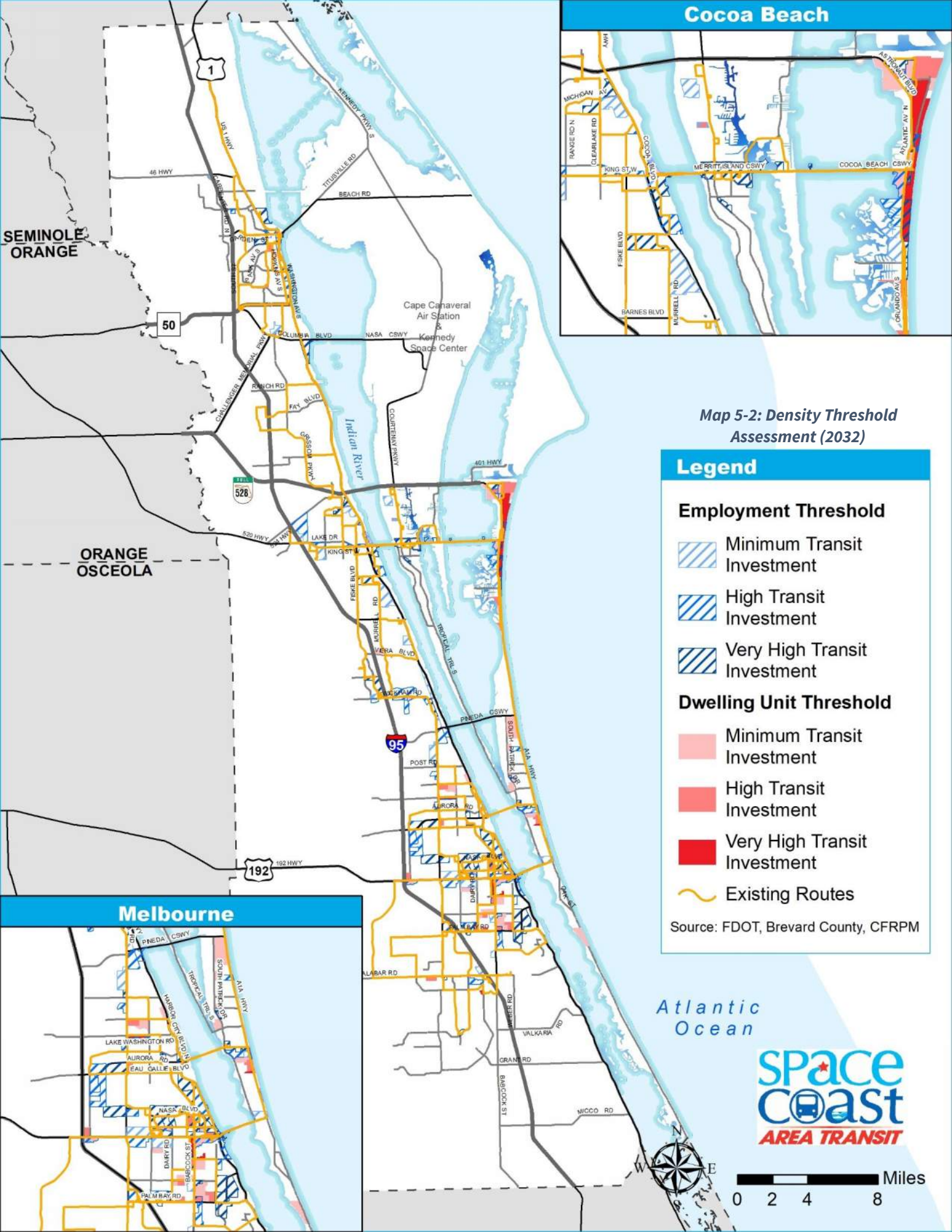


Source: Transportation Research Board National Research Council, TCRP Report 16, Volume 1 (1996), "Transit and Land Use Form"

As density increases, areas generally become more transit-supportive; the DTA assists in determining the presence of optimal conditions for varying levels of fixed-route transit service. The results of these analyses are used in the assessment of transit needs and demand. Maps 5-1 and 5-2 illustrate the results of the 2023 and 2032 DTA analyses conducted for Brevard County and include an overlay of the existing Space Coast route network to gauge how well the current transit network covers the areas of Space Coast that are considered supportive of at least a minimum level of transit investment.



Map 5-1: Density Threshold Assessment (2023)



Map 5-2: Density Threshold Assessment (2032)

Traditional Rider Markets

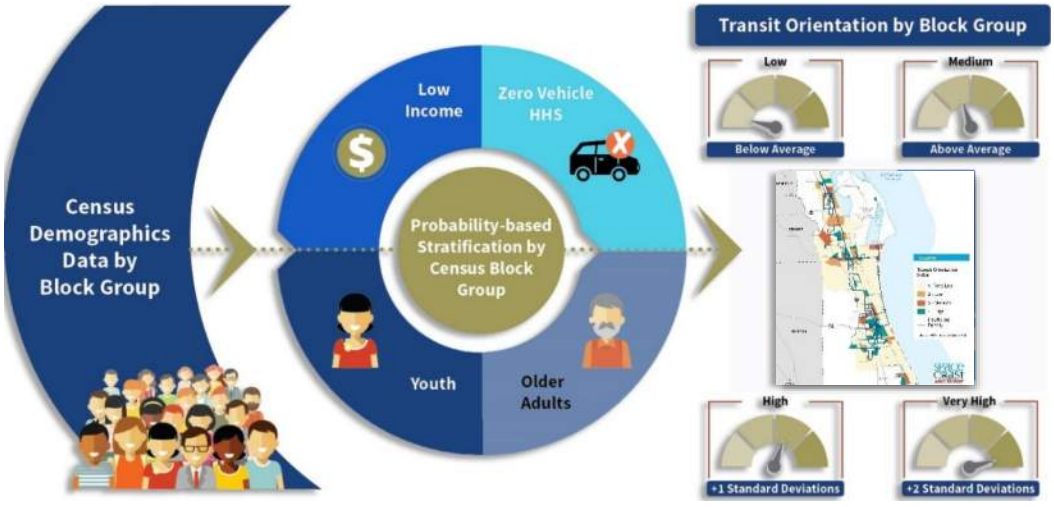
A traditional rider market refers to population segments that historically have had a higher propensity to use transit or are dependent on public transit for their transportation needs. Traditional transit users include the following:

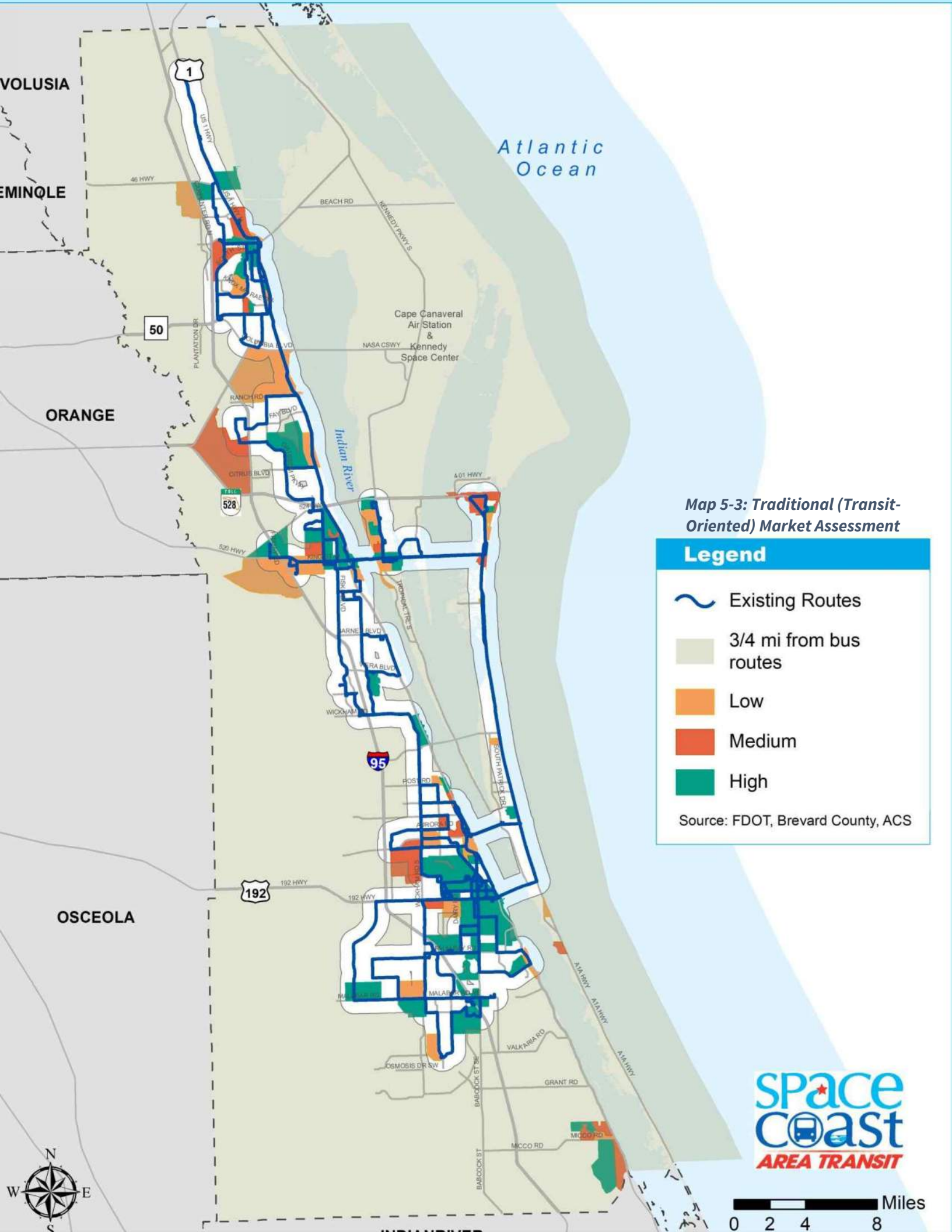
- Low-income households, those with an annual household income of $27,479 or less for a family of 4 with 2 children
- Youths/young adults, including people ages 15–24
- Older adults, including people age 65 and older
- Zero vehicle households, including homes that do not have an operable vehicle

For some, the ability to drive is greatly diminished with age, so they must rely on others for their transportation needs. Likewise, younger adults may rely more on public transportation until they reach driving age to get to/from employment or recreational activities. For lower-income households, such as those with no private vehicle, transportation costs can be particularly burdensome, as they tend to spend a greater portion of income on transportation-related expenses and typically have an increasing reliance on public transportation for their mobility needs.

A TOI was developed for the TDP and reconsidered for this analysis to assist in identifying areas of the county where these traditional rider markets exist. To create the TOI for this analysis, demographic data from the 2019 ACS 5-Year Estimates were analyzed at the Block Group level for demographic and economic variables. Using data for these characteristics and developing a composite ranking for each census Block Group, each area was ranked as "Very High," "High," "Medium," or "Low" in its respective level of transit orientation. Areas with a population density below 100 persons per square mile were eliminated from the analysis due to lack of density to support transit services. The methodology and benchmarks are shown in Figure 5-3. Map 5-3 illustrates the 2019 TOI, reflecting areas throughout the county with varying traditional market potential. The existing transit route network overlay shows the extent to which Space Coast Area Transit currently covers those areas.

Figure 5-3: Transit Orientation Index





Map 5-3: Traditional (Transit-Oriented) Market Assessment

Legend

- Existing Routes
- 3/4 mi from bus routes
- Low
- Medium
- High

Source: FDOT, Brevard County, ACS

Space Coast Area Transit

Market Analysis Summary

- Most areas that exhibit “high” or “very high” orientation towards transit are concentrated in incorporated areas of Melbourne, Cocoa, Titusville, Malabar, and Palm Bay.
- Some unincorporated areas exhibiting a “very high” orientation towards transit include Cocoa West, Micco, Port St. John, and Mims.
- Port Canaveral and the Cape Canaveral areas exhibit “high” transit propensity.
- Generally, most areas in Brevard County have low transit orientation or density below the minimum threshold to be designated as transit supportive.

Transit Accessibility Analysis

An analysis was conducted to identify the degree of accessibility from key transfer and activity locations via the current Space Coast Area Transit system. This can provide valuable information on how the current system may impact travel patterns of current and potential riders.

Using the existing Space Coast Area Transit fixed-route bus network and functionalities from the Remix software platform, an analysis was conducted to visualize potential destinations that are accessible within a 90-minute travel time and potential gaps.

The accessibility tool is a travel-time isochrone that shows how far a person can travel to or from a specific point within a given time frame. The travel distance is represented by four colors. Each represents how far a person can travel. The travel includes a combination of walking (at a walk speed of approximately 3 miles per hour) and taking transit, including potential transfers. Transfer wait times are based on 1/2 the headway at the given time before "riding" the bus.

Accessibility was measured for a weekday at 7:00 am using average wait times. The following transfer locations were selected as origins for this accessibility analysis:

- Melbourne Square Mall
- Hammock Landing
- Cocoa Transit Center
- Merritt Square Mall
- Titus Landing
- Melbourne International Airport

Figures 5-4 through 5-9 show the results of the accessibility analysis by origin. Accessibility from the Melbourne Square Mall transfer station is concentrated in West Melbourne and Melbourne, but does not reach Cocoa, Titusville, or the beaches. Travel starting at the Hammock Landing is comparable to travel starting at the Melbourne Square Mall, but with a slightly smaller travel shed.

Travel starting in the Cocoa Transit Center reaches more of Brevard County due to its centralized location and high-frequency routes. Travel to destinations within the 90-minute travel shed includes the southern portion of Titusville as well as Viera, Merritt Island, Cape Canaveral, and the northern half of Cocoa Beach; it reaches the southern municipalities of Brevard County such as Palm Bay,

Melbourne and Melbourne Beach, and the Melbourne International Airport. The 90-minute travel shed from Merritt Square Mall is similar but is slightly smaller than the Cocoa Transit Center.

Accessibility from the Titus Landing extends from Titusville, Cocoa, and as far south as Viera. Although a small portion of the urbanized area of Merritt Island is accessible, Palm Bay, Cape Canaveral and Cocoa Beach are not within the 90-minute travel shed. Accessibility from the Melbourne International Airport is limited to the Melbourne, West Melbourne, Palm Bay, Melbourne Beach, and Satellite Beach. Despite the large geographic coverage of the existing transit system, the ability to travel between cities and coastal destinations using transit is generally limited.

Figure 5-5: Figure 5-6: 90-minute Travel Shed from Melbourne Square Mall

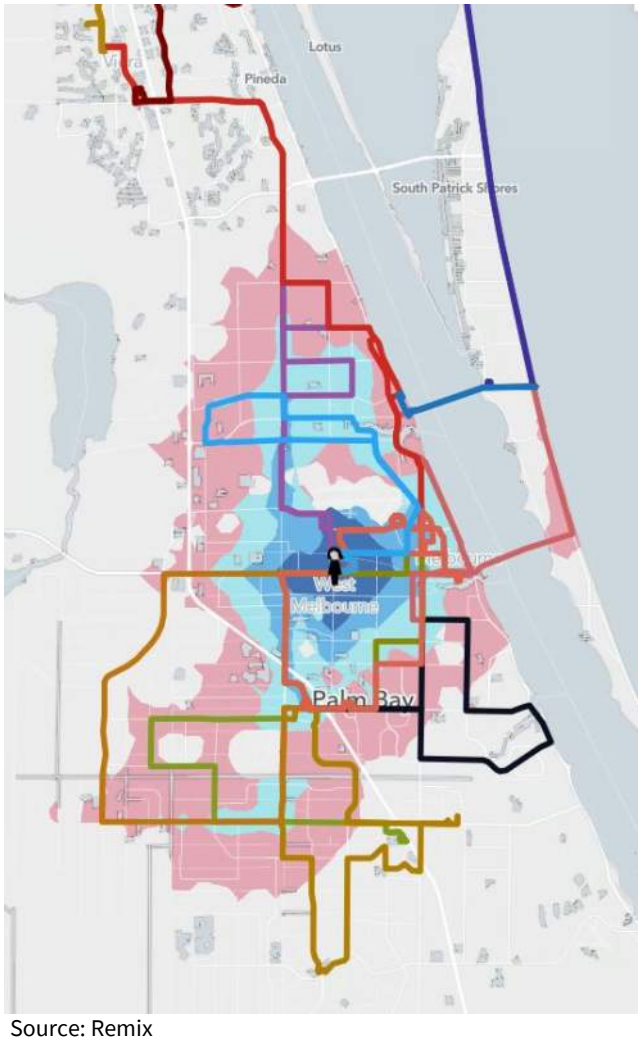
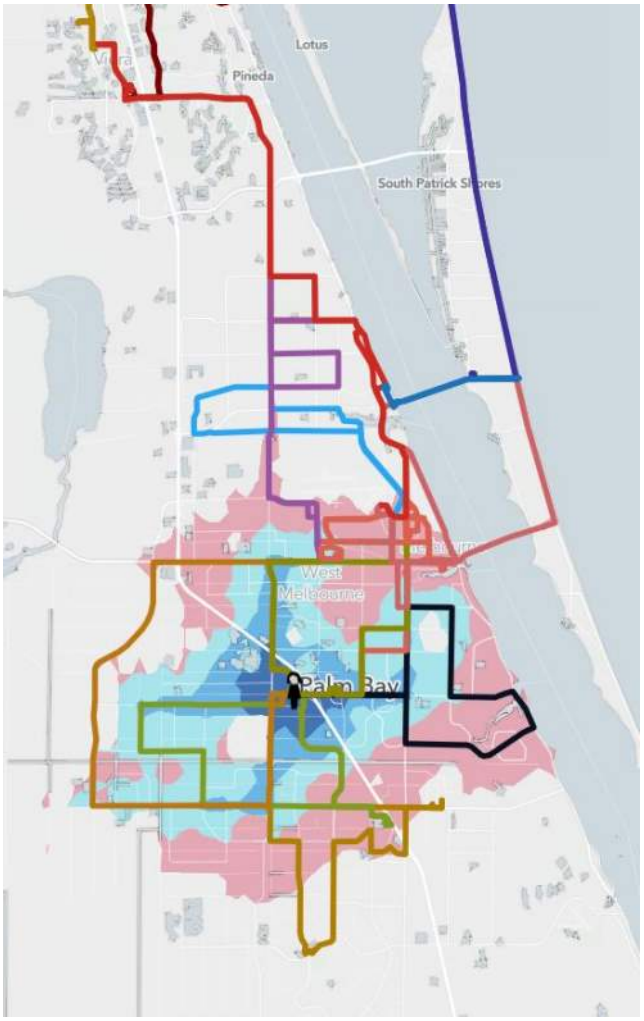


Figure 5-4: 90-minute Travel Shed from Hammock Landing



Source: Remix

Figure 5-7: 90-minute Travel Shed from Cocoa Transit Center

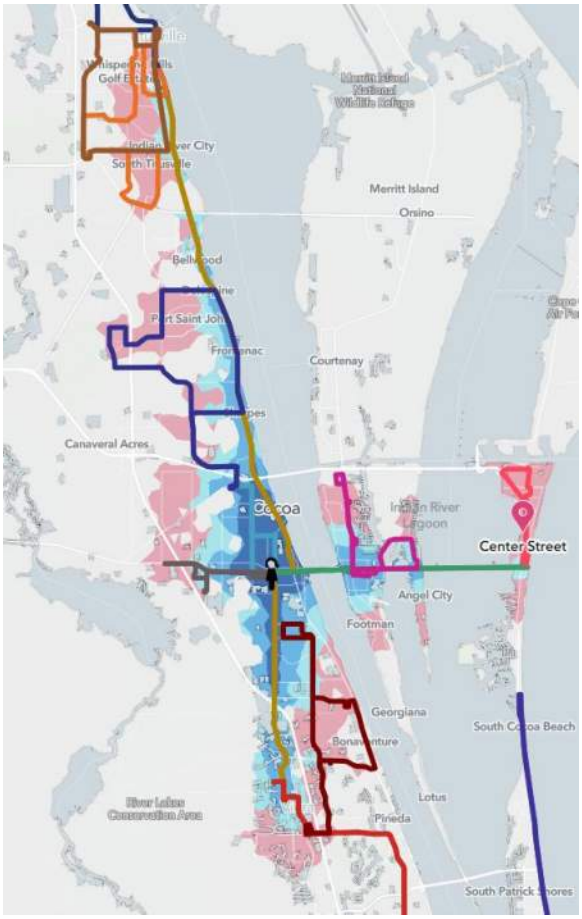
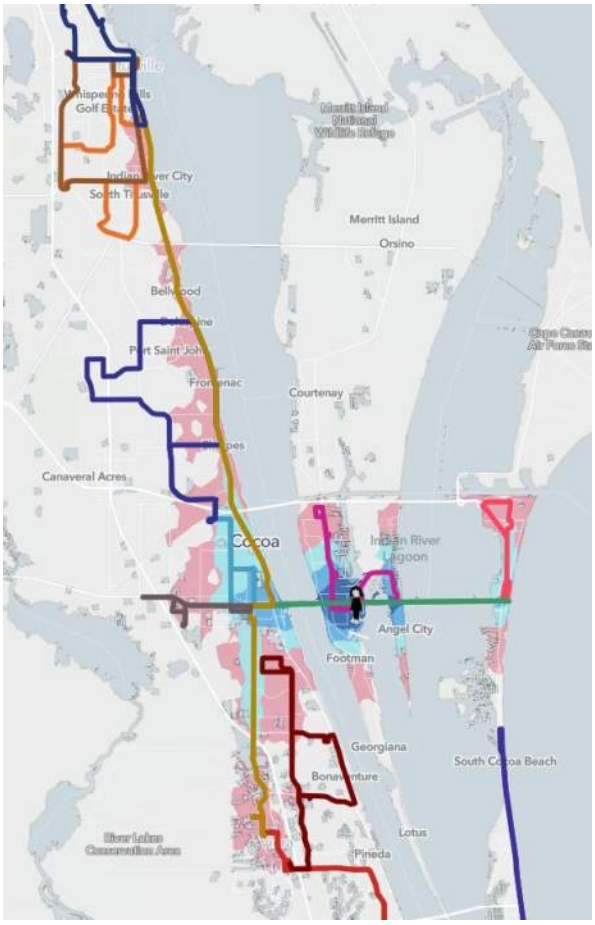


Figure 5-8: 90-minute Travel Shed from Merritt Square Mall



Source: Remix

Figure 5-9: 90-minute Travel Shed from Titus Landing

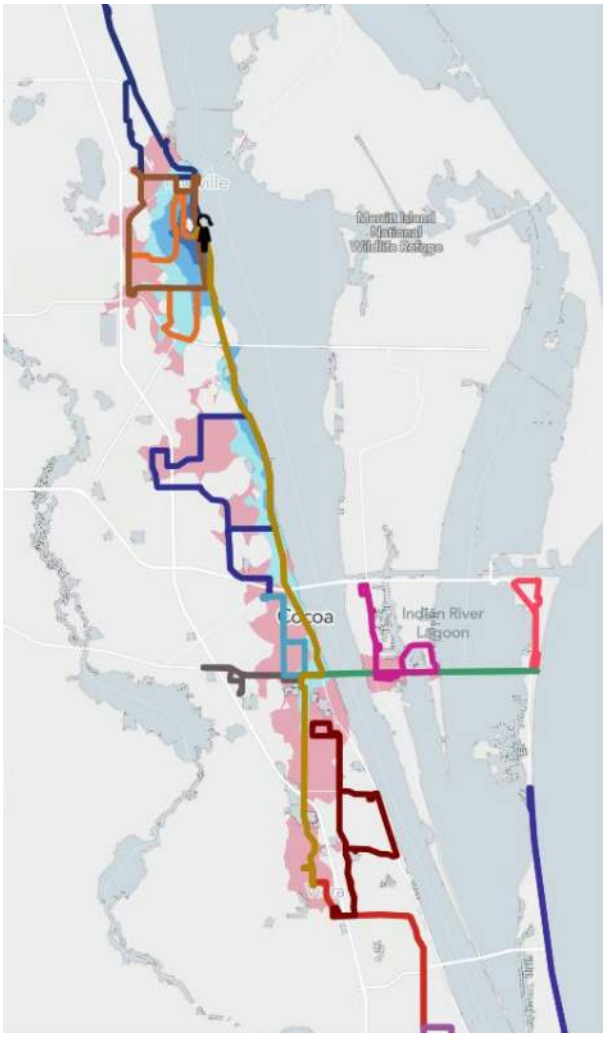
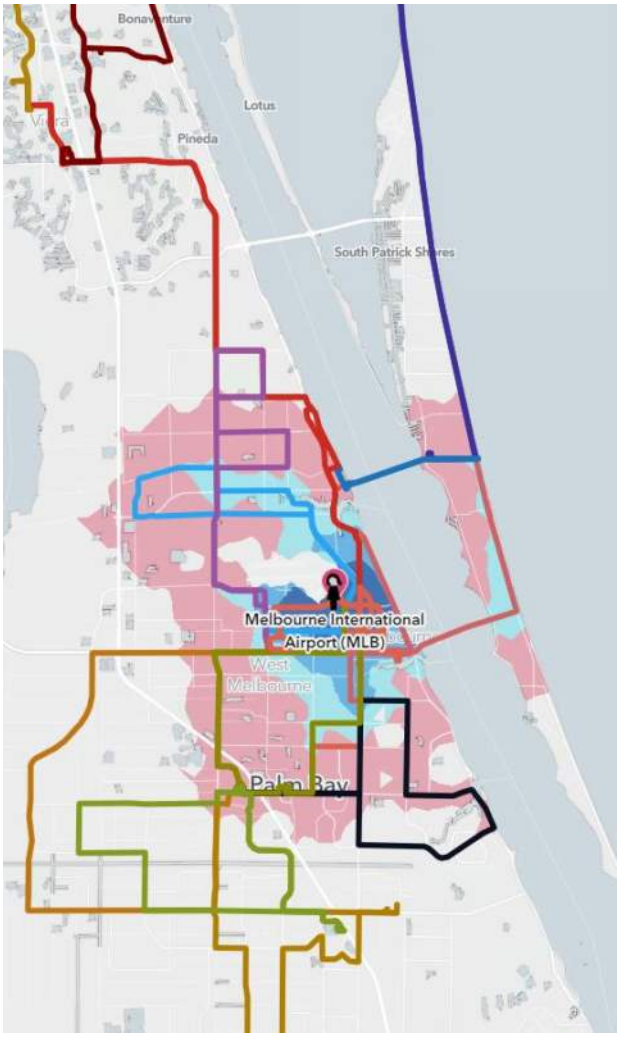


Figure 5-10: 90-minute Travel Shed from Melbourne International Airport

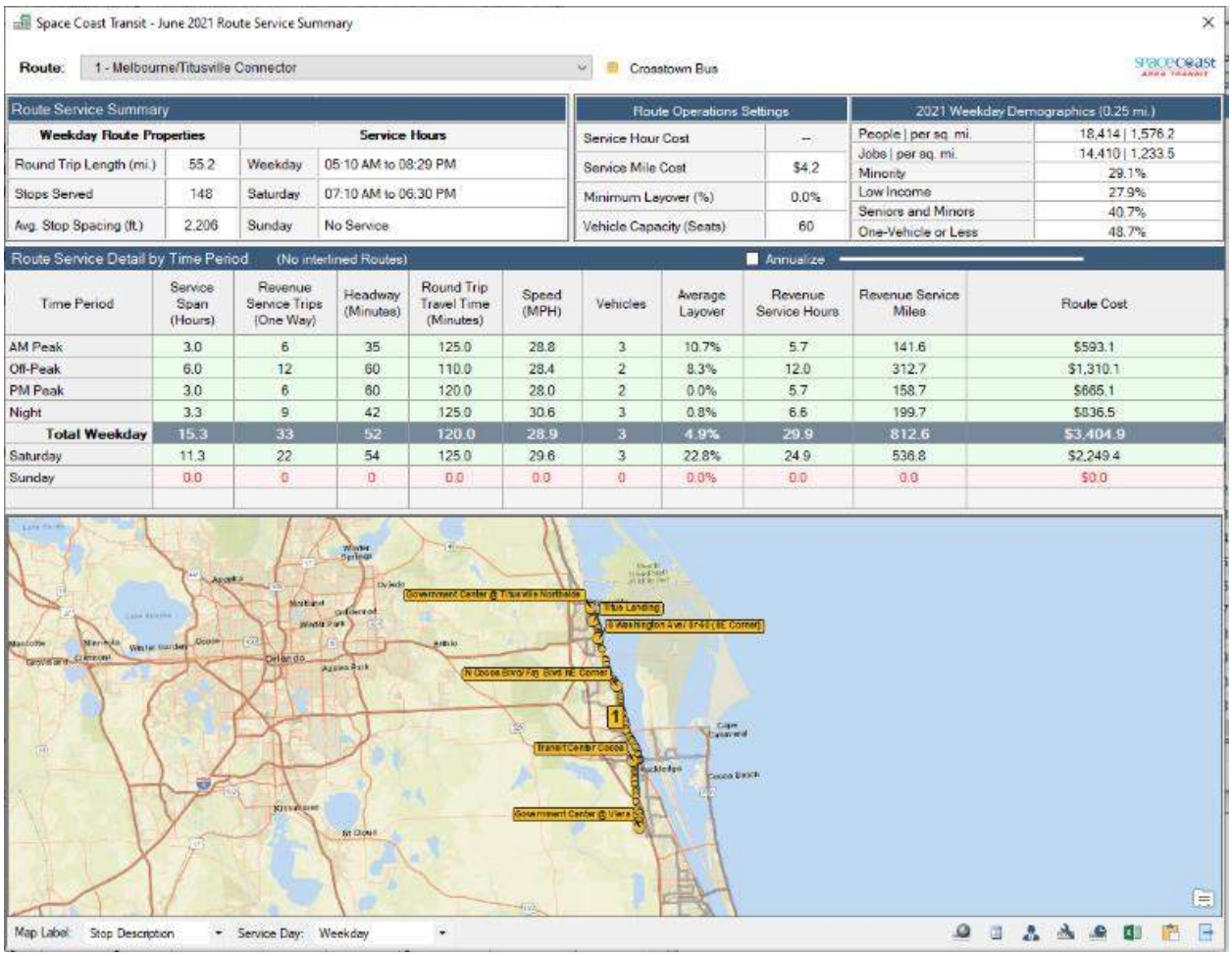


Source: Remix

Baseline Ridership Demand Projections

Transit ridership demand projections for the existing fixed-route transit network was analyzed using the ridership forecast data from TBEST, the FDOT-approved ridership estimation software for TDPs. This analysis was completed to gauge the route-level and systemwide demand, assuming the maintenance of existing transit service. TBEST simulates travel demand at the individual stop-level while accounting for network connectivity, spatial and temporal accessibility, time-of-day variations, and route competition and complementarity. The software was designed to provide near- and mid-term forecasts of transit ridership consistent with the needs of transit operational planning and TDP development. TBEST uses various demographic and transit network data as model inputs. The model used the recently released TBEST Land Use Model structure (TBEST Land Use Model 2021), which is supported by parcel-level data developed from the Florida Department of Revenue (DOR) statewide tax database.

Figure 5-11: Example TDP Ridership Analysis



T-BEST Model Limitations

Whereas TBEST is an important tool for evaluating improvements to existing and future transit services, model outputs do not account for latent demand for transit that could yield significantly higher ridership. The model is not interactive with roadway network conditions. Therefore, ridership forecasts will not show direct sensitivity to changes in roadway traffic conditions, speeds, or roadway connectivity. In addition, TBEST cannot display sensitivities to other external factors such as an improved marketing and advertising program, changes in fare service for customers, fuel prices, parking supply, walkability, and other local conditions and, correspondingly, model outputs may over-estimate demand in isolated cases.

Although TBEST provides ridership projections at the route and bus stop levels, its strength lies more in its ability to facilitate relative comparisons of ridership productivity. As a result, model outputs are not absolute ridership projections, but, rather, are comparative ridership scenario levels for evaluation in actual service implementation decisions.

Space Coast Area Transit Network

December 2021 daily average ridership data was used to validate the base scenario. General Transit Feed Specification (GTFS) data imported to TBEST was used for the base transit network and edited as needed. Data that was that verified include:

- Route alignments
- Route patterns
- Bus stop locations
- Service spans
- Bus arrival times

Socioeconomic Data

The socioeconomic data used as the base input for the TBEST model were derived from 2019 ACS 5-Year Estimates, the Bureau of Labor Statistics, the Bureau of Economic Analysis, 2020 InfoUSA employment data, and 2020 parcel-level land use data from the Florida Department of Revenue (DOR). Using these data inputs, the model captures market demand (population, demographics, employment, and land use characteristics) within ¼-mile of each stop.

TBEST uses two socioeconomic data growth functions to project population and employment data: Traffic Analysis Zone data developed by the CFRPM 7.0 model and historical growth rates for various population and employment characteristics. The growth rates do not reflect fluctuating economic conditions experienced in real time.

Special Generators

Special generators were identified using the Space Coast Area Transit system map and coded into TBEST to evaluate the opportunity for generating high ridership. Generator types include shopping malls, transfer stations, and universities. Special generators coded into the base network include:

Special Generators	
Transit Center Cocoa	Melbourne Square Mall
Barton Blvd/Murrell Rd	Hammock Landing
Dr. Martin Luther King Blvd @ Legacy Apartments	Melbourne Orlando International Airport
E. New Haven @ Trinity Tower South	Merritt Square Mall @ Sears
E Strawbridge Ave @ Trinity Towers East	Eastern Florida State College campuses
Government Center @ Titusville Northside	Walmart Supercenter @ Viera
Government Center @ Viera	Shepard Park @ Pizza Hut
Palm Bay Hospital	NASA Blvd @ Babcock St
Holmes Regional Hospital	

Existing Network Ridership Forecast

Table 5-1 shows the projected 10-year route- and system-level ridership for the 2023 and 2032 Status Quo Existing Network scenarios projected by the TBEST model. Overall ridership is estimated to increase 9.6%, with the highest increases in ridership occurring on Routes 11, 8, 30 and 21. Note that the ridership levels used to validate the model were based on December 2021 ridership but were not adjusted to consider seasonal or COVID-19 related fluctuations in ridership levels.

Table 5-1: 10-Year Annualized Ridership Estimates for Existing Fixed-Route Network

Route	2022 Boardings	2032 Boardings	Percent Change
1	138,697	152,598	10.0%
2	55,304	61,957	12.0%
3	30,185	34,263	13.5%
4	234,339	264,504	12.9%
5	27,437	30,345	10.6%
6	162,018	168,601	4.1%
7	25,813	26,423	2.4%
8	25,821	29,703	15.0%
9	169,141	189,695	12.2%
10	13,922	14,944	7.3%
11	8,696	10,216	17.5%
20	16,164	17,750	9.8%
21	68,551	77,850	13.6%
22	37,579	39,734	5.7%
23	46,014	48,622	5.7%
24	35,022	39,328	12.3%
25	103,360	113,668	10.0%
26	14,438	16,393	13.5%
27	73,001	80,596	10.4%
28	63,538	64,498	1.5%
29	103,730	109,133	5.2%
30	28,669	32,803	14.4%
33	787	895	13.7%
Total	**1,482,226**	**1,624,519**	**9.6%**

Source: TBEST

6 Situation Appraisal

A TDP is a strategic planning document that includes an appraisal of a variety of factors within and outside a service area that affect the delivery of public transit services. Conducting a situation appraisal is a key requirement under the current TDP Rule and assists a transit agency in examining its strengths, weaknesses, challenges, and opportunities for the services it provides. This assessment supports the examination of the existing Space Coast Area Transit system and the identification and development of future public transit needs for the community.

Reviewed prior to this appraisal were locally, regionally, and federally approved plans and studies to ensure consistency between the 10-year transit plan goals and initiatives with other government policies and planning efforts. The current planning initiatives/policy guidance from these plans were reviewed to better understand the policy context under which Space Coast Area Transit operates.

Plans Review

A review of existing plans, studies, and policy documents was conducted to align the Space Coast Area Transit TDP with existing planning efforts and explore potential opportunities for interagency cooperation. The review included local, regional, and state/federal plans, programs, and policies examined for significant considerations and implications for this TDP. Each document reviewed had some relationship to public transit services or closely-related subject matter. The list of plans reviewed is shown in Table 6-1, and a detailed assessment of each plan can be found in Appendix E.

From the plans review, the following themes were identified:

- To a large degree, public transit is considered essential in Brevard County and supported by various transportation studies and planning activities around the region.
- Often, the focus is on transit improvements that would serve a certain group (i.e., transportation disadvantaged) or geography (i.e., Wickham Road, Sarno Road, and Minton Road, or along other major transportation corridors).
- Multimodal improvements to facilitate movement and connections to transit are supported by stakeholders through planning activities and corridor studies both locally and regionally.
- Brevard County and its municipalities support the development of integrated Complete Streets networks and furthering investments in transit infrastructure to manage congestion through transportation planning principles and various development regulations.
- Locally, municipalities show support for the development and/or improvement of bicycle and pedestrian networks.
- The need for regional transit connections has been established by stakeholders in surrounding counties but no plans have been funded.
- Most federal and state resources focus on providing funding that supports the advancement of transit accessibility and equity.

Table 6-1: Local, Regional, State, and Federal Plans Reviewed

<table>
<tr><th colspan="2">Local Plans/Studies</th></tr>
<tr><td>✓ Space Coast Area Transit FY 2020 TDP Annual Progress Report
✓ Space Coast Area Transit FY 2018–2027 Major Update (2017)
✓ Space Coast Area Transit TDSP Major Update (2020)
✓ Space Coast ADA Bus Stop assessment (2015)
✓ Space Coast TPO 2045 LRTP (2020)
✓ Space Coast TPO 2021–2025 TIP (2021)
✓ Brevard County Comprehensive Plan (1988)
✓ Aurora Road Corridor Study (2018)
✓ Sarno Road Corridor Study (2017)
✓ Milton Road Corridor Study (2021)
✓ Wickham Road Operational Analysis (2018)</td><td>Comprehensive Plan Future Land Use and Transportation Elements for:
✓ City of Cocoa Beach
✓ Town of Grant-Valkaria
✓ City of Melbourne
✓ City of Palm Bay
✓ City of Rockledge
✓ City of Satellite Beach
✓ City of Titusville
✓ City of West Melbourne</td></tr>
<tr><th>Regional Plans/Studies</th><th>Federal Plans/Policies</th></tr>
<tr><td>✓ Space Coast Passenger Rail Station Location Study (2016)
✓ Brightline
✓ Central Florida Regional Transit Study (2018)
✓ GoLine TDP Annual Update 2021
✓ VOTRAN TDP Annual Update 2020
✓ LYNX 2018–2027 TDP Major Update (2021)</td><td>✓ State of Florida Transportation Disadvantaged 5-Year/20-Year Plan
✓ FDOT Complete Streets Implementation Update: Handbook and Design Manual
✓ Florida Transportation Plan (FTP)
✓ Accessing Transit Design Handbook for Florida Bus Passenger Facilities, Version III
✓ FTA Circular 4702.1B: Title VI Requirements and Guidelines for Federal Transit Administration Recipients
✓ FTA Circular 4703.1: Environmental Justice Policy Guidance for Federal Transit Administration Recipients
✓ Executive Order 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government
✓ Infrastructure Investment and Jobs Act
✓ Implications to Public Transportation of Emerging Technologies</td></tr>
</table>

Situation Appraisal

Transit systems thrive in an environment when they address factors related to regulations, geographic, environmental, land use, development, community needs, etc., that can impact the allocation and delivery of their services.

To this end, a situation appraisal for Space Coast Area Transit was conducted to assess and document key aspects of the agency's operating environment based on information gathered for the TDP, including baseline conditions, public outreach, and local and regional plans, and policies.

Figure 6-1: Situation Appraisal Elements

Included in this this section are assessments of the situation appraisal elements illustrated in Figure 6-1. The appraisal examines the strengths and weaknesses of the system, any existing barriers or threats to the provision of service in the county, and key opportunities for addressing those threats and/or enhancing the perception of transit within the operating environment.

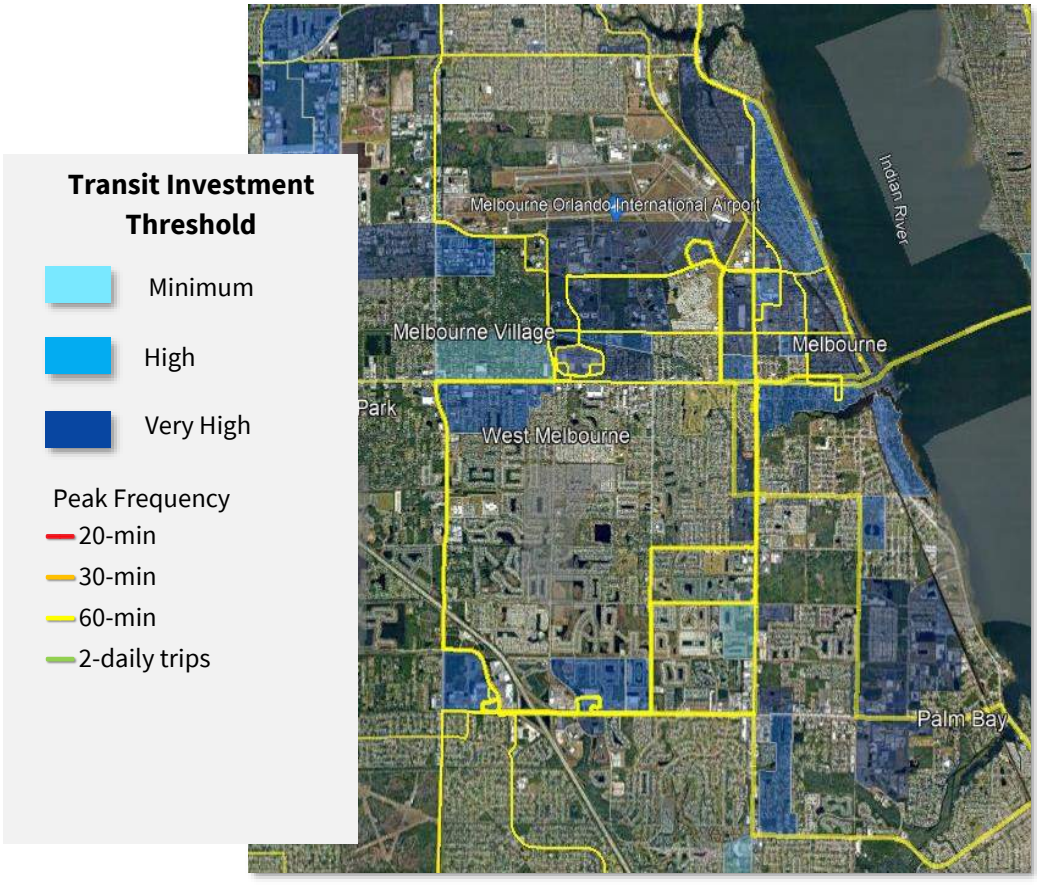
Socioeconomic Trends

An assessment of the socioeconomic trends and potential transit markets was conducted to understand potential impacts on demand for transit services.

- Brevard County has a relatively low population density, with much of the population located near coastal areas or areas surrounding Melbourne, Palm Bay, Cocoa and Titusville, where transit services currently exist.
- Most population growth is projected to occur in the urbanized areas where much of the population already exists.
- The percentage of Black/African American workers who use public transit is 1.4 times greater than those who drive alone.
- The eastern portions of Melbourne, Palm Bay, Cocoa, and Titusville have the highest concentrations of employment. The area south of Port Canaveral along A1A has employment density thresholds that warrant high to very high levels of transit. They are currently serviced by 30-minute transit headways.

- There are several areas surrounding the Melbourne Orlando International Airport that meet the high and very high transit investment threshold based on employment density. These areas are currently serviced by 60-minute headways. Wickham Road from Health First's Viera Hospital to West New Haven Avenue has sporadic areas with considerable employment density thresholds that meet minimum to very high transit investments but are served with 60-minute headways, as shown in Figure 6-2.
- Palm Bay Road has a dispersed yet notable presence of employment density that meets high to very high levels of transit investment thresholds but is currently serviced by 60-minute headways.
- Most areas with a medium to high TOI are currently serviced by transit. Micco has no current transit service but has a growing need, as it has several areas with a medium and high TOI.
- From 2010 to 2019, the total number and percentage of residents age 65 and older increased more than any other age range and currently represent 24% of the population.
- Areas where over 25% of the population have disabilities include the northern half of Titusville along US-1, and sporadic areas within Cocoa, Cocoa West, Indian River Colony Club (age 55 and over community), Palm Bay, and Micco.

Figure 6-2: Higher Employment Density Areas with 60-Minute Headways



Implications

Areas with higher employment densities represent potential transit markets with latent demand. Based on existing employment densities, most areas are meeting at least a minimum level of transit investment and are currently serviced by transit. However, several areas noted above that meet high and very high-density thresholds would benefit from additional transit investments by increased frequencies.

Brevard County is home to a large population of retired persons and older adults, which directly translates into an increasing demand for mobility services that cater those who are aging-in-place. As people age-in-place, their ability to access traditional fixed-route transit declines and their need for more costly curb-to-curb increases. Services such as mobility on demand have the potential to move more trips away from the more expensive demand-response service while meeting the needs of residents. Other unique populations that could benefit from these services include persons with disabilities who require access to medical appointments and groceries.

Figure 6-3: Unfunded BRT and Intermodal Facility Needs

It is anticipated that the traditional transit market will continue to rely on Space Coast Area Transit services. Brevard County needs improvements to current transit service through increased frequencies, more streamlined routes, and new services such as MOD in areas with a high transit orientation, persistent poverty (especially Palm Bay, Melbourne and Micco). Areas with a high number of employees working in the service industry such as in Titusville, Cape Canaveral and Port Canaveral demonstrate a need for more transit services. To attract discretionary "choice" riders, greater frequency of service and a more grid-like transit system will be needed. Implementation of the recommendations of the Comprehensive Operations Analysis (COA) to remove the one-way loops will be important to make transit more attractive yet operationally efficient.

Travel Behavior and Transit Demand

An assessment of trends in travel behavior and transit demand for Brevard County indicated the following:

- 10-year ridership projections show that demand for ridership could increase 9.6%, with the highest increases occurring on routes 8, 11, and 33.
- Most employees working in Brevard County live in Brevard County (65.8%); about 9.2% of employees living Brevard County commute to Orange County.
- Most trip start times on an average weekday in Brevard County occur between 6:00 AM–7:00 PM, which generally are covered by Space Coast Area Transit's service span times of 6:00 AM–11:30 PM.
- Congested corridors such as the Merritt Island Causeway and the corridors near I-95 and Palm Bay Road have a high density of trip origins and destinations.
- Routes 1, 4, 6, 9, 25, and 27 are the most productive routes; some of the major corridors they service are US-1 between Titusville and Melbourne, A1A between Port Canaveral and Cocoa Beach, Clearlake Road, and Merritt Island Causeway.
- There are no immediate plans for Brightline to provide service to Brevard County but discussions are ongoing.
- About 10% of Brevard County workers commute from Orange County and vice versa, especially to areas near Disney and Orlando International Airport. Other notable travel flows of workers commute to and from the Daytona Beach area and St. Lucie County.
- In the Space Coast TPO LRTP, several potential areas of expansion for corridor-based multimodal services were identified, including BRT routes for most major corridors where local bus service currently operates. This includes but is not limited to the A1A, US-1, SR-528, and SR-520 corridors. The LRTP identified BRT as a longer-term unfunded need.
- A need for a Beach Trolley along A1A with no need for transfer was identified. The length of such a route, however, makes it challenging to maintain service levels that would be satisfactory to riders within available financial resources.
- Most areas that exhibit high or very high orientation towards transit are concentrated in incorporated areas on the eastern edge of the county, including Melbourne, Cocoa, Titusville, Malabar, and Palm Bay. Some unincorporated areas exhibiting a very high orientation towards transit include Cocoa West, Micco, Port St. John, and Mims. Port Canaveral and the Cape Canaveral areas exhibit a high transit propensity.
- The transit accessibility analysis shows that despite the large geographic coverage of the existing transit system, the ability to travel between cities and coastal destinations using transit is generally limited when travel time is considered.

Implications

Congested corridors with high transit ridership such as US-1, A1A, and Merritt Island Causeway will require high levels of transit service with increased frequencies and more premium service.

Work commuter trips flowing into and out of the county are dispersed throughout north, central, and south Florida, which makes it difficult to create efficient route planning for public transit to service these neighboring areas, as Space Coast Area Transit primarily serves the more "captive" market for more local trips. The immediate need to connect the region by transit has not been identified in recent local or regional plans. The presence of other transportation providers providing service between the Orlando area and Brevard County and the notable percentage of workers commuting to and from Orange County show there is a need for regional travel; however, the demand may not be high enough to warrant service investments such as new express routes. Other transportation providers providing regional transportation services between Orlando and Brevard County currently help to fill the existing need for regional travel. As the region grows, the need to evaluate new transportation services may arise in the future.

Although the existing spans of service generally cover the county's trip start times, longer commutes for transit riders will require spans of service to accommodate longer travel times, especially for those in the service industry. Workers using transit will continue to need later evening and weekend service to meet the demands of their work schedules.

Service expansion through flexible MOD service provides an opportunity for Brevard County to expand service coverage and enhance connectivity in a potentially cost-effective way. These services may fulfill the travel needs for commuters, the public, and ADA customers.

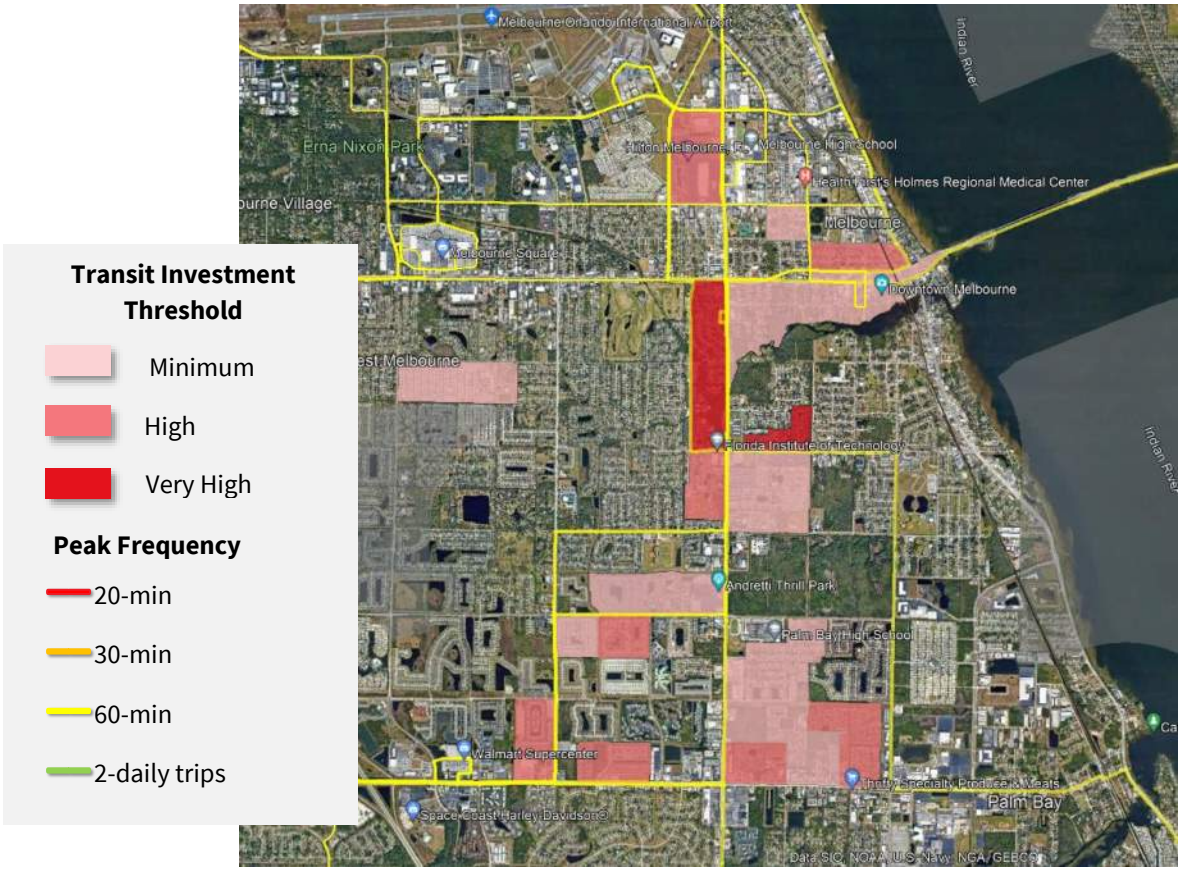
Land Use Patterns and Urban Design

Land use and transportation, when planned concurrently, can lead to more effective land use and transportation networks, which can increase mobility and walkability. Local governments are responsible for land use policies in their respective incorporated areas, including the establishment of zoning districts and future land use designations. Brevard County oversees these decisions for unincorporated portions of the county only; land use decisions in incorporated areas are made by the respective jurisdictions. The following patterns of land use and density were observed:

- Industrial use is concentrated along major roads such as US-1 and at Port Canaveral.
- Residential use is concentrated along the eastern portion of the county and is mostly low-density single-family housing.
- Commercial use dominates most major arterial roads in the county, such as King Street and US-1.
- The area south of Port Canaveral along A1A has dwelling unit thresholds that warrant high to very high levels of transit. They are currently serviced by 30-minute transit headways.

- There are several areas surrounding the Melbourne Orlando International Airport that meet the high and very high transit investment threshold based on dwelling unit density. These areas are currently serviced by 60-minute headways (Figure 6-4).

Figure 6-4: Higher Dwelling Unit Density Areas with 60-min Headways



- The areas surrounding the Florida Institute of Technology (FIT) have a dwelling unit density that meets varying levels of transit service investment and is serviced with 60-minute headways.
- Much of the western portion of the county is categorized as Agriculture, Recreation, or Conservation.
- The Downtown Melbourne Activity Center, the Eau Gallie Activity Center, and the Midtown Activity Center are designed as Mixed-Use.
- Future development activity, including Developments of Regional Impact (DRIs), will need to be monitored to plan for service impacts. This includes, but is not limited to, the new Amazon distribution center in Cocoa, the new Walmart distribution center in west Cocoa, relocation of Health First Hospital on Merritt Island, the planned Health First Hospital at Malabar and Minton Road, and the Space Coast Town Center in West Melbourne. In addition, there are many residential development projects underway throughout the county, such as the Lakeside Area developments, West Palm Bay developments, and developments surrounding

Micco. Other DRIs that have the potential to produce significant growth include the Cirrus Multi-Family Apartments near SR-524 in west Cocoa and the luxury apartments, hotel, and shop developments planned near Sand Point Park in Titusville across from Titusville Marina.

- Brainstorming discussions with Space Coast Area Transit included a discussion about the western portion of Malabar Road that has two-lanes and several sidewalk gaps (Figure 6-5). These roads will be widened eventually; however, more immediate new transit services on Malabar Road such as MOD may help to fill the need for transit services.

Figure 6-5: Western Side of Malabar Road with Sidewalk Gaps

Image Source: Google Streetview

Implications

Low-density land use patterns will continue to challenge Space Coast Area Transit's ability to provide efficient transit service, especially in residential areas that do not have a traditional grid. More flexible transit services such as MOD have the potential to better serve these areas. Recently-developed residential areas lack the traditional grid that is conducive to pedestrian and transit modes. Few policies such as parking maximums, density bonuses, transit stop designs, etc., that support the provision of transit are present in the region.

Progressive policies such as the designed mixed-use overlay areas of Downtown Melbourne Activity Center, the Eau Gallie Activity Center, and the Midtown Activity Center will help the provision of transit; however, the widespread policy of minimum parking requirements will continue to hinder transit-friendly urban design by reducing density and walkability. With reduced walkability, first/last-mile connections will need to be evaluated to improve rider experience.

Areas that are growing, such as the new Amazon Distribution Center in Melbourne and the Walmart Distribution Center in west Cocoa, will need to be monitored to determine if new transit services or higher levels of transit service are warranted.

Services such as MOD might provide better service in low-density areas while overcoming other land use and urban design-related barriers such as sidewalk gaps on Malabar Road.

Public Outreach

Feedback from current users and non-users of transit services provided valuable input for deciding how to enhance existing transit service in Brevard County. Input was obtained from stakeholder interviews, discussion groups and public workshop meetings, an on-board survey for fixed-route riders, and a phone survey for demand-response users. The following summarizes recurring themes from the public outreach process:

- **Increased frequency and service on existing routes** – Public feedback emphasized the need for more frequency within the existing fixed-route schedule, specifically expansion of overall weekend service, with significant attention to Sunday service frequency.
- **Addition of new routes in requested areas** – Strong interest was shown in new routes being established that connect to Cocoa, Melbourne, Palm Bay, and Palm Shores.
- **Improved infrastructure** – Increased infrastructural amenities such as benches and overhead shelters at bus stops and accessibility features such as paved walkways were desired.
- **Upgraded technology** – A need for technology updates was evident as a means for riders to obtain bus routes and service change announcements. Features such as paying fares and tracking bus arrival digitally indicates an opportunity to attract more riders.

Implications

Common recommendations heard during the public involvement process included the need for increased frequency, expanding night and weekend hours, adding more routes to underserved and dense areas, improving regional and east/west connections, and improving the customer experience through the addition of amenities.

Providing ADA-compliant shelters has been shown to be a relatively small investment that yields strongly positive responses from riders. Strategic investments in bus stop safety, accessibility, and amenities have been shown to increase ridership system-wide.

The demand-response survey revealed that customers very much appreciate and like the service and would like more service, noting that booking trips (calling in to schedule rides) takes too long. This likely indicates a need to improve call center capacity.

Organization Attributes

Space Coast Area Transit's organizational structure influences its ability to function effectively and serve the needs of its users.

- Space Coast Area Transit operates as a department of Brevard County and is the only public transit provider in the county. It operates fixed-route and demand-response services and has one of the largest commuter and non-profit agency vanpool programs in Florida.
- The COA internally assessed the system and will recommend operational changes to enhance efficiency within the current fiscal constraints.
- Space Coast Area Transit had 36% fewer FTE employees compared to its peer group average.

Table 6-2: Fixed-Route and Demand-Response FTE Employment Levels

Employee Type	Fixed-Route	Demand-Response
Operating Employee FTEs	69	31
Maintenance Employee FTEs	0	0
Administrative Employee FTEs	4	3
Total Employee FTEs	73	34
Peer Average	115	41

Source: 2020 NTD Data

- Bus operator retention has long been a transit industry challenge and was exacerbated by the COVID-19 global pandemic. According to the American Public Transportation Association (APTA), 66% of agencies are having difficulty retaining employees and 71% have either cut service or delayed planned services increases due to driver shortages.[5] As with many agencies, this shortage is placing more pressure on drivers to work overtime to maintain operating schedules and increasing overtime costs for the agencies.
- Loss of farebox revenue has impacted transit agencies nationwide, including Space Coast Area Transit. Fare collection was initially suspended April 6–September 30, 2020 due to the pandemic to facilitate rear-door boarding and maintain social distancing from bus operators. Lower ridership since fares were reinstated has continued to suppress fare revenue compared to pre-pandemic levels. This, coupled with significant increases in operator overtime to cover position shortages, has impacted the agency's operating budget.
- Federal funding in response to the pandemic provided financial support to U.S. transit systems through the COVID-19 pandemic. These relief funds included the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 , the Coronavirus Response and Relief Supplemental Appropriations Act (CRSSA), and American Rescue Plan Act (ARPA) of 2021.

Implications

Space Coast Area Transit should work to implement operational recommendations set forth in the COA (and further detailed in Section 8 of this TDP) to maximize available staff resources, notably bus operators, as shortages continue. Whereas there is no single solution, improved scheduling, rostering, and working conditions can improve the operator work environment and improve employee retention.

The peer review findings documented in Section 3 indicate that Space Coast Area Transit's staffing levels are below the selected peer agencies and it may be beneficial to perform a separate more in-depth organization assessment. Intragovernmental staffing issues have also been an issue for

[5] Workforce Shortages Impacting Public Transportation Recovery, American Public Transportation Association, March 2022.

continuity and consistency within day-to-day operations for the agency. Addressing this issue could positively impact various elements of planning, service delivery, and daily operations of the agency.

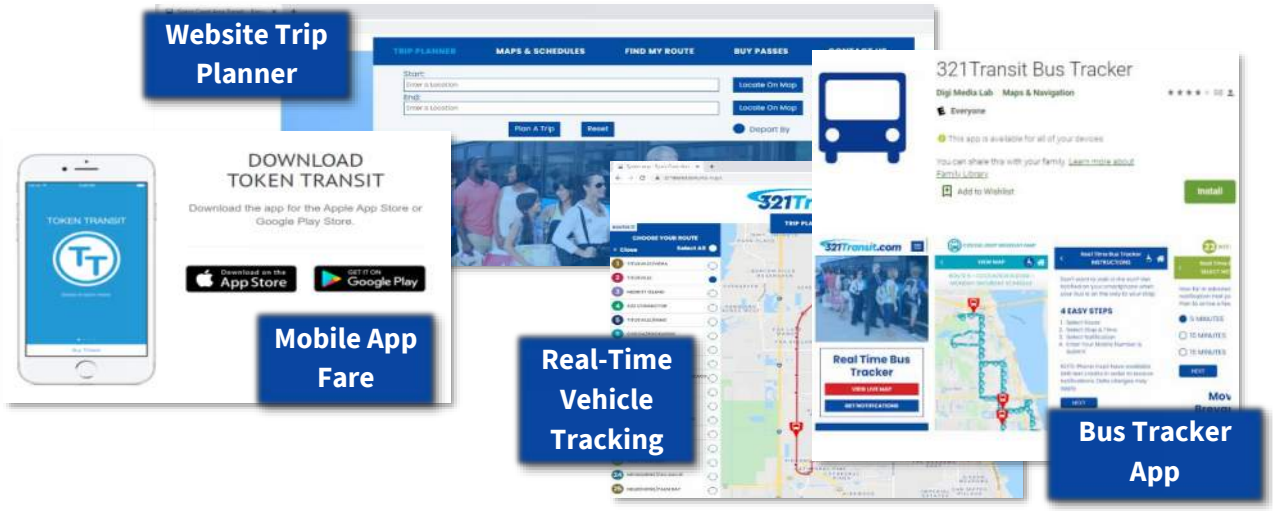
Although fare and gas tax revenues were significantly impacted by the pandemic, the federal government stepped in with significant levels of aid for transit systems that have helped keep the Space Coast Area Transit budget steady. However, if Space Coast Area Transit increases its current service levels or expand to provide additional services, a longer-term, consistent local funding source is needed.

Technology

Space Coast Area Transit has implemented several key technology components/ improvements to its system and bus fleet, including the following:

- Evaluating a mobile fare payment pilot project.
- Implementing Intelligent Transportation System hardware and modules to include automatic vehicle locating (AVL), demand-response scheduling, real-time passenger information, automatic passenger counting (APCs), automatic stop announcements, and provision of Wi-Fi on buses.
- Implementing Token Transit contactless fare payment cellphone application that allows passengers to purchase bus passes.
- Making available the 321Transit Bus Tracker mobile application to smartphone users with an Android or iPhone operating system.
- Leveraging Google Transit Feed Specification (GTFS) files to support various trip planning platforms for users; this function is available through Google Maps and on the agency's website or mobile app.
- Equipping all transit vehicles with a mobile video surveillance system to improve safety and security for passengers and the transit agency employees.
- Providing Wi-Fi; although most phones now have data plans, Wi-Fi still can provide a convenience to riders and incentive to use transit when offered to patrons at major transfer locations. Providing Wi-Fi on buses also can help improve the quality of a rider's experience and may help sell commuter type bus services.
- Enhancing vehicle propulsion. Like many public transit agencies, Space Coast Area Transit is looking towards transitioning its fleet to a more sustainable fuel alternative than diesel. In 2020, the agency introduced two new hybrid buses into its fleet to replace diesel buses that had reached their useful life, Brevard County's first alternative-fueled buses. Continuing to replace diesel buses with low/no-emissions buses will decrease carbon emissions and fuel costs and will support the Space Coast Area Transit and Brevard County commitment to sustainability.

Figure 6-6: Space Coast Are Transit Technology Initiatives



Implications

Recent technology improvements will contribute to ridership data collection/performance monitoring efforts, thus improving system effectiveness and efficiency and significantly enhancing the rider experience and quality of service.

Space Coast Area Transit should continue to invest in new and emerging technologies to ensure the quality and accessibility of its services as it strives to expand its user base. This was a key interest that both current and potential riders indicated in outreach efforts. Based on the results captured during the on-board survey, riders suggested real-time information on buses (79%), wireless internet on buses (72%), and real-time schedule information at terminals (51%). Results from the online survey included responses from riders and non-riders who suggested real-time information on buses (76%), wireless internet on buses (76%), and real-time schedule information at terminals (49%). In addition, Space Coast Area Transit recently employed technology as a tool to improve the rider experience (such as mobile app and Token Transit passes) and to streamline its processes, such as equipping buses with APCs and AVL systems.

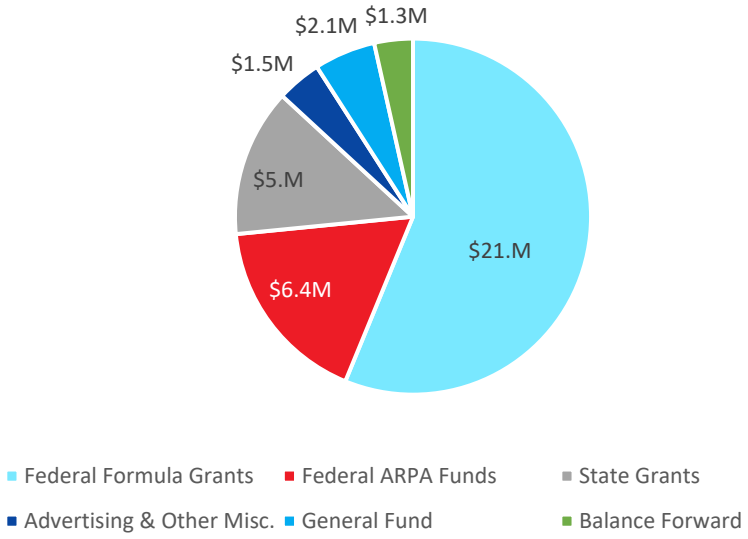
Space Coast Area Transit should continue to purchase replacement hybrid-electric buses in the near-term while exploring options for other no-emission options such as fully-electric buses. Studies show that although initial investment in electric buses can be expensive, there are long-term savings on fuel and maintenance costs. Purchasing electric vehicles may allow Space Cost Area Transit to attract more younger generation riders who are environmentally-conscious and currently see driving as the only option to travel. However, infrastructure needs and operational considerations through such a transition must be thoroughly evaluated.

With the implementation of any new technology, consideration should be given to implementing an effective training program to equip staff with the necessary skills to effectively use the technology to its full benefit.

Funding

Space Coast Area Transit operates service using a combination of funds from federal formula grant programs, the Florida Public Transportation Block Grant Program, Brevard County's General Fund, fares, advertising revenue, and other miscellaneous sources. The distribution of revenue sources proposed for FY 23 is illustrated in Figure 6-7. Space Coast Area Transit uses federal revenues to fund its maintenance and capital outlay programs used to purchase buses, vans, office equipment, technology, construct bus stop improvements, and other facility needs.

Figure 6-7: FY 2023 Proposed Revenue Sources



Federal assistance was used through various federal spending bills that helped offset some impacts from the pandemic and allowed service to maintain pre-pandemic levels. In March 2020, the Coronavirus Aid Relief and Economic Security (CARES) Act was passed by Congress to assist agencies with operational and administrative costs. Space Coast Area Transit received $17.8 million for operating expenses through FY 2022; funds were also used to add fixed-route service in central Titusville (Route 10), Port St. John (Route 11), and Melbourne/south beaches area (Route 30). Reductions in revenue have impacted transit agencies nationwide since early 2020. Fare collection for Space Coast Area Transit was suspended due to the pandemic and reduced fare collections from $2.08 million in 2019 to $1.17 million in 2020.

As the pandemic continued to affect ridership, the American Rescue Plan Act of 2021 (ARPA), worth $1.9 trillion, was signed into law in March 2021. Brevard County received $40 million in ARPA funds, of which $3 million was budgeted to fund transit service operations in FY 2023.

Implications

As funding is limited and continues to tighten, particularly with historical inflationary increases starting in 2022, Space Coast Area Transit has stayed true to its mission of providing mobility for both

fixed-route and paratransit users. Securing new sources and bolstering existing dedicated local funding should be a priority.

In conjunction with this TDP update, Space Coast Area Transit conducted a Comprehensive Operational Analysis (COA) to assess the system's performance and identify specific near-term improvements to improve effectiveness and efficiency while also benefitting riders. Cost-saving measures identified should be considered to mitigate potential operating funding deficits.

In November 2021, the Infrastructure Investment and Jobs Act was signed into law to authorize $1.2 trillion in funding for infrastructure investments over the next five years. This includes $108 million authorized for public transportation though formula funding programs and existing and new competitive grant programs. Space Coast Area Transit should identify opportunities for federal discretionary grant funding and best position the agency for compete for funding. For example, the Bus and Bus Facilities Grant Program now requires consideration of the Justice40 initiative (to expend at least 40% of overall benefits from federal investments in climate and clean energy to disadvantaged communities), impacts of the potential project on historically-disadvantaged communities and areas of persistent poverty, and the requirement for a Zero-Emissions Bus Transition Plan when pursing funding for transit vehicles.

7 Goals and Objectives

This section presents Space Coast Area Transit's mission, vision, and transit goals, objectives, and strategies for the next 10 years.

Transit Vision

To provide all persons living, working, or visiting Brevard County the opportunity to use transit as a safe, affordable, convenient, and sustainable way of traveling.

Transit Mission

Respond to existing and emerging user markets by maintaining current transit service levels while gradually enhancing fixed-route services in the most productive corridors, providing flexible on-demand services in high-need areas where fixed-route service may not be the optimal choice, and implementing sustainable service delivery options, as feasible.

Goals, objectives, and strategies are an integral part of any transportation plan because they provide the policy direction to achieve the community's vision. The goals, objectives, and strategies presented in Table 7-1 were refined based on review of those in the agency's 2021 TDP Annual Progress Report and outcomes from the situation appraisal. Additional focus is placed on leveraging partnerships, technology options, and flexible service delivery strategies to address increasing mobility demand and first/last mile connectivity.

A major component of the long-term viability of the Space Coast Area Transit network is a modernized new facility for maintenance and operations. Addressing this critical need though utilization of federal grant programs will be crucial to the successful implementation of future services and the management of ongoing operations, including ownership of facility assets. As this process is navigated, identifying and establishing the agency's vision for sustainability will be imperative to ensure that the facility can accommodate not only existing fleet vehicles (diesel and hybrid) but potentially no-/low-emission vehicles.

Table 7-1: FY 2023 TDP Goals and Objectives

Goal	Objective	Strategy
Goal 1: Support an integrated and coordinated transportation system.		
Objective 1.1	Coordinate and partner with public and private agencies and transportation providers to expand awareness of Space Coast Area Transit and its services.	Increase the number of businesses and promotional activities on an annual basis to expand knowledge of existing services throughout the community.
Objective 1.2	Coordinate with the Space Coast TPO in the planning of transportation projects to improve transit service and integration with other transportation modes.	Review projects that touch transit corridors to continue to find enhancement opportunities through projects funded for other local agencies that can benefit the existing and future transit network.
Objective 1.3	Coordinate with other regional transit providers to promote ride-sharing practices and optimize regional service connections.	Continue to engage in regular coordination that focus on mutually beneficial projects and connectivity that support shared goals across the region.
Objective 1.4	Maintain existing coordination contracts and execute new ones, where feasible, needed, and cost-effective.	Continue to refine and update processes to prioritize coordination contracts most essential to agency operations.
Objective 1.5	Encourage the connection between transit, land uses, and Brevard County's Complete Streets principles through coordination with the Space Coast TPO, Brevard County, and municipalities in the growth management process, including comprehensive plans, land development codes, corridor studies, and site review of development.	Reinforce and promote shared goals and their dissemination to decision-makers to educate them on how these policies transcend each agencies' specific mission to enhance mobility for all.
Goal 2: Enhance mobility choice and access to opportunity through public transportation.		
Objective 2.1	Ensure that the fixed-route, vanpool, and demand-response systems continue to provide high-quality service and remain responsive to the needs of the transportation disadvantaged.	Increase the efficiency of service by innovating and providing service through enhanced technology and new platforms. Enhance service delivery by alerting customer in real-time to trips available in their vicinity at alternate times of day.
Objective 2.2	Expand evening and weekend fixed-route service to service riders with non-traditional work hours and other off-peak travel needs.	Prioritize increases in the span of service and frequency of coverage to areas with the highest need for transportation options.
Objective 2.3	Evaluate the use of emerging flexible service options in lower-density yet high-demand areas where first/last mile connections to bus routes is an obstacle for riders.	Conduct a feasibility study to evaluate innovative complementary transit solutions, such as mobility-on-demand, and prioritize pilot areas to implement the new service concept.
Objective 2.4	Continue to increase the number of bus stops with accessible pathways, shelters, and other necessary infrastructure.	Continue dedicating annual funding to bus stop infrastructure and accessibility improvements.

Goal	Objective	Strategy
Goal 3: Use technology and innovation to enhance service delivery.		
Objective 3.1	Continue to evaluate technology options that improve information delivery and rider experience.	Continue to implement Intelligent Transportation Systems (ITS) technologies to improve customer experience and scheduling.
Objective 3.2	Monitor service quality and maintain minimum performance standards.	Maintain APC system for tracking ridership, on-time performance, and bus, stop utilization data.
Objective 3.3	Reduce overall vehicle emissions through emerging vehicle propulsion technologies.	Conduct fleet transition study to evaluate no-/low vehicle emission technologies, infrastructure needs, and potential costs.
Objective 3.4	Provide a more connected on-board experience for the rider.	Implement complementary Wi-Fi on-board fixed-route buses, which can also serve as a communication portal between the transit agency and the user.
Goal 4: Ensure accountability and fiscal responsibility.		
Objective 4.1	Adhere to the procedures, rules, and regulations established by the Commission for the Transportation Disadvantaged, Florida Department of Transportation, State of Florida, Federal Transit Administration, and Brevard County regarding the receipt of funds for public transportation.	Continue to ensure staff are regularly educated on the regulatory requirements of the agency and regularly review practices for required data collection and reporting to ensure compliance with all applicable rules and procedures related to securing grant funding.
Objective 4.2	Continue to pursue local government and private sector funding partnerships to provide operating assistance to maintain existing service levels and expand service to meet future needs for operations, operating funds, capital funds, customer amenities, ADA accessible ways, and service delivery.	Establish benchmarks for acquiring additional funding from public and private sources to meet existing and future funding needs.
Objective 4.3	Maintain transit assets in a State of Good Repair as defined by FTA.	Continue to use the Transit Asset Management planning process to define and track asset performance.
Objective 4.4	Prioritize federal and state grant opportunities for operating or capital funding assistance.	Identify target grant opportunities and develop a plan to address any new program requirements (e.g., the new requirement to submit a fleet transition plan when applying for FTA Section 5339(a) funding for no-/low-emission vehicles or facilities).
Objective 4.5	Work with the Commission for the Transportation Disadvantaged, FDOT, and FTA to continue to obtain funding necessary to meet service demands of transportation disadvantaged citizens.	Maintain communication and processes with essential agencies to secure funding and identify issues in advance.

Goal	Objective	Strategy
Goal 5: Expand marketing and outreach strategies to increase ridership and awareness of Space Coast Area Transit.		
Objective 5.1	Continue to leverage the "321Transit" brand to increase awareness of the system and mobile application to serve as a single source of information for current riders and to attract new riders.	Expand marketing campaigns to attract non-riders and develop targeted materials to partner industries, such as colleges/university, major employers, etc.
Objective 5.2	Maximize availability of service information; ensure that material is available in accessible formats including print, online, and video media.	Expand network of information dissemination to focus on existing and future riders by targeted media outreach.
Objective 5.3	Participate in community events and meetings where information can be distributed to participants.	Review and enhance recurring targeted outreach that based on knowledge of past success and identify new opportunities in the future based on targeted ridership demographics for increasing utilization of transit throughout the community.
Objective 5.4	Educate community partners on improving planning activities for existing and future transit service.	Establish a strategic vision for transit advocacy in Brevard County.

8 Ten-Year Transit Needs Development and Evaluation

Transit Needs Development Process

This section summarizes the identified transit needs to be evaluated for inclusion in the 10-year plan. These needs were developed based on information gathered through various data collection, analytical, and outreach efforts conducted for this TDP and the Comprehensive Operational Analysis (COA) conducted concurrently. The COA is more focused on near-term cost neutral or low-cost operational efficiencies and service enhancements, whereas the TDP is a more wholistic planning process to improve the current system over time. However, some COA recommendations may also require additional funding for implementation during the 10-year period.

Figure 8-1 illustrates the main elements used to identify and prioritize the 10-year transit needs for this TDP.

Figure 8-1: Transit Needs Development Process

The proposed improvements (alternatives) described in this section represent Space Coast Area Transit needs for the next 10 years without consideration of funding constraints. The financial feasibility for moving forward any of these improvements over the next 10 years, along with potential timing of implementation, is discussed in the next section.

The identified improvements are grouped into three main categories:

- Transit Service/Operating Needs
- Capital/Infrastructure Needs
- Planning/Policy Needs

Transit Service/Operating Needs

COA Short-Term Network (Operational Efficiency Changes)

The COA process identified potential near-term adjustments to the existing fixed-route network that expands service coverage, eliminates large one-way loops, and increases opportunities for transit connections through the addition of more transit hubs. Collectively, these short-term operational efficiency improvements are referred to as the "COA Short-Term Network," which maintains existing service spans and headways while improving operational reliability and generating potential cost savings through route network adjustments.

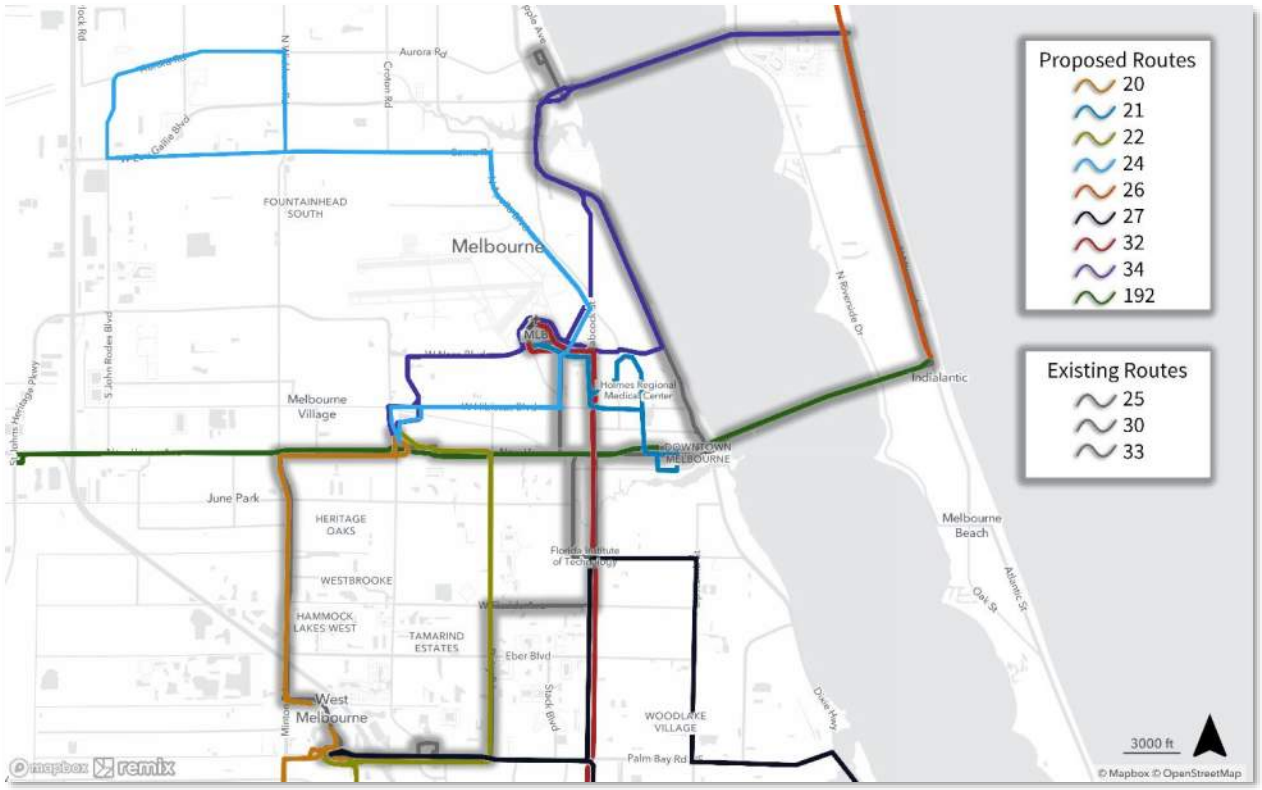
Modified/Replacement Services

Recommended changes to existing fixed routes in the COA Short-Term Network include the following:

- **Route 10 Circulator and Route 10 Connector** – This recommendation splits Route 10 into the Route 10 Circulator and the Route 10 Connector. The Route 10 Circulator provides local circulator service to neighborhoods in Titusville with short trips to Titus Landing and connections to Route 2 on Garden Street. The Route 10 Connector will join with the new recommended Route 10 Circulator to allow transfers to other routes in Titusville without having to first travel to a transfer location. In addition, the Route 10 Connector will provide local bidirectional service from Titus Landing to shopping areas near Walmart, Aldi, Home Depot, and Lowes.
- **Restructure routes 20, 21, 22, 24, 26, 27** – This recommendation restructures several routes to achieve a more efficient transit network that provides faster and more direct travel options within the county while continuing to serve areas with high transit need.
- **Route 32** – This streamlined bidirectional north-south route provides connections from Eastern Florida State College's Palm Bay campus to Melbourne Orlando International Airport via Babcock Street. The streamlined coverage along Babcock Street replaces segments of routes 25 and 30. In addition, this route will provide coverage to FIT and the Melbourne Shopping Center.
- **Route 34** – This streamlined bidirectional east-west route provides connections from Melbourne Square Mall, Melbourne Orlando International Airport, and Indian Harbour Beach via Eau Gallie Boulevard and provides coverage along Eau Gallie Boulevard, Harbor City Boulevard, and Babcock Street, replacing segments currently served by routes 30 and 33.
- **Route 192** – This streamlined bidirectional east-west route will provide major coverage along US-192 to continue service along existing route segments removed through other recommendations for this network and expand service coverage to new areas in west Brevard County anticipated to have significant growth. It will provide connections from the new Space Coast Town Center to James H. Nance Park via US-192 and serve Melbourne Square Mall and downtown Melbourne.

Figure 8-2 illustrates the COA Short-Term Network and extended coverage provided by the restructured routes 20, 21, 22, 24, 26, 27, plus routes 32, 34, and 192 replaces existing routes 25, 30 and 33.

Figure 8-2: COA Eliminated Route Overlay



Note: Figure does not display all COA proposed routes.

Continuous Saturday Service

Currently, all routes suspend transit service for about one hour each Saturday for bus operator lunch breaks. The on-board survey conducted by the Space Coast TPO in 2021 identified that this pause in transit service negatively impacts riders. Further review of this scheduling policy during the COA led to the recommendation that this break be eliminated and that continuous Saturday service be provided on all routes.

Existing Service Improvements

Expanding existing fixed-route service continues to be a top priority of current riders and needed to make transit more attractive to non-riders, as confirmed by the outreach conducted for this TDP. To ensure that adequate service hours are provided daily, particularly so riders can better rely on public transit for work and other life-sustaining trips, the following service improvements were identified for specific routes identified in Table 8-1:

- **Increase weekday evening service** – Existing ridership and transit demand, expected growth and development along the route corridor, and the presence of existing transfer stops and service industries, along with public input, were factors in identifying potential routes where later weekday evening service is needed.
- **Improve service to 30-minute headways** – How often a bus comes can determine the attractiveness for potential riders. For riders that depend on transit, infrequent service can be very restrictive. It is recommended that weekday headways be improved to 30 minutes for higher-performing routes.
- **Add Sunday service** – Sunday service is currently provided on only four routes. To ensure that adequate service hours are provided daily, particularly for riders to be able to rely on transit for work purposes, it is recommended that Sunday service be provided across all routes. This is also a high priority of the public, particularly current riders.

These improvements build on the routes included in the proposed COA Short-Term Network.

Table 8-1: Summary of Service Improvements

Route	Weekday Service to 9 PM	30-Minute Headways	Add Sunday Service
1	**Recommended**	Currently Provided (AM Peak)	**Recommended**
2	**Recommended**	**Recommended**	**Recommended**
3	--	--	**Recommended**
4	Currently provided	Currently provided	Currently provided
5	**Recommended**	--	**Recommended**
6	--	Currently provided	Currently provided
7	**Recommended**	--	**Recommended**
8	--	Currently provided	**Recommended**
9	Currently provided	Currently provided	Currently provided
10	--	**Recommended**	**Recommended**
11*	--	--	--
20	**Recommended**	**Recommended**	**Recommended**
21	**Recommended**	Currently provided (off-peak)	Currently provided
22*	--	--	--
23*	--	--	--
24	**Recommended**	--	**Recommended**
26	**Recommended**	--	**Recommended**
27	**Recommended**	**Recommended**	**Recommended**
28	**Recommended**	Currently provided (off-peak)	**Recommended**
29	**Recommended**	--	**Recommended**
32	**Recommended**	**Recommended**	**Recommended**
34	**Recommended**	**Recommended**	**Recommended**
192	**Recommended**	**Recommended**	**Recommended**

*To be replaced with MOD service as detailed later in this section.

New Transit Services

This section discusses new transit service needs identified as part of the TPD process.

Mobility on Demand (MOD)

MOD is a dynamic, real-time shared ride service available to the public within a defined service zone. This service concept uses cloud-based Mobility as a Service (MaaS) or Software as a Service (SaaS) tools to allow passengers to hail a ride in real time (typically under 15 minutes) or schedule in advance via phone app. MOD services are typically provide using 9- to 16-passenger vehicles.

The primary difference between a SaaS solution and a MaaS solution is that MaaS incorporates a vehicle operations contractor, whereas SaaS assumes that vehicle operations are directly-operated or otherwise procured by the transit agency (like most paratransit providers).

MOD scheduling is dynamic where the cloud-based platform continually updates and optimizes trip assignments based on trip request times, origin and destination locations, vehicle location, and vehicle capacity considerations. The process is automated, and the vehicle operator receives and responds to trip assignments in real time. The technology platforms also may include fare payment, consistent with Space Coast Area Transit policies. All trip data are collected and stored in real time and used to generate operations and management reports.

WHAT IS MOBILITY ON DEMAND?

- ✓ Door-to-door flex service within a defined service zone.
- ✓ Open to the public (no application/approval required).
- ✓ Provides first/last mile connections to fixed-route transfer points or bus stops.
- ✓ Rides requested via mobile app (e.g., Uber or Lyft) or by phone.
- ✓ Expands overall transit service coverage area.
- ✓ Can shift riders from more expensive paratransit services to MOD service.

In certain instances, implementing MOD provides critical missing first/last mile connectivity to fixed routes, expanding opportunity to use the bus system. MOD can provide more efficient service coverage in certain areas, eliminating the need for underlying fixed-route service, and is accessible in that it must meet the requirements of the public dial-a-ride section of ADA. However, if fixed-route service is provided within a MOD zone, complementary ADA service must still be provided within ¾-mile of the fixed route per federal rules.

Potential MOD Service Zones

MOD zones are designed to serve shorter localized mobility (i.e., home to grocery store) and provide connections to the fixed route transit network for longer trips (i.e., home to mobility hub or transfer location to catch the route to other areas in the network). Through the TDP and COA processes, four areas for potential MOD service were identified: Port St. John, West Palm Bay, South Palm Bay, and Micco/Barefoot Bay. These service zones are preliminary and were developed for initial planning-level analyses. Prior to implementation of service, each zone must be thoroughly evaluated through a more

detailed feasibility study where exact service boundaries will likely be refined. The four potential zones, described in more detail below and illustrated on Map 8-1, were identified through a process that evaluated:

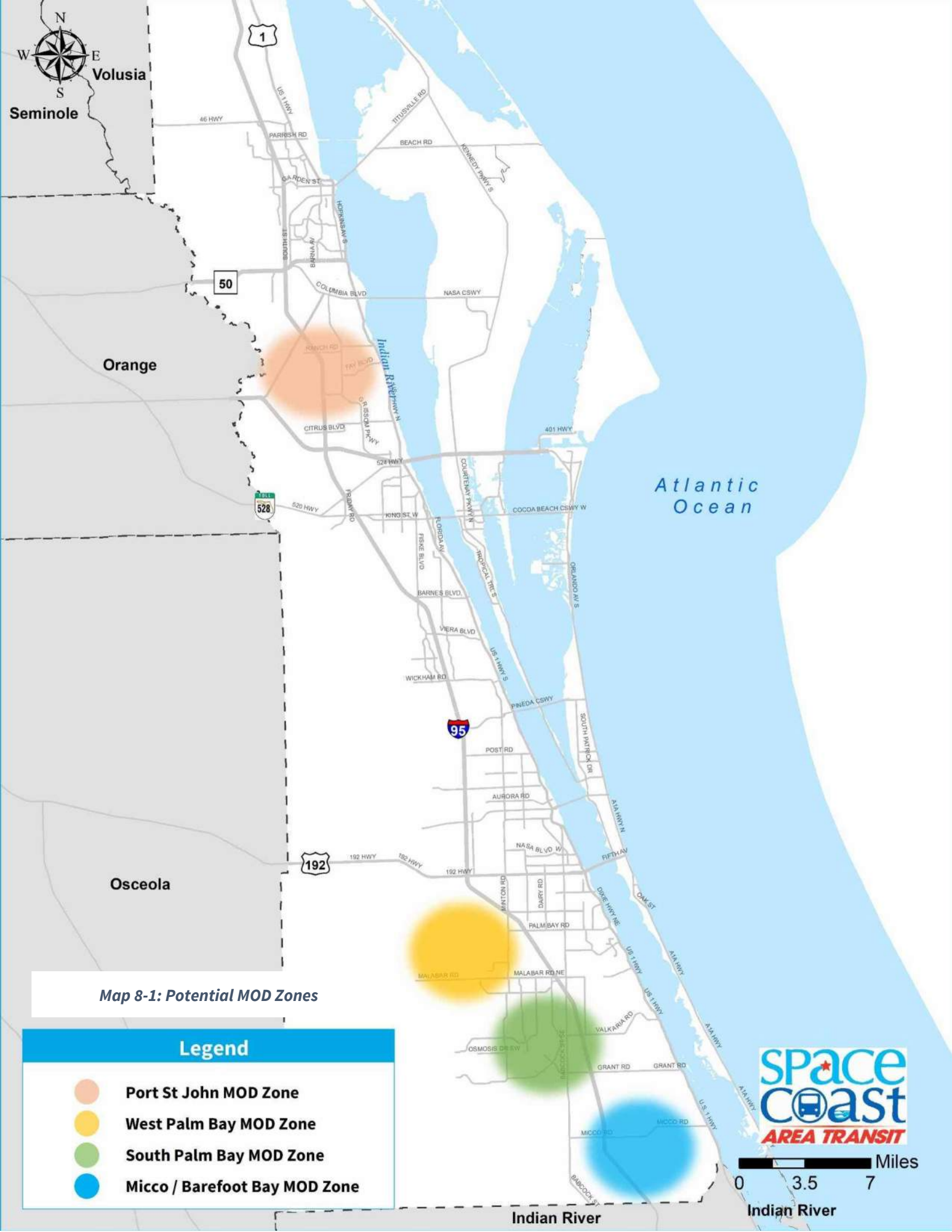
- The need for transit services, based on various technical analysis and public outreach as documented in this TDP, focusing on areas where limited or no service is currently provided.
- Route performance data to understand which routes, or segments thereof, are underperforming compared to the system average.
- Land use patterns to identify areas with low-density residential development and low employment density along the primary corridors.
- First/last mile connectivity needs.
- Existing and future residential development plans.
- Current paratransit trip origins/destinations to gauge the existing demand-response market.
- Operational challenges to providing fixed-route service due to street network constraints, canals, and areas where customers have limited mobility access to bus stops and infrastructure.

Port St. John

The area identified for planning purposes is approximately 7 square miles and extends west to Fay Lake Wilderness Park. To the north, the MOD zone borders Kings Highway, to the east the zone borders US-1, and to the south the zone extends as far south as Adele Street. This area is currently served by Route 11, a large one-way loop route serving higher concentrations of persons living in poverty with limited connectivity to a major trunkline route on US 1. The existing land use is primarily Single-Family Residential with Commercial uses found along US-1.

West Palm Bay

The area identified for planning purposes is approximately 19 square miles and encompasses Fred Poppe Regional Park, Walmart, the Eastern Florida State College Palm Bay campus, and Hammock Landing. This zone falls between I-95 to the east, St. Johns Heritage Parkway to the west, Norfolk Parkway to the north, and Jupiter Boulevard to the south. The western portion of the zone is designed to include new residential development surrounding Heritage High School. In addition, the western portion of Malabar Road is a two-lane roadway with several sidewalk gaps on the south side which makes it more difficult for riders to access bus stops, thus making the corridor better serviced by door-to-door service.



Map 8-1: Potential MOD Zones

South Palm Bay

The area identified for planning purposes is approximately 23 square miles and encompasses most residential areas south of Bayside Lakes Boulevard, extending as far south as Sartori Avenue, as far west as Sage Avenue, and as far east to Babcock Street. In addition, this zone borders Malabar Road to the north and encompasses Walmart and the Eastern Florida State College Palm Bay campus. Additional considerations include the following:

- The western portion of Malabar Road is a two-lane roadway with several sidewalk gaps on the south side which makes it more difficult for riders to access bus stops, thus making the corridor better serviced by door-to-door service.
- The service area includes street network constraints not suitable for fixed route transit.
- The service area is served by a one-way loop route which does not extend past Bayside Lakes Boulevard.
- The service area would provide a vital connection to Walmart Supercenter on Malabar Road.
- This service area was identified as an area of transit need in the prior TDP.

Micco/Barefoot Bay

There is currently no transit service provided in the southeast part of the county. This area includes a mix of low and high density residential, which consist of higher concentrations of potentially transit-dependent persons, including older adults and persons with disabilities, and it is a rapidly growing area. Newer developments include The Lakes at St. Sebastian Preserve and areas directly north of the Barefoot Bay community. The area identified for planning purposes is approximately 4 square miles and includes, but is not limited to, the residential neighborhoods of Barefoot Bay, The Lakes at St. Sebastian Preserve, and south of Micco Road. The MOD will also provide connections to Dollar General, Winn-Dixie, Summit Plaza, and Family Dollar. This service, in conjunction with a new US-1 route described below, would provide connections to Walmart in Sebastian, allowing regional connections to GoLine Indian River County's transit system.

New Fixed-Route Bus Service

A1A Beach Trolley

Currently, the A1A corridor from the Cocoa Beach Causeway to US-192 is served by routes 9, 26, and 30. This bidirectional north-south route would consolidate service into a single route to provide continuous service along A1A, eliminating the need for transfers and providing consistent bus service along A1A that is more attractive to infrequent riders such as beach tourists.

US-1 Palm Bay to Micco

This limited-stop route is a peak service that would provide service from Walmart Supercenter in Sebastian to Hammock Landing in Palm Bay via Palm Bay Road and US 1. As presented, the route would provide two morning and two evening peak trips connecting riders from the Sebastian, Micco, and Barefoot Bay areas to other routes or MOD zones in the network. It would connect passengers to routes 20, 22 27, and 32 (of the future network), the West Palm Bay MOD zone and the Micco/Barefoot

Bay MOD zone. It will also connect passengers to the GoLine Route 5 in Sebastian, which would provide more regional connectedness.

Transit Capital/Infrastructure Needs

Capital and infrastructure needs identified to support the existing system and proposed operational investments are documented in this section.

Technology Needs

- **Mobile lift system** – A mobile lift system is needed to support various maintenance activities.
- **ITS systems** – The agency has implemented and is continuing investments in ITS hardware and modules such as AVL, demand-response scheduling, real-time passenger information, APCs, automatic stop announcements, and the provision of on-board Wi-Fi. These technologies optimize operations and improve customer experience.
- **Security equipment and cameras** – A key component to modernizing operations and safety for operators, staff, and riders is enhancing security features and technology at transit facilities, bus stops, and on-board vehicles. Space Coast Area Transit must regularly upgrade, maintain, and replace its security equipment and cameras.
- **Radios/computer hardware** – Space Coast Area Transit must regularly upgrade, maintain, and replace radio and computer hardware to support staff communications and overall agency operations.
- **Mobile application technology** – As technology evolves, transit systems must adapt functions such as fare payment and how bus schedules and real-time travel information are accessed. Mobile/cashless fares improve data collection, reduce safety and security concerns with having cash on-board, and reduce time-intensive and expensive activities related to processing cash fares. Pre-payment reduces dwell time at stops and generally makes the user experience better. This also can assist operators in keeping routes on time and translate into more consistent and predictable layovers which can have positive mental and physical health impacts. In 2021, Space Coast Area Transit implemented its "321 Transit" mobile app, which allows riders to:
    - View real-time arrival information for any bus
    - Receive bus tracker alerts with up-to-the-minute arrival times.
    - Find a route by name, address, area, location, or landmark
    - Use the Trip Planner and navigate multiple stops and routes.
    - Use contactless mobile ticketing through Token Transit to purchase using a credit or debit card a bus/trolley 1-ride, 10-ride or 30-day pass.

Fleet/Vehicle Needs

Fleet Replacement and Acquisition Program

Operating well-maintained vehicles in a state of good repair is important to providing safe and efficient service. Space Coast Area Transit's Fleet Replacement Program enables the agency to

maintain its vehicle fleet (and other capital assets) in a state of good repair. The agency's 2020 Transit Asset Management Plan includes a fleet replacement schedule for current revenue and non-revenue vehicles based on FTA useful life benchmarks. With various service improvements and new service needs identified, additional vehicles beyond replacing the current fleet may need to be purchased over the next 10-years. Costs for such vehicles are identified in the 10-year financial plan.

Low/No-Emission Vehicles

In 2020, Space Coast Area Transit introduced the first two new hybrid buses into its fleet when Routes 10 and 11 were introduced. Continuing to replace diesel buses with low/no-emissions buses will decrease carbon emissions and fuel costs and support the Space Coast Area Transit and Brevard County commitment to sustainability. The agency is currently researching other vehicle alternatives, including propane and electric vehicles, to understand operating considerations and infrastructure requirements.

Space Coast Area Transit bus stop improvement outcome.
Source: Space Coast Area Transit

Infrastructure/Facility Needs

Bus Stop Improvements

- **Accessibility improvements** – The design of infrastructure/amenities at a bus stop can greatly improve access to transit services, ensure accessibility by all users, and enhance customer safety and experience. In 2018, the Space Coast TPO funded a comprehensive inventory and assessment of all Space Coast Area Transit's bus stops. In addition to documenting the presence and condition of infrastructure and amenities, accessibility deficiencies were identified for each bus stop. This effort produced an ADA Transition Plan to prioritize and estimate costs to make deficient bus stops compliant with the ADA and meet agency standards.
- **New bus stops/infrastructure improvements** – Space Coast Area Transit routinely assesses the need for new bus stop locations. Recent investment in APCs will help evaluate rider activity, which can be used to assess bus stop location needs and prioritize infrastructure investments.

New Centralized Transit Facility Design and Construction

Space Coast Area Transit currently operates out of two facilities—the North Terminal in Cocoa and the South Terminal in Melbourne. Both facilities were constructed in the 1990s. Per the agency's 2020 Transit Asset Management Plan, the facilities are currently in a state of good repair, primarily as a result of recent upgrades and renovations. Over time, it will become more expensive to maintain older facilities in a state of good repair and to retrofit for technology and vehicle propulsion system changes.

From an operational perspective, separate facilities can create challenges for vehicle maintenance and complicate scheduling and vehicle route assignments. This impact is especially felt with critical

driver shortages ongoing the past several years. A single facility optimizes communication, improves oversight, and fosters collaboration, leading to positive workplace culture. How the facility is designed to interface with the public and branded can greatly increase awareness of the agency's brand in the community.

New Cocoa Transfer Center Design and Construction

Of the four current transfer sites, Brevard County owns the one located in Cocoa. An expanded and updated transfer center in Cocoa has been identified as an important need for some time to provide an enhanced, safe environment for riders, bus operators, and vehicles at this critical transfer point. This facility also would provide riders with easy access to transit information. As with the centralized facility, how a transfer center is designed to interface with the public and branded can greatly increase awareness of transit and the agency's brand.

Planning/Marketing Needs

Planning needs identified over the next 10-years include those tied to implementing new services, investing in capital/technology improvements, and maintaining compliance with applicable federal and state requirements:

- **MOD Feasibility Study** – This TDP and COA efforts included a cursory analysis of potential MOD service areas, costs, and ridership potential. As a next step, a more in-depth feasibility study is needed to analyze specific zonal boundaries, evaluate service models and vehicle/technology needs, and produce more specific cost estimates (including potential cost savings from transferring higher-cost paratransit riders). The results can then support decisions on moving forward with this new service concept.
- **Zero Emission Bus Plan** – This plan supports a transit agency's fleet transition to no/low-emission vehicles and is a requirement for applicants of discretionary Bus and Bus Facilities (Section 5339a) funds. As the next step in evaluating vehicle propulsion options, Space Coast Area Transit should prepare such a plan to understand how such a transition could be accommodated, as well as the infrastructure and operational considerations for using different propulsion technologies.
- **Transit Development Plan** – As a recipient of Florida Public Transportation Block Grant funds, Space Coast Area Transit is required to submit an annual update of its TDP to FDOT by September 1. A major update, such as this one, is due every five years with annual progress reports produced in the interim years.
- **Transportation Disadvantaged Service Plan** – Space Coast Area Transit serves as the Brevard County Community Transportation Coordinator (CTC) for the Transportation Disadvantaged (TD) program. As the CTC, Space Coast Area Transit is required to jointly develop an annually updated Transportation Disadvantaged Service Program (TDSP) with Space Coast TPO, which serves as the designated official planning agency.
- **Other compliance-related plans/studies** – As a recipient of federal and state funds, Space Coast Area Transit is required to comply with various planning and programmatic

requirements. This includes setting a triennial Disadvantaged Business Enterprise (DBE) goal, and updating its Title VI Program, a Transit Asset Management Plan, a Public Transportation Agency Safety Plan (PTSASP), etc.

Marketing/Education Campaigns

Space Coast Area Transit should expand its marketing efforts with the launch of the redesigned route network, highlighting immediate improvement to riders and how cost savings are planned to improve/expand service over time. Continuing public education campaigns on the benefits of transit and use of social media campaigns for targeted audiences is recommended. Furthermore, avenues to access transit information should be expanded, including increased digital marketing presence, disseminating information via the 321 Transit app, and utilizing the Wi-Fi landing page.

10-Year Transit Demand Analysis

Using Transit Boardings Estimation Simulation Tool (TBEST), 2032 ridership estimates were prepared to understand potential demand for the proposed fixed-route service improvements described earlier. TBEST does not account for on-demand services, such as MOD; therefore, potential system ridership gains from introducing new MOD services are not reflected in this table. Table 8-2 compares the estimated weekly ridership in 2022 to the estimated ridership in 2032, assuming all service improvements have been implemented.

Table 8-2: Annualized 10-Year Ridership Estimates (Improved Fixed-Route Network)

Route	2022 Ridership*	2032 Ridership*	# Change	% Change
1	115,006	118,546	3,540	3.1%
2	56,681	82,345	25,664	31.2%
3	27,598	31,196	3,598	11.5%
4	142,967	149,102	6,135	4.1%
5	25,444	34,839	9,395	27.0%
6**	48,363	45,906	-2,457	-5.4%
7	18,869	23,682	4,813	20.3%
8	9,696	13,764	4,068	29.6%
10	9,141	18,579	9,438	50.8%
11	5,471	6,383	912	14.3%
20	29,741	50,250	20,509	40.8%
21	36,503	50,067	13,564	27.1%
22	20,055	27,941	7,886	28.2%
23	22,459	29,072	6,613	22.7%
24	17,181	24,391	7,210	29.6%
27	42,345	66,512	24,167	36.3%
28	16,876	17,785	909	5.1%
29	92,944	107,130	14,186	13.2%
32	54,174	79,690	25,516	32.0%
34	32,840	54,641	21,801	39.9%
192	32,002	50,108	18,106	36.1%
A1A***	-	173,792	173,792	100.0%
US-1 (new route)	-	6,268	6,268	100.0%
Total	**856,356**	**1,081,929**	**225,573**	**20.8%**

*Ridership reflects Weekday, Saturday, and Sunday estimates based on TBEST model; includes routes eliminated in the COA Short-Term Network.
*Projected ridership decrease is due to fixed-route trips shifting from Route 6 to other improved routes in the TBEST model.
***Replaces routes 9 and 26.

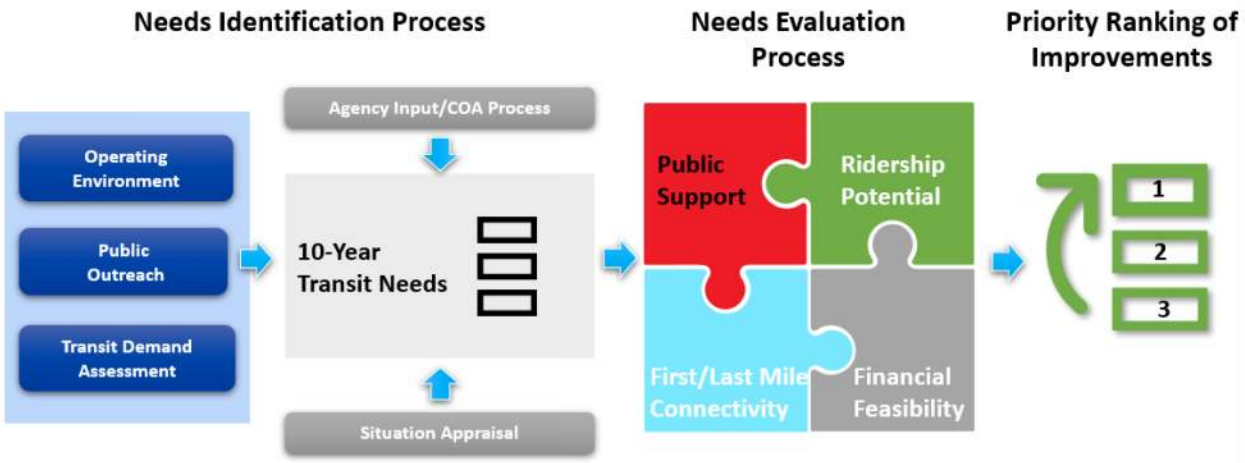
10-Year Public Transit Needs/Alternatives Evaluation

This section presents the evaluation process and methodology for the 10-year transit needs previously identified in this report. After TDP needs were identified and potential service alternatives developed, a quantitative-qualitative hybrid methodology evaluation framework was used to prioritize the potential strategies. This prioritization, along with funding and other considerations, was then used to develop the 10-year implementation plan presented in Section 9.

Transit Needs/Alternatives Evaluation Process

An overview of the evaluation process is illustrated in Figure 8-3 and described in the remainder of this section.

Figure 8-3: 10-Year Transit Needs Evaluation



Evaluation Criteria

Four evaluation criteria and associated weighted measures were used to consider public support, ridership potential, connectivity, and financial feasibility of each improvement.

Public Support

An extensive public outreach process was conducted for this TDP and resulted in numerous opinions and suggestions on transit services from transit users and non-users and local/regional stakeholders. Both quantitative and qualitative measures were used to evaluate public support for the alternatives.

- **Transit Needs and Priorities Survey** – Relative scores indicating favorableness for proposed transit alternatives produced by the transit needs survey were used.
- **Other Public Outreach** – Input gathered through some outreach activities, such as stakeholder interviews, is qualitative but equally important. Interest in the proposed alternatives generated through this input was used to collectively assign interest levels as "None," "Moderate," "High," or "Very High" in the evaluation process.

Ridership Potential

For evaluating possible ridership or transit demand, three quantitative measures were considered that take into account land use and demographic variables:

- **Traditional Transit Market** – Considers the proportion of each alternative that would operate within areas identified as "High" or "Very High" transit orientation.
- **Discretionary Market** – Considers the proportion of each alternative that would operate within areas meeting at least the "Minimum" dwelling unit or employment density threshold for transit investment.
- **Ridership Productivity** – Considers the annual passenger trips per revenue hour of service anticipated to be generated. For fixed-route service, TBEST outputs were used. For potential

mobility on demand service, an analysis of potential demand based on the preliminary service zones was completed.

First/Last Mile Connectivity

This factor evaluates the potential for providing or improving critical first/last time connections to core transit services.

Financial Feasibility

Productivity is generally measured using cost-efficiency and used to gauge how well a transit agency is using its financial resources. Ensuring cost-efficiency is critical to successful service delivery; services projected to perform with the highest efficiencies should be prioritized. Forecasts of ridership and operating costs for each individual alternative were used to evaluate its financial feasibility.

Alternatives Evaluation Scoring

For each transit alternative, a score was determined either through computation of the selected measure or through professional judgment based on qualitative data reviewed. Scores for the more qualitative criteria (e.g., verbal public input from stakeholder interviews, discussions with riders, etc.) were assigned based on a relative comparison of each transit alternative with other transit alternatives. A higher score is consistent with a higher ranking for a given alternative. The thresholds for computation-based criteria (traditional market, choice market, trips per hour, and operating cost per trip) were determined using the average of the entire data set and one standard deviation above or below the average.

Table 8-3 shows the thresholds and scoring for each measure used in the evaluation.

Table 8-3: 10-Year TDP Service Needs Evaluation Factors and Weights

Criteria	Measure	Measure Description	Measure Weight	Criteria Weight
Public Support	Transit Needs and Priorities Survey	Level of interest in specific alternatives from measurable public outreach activities	15%	25%
	Other Public Outreach	Level of interest in specific improvements (Very High, High, Moderate, None), as gathered from overall public input	10%	
Ridership Potential	Traditional Market Coverage	Percent coverage of traditional markets (areas with “High” or “Very High” rating from Transit Orientation Index)	15%	45%
	Discretionary Market Coverage	Percent coverage of discretionary markets (Density Threshold Assessment areas with 4 or more jobs or dwelling units per acre)	15%	
	Ridership Productivity	Estimated trips per hour in 2032 from TBEST forecast	15%	
Connectivity	First/Last Mile Connectivity	Improved connections to/from fixed-route network and other public transit services	15%	15%
Financial Feasibility	Cost-efficiency	Operating cost per trip	15%	15%

Alternatives Evaluation Results

The individual transit service alternatives were grouped into improvement categories for evaluation purposes and are shown in Table 8-4. These alternatives were developed without specific consideration of financial constraints but also recognize that some improvements are more cost-feasible than others.

Table 8-4: 10-Year Transit Needs Ranking

Evaluation Measures	Scoring Details	Weekday Span Improvements	Frequency Improvements	Sunday Service	Modified/New Fixed-Route Services	Mobility-On-Demand
Transit Needs and Priorities Survey	Weighted Score	13.29%	10.49%	7.69%	22.08%	25.66%
	Score	3	3	1	5	7
	Weight	15%	15%	15%	15%	15%
Other Public Outreach	Favorable Measure	Moderate	High	Very High	High	Moderate
	Score	3	5	7	5	3
	Weight	10%	10%	10%	10%	10%
Ridership Productivity	Trip/Hr	8.13	6.55	5.84	7.29	4.20
	Score	7	5	3	5	1
	Weight	15%	15%	15%	15%	15%
First/Last Mile Connectivity	Yes/No	No	No	No	No	Yes
	Score	1.00	1.00	1.00	1.00	3.00
	Weight	15%	15%	15%	15%	15%
Cost Efficiency	Cost/Trip	$9.70	$12.30	$11.82	$9.39	$11.36
	Score	5	1	3	7	3
	Weight	15%	15%	15%	15%	15%
Discretionary Market Coverage	Coverage	22%	19%	22%	33%	2%
	Score	5	3	5	7	1
	Weight	15%	15%	15%	15%	15%
Traditional Market Coverage	Coverage	30.78%	30.34%	32.33%	44.69%	18.23%
	Score	3	3	5	7	1
	Weight	15%	15%	15%	15%	15%
Total Score		**3.80**	**3.10**	**3.60**	**5.20**	**2.70**
Rank		**2**	**4**	**3**	**1**	**5**

9 Ten-Year Plan

This section presents the recommended 10-year financial and implementation plan for Space Coast Area Transit's FY 2023-2032 TDP.

Recommended 10-Year Transit Plan

The transit service, capital/infrastructure, and planning/policy needs identified in the previous section are incorporated into the 10-year plan, with implementation based on the estimated costs vs. anticipated available funding, discussions with agency staff, alternatives evaluation results, operational considerations, and other factors.

The 10-year transit service plan is illustrated in Map 9-1 and includes the following improvements:

- Implement COA Short-Term Network changes to:
    - Restructure routes 20, 21, 22, 24, 26, and 27
    - Split Route 10 into the 10 Circulator and 10 Connector
    - Introduce Route 32 to replace routes 25 and 30
    - Introduce Route 34 to replace routes 30 and 33
    - Introduce Route 192
- Implement continuous mid-day service.
- Add Sunday service to all routes except 4, 6, 9, and 21 (currently provided) and 11, 22, and 23, which are replaced with MOD service in the future network.
- Increase weekday evening service to 9:00 PM on routes 1, 2, 20, 21, 24 27, 28, 29, and 192.
- Improve service to 30-minute headways on routes 2, 10, 20, 27, 32, 34, and 192.
- Implement MOD service in the Port St. John ,West Palm Bay, South Palm Bay, and Micco/Barefoot Bay areas; eliminate duplicative underlying fixed-route service as follows: Route 11 (Port St. John), Route 22 (South Palm Bay), and Route 23 (West Palm Bay).
- Implement the A1A Beach Trolley to replace routes 9 and 26 at 40-minute headways.
- Implement new US-1 route from Palm Bay to Micco.

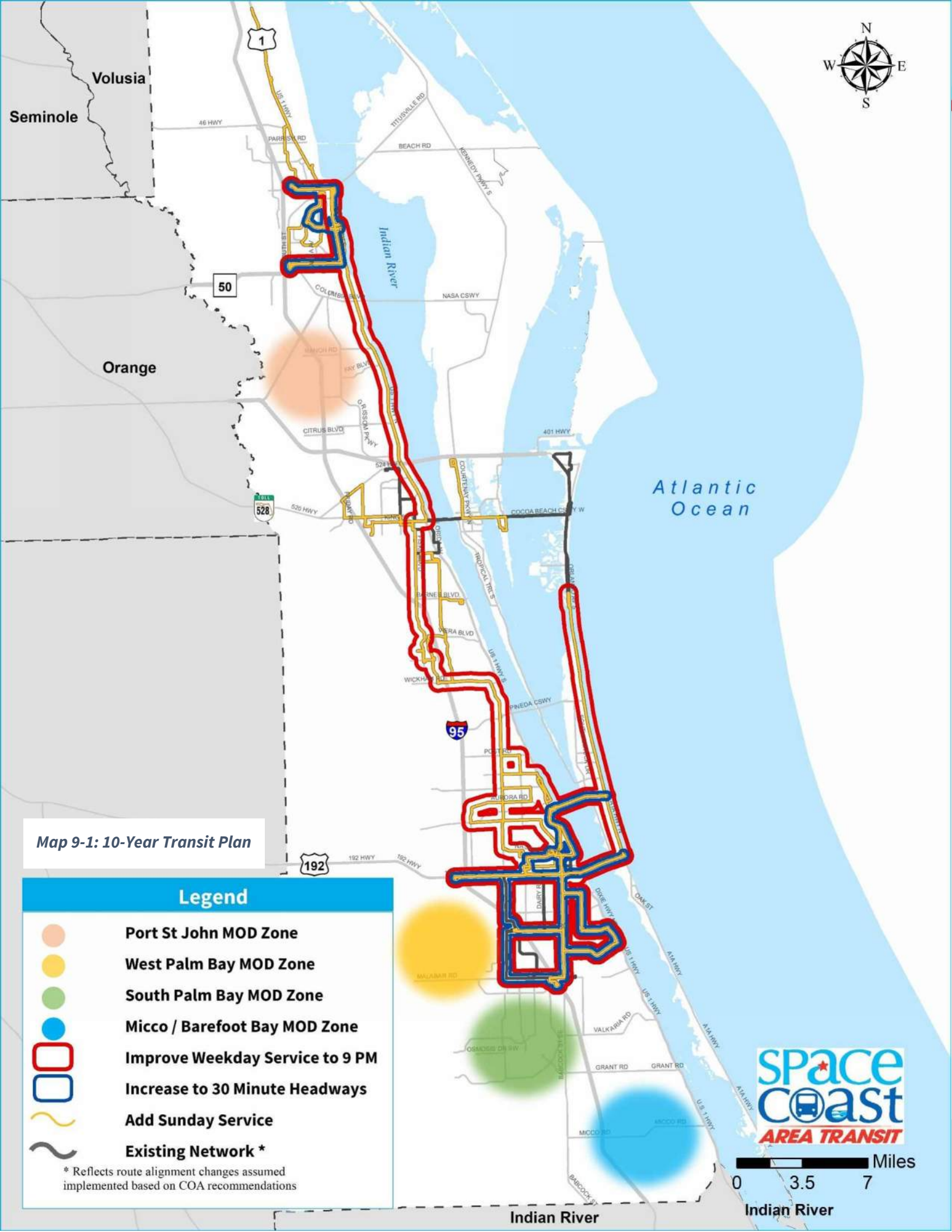
Table 9-1 summaries the fixed-route network operating characteristics incorporating the above improvements. The weekday headways for the entire system are illustrated in Map 9-2.

Table 9-1: 10-Year Fixed-Route Network Operating Characteristics

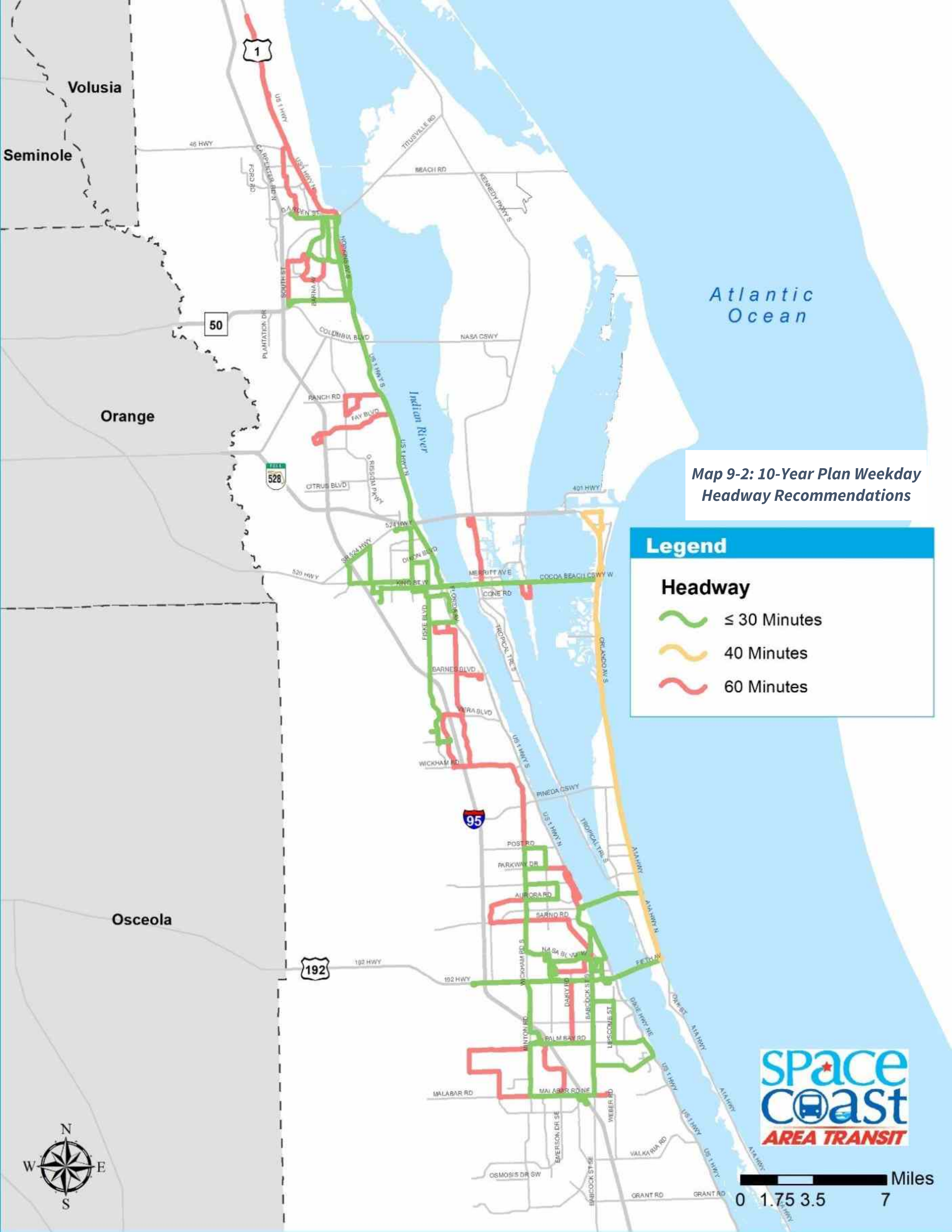
10-Year Network Route	Weekday			Saturday			Sunday		
	Start Time	End Time	Headway (min)	Start Time	End Time	Headway (min)	Start Time	End Time	Headway (min)
1	5:15 AM	9:30 PM	30/60	7:10 AM	6:30 PM	60	7:15 AM	6:00 PM	60
2	6:15 AM	9:00 PM	30	8:20 AM	8:32 PM	60	9:00 AM	5:00 PM	60
3	7:11 AM	7:00 PM	60	8:22 AM	7:00 PM	60	9:00 AM	5:22 PM	60
4	6:20 AM	10:20 PM	20/30/60	6:20 AM	10:20 PM	20/30/60	7:50 AM	5:45 PM	60
5	8:00 AM	9:00 PM	60	8:00 AM	4:55 PM	60	9:00 AM	4:55 PM	60
6	5:50 AM	8:17 PM	20/30/60	7:20 AM	6:17 PM	20/30	8:50 AM	4:45 PM	60
7	7:30 AM	9:00 PM	60	7:30 AM	5:55 PM	60	9:00 AM	5:55 PM	60
8	6:45 AM	6:20 PM	30	6:45 AM	6:20 PM	60	9:00 AM	5:45 PM	60
10 Circulator	7:00 AM	7:55 PM	30	8:00 AM	5:55 PM	30	9:00 AM	5:00 PM	30
10 Connector	7:00 AM	7:55 PM	60	8:00 AM	5:55 PM	60	9:00 AM	5:55 PM	60
11*	7:07 AM	9:00 PM	60	8:07 AM	6:04 PM	60	9:00 AM	6:04 PM	60
20	6:25 AM	9:20 PM	30	7:25 AM	5:20 PM	60	9:00 AM	5:20 PM	60
21	7:15 AM	9:19 PM	30/60	7:15 AM	6:19 PM	60	9:00 AM	2:28 PM	60
22*	7:35 AM	8:30 PM	60	7:35 AM	5:30 PM	60	9:00 AM	6:30 PM	60
23*	6:35 AM	8:30 PM	60	7:35 AM	5:30 PM	60	9:00 AM	5:30 PM	60
24	6:55 AM	9:00 PM	60	7:55 AM	5:50 PM	60	9:00 AM	5:50 PM	60
27	6:35 AM	9:00 PM	30	7:35 AM	5:30 PM	60	9:00 AM	5:30 PM	60
28	7:00 AM	9:00 PM	60/30	7:55 AM	5:50 PM	60	9:00 AM	5:50 PM	60
29	5:57 AM	9:05 PM	60	8:00 AM	6:02 PM	60	9:00 AM	6:02 PM	60
32	6:00 AM	9:00 PM	30	8:00 AM	8:00 PM	60	9:00 AM	8:00 PM	60
34	7:00 AM	9:00 PM	30	8:00 AM	6:00 PM	60	9:00 AM	6:00 PM	60
192	6:00 AM	9:00 PM	30	6:00 AM	8:00 PM	60	9:00 AM	5:00 PM	60
A1A Beach Trolley**	6:00 AM	11:00 PM	40	6:00 AM	11:00 PM	40	9:00 AM	11:00 PM	40
US-1	Peak trips only		60	N/A	N/A	N/A	N/A	N/A	N/A

*Assumed to be replaced with MOD service.

**Replaces routes 9 and 26.



Map 9-1: 10-Year Transit Plan


Map 9-2: 10-Year Plan Weekday Headway Recommendations
Legend
Headway
≤ 30 Minutes
40 Minutes
60 Minutes
Atlantic Ocean
Indian River
Volusia
Seminole
Orange
Osceola
Miles
0 1.75 3.5 7
SPACE COAST AREA TRANSIT

Financial and Data Assumptions

The cost and revenue assumptions used to develop the financial plan and facilitate the implementation of the transit alternatives over the next 10 years are presented below.

Cost Assumptions

Numerous data sources and assumptions were used to estimate and forecast transit costs over the next 10 years, including service performance data, discussions with agency staff, validated NTD data, other transit industry data, and recent agency budgets and expenses. Unless otherwise noted, all costs noted are for FY 2023 and inflated based to the year of implementation. The annual inflation rate for all costs in this plan is 3%, based on discussions with Space Coast Area Transit finance staff.

The estimated costs discussed below do not establish a financial commitment for Brevard County and, based on the level of funding available, may remain as unfunded in the 10-year plan.

Operating Cost Assumptions

- With the focus on restructuring the current system and improving existing services, it is unlikely that agency overhead expenses will increase considerably. Therefore, fixed-route service costs were estimated based on annual revenue hours and miles for the improvement multiplied by a marginal cost of $49.19 per hour and $1.63 per mile to account for the operator, fuel, and maintenance costs for providing the expanded service. These unit costs are based on the agency's validated FY 2021 NTD data (Table 9-2) and inflated to the TDP base year of 2023.

Table 9-2: Fixed Route Operating Unit Costs

Expense Category	2021 Amount	2021 Bus Operations	2021 Unit Cost
Operator Wages, Fringe Benefits	$4,834,851	104,259 revenue hours	$46.67/revenue hour
Fuel, Tires, Maintenance/Service	$3,121,647	2,028,612 revenue miles	$1.54/revenue mile

Source: FY 2021 NTD reports

- FY 2023 expenses included in the agency's operating budget but those not anticipated to recur are not carried forward for FY 2024 and beyond. An example is a short-term increase for FY 2023 in material expenses due to COVID response.
- Maintaining costs for the ADA paratransit, TD, and vanpool programs was assumed unless otherwise noted.

For MOD services, the following assumptions were made:

- A third-party contractor will operate this service; therefore, costs presented are inclusive of all operations and vehicles. A cost of $100 per service hour is assumed based on recent costs for MOD services provided by other agencies that are comparable to the scale of MOD services recommended for Space Coast Area Transit in this TDP.
- Annual cost estimates are based on an average of 2 vehicles per zone operating 10 hours spans on weekdays, with the larger zones (West Palm Bay, South Palm Bay) each requiring 3

vehicles and smaller zones (Port St. John, Micco/Barefoot Bay) each requiring 1 vehicle. For Saturday service, it is assumed that all four zones will operate 1 vehicle for 10 hours.

- Some cost savings associated with transferring current paratransit/TD riders to the MOD service are anticipated, as the service coverage area will be significantly expanded, and first/last mile connections will be available. Based on analysis of sample paratransit trip data in each proposed MOD zone, paratransit cost savings of 10–40% for intrazonal trips are assumed.
- Underlying fixed-route service will be eliminated with implementation of MOD service. This includes Route 11 in the Port St. John zone, Route 22 in the South Palm Bay zone, and Route 23 in the West Palm Bay zone. Savings by removing these bus routes is factored into the overall MOD implementation costs.
- The specific zonal boundaries, vehicle needs, and cost estimates (including potential cost savings from transferring paratransit riders to MOD service) will need to be further evaluated in a feasibility study prior to service being implemented.

Capital/Planning Cost Assumptions

- Costs for capital outlay items in the agency's FY 2023 proposed budget were used as the basis for the capital plan. This includes the mobile lift system, ITS/CAD/AVL systems, security equipment/cameras, radios, computer hardware, mobile fare system, and facility improvements related to bus shelter improvements, parking lots at both terminals, and the Cocoa terminal public restroom/kitchen renovation project. Where applicable, recurring annual costs associated with these categories are assumed based on discussions with agency staff.
- The agency will continue to capitalize maintenance service costs as allowed by FTA.
- Bus stop accessibility improvement costs are assumed to be $250,000 annually based on discussions with agency staff.
- An initial capital investment of $250,000 is assumed for MOD application/software, including rider and driver apps and dashboards, to support contracted service implementation. This is based on costs from other similar studies/service providers.
- The cost for the new centralized administration, operations, and maintenance facility is assumed to be $20 million, with 10% for design and the remainder for construction. This estimate is based on recent costs for similar facilities provided by other Florida transit agencies.
- The cost for the new Cocoa Transfer Center is assumed to be $2 million, with 10% for design and the remainder for construction. This estimate is consistent with a recent FDOT grant award for project design.
- Costs for planning studies range and are based on Space Coast Area Transit's compliance schedule and recent costs for similar studies.
- An expanded transit marketing and education campaign is assumed to cost $25,000 per year.

The 10-year vehicle replacement/acquisition schedule provided in Table 9-3 is a critical component of the financial plan. Assumptions regarding this include the following:

- Replacement vehicles to be acquired in FY 2023 are consistent with the agency's FY 2023 capital outlay plan.
- Vehicle life cycles are based on useful life benchmarks established for each asset category as documented in the agency's 2020 Transit Asset Management Plan. Replacement vehicles planned to be purchased include those necessary to replace vehicles within the existing fleet that will reach the end of their useful life within the TDP planning period. Addressing backlog of vehicles scheduled for but not yet replaced prior to 2023 is assumed in the vehicle replacement plan.
- The cost of a 35' diesel bus is assumed to be $532,000 and a 35' hybrid bus is assumed to be $825,000, based on the agency's most recent vehicle purchases. The replacement plan assumes five vehicles to be purchased annually, including three hybrid and two diesel vehicles, with consideration for other types of low/no-emission vehicles. Any vehicles needed to expand services are assumed to be hybrid for cost purposes.
- A cutaway paratransit vehicle is assumed to cost $374,000 based on recent similar vehicle purchases by the agency.
- Support (non-revenue) vehicles are estimated at $45,000 each, as budgeted in the FY 2023 Capital Outlay Plan.
- Replacement vans for the Volunteers In Motion program are estimated at $66,000 each, as budgeted in the FY 2023 Capital Outlay Plan.
- Four buses associated with the three fixed routes to be eliminated when MOD service is implemented are assumed to transition to serve as additional spare vehicles. These are needed to support the expanded fleet and supplement the useful life acceleration of other vehicles when increasing fixed-route service levels (e.g., by adding Sunday service).

Table 9-3: 10-Year Vehicle Replacement/Acquisition Schedule

Year	Fixed-Route Bus			Paratransit Replacement Vehicle	Volunteers In Motion Replacement Vans	Non-Revenue Replacement Vehicle
	Replacement (Diesel)	Replacement (Hybrid)	Expansion (Hybrid)			
2023	3	2	0	2	3	1
2024	1	2	1	4	5	2
2025	1	2	0	3	0	2
2026	1	2	4	3	0	2
2027	1	2	0	3	0	2
2028	1	2	0	3	0	2
2029	1	2	2	3	0	2
2030	1	2	0	3	0	2
2031	0	0	0	3	0	0
2032	1	3	0	3	0	0
Total	**11**	**19**	**7**	**30**	**8**	**15**

Revenue Assumptions

Several assumptions were made to estimate and project revenues reasonably anticipated to be available for implementation of the 10-year plan. This is based on data from and discussions with agency staff, historical performance data, information on transit industry/FDOT funding programs, and other sources.

- Revenue sources included in the agency's FY 2023 budget, including federal and state formula funds and other recurring sources, such as Florida CTD funds, are the basis for the plan. The composition/use of funding sources is assumed to continue over the next 10 years unless otherwise noted.
- The balance forward of federal funds includes prior year formula funds set aside for vehicle purchases in FY 2023 ($3.1 million). and remaining American Rescue Plan (ARP) funding ($3.3 million). An additional $1.3 million balance forward of other funding is also identified. The balance forward funds are not assumed to be reoccurring revenues beyond FY 2023.
- Additional fare revenue to be generated by new/expanded services implemented during the 10 years is based on a farebox recover ratio of 8%, consistent with the percentage reported to the NTD in 2021.

New FDOT funding is assumed to support service improvements that enhance the attractiveness of transit for discretionary riders and increase the quality of service for existing riders as follows:

- Space Coast Area Transit was recently awarded a FDOT District 5 Intermodal Development Grant for 50% of the design costs for the new Cocoa Transfer Center. The total design costs are estimated at $200,000 with the required 50% match to be funded by the agency.
- The FDOT Intermodal Development Grant is a potential source of funding for 50% of the Cocoa Transfer Center construction costs, with a 50% local match needed.
- FDOT's Service Development Program awards discretionary state funding for projects involving the use of new technologies; services, routes, or vehicle frequencies; the purchase of special transportation services; and other such techniques for increasing service to the riding public. Projects involving the application of new technologies or methods for improving operations, maintenance, and marketing are also eligible. Funds can be awarded up to 50% of the project costs for a maximum duration of three years. Projects submitted for funding must be justified in the agency's TDP (or TDSP, if applicable).

  FDOT Service Development funds is a potential source of revenue for implementing new MOD services. For purposes of this 10-year plan, it is assumed that Service Development funds will be available to fund 50% of the MOD application/technology start-up costs and operating costs for the four MOD zones and new US-1 route (operating in tandem with the Micco/Barefoot Bay MOD zone) for three years .
- FDOT's Transit Corridor Program is authorized in Chapter 341, F.S., and provides funding to support new services within specific corridors when the services are designed and expected to help reduce or alleviate congestion or other mobility issues. Transit Corridor funds are

discretionary and are distributed based on documented need. Program funds may be used for capital or operating expenses up to 100% of the project less any federal funds, fares, or other sources of income to the project. Eligible projects must be identified in a TDP, Congestion Management System Plan, or other formal study undertaken by a public agency.

For purposes of the 10-year plan, it is assumed that FDOT Transit Corridor funds provided to Space Coast Area Transit will be increased to offset the operating costs of the A1A Beach Trolley to provide consistent and attractive bus service along the congestion A1A corridor.

10-Year Financial Plan

The 10-year financial plan was developed based on the assumptions noted above and input from various stakeholders, community input and preferences, and operational efficiencies identified throughout the TDP process. It is intended to guide and support decision-making by Space Coast Area Transit regarding service, capital, and other improvements over the next 10 years. The identified implementation plan may be adjusted as priorities shift, funding assumptions change, or additional funding becomes available. *This plan does not establish a financial commitment by Brevard County and the Board of County Commissioners must approve each fiscal year budget annually.*

The 10-year plan is balanced for FY 2023 based on the agency's operating and capital budget; beyond the first year, the plan includes annual costs for service and capital improvements programmed for implementation within the next 10 years, together with supporting revenues that are reasonably expected to be available to fund their implementation.

Figure 9-1 shows the estimated annual operating and capital costs for the TDP implementation plan, along with the projected revenues.

Figure 9-2 shows the annual funded expenses and unfunded needs included in the plan.

Table 9-4 details the annual operating and capital expenses, while Table 9-5 details the federal, state, and local revenue assumptions, as well as the funding balance each year for the 10-year financial plan.

10-Year Transit Plan Highlights

$165.2 million to operate the redesigned and expanded system.

$213.4 million for capital expenses, including technology, vehicles, etc.

$339.1 million in revenue from existing and potential new sources.

$39.5 million in unfunded needs over the 10-years.

Figure 9-1: Estimated Annual Operating and Capital Costs vs Projected Revenues

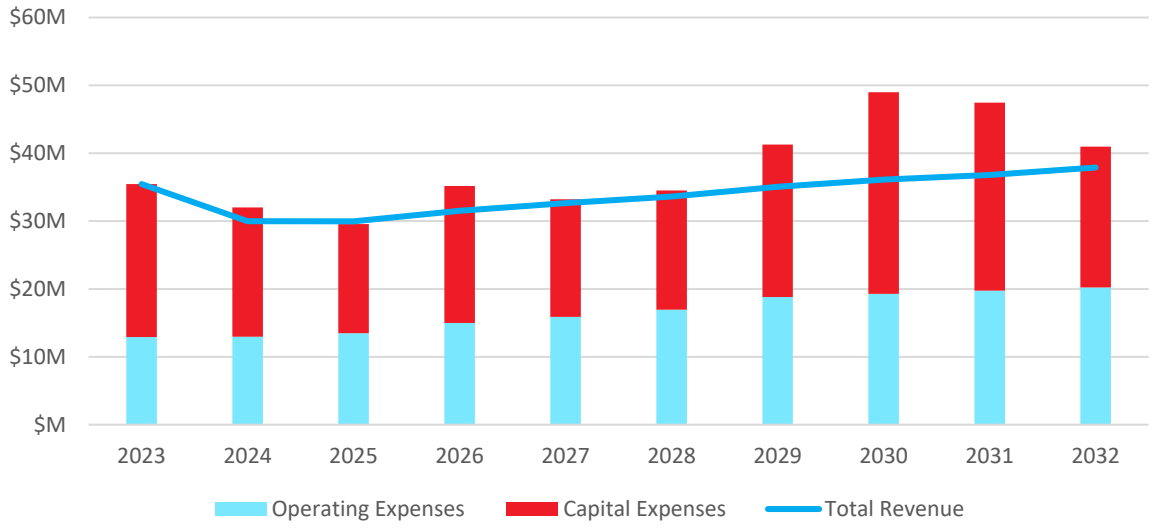


Figure 9-2: Annual Funded Expenses vs. Unfunded Needs

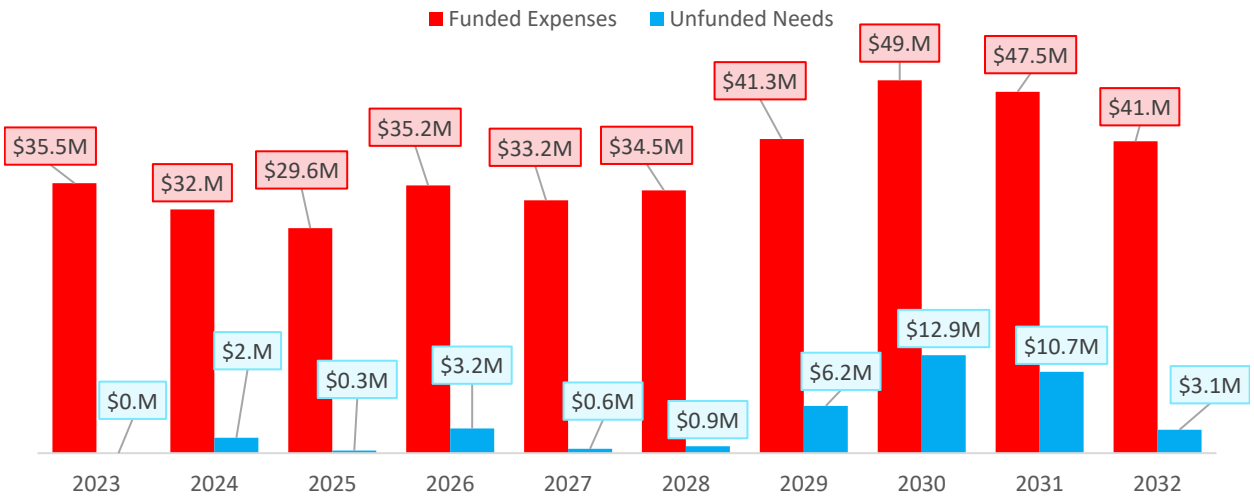


Table 9-4: 10-Year Financial Plan (Projected Operating and Capital Expenses)

	Fiscal Year									
	2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Operating Expenses										
Existing Operating Expenses	$12,821,534	$13,001,180	$13,291,215	$13,589,952	$13,647,650	$13,957,080	$14,275,792	$14,604,066	$14,942,188	$15,290,454
Implement COA Efficiency Improvements	$0	($271,694)	($279,845)	($288,241)	($296,888)	($305,794)	($314,968)	($324,417)	($334,150)	($344,174)
Continuous Saturday Service	$0	$0	$336,139	$346,223	$356,610	$367,308	$378,327	$389,677	$401,367	$413,408
Add Sunday Service	$0	$0	$0	$669,284	$689,363	$710,044	$731,345	$753,285	$775,884	$799,160
New A1A Beach Trolley	$0	$0	$0	$555,369	$572,031	$589,191	$606,867	$625,073	$643,825	$663,140
Extend Weekday Service Span to 9pm	$0	$0	$0	$0	$536,452	$552,546	$569,122	$586,196	$603,782	$621,895
Increase Weekday Service to 30-Minute Headways	$0	$0	$0	$0	$0	$842,864	$1,684,218	$1,734,744	$1,786,786	$1,840,390
New US 1 Route	$0	$0	$0	$0	$0	$0	$188,039	$193,681	$199,491	$205,476
Implement Mobility on Demand Service	$0	$0	$0	$0	$0	$1,480,625	$3,050,087	$3,141,590	$3,235,837	$3,332,913
Fixed Route Reduction with Mobility On Demand Service	$0	$0	$0	$0	$0	($912,940)	($1,532,492)	($1,578,466)	($1,625,820)	($1,674,595)
ADA Cost Reduction with Mobility on Demand Service	$0	$0	$0	$0	$0	($461,501)	($950,692)	($979,213)	($1,008,590)	($1,038,847)
Zero Emission Bus Plan	$0	$75,000	$0	$0	$0	$0	$0	$0	$0	$0
Fare Study	$0	$30,000	$0	$0	$0	$0	$0	$0	$0	$0
Mobility on Demand Feasibility Study	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Compliance Related Plans/Studies	$100,000	$100,000	$100,000	$100,000	$350,000	$100,000	$100,000	$100,000	$100,000	$100,000
Expanded Marketing/Outreach Campaign	$0	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
Subtotal Operating Expenses	**$12,921,534**	**$12,959,486**	**$13,472,509**	**$14,997,588**	**$15,880,218**	**$16,944,421**	**$18,810,646**	**$19,271,215**	**$19,745,602**	**$20,234,220**
Capital Expenses										
Capitalized Maintenance	$8,868,087	$9,134,130	$9,408,153	$9,690,398	$9,981,110	$10,280,543	$10,588,960	$10,906,628	$11,233,827	$11,570,842
Miscellaneous Capital Expenses	$2,699,237	$2,107,491	$2,170,716	$2,235,837	$2,302,913	$2,372,000	$2,443,160	$2,516,455	$2,591,948	$2,669,707
Replacement Non-Revenue Vehicles	$45,000	$95,481	$98,345	$101,296	$104,335	$107,465	$110,689	$114,009	$0	$0
Replacement Buses (Diesel)	$1,595,813	$547,896	$564,333	$581,263	$598,701	$616,662	$635,161	$654,216	$0	$694,058
Replacement Buses (Hybrid)	$1,650,000	$1,699,500	$1,750,485	$1,803,000	$1,857,090	$1,912,802	$1,970,186	$2,029,292	$0	$3,229,314
Replacement Paratransit Vehicles (Cutaways)	$747,758	$1,586,593	$1,225,643	$1,262,412	$1,300,285	$1,339,293	$1,379,472	$1,420,856	$1,463,482	$1,507,386
Replacement Vans (Volunteers In Motion)	$197,937	$349,986	$0	$0	$0	$0	$0	$0	$0	$0
Additional Buses (Hybrid)	$0	$849,750	$0	$3,605,999	$0	$0	$1,970,186	$0	$0	$0
Mobile Lift System	$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
ITS/CAD/AVL Systems	$711,510	$154,500	$159,135	$163,909	$168,826	$173,891	$179,108	$184,481	$190,016	$195,716
Security Equipment/Cameras	$320,000	$51,500	$53,045	$54,636	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239
Radios	$197,555	$66,950	$68,959	$71,027	$73,158	$75,353	$77,613	$79,942	$82,340	$84,810
Computer Hardware	$265,524	$283,250	$291,748	$300,500	$309,515	$318,800	$328,364	$338,215	$348,362	$358,813
Fare Equipment	$2,031,336	$25,750	$26,523	$27,318	$28,138	$28,982	$29,851	$30,747	$31,669	$32,619
Facility Improvements	$2,683,216	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bus Stop Improvements	$250,000	$257,500	$265,225	$273,182	$281,377	$289,819	$298,513	$307,468	$316,693	$326,193
MOD Application/Technology	$0	$0	$0	$0	$281,377	$0	$0	$0	$0	$0
New Cocoa Transfer Center - Design	$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Cocoa Transfer Center - Construction	$0	$1,854,000	$0	$0	$0	$0	$0	$0	$0	$0
New Centralized Transit Facility - Design	$0	$0	$0	$0	$0	$0	$2,388,105	$0	$0	$0
New Centralized Transit Facility - Construction	$0	$0	$0	$0	$0	$0	$0	$11,068,865	$11,400,931	$0
Subtotal Capital Expenses	**$22,537,973**	**$19,064,276**	**$16,082,309**	**$20,170,778**	**$17,343,099**	**$17,573,573**	**$22,459,072**	**$29,712,669**	**$27,722,606**	**$20,734,697**

Table 9-5: 10-Year Financial Plan (Projected Revenues and Annual Funding Balance)

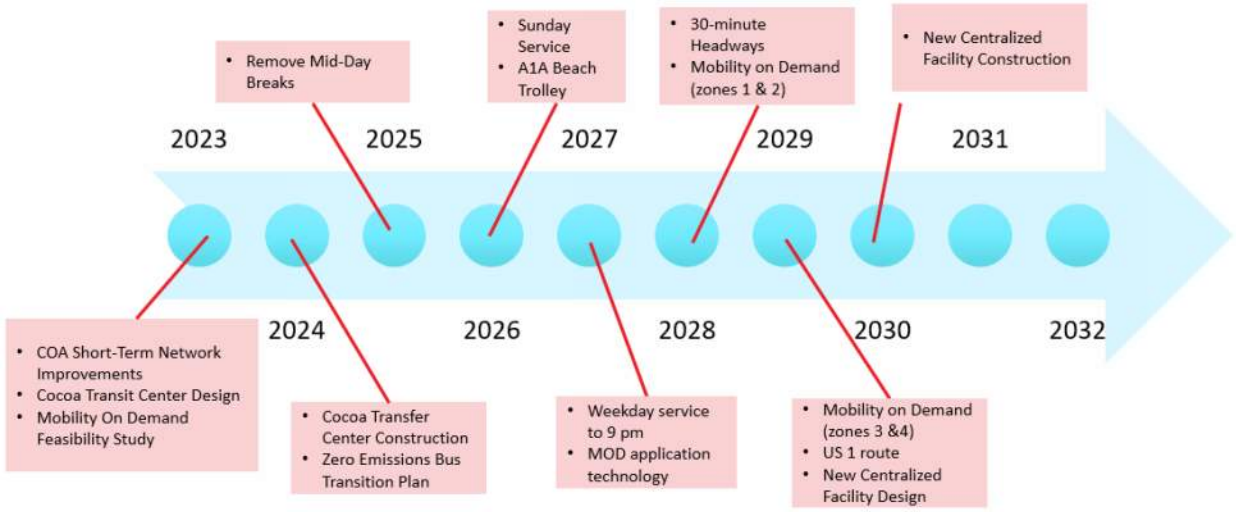
	Fiscal Year									
	2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Current Revenue Sources										
Federal Funding	$21,009,020	$21,639,291	$22,288,470	$22,957,124	$23,645,837	$24,355,213	$25,085,869	$25,838,445	$26,613,598	$27,412,006
Balance Forward - Federal Funds	$6,438,445	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Grants	$5,020,494	$5,171,109	$5,326,242	$5,486,029	$5,650,610	$5,820,129	$5,994,732	$6,174,574	$6,359,812	$6,550,606
Charges for Service	$1,515,184	$1,560,640	$1,607,459	$1,655,682	$1,705,353	$1,756,514	$1,809,209	$1,863,485	$1,919,390	$1,976,971
General Fund	$2,082,527	$2,145,003	$2,209,353	$2,275,633	$2,343,902	$2,414,220	$2,486,646	$2,561,246	$2,638,083	$2,717,225
Statutory Reserve (5%)	($2,018,072)	($1,447,770)	($1,491,203)	($1,535,939)	($1,582,018)	($1,629,478)	($1,678,362)	($1,728,713)	($1,780,575)	($1,833,992)
Balance Forward-Other	$1,311,909	$0	$0	$0	$0	$0	$0	$0	$0	$0
Potential New Revenue Sources										
Fares for New/Expanded Services	$0	$0	$26,891	$125,670	$172,356	$253,451	$377,986	$389,325	$401,005	$413,035
FDOT Intermodal Development Grant (50% of Costs)	$100,000	$927,000	$0	$0	$0	$0	$0	$0	$0	$0
FDOT Corridor Funds (100% of Costs)	$0	$0	$0	$555,369	$572,031	$589,191	$606,867	$625,073	$643,825	$663,140
FDOT Service Development Grant (50%)	$0	$0	$0	$0	$140,689	$53,092	$377,471	$388,795	$0	$0
Total Revenue	**$35,459,507**	**$29,995,272**	**$29,967,211**	**$31,519,569**	**$32,648,761**	**$33,612,330**	**$35,060,418**	**$36,112,231**	**$36,795,138**	**$37,898,993**
10-Year Expenses & Revenue Summary										
Total Revenue	$35,459,507	$29,995,272	$29,967,211	$31,519,569	$32,648,761	$33,612,330	$35,060,418	$36,112,231	$36,795,138	$37,898,993
Total Expenses	$35,459,507	$32,023,762	$29,554,818	$35,168,366	$33,223,317	$34,517,995	$41,269,717	$48,983,884	$47,468,207	$40,968,917
Revenues less Expenses	$0	($2,028,490)	$412,393	($3,648,797)	($574,556)	($905,665)	($6,209,299)	($12,871,653)	($10,673,069)	($3,069,924)
Rollover Funds from Prior Year Funding Balance	$0	$0	$0	$412,393	$0	$0	$0	$0	$0	$0
Annual Funding Balance - Surplus/(Shortfall)	**$0**	**($2,028,490)**	**$412,393**	**($3,236,404)**	**($574,556)**	**($905,665)**	**($6,209,299)**	**($12,871,653)**	**($10,673,069)**	**($3,069,924)**

Note: cost and revenue assumptions are detailed in report section text.

10-Year TDP Implementation Plan

The implementation timeline for executing key service and capital improvements, either funded or unfunded in the 10-year plan, is shown in Figure 9-3.

Figure 9-3: 10-Year Implementation Plan (Service & Major Capital Improvements)



As detailed in the 10-year plan, there is a projected $39.5 million shortfall based on the estimated expenses compared to the projected revenues. Table 9-6 summarizes the unfunded needs included in the 10-year plan.

Table 9-6: 10-Year TDP Implementation Plan and Unfunded Needs

	Unfunded Expenses	Implementation Year(s)	% Unfunded	Total Amount Unfunded
Operating	Continuous Saturday Service	2024-2032	100%	$2,989,060
	Add Sunday Service	2025-2032	100%	$5,128,364
	Extend Weekday Service to 9 pm	2026-2032	100%	$3,469,993
	Increase Weekday Service to 30-Minutes	2027-2032	100%	$7,889,002
	Implement MOD Pilot Zones 1-2	2027-2032	50%*	$2,585,911
	New US 1 Route/MOD Pilot Zones 3-4	2028-2032		
Capital	New Cocoa Transfer Center - Construction	2025	50%*	$927,000
	New Centralized Facility Design & Construction	2029-2031	100%	$12,428,950
	Unfunded Replacement/New Vehicles	2024-2032	100%	$4,486,918
	Estimated Unfunded Expenses**	--	--	**$39,905,199**

*Assumes 50% funding through FDOT grant programs, requiring 50% unfunded local match.

**The total amount of unfunded needs in this table vs the 10-year plan detail is slightly higher due to a small funding surplus calculated in FY 2025. The use of those funds towards any unfunded needs would depend on the funding source, local match requirement, and other factors and is therefore not shown as a reduction in the total cost of these unfunded improvements.

10 Plan Implementation and Coordination

This section discusses key action items for Space Coast Area Transit to consider as it moves towards implementing this 10-year TDP. As this plan is intended to be a guiding document for the agency, it is acknowledged that adoption of this TDP by the Brevard County Commission does not guarantee that implementation will align with the recommended schedule or preclude the opportunity to delay or advance any projects. As priorities change, funding assumptions do not materialize, and/or more funding becomes available, the project implementation schedule in the 10-year plan can and should be adjusted.

Leverage Potential Near-Term Cost Savings from the COA

The COA effort identified operational changes that, once implemented, will reduce annual operating costs and improve service efficiencies. These changes should be implemented in the near term so that cost savings can begin to be realized and subsequent service and capital alternatives evaluated for incorporation into the refined fixed-route network. Space Coast Area Transit should continue to periodically assess its service efficiency in a similar manner at least every five years to maintain operational health.

Recruit and Retain Operators

Bus operator retention has long been a transit industry challenge and was exacerbated by the COVID-19 global pandemic. Like many agencies, Space Coast Area Transit is facing a critical operator shortage that is creating operational challenges. Identifying strategies to both recruit and retain operators is a key priority for the agency.

Regain Ridership Levels and Diversify Ridership Markets

Regaining ridership to pre-pandemic levels and diversifying ridership markets is a longer-term strategy to further the reach and benefit of Space Coast Area Transit. Older adults, tourists, and high school-age workers are examples of growing demographic groups in Brevard County where targeted marketing efforts can help attract first-time riders.

Explore Technological Advancements and Emerging Service Concepts

Space Coast Area Transit should remain on the forefront of technological advancements to improve service delivery, meet customer's needs, and make transit an easy and attractive mode of transportation in Brevard County. In the short-term, a more in-depth evaluation for implementing mobility on demand pilot services should be undertaken.

Continue to Engage FDOT and Space Coast TPO as Partners

Space Coast Area Transit's ongoing coordination with agency partners provides strong foundation for this 10-year plan. Continuing to coordinate transit planning activities

with the Space Coast TPO and funding opportunities with FDOT District 5 are both critical components of this 10-year plan.

Secure Support for Funding Opportunities

It is important to the success of this plan to ensure that the necessary funding is available each year to maintain existing services. To improve or expand services or capital improvements programmed in the TDP implementation plan, additional funding will be needed. A solid plan for how such funds would be used to expand public transit services, coupled with education of the wide-reaching benefits to the community, is critical to gaining the necessary policy leader, stakeholder, and public support for pursuing federal and state grant opportunities and securing local funding for required program matches.

Leverage the TDP as a Marketing and Educational Tool

The adopted TDP should be used as a tool to substantiate and explain the reasons for continued investments in transit services and capital needs. Space Coast Area Transit has put in a major effort to develop the TDP and the return on investment from conducting this planning effort should span at least over the next four years, until the next major update is undertaken. Space Coast Area Transit should capitalize on and continue to maximize the strategic blueprint contained in this TDP, whenever possible, to realize the recommended implementation plan. The TDP Annual Progress Report (APR) is another tool to help maintain this plan as a "living document." While it is an FDOT requirement, the APR also can be a critical opportunity to annually evaluate progress made towards the community vision and the benefits of the recommended alternatives.

The Executive Summary should be used as a promotional tool and an effective medium to continue generating support for the TDP's recommendations. This user-friendly summary document with key information from the TDP may work better than distributing a large report with technical details when soliciting support from the public and stakeholders.

Continued Community Engagement

Both Space Coast Area Transit and the Space Coast TPO conducted extensive public outreach to support this TDP process. The momentum from this effort should be leveraged and expanded to market other planning efforts, such as service initiation efforts, marketing programs and campaigns, and budget plans. A carefully crafted plan to promote the TDP after adoption will improve the likelihood of achieving the implementation plan.

Appendix A: Farebox Analysis Report

Space Coast Area Transit Fare Box Recovery Report
Brevard County, Florida May 2022

Current Farebox Recovery Ratio

The farebox recovery ratio (FRR) for Space Coast Area Transit, the public transportation provider for Brevard County, was 7.9% for fixed-route services in FY 2021, as reported to the NTD. This number reflects a 32.8% decrease over the five-year period from FY 2017 to FY 2021, primarily due to ridership decreases caused by the COVID-19 global pandemic.

Prior Year Fare Studies and Changes

Space Coast Area Transit's most recent fare change was during the COVID-19 pandemic, when fares were suspended for approximately six months. Currently, the one-way adult cash fare for fixed-route bus or trolley service is $1.50 ($0.75 reduced fare). The agency offers other fare specials, such as a 10-ride pass for $12.00 ($6.00 reduced) and a 30-day pass for $42.00 ($21.00 reduced).

Strategies Affecting Farebox Recovery Ratio

This TDP identifies strategies that will be used to maintain or increase the farebox recovery ratio, including the following:

- Using the recently-implemented Token Transit contactless payment smartphone application to enhance the fare collection process, increase efficiency, and minimize cash handling.
- Implementing ITS hardware and a mobile ticketing system.
- Uploading GTFS for real-time information and to support the 321 Transit app for customer trip planning.
- Continuing to monitor key performance measures for individual routes.
- Implementing short-term operational efficiency improvements recommended by the COA.
- Ensuring that transit is providing access to key activity and job centers in Brevard County, increasing the effectiveness of service.
- Continuing to evaluate TD and ADA passengers to transition to fixed-route services, as feasible, to increase transit use.
- Providing local employers with incentives for employee transit use.
- Providing convenient locations for bus passes purchases.
- Increasing ridership through enhanced marketing and community relations activities.
- Monitoring opportunities to secure additional funding to improve rider experience and connectivity.
- Conducting an on-board survey at least every four years to gather information on how to make services more convenient and useful to patrons.

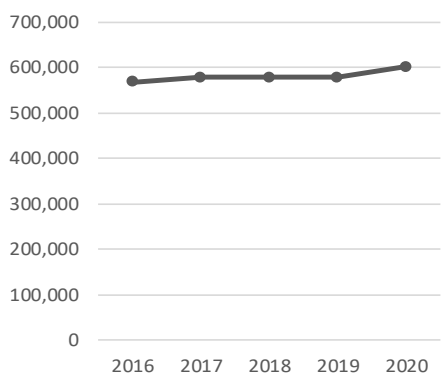
Appendix B: Peer and Trend Analysis

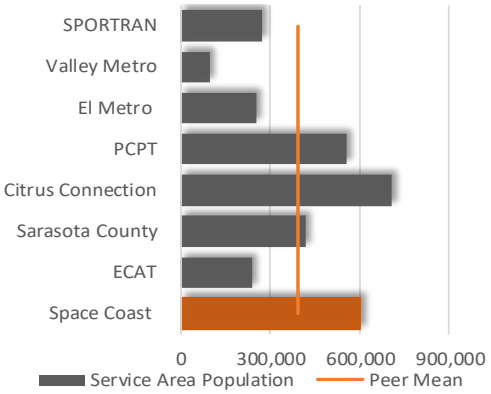
This appendix details the results of the peer and trend analysis of Space Coast Area Transit's fixed-route and demand-response services conducted for this TDP. Various performance measures obtained from validated NTD data were used to help evaluate and benchmark the effectiveness and efficiency of the agency's services over time and compared to the selected "peer" systems listed in Table A-1.

Table B-1: Fixed-Route Service and Demand-Response Peer Agencies

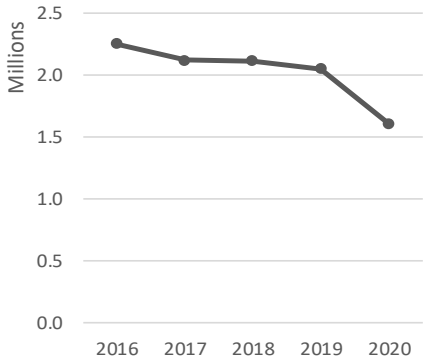
Fixed-Route Peer Agencies	Demand-Response Peer Agencies
Escambia County Area Transit (FL)	Central Midlands Transit (SC)
Sarasota County Area Transit (FL)	STAR Transit (TX)
Valley Metro (VA)	Escambia County Area Transit (FL)
Citrus Connection (FL)	Charlotte County Transit (FL)
GoPasco (FL)	GreenWay Public Transit (NC)
El Metro (TX)	Mountain Mobility (NC)
SporTran (LA)	LeeTran (FL)

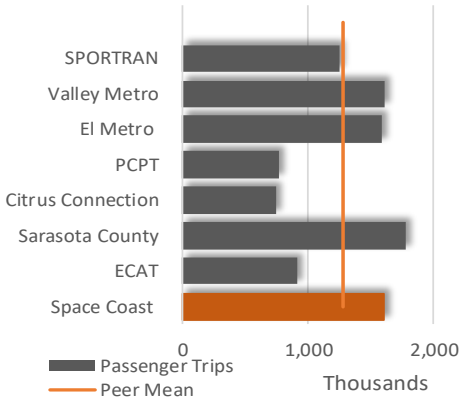
Fixed Route Service Area Population



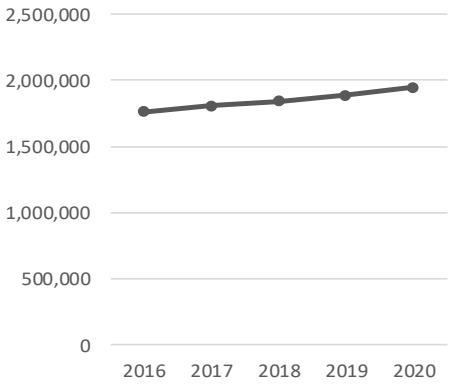


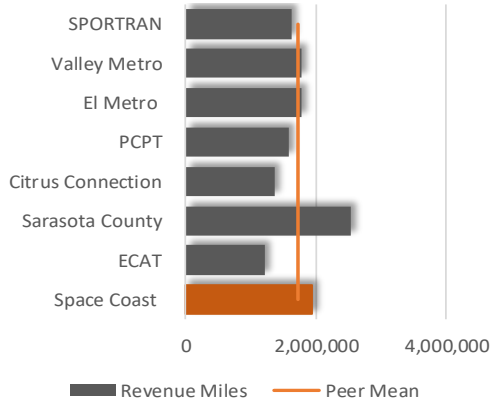
Fixed Route Passenger Trips



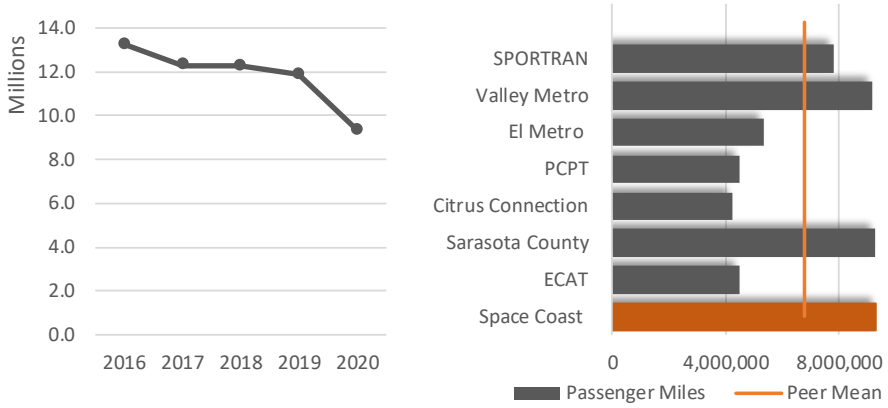


Fixed Route Revenue Miles

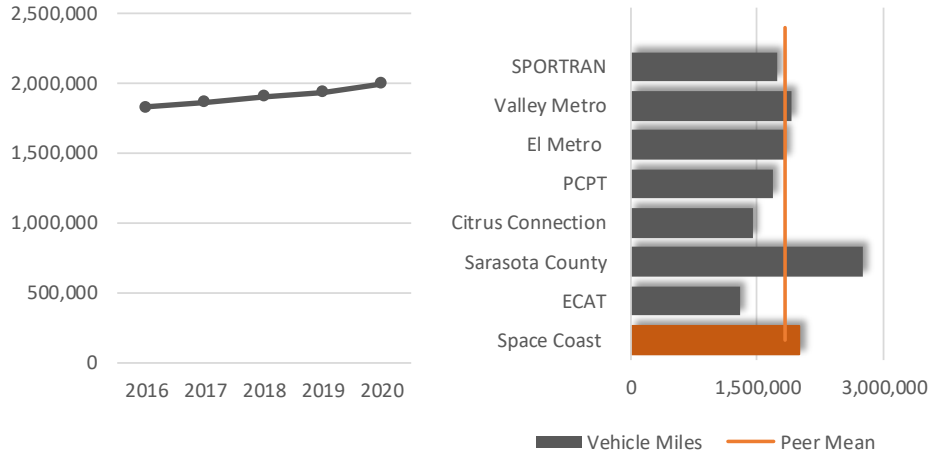




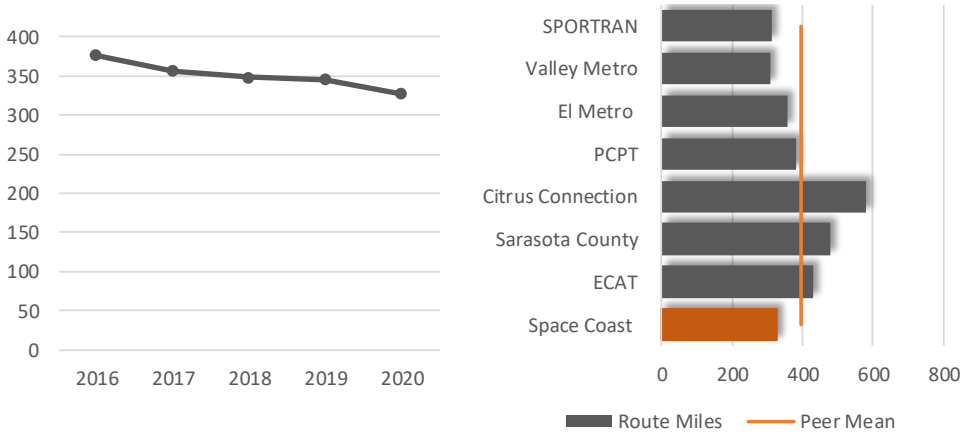
Fixed Route Passenger Miles



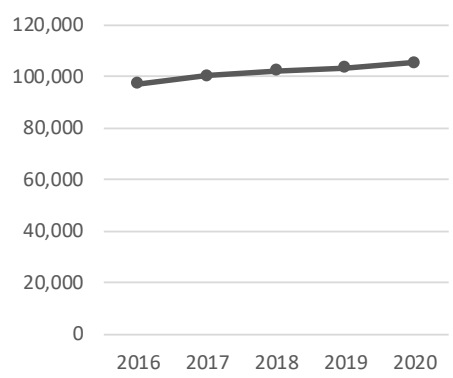
Fixed Route Vehicle Miles

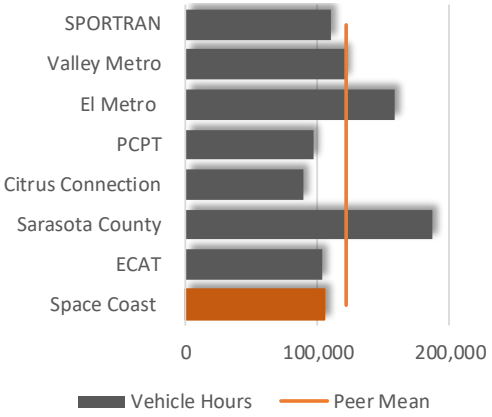


Fixed Route Route Miles

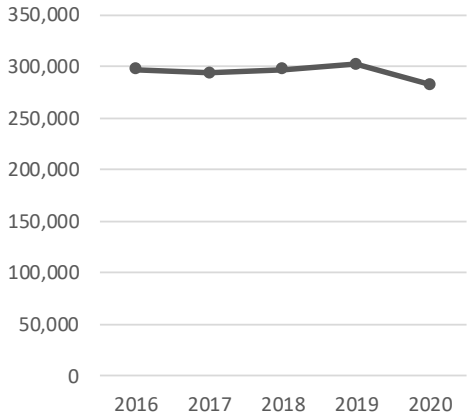


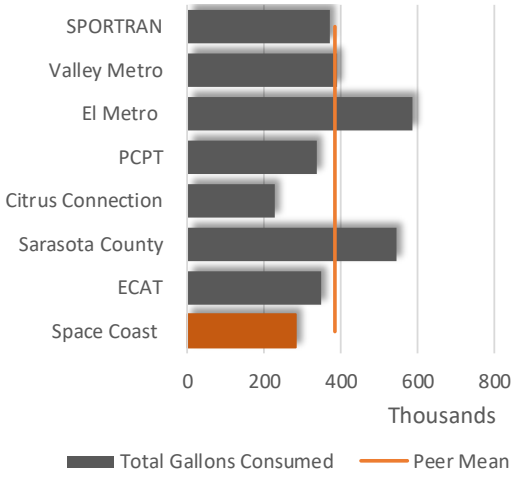
Fixed Route Vehicle Hours



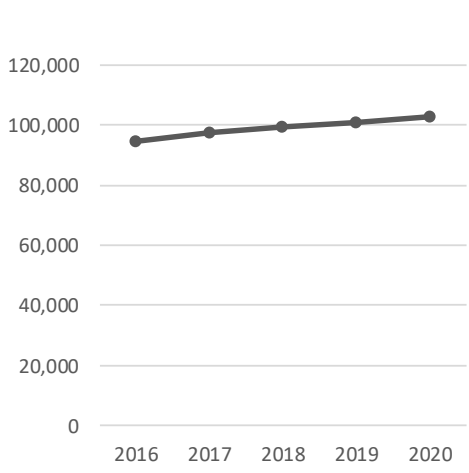


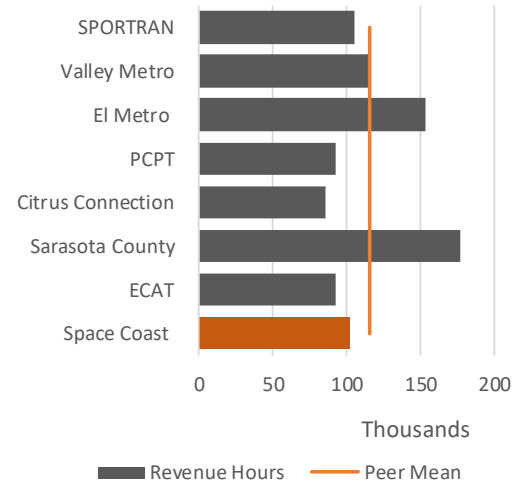
Fixed Route Total Gallons Consumed



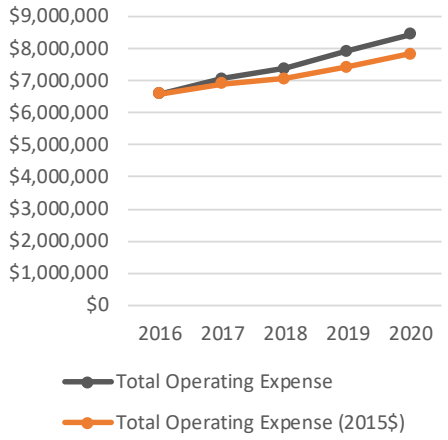


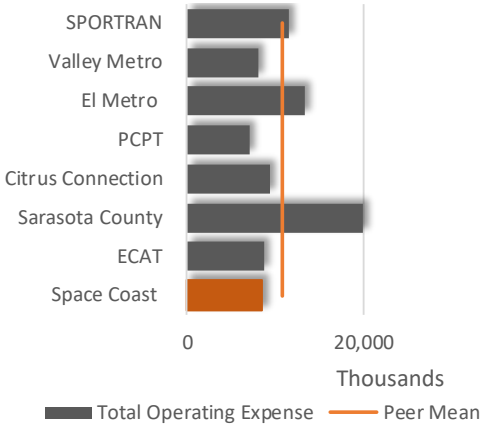
Fixed Route Total Revenue Hours



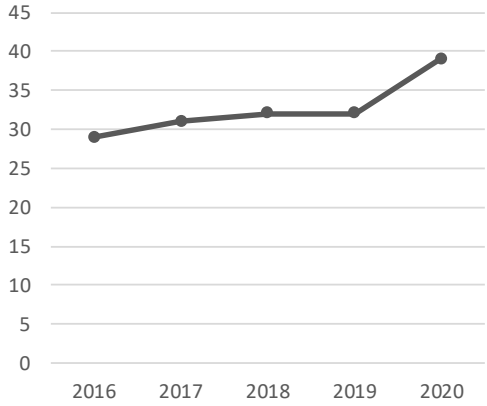


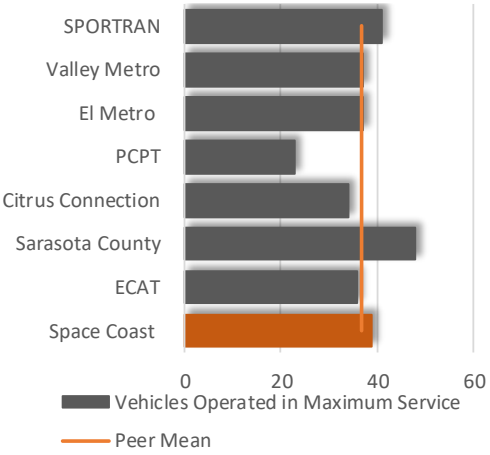
Fixed Route Total Operating Expense



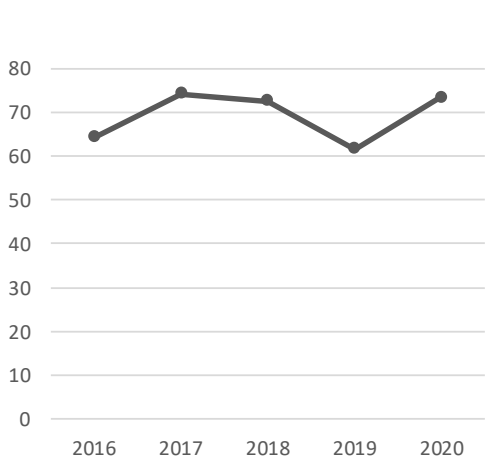


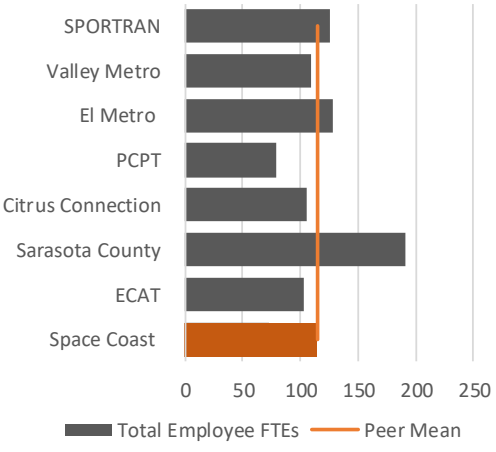
Fixed Route Vehicles Operated in Maximum Service



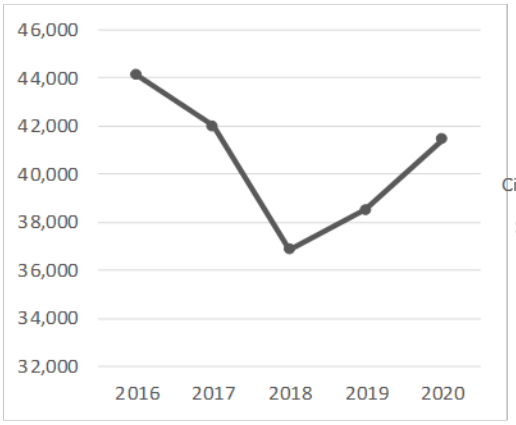


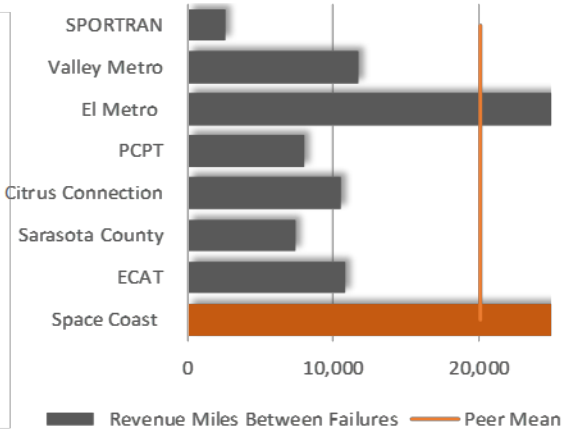
Fixed Route Employee FTEs



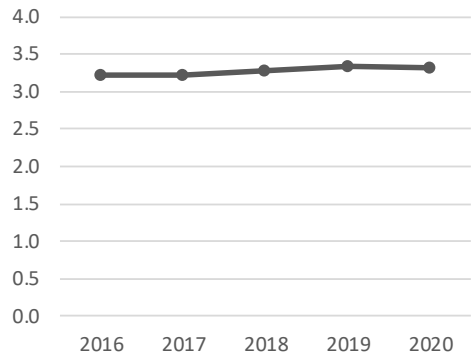


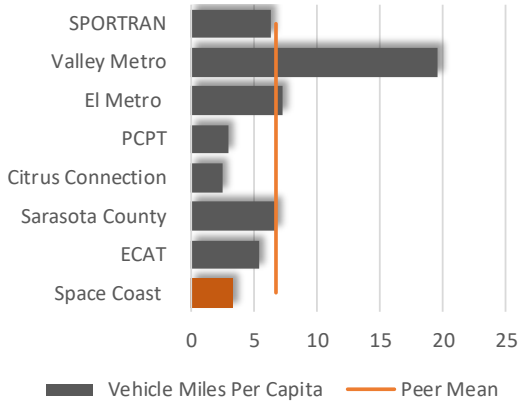
Fixed Route Revenue Miles Between Failures



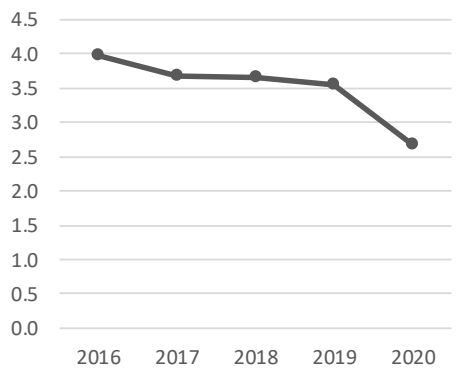


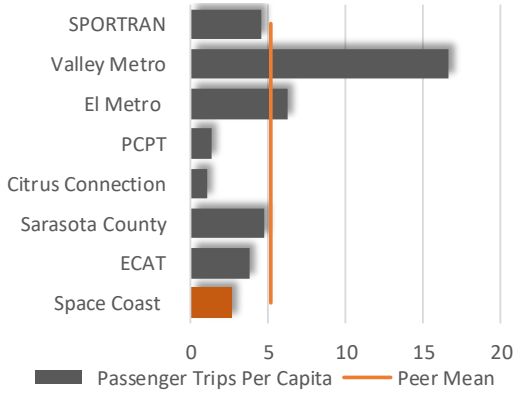
Fixed Route Vehicle Miles per Capita



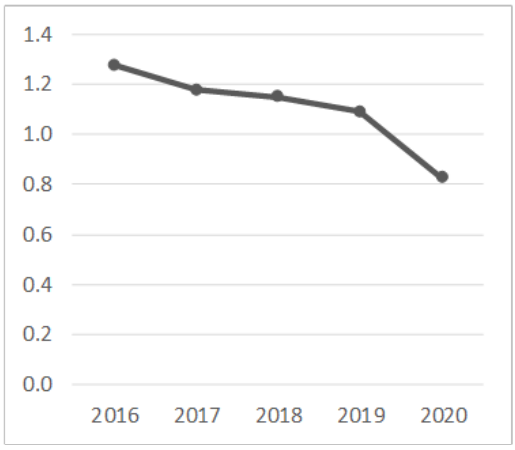


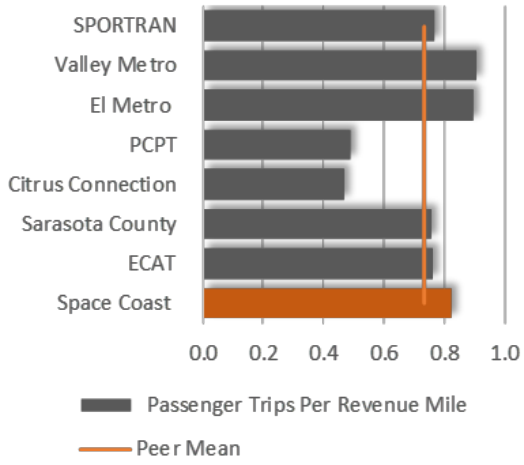
Fixed Route Passenger Trips per Capita



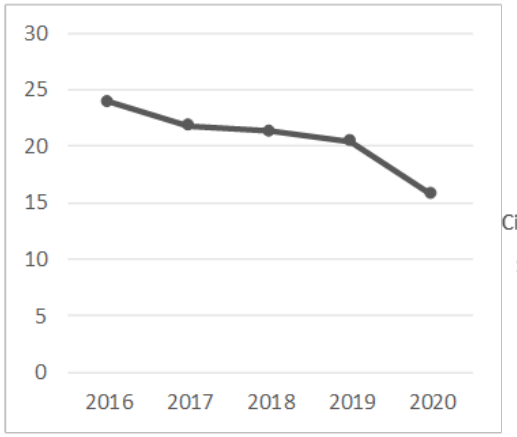


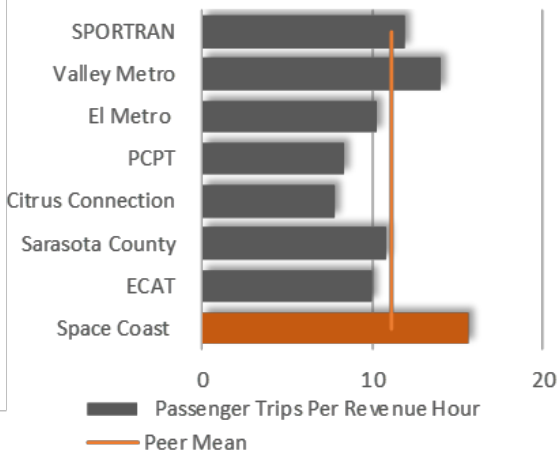
Fixed Route Passenger Trips per Revenue Mile



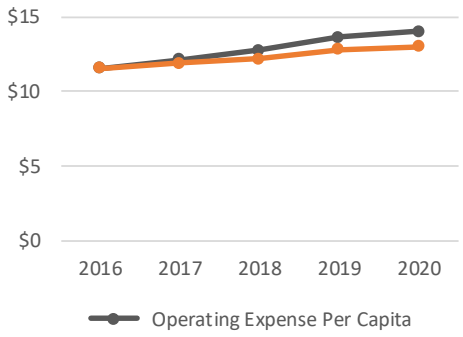


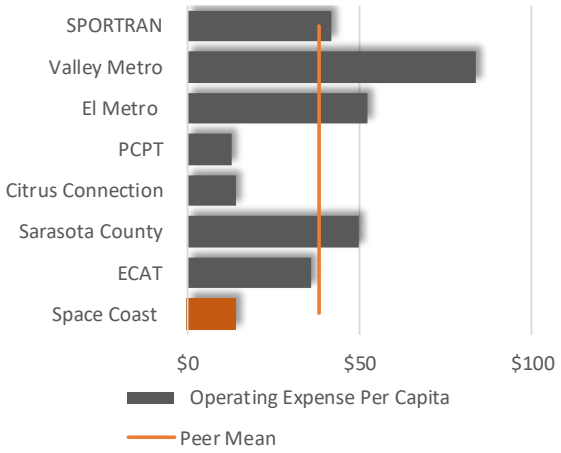
Fixed Route Passenger Trips per Revenue Hour



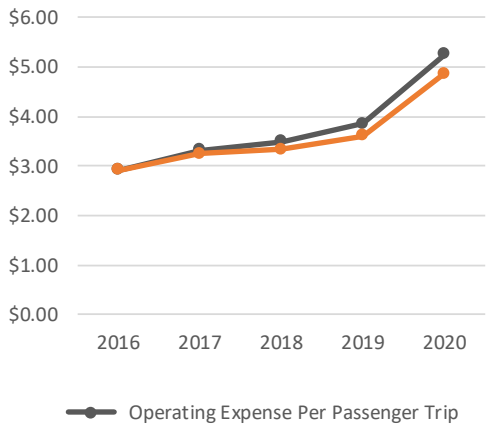


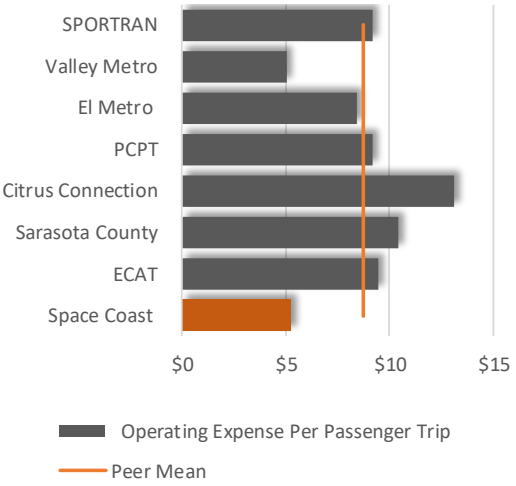
Fixed Route Operating Expense per Capita



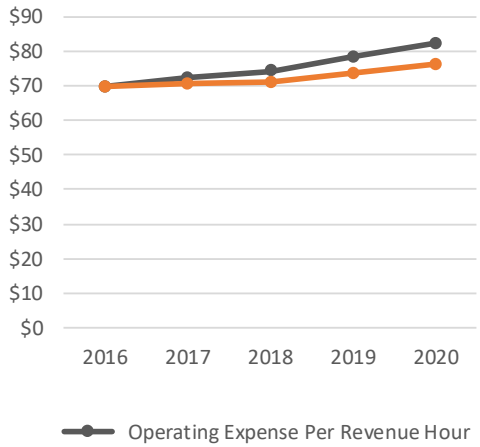


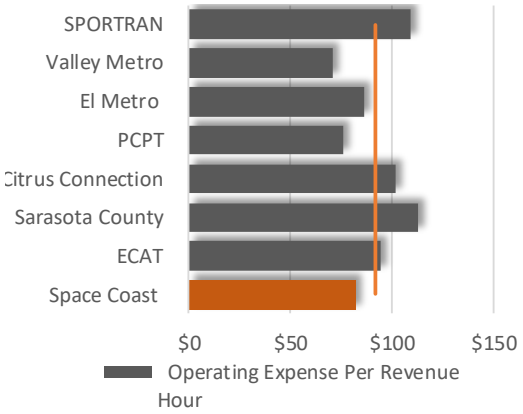
Fixed Route Operating Expense per Passenger Trip





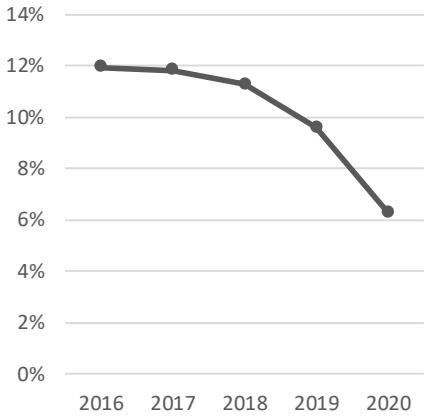
Fixed Route Operating Expense per Revenue Hour

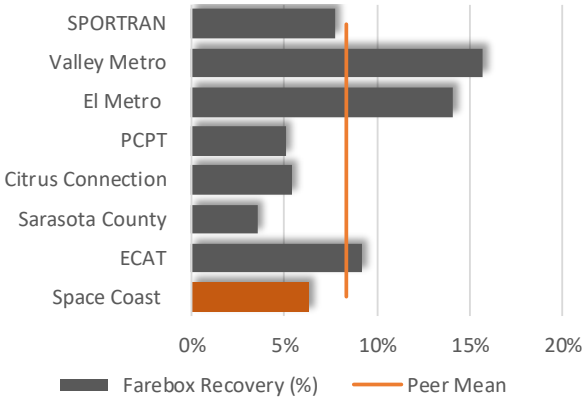




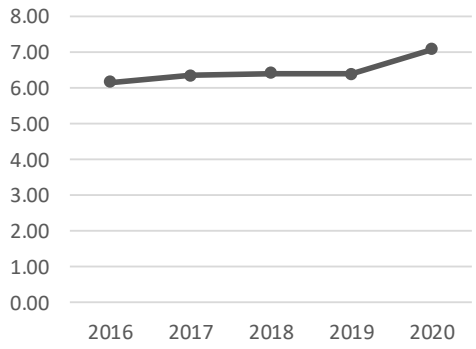
The a

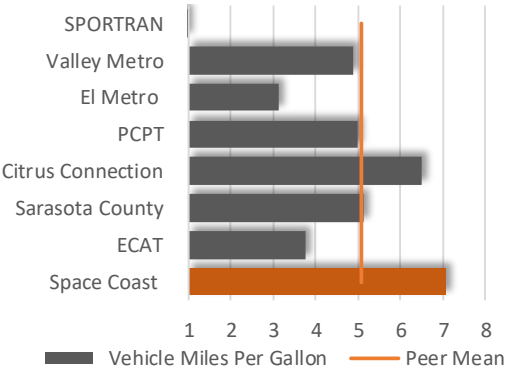
Fixed Route Farebox Recovery (%)



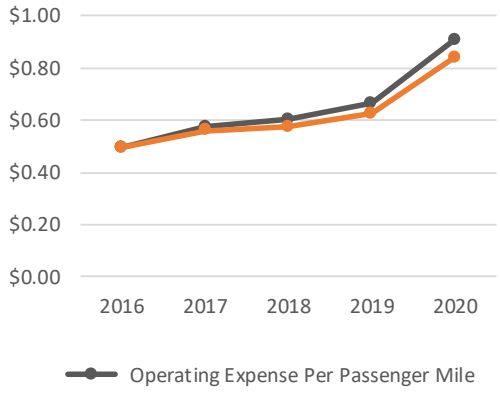


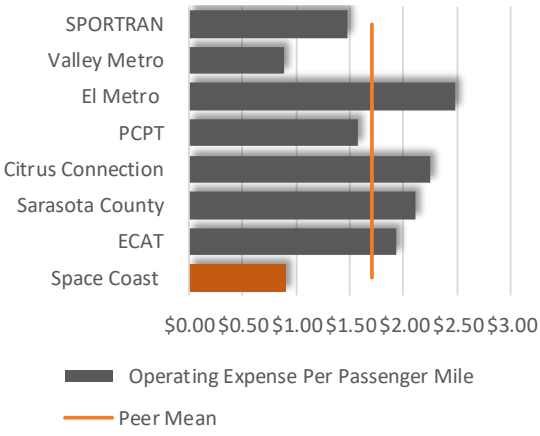
Fixed Route Vehicle Miles per Gallon



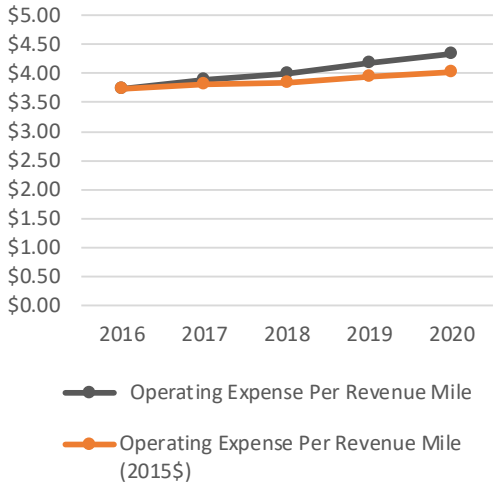


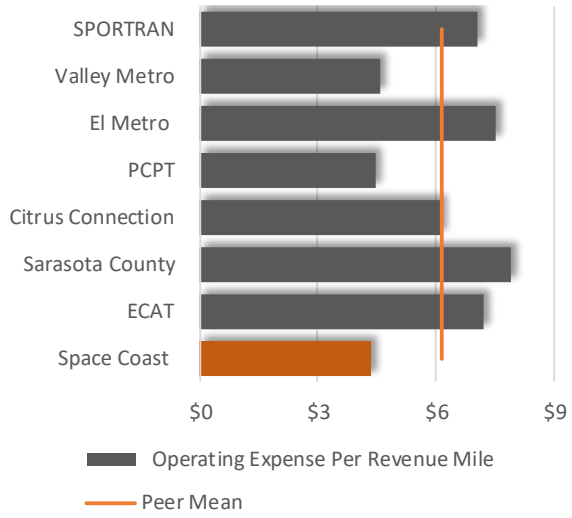
Fixed Route Operating Expense per Passenger Mile



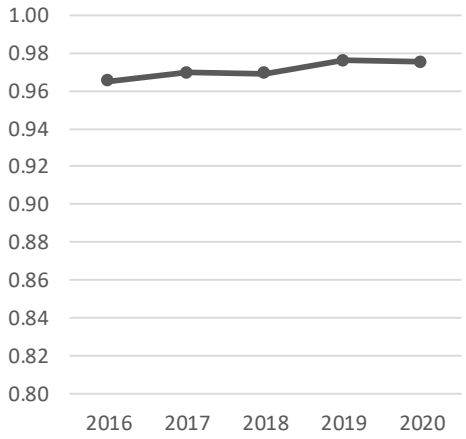


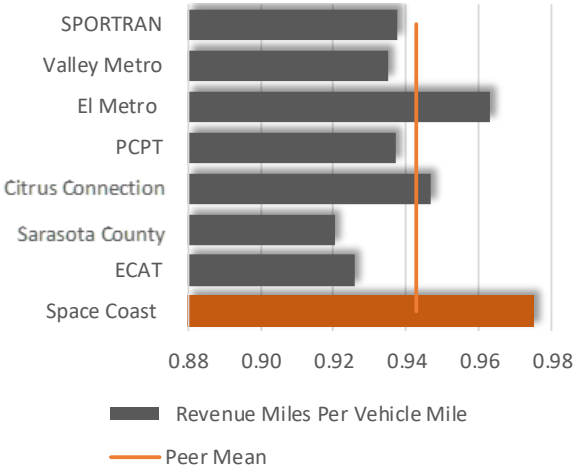
Fixed Route Operating Expense per Revenue Mile



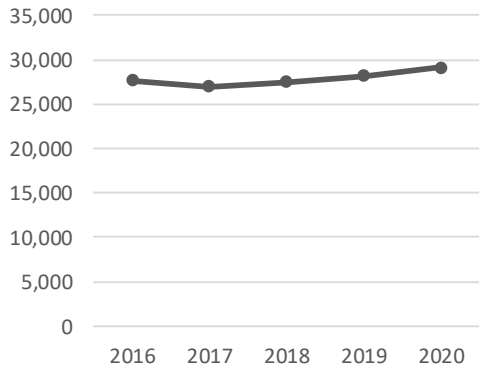


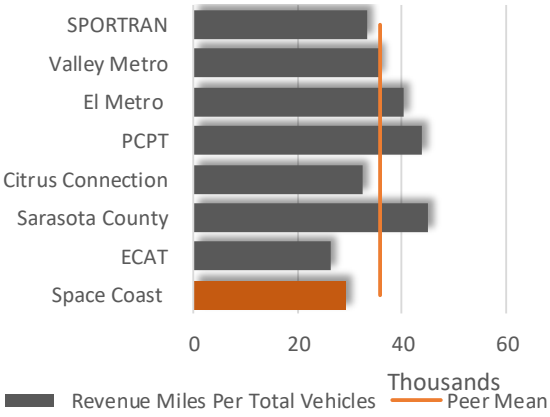
Fixed Route Revenue Miles per Vehicle Mile



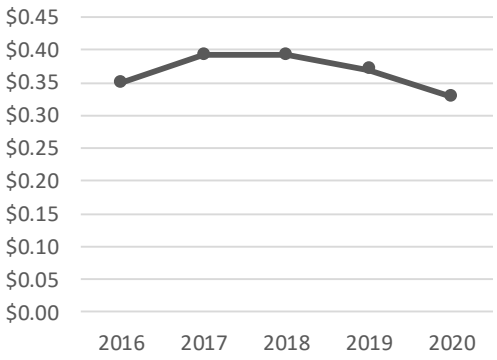


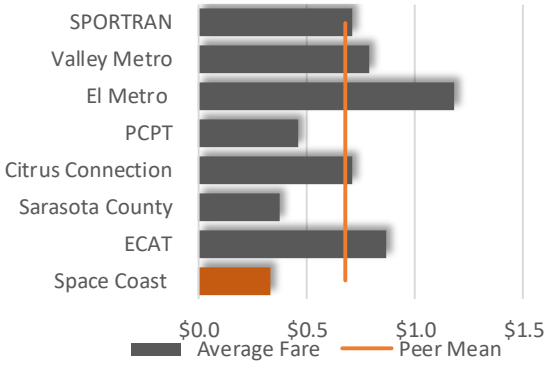
Fixed Route Revenue Miles per Total Vehicles



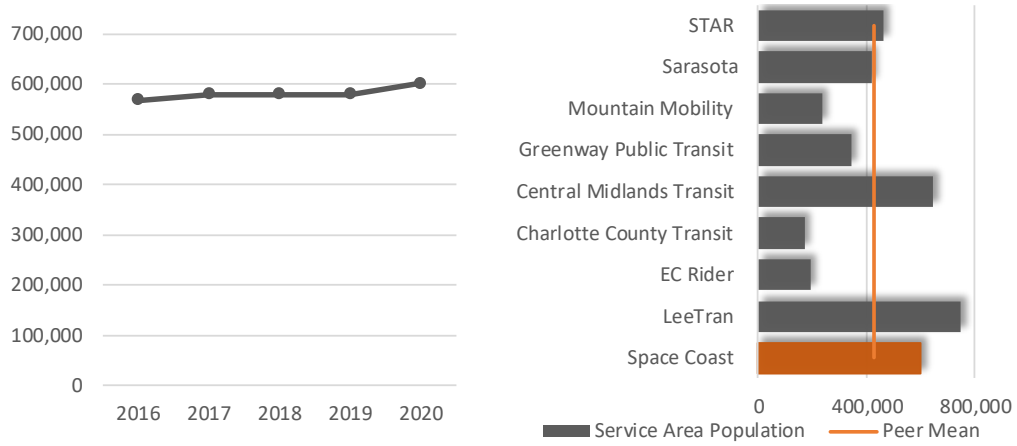


Fixed Route Average Fare

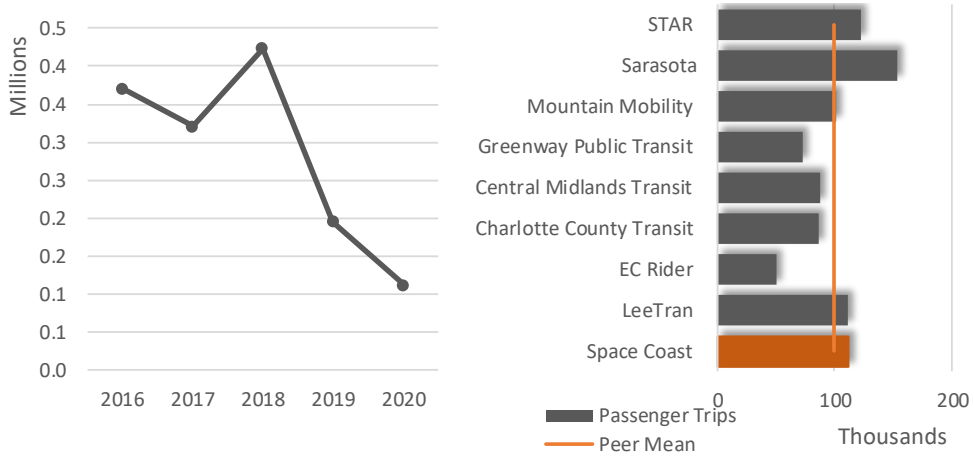




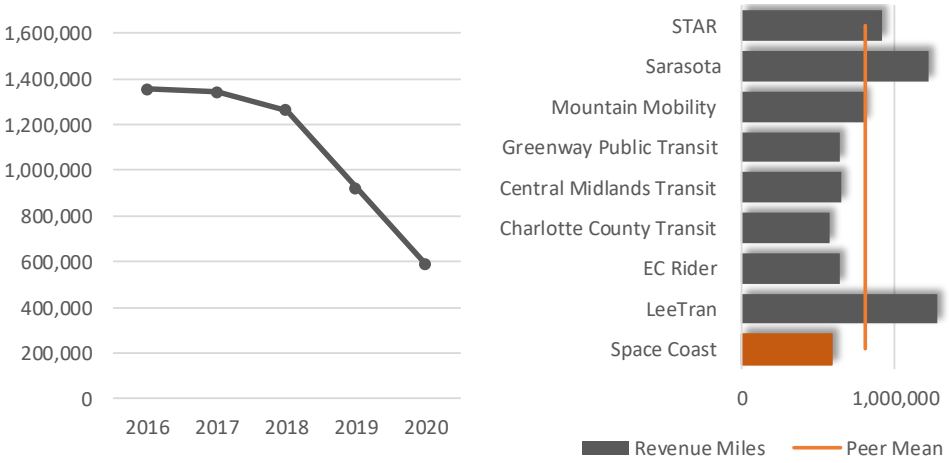
Demand Response Service Area Population



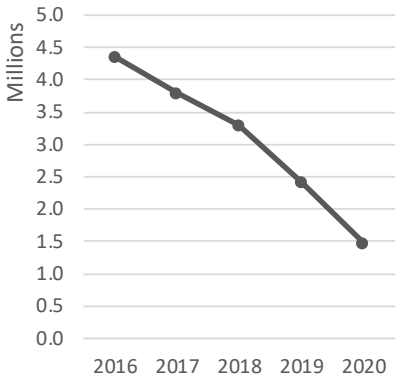
Demand Response Passenger Trips

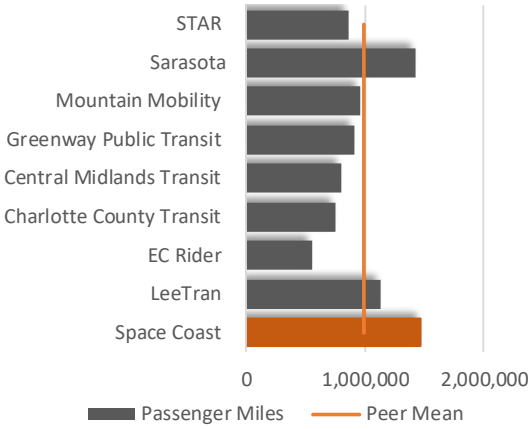


Demand Response Revenue Miles

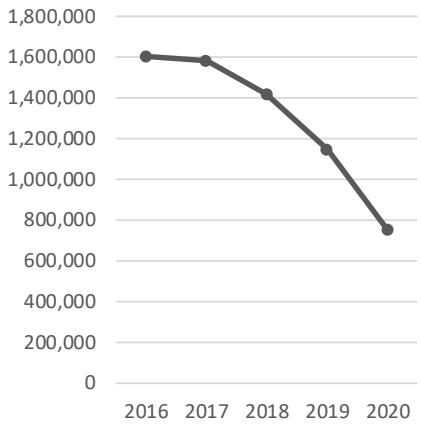


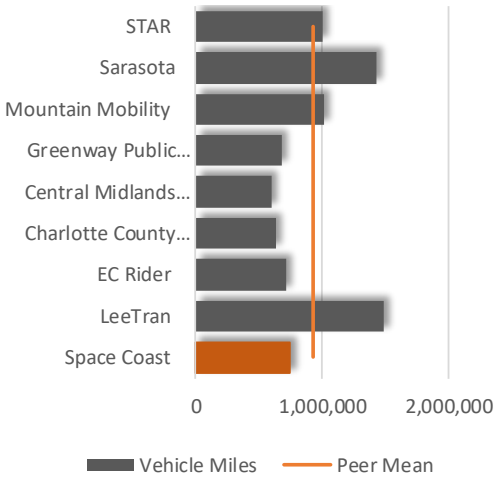
Demand Response Passenger Miles



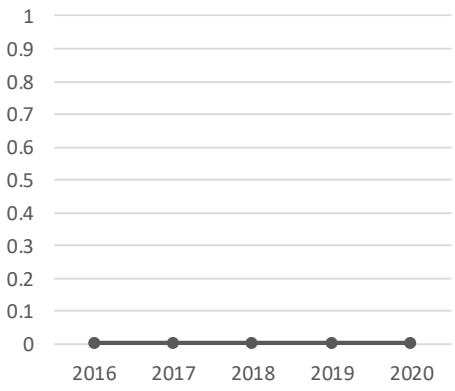


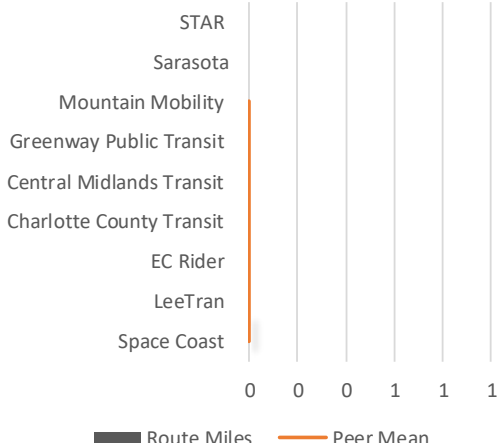
Demand Response Vehicle Miles



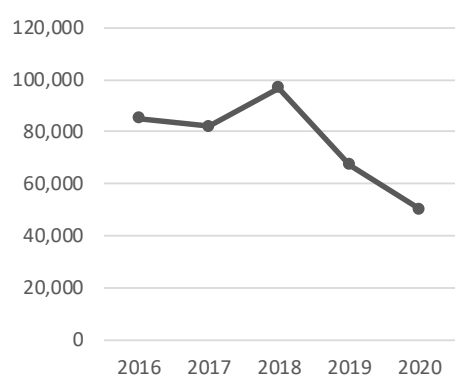


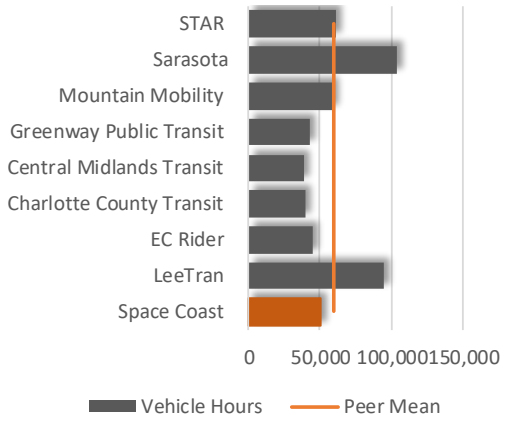
Demand Response Route Miles



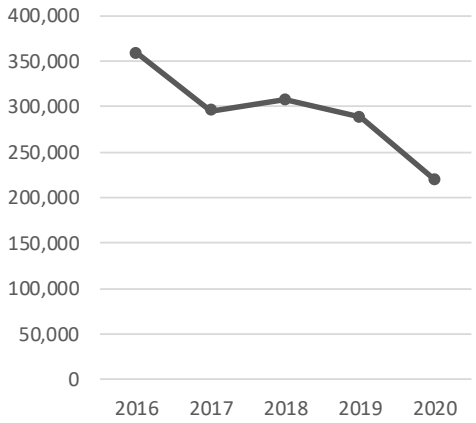


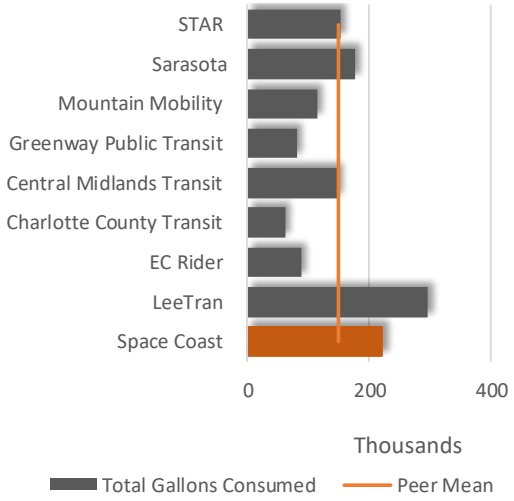
Demand Response Vehicle Hours



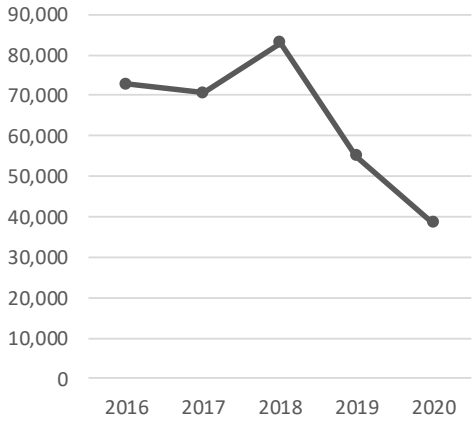


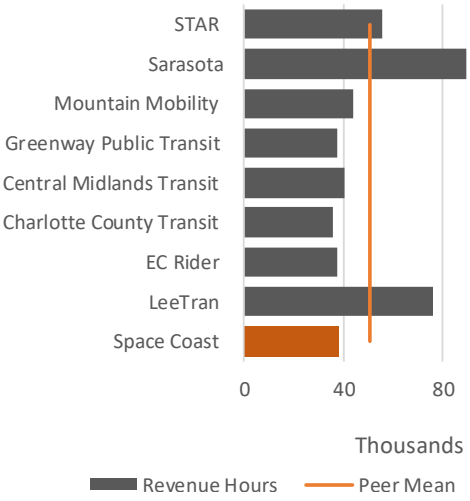
Demand Response Total Gallons Consumed



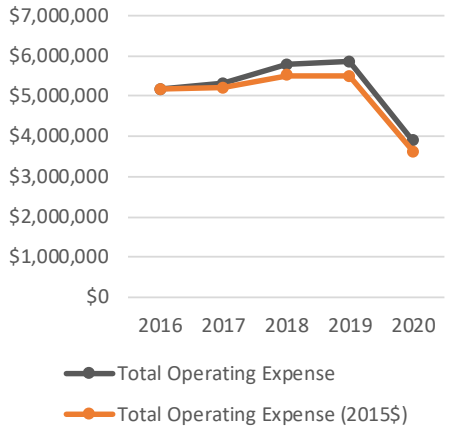


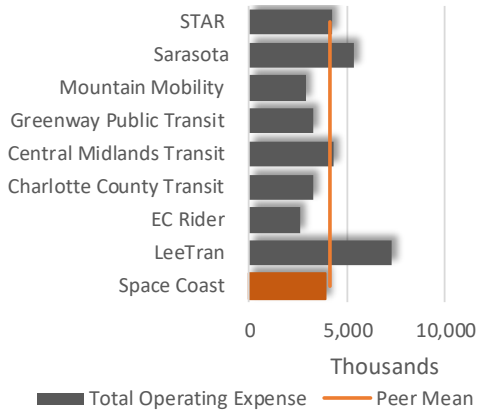
Demand Response Total Revenue Hours



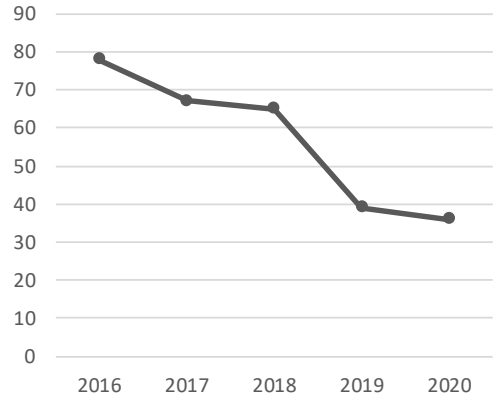


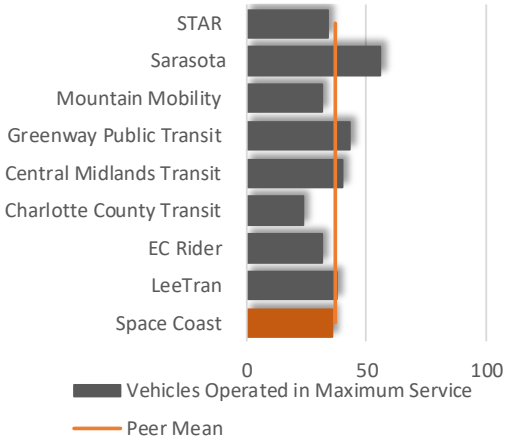
Demand Response Operating Expense



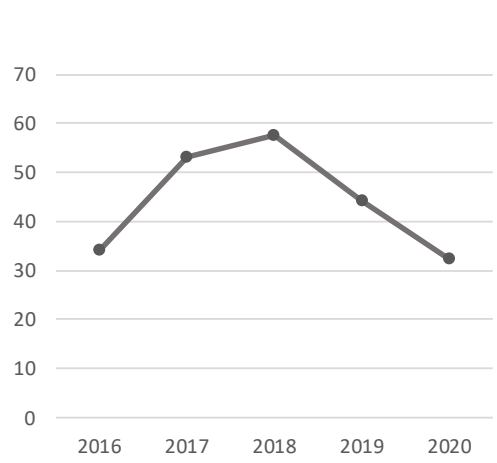


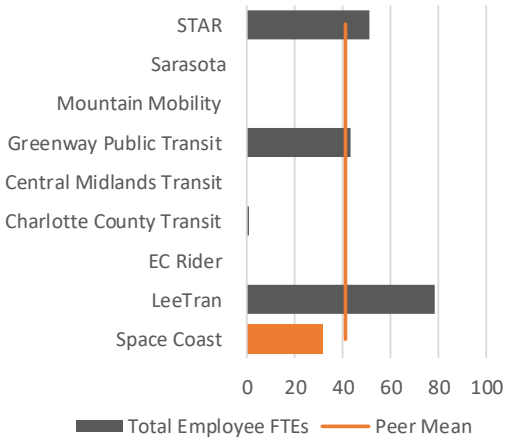
Demand Response Vehicles Operated in Maximum Service



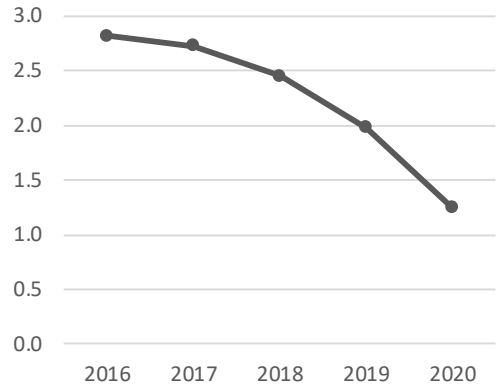


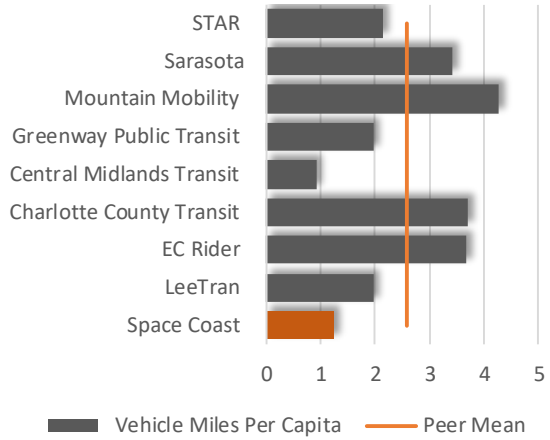
Demand Response Total Employee FTEs



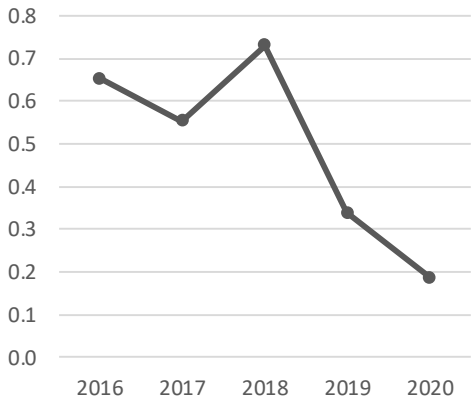


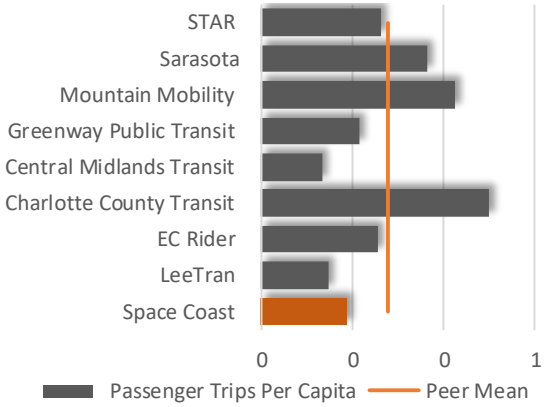
Demand Response Vehicle Miles per Capita





Demand Response Passenger Trips per Capita





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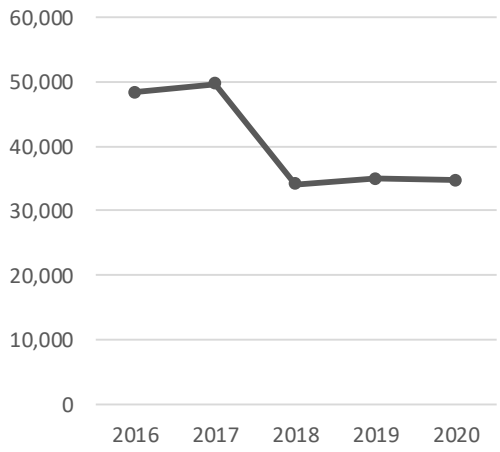
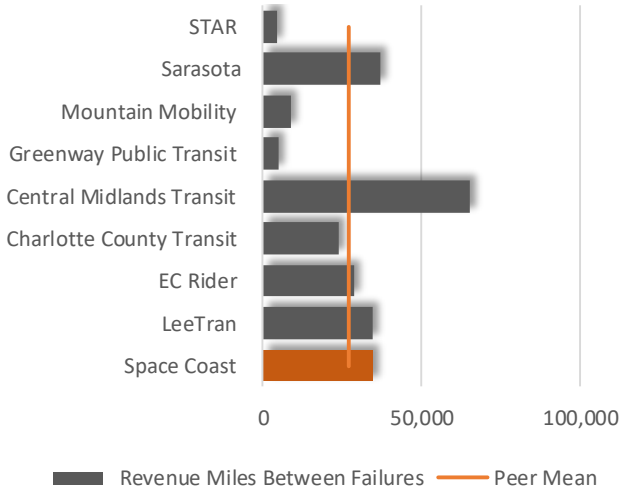
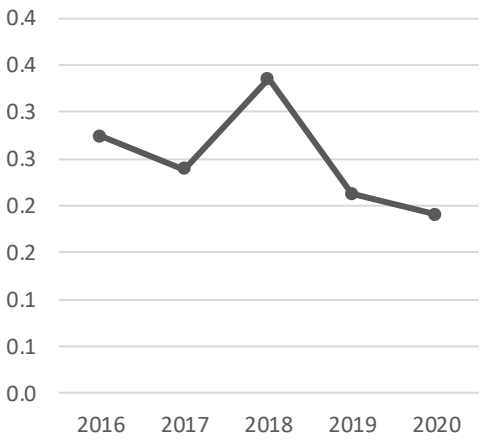
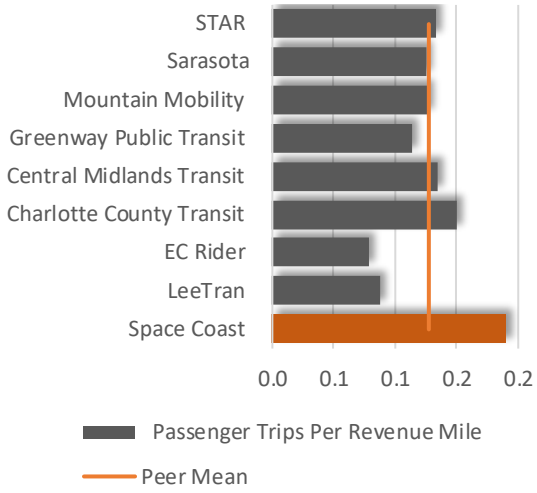


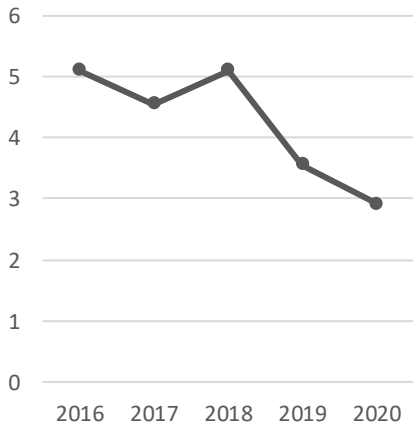


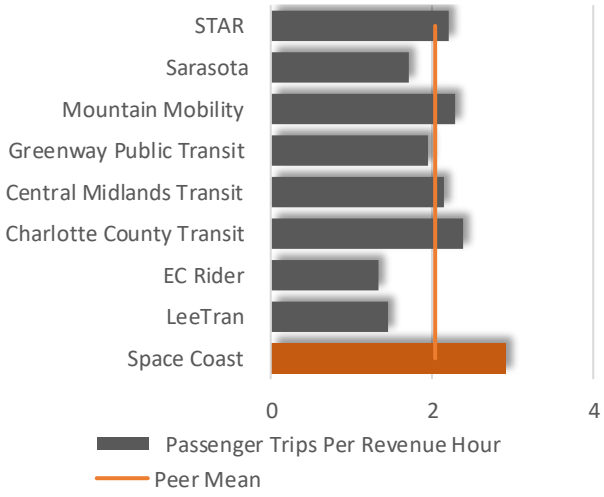
Demand Response Passenger Trips per Revenue Mile



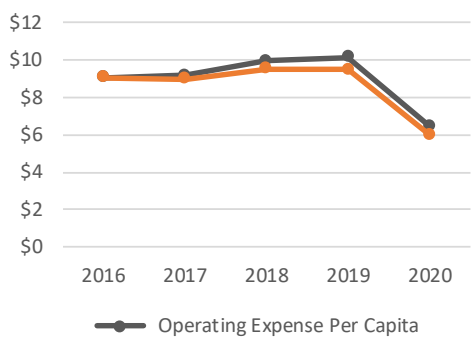


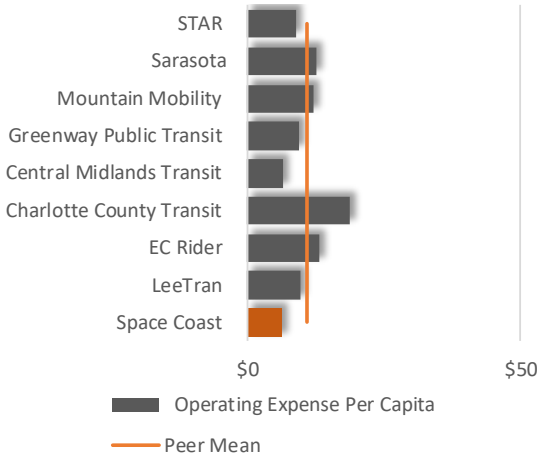
Demand Response Passenger Trips per Revenue Hour



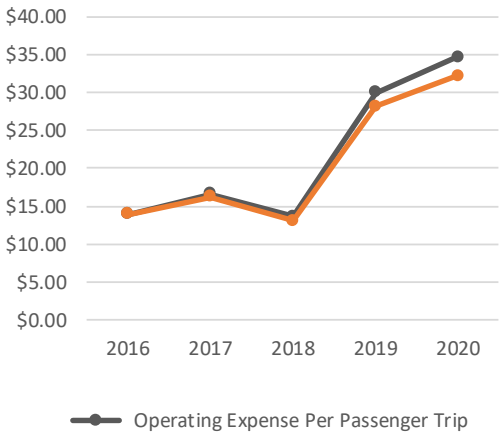


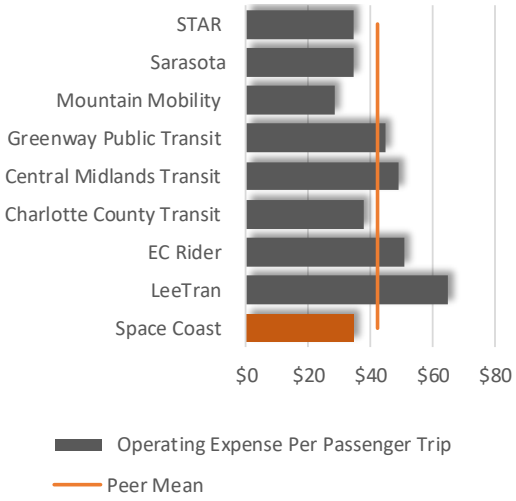
Demand Response Operating Expense per Capita



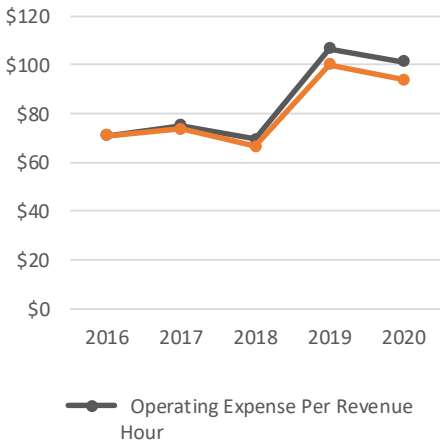


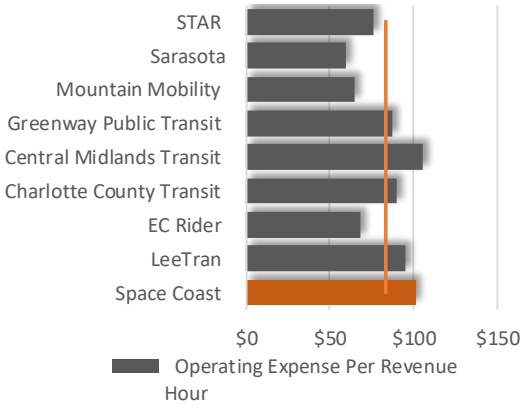
Demand Response Operating Expense per Passenger Trip



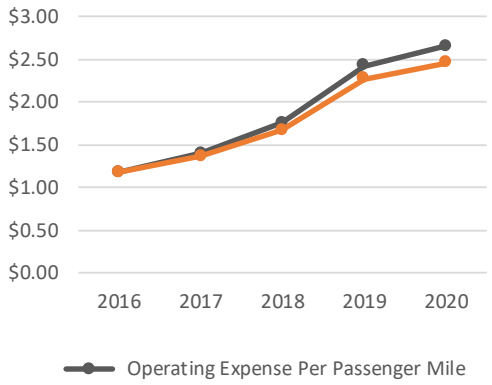


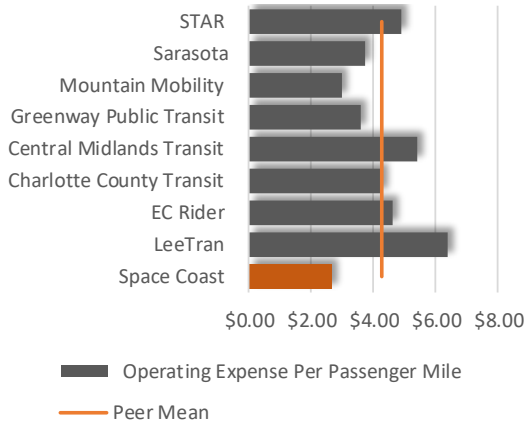
Demand Response Operating Expense per Revenue Hour



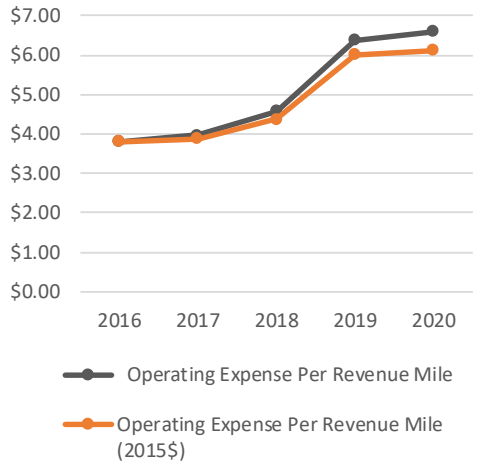


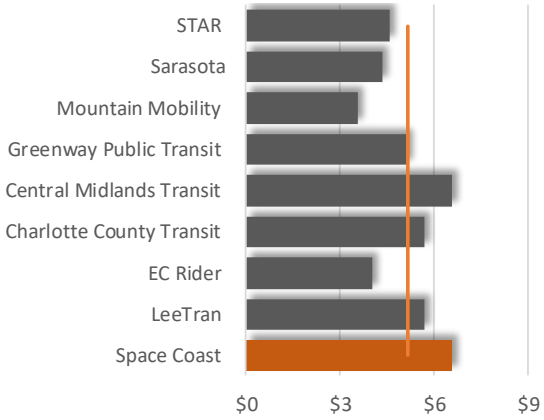
Demand Response Operating Expense per Passenger Mile



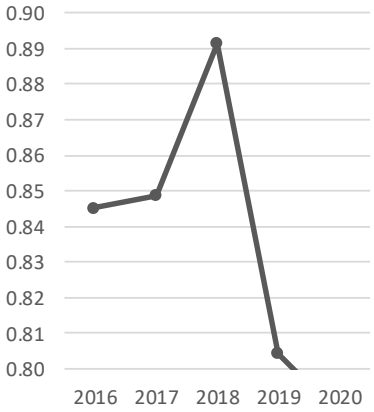


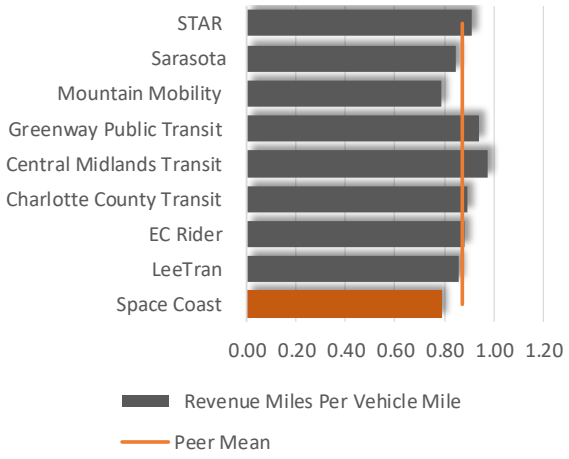
Demand Response Operating Expense per Revenue Mile



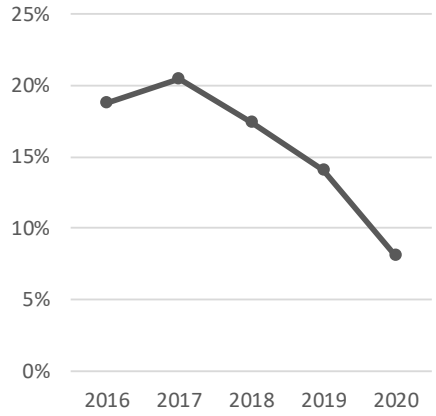


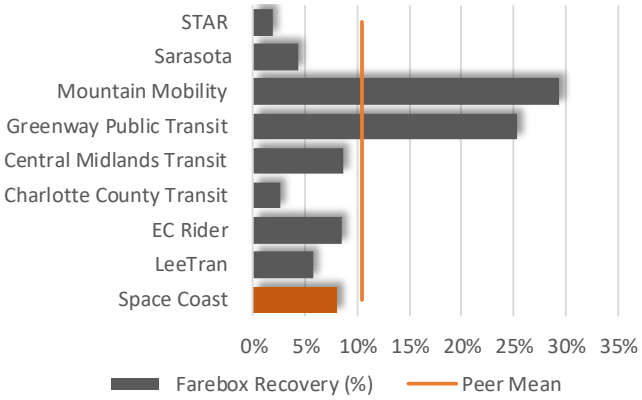
Demand Response Revenue Miles per Vehicle Mile



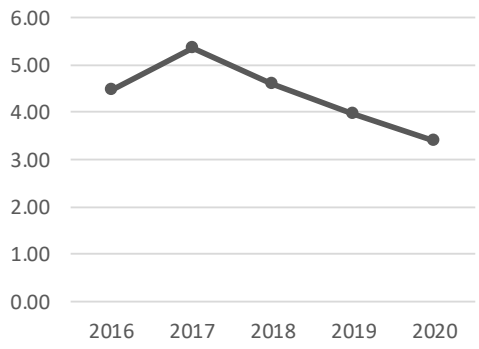


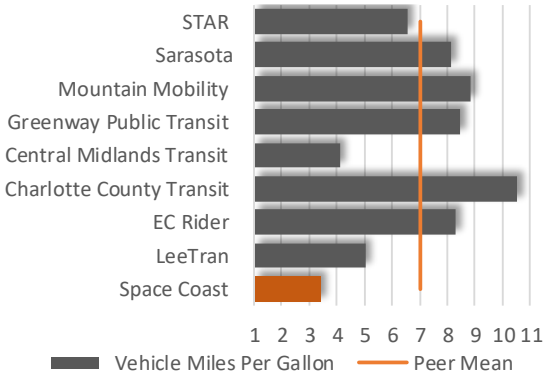
Demand Response Farebox Recovery (%)



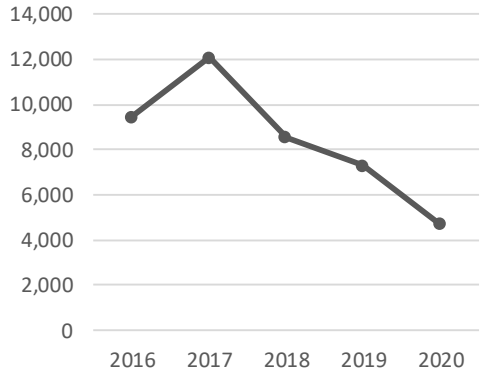


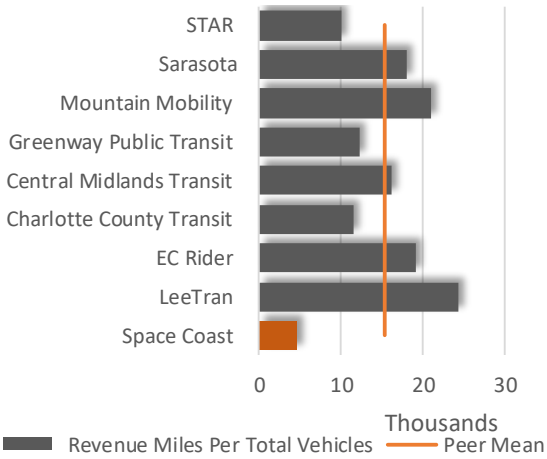
Demand Response Vehicle Miles per Gallon



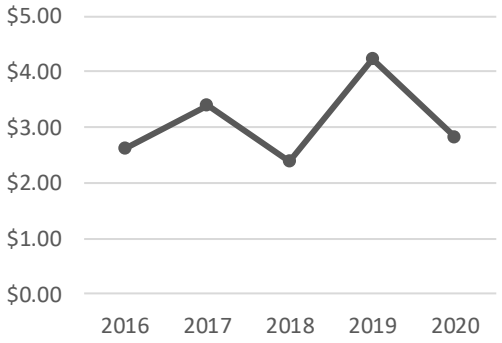


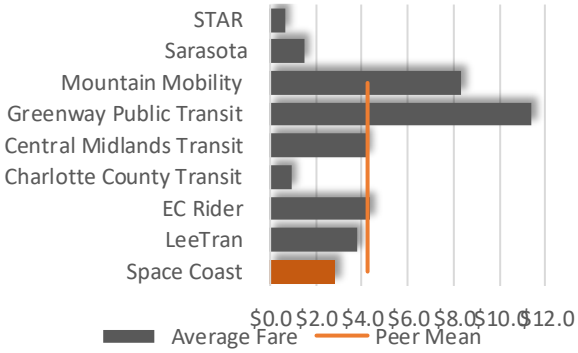
Demand Response Revenue Miles per Total Vehicles





Demand Response Average Fare





Appendix C: Public Involvement Plan

FDOT

Florida Department of Transportation

RON DESANTIS
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720

KEVIN J. THIBAULT, P.E.
SECRETARY

March 16, 2022

Terry Jordan, Transit Director
Space Coast Area Transit
401 S. Varr Avenue
Cocoa, Florida 32922

RE: Public Involvement Plan Space Coast Area Transit FY 2023-32 Transit Development Plan – FDOT Technical Assistance Comments

Dear Mr. Jordan:

The Florida Department of Transportation (FDOT), District Five, has reviewed the Public Involvement Plan (PIP) for Space Coast Area Transit's FY 2023-32 Transit Development Plan (TDP) major update. FDOT commends Space Coast Area Transit for preparing a public involvement plan outlining a variety of outreach strategies for stakeholder involvement as part of the TDP major update.

Multimodal transportation choices including high quality public transportation services is a primary objective of the FDOT as memorialized in the Florida Transportation Plan and the Florida Strategic Highway Safety Plan. In light of this objective and as a TDP Review Committee partner, FDOT has reviewed the PIP and determined that it meets the requirements of Florida Administrative Code 14-73.001 for public involvement, which includes a description of the process used and the public involvement activities. FDOT offers the following technical assistance comments to enhance the public involvement process of the TDP update.

- The PIP references several outreach activities and strategies. However, there are no timelines or schedules associated with the overall public participation process or the individual outreach activities. It would be helpful to share a proposed schedule of activities so the Department can have a general understanding of the public participation timeline. Although specific dates might not have been set, a general timeline would be useful for evaluation.
- The PIP commits to compliance with Space Coast Area Transit's Title VI Program and Space Coast Transportation Planning Organization's Public Participation Plan to ensure meaningful participation of minority and low-income populations throughout the TDP process. Based on other TDPs previously submitted to the Department, representation at public meetings and via online surveys have largely been by non-riders. This leads to input on potential alternatives primarily from non-riders. The Department encourages Space Coast Area Transit to seek participation from current riders, traditionally underserved populations and people with limited access to online resources, as much as possible.

Thank you for providing FDOT with the opportunity to review and comment on the Public Involvement Plan of the FY 2022-31 TDP Major Update. If you have any questions, please contact me at (321) 319-8175 or jo.santiago@dot.state.fl.us.

Sincerely,

Jo Santiago
Transit Intermodal Supervisor
Office of Modal Development
FDOT District Five

C: Luciana Taylor, Transit Programs Administrator, District Five Office of Modal Development

Space Coast Area Transit

FY 2023-2032 Transit Development Plan

Public Involvement Plan

January 2022

Prepared by

Tindale Oliver
is now
benesch

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1 Introduction

The Brevard County Board of County Commissioners provides public transportation in Brevard County through Space Coast Area Transit. The agency was formed in 1985 to consolidate public transit services provided by two competing systems; Brevard Transportation Authority and Consolidated Agencies Transportation System. Today, Space Coast Area Transit provides fixed route bus service, complementary paratransit service (as required under the Americans with Disabilities Act [ADA]), vanpools, and volunteer transportation for older adults.

Space Coast Area Transit is preparing an update of its Transit Development Plan (TDP) to guide the development of the transit system over the next 10 years. As a recipient of Florida Department of Transportation (FDOT) Block Grant funding, Space Coast Area Transit must update its 10-year TDP every 5 years; therefore, this update will cover the FY 2023-2032 planning horizon.

The TDP update is also being prepared in conjunction with a comprehensive operational analysis (COA). The COA will assess the transit system's performance and identify specific near-term improvements to improve effectiveness and efficiency, while also benefitting riders.

This Public Involvement Plan (PIP) serves to guide the public outreach efforts for Space Coast Area Transit's TDP update process. It also identifies recent public outreach efforts undertaken by other agencies, the results of which will be reviewed and integrated into the TDP as appropriate.

Public Involvement Plan Purpose

This PIP has been developed in accordance with Florida Rule 14-73.001, which requires that the TDP preparation include the following activities:

- A PIP approved by FDOT. As an alternative, the local metropolitan planning organization's Public Involvement Plan (PPP), approved by both the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) can be used to guide the TDP public involvement process. The Space Coast Transportation Planning Organization (TPO) serves as the metropolitan planning organization for Brevard County, which includes the Palm Bay–Melbourne–Titusville urbanized area, as designated by the US Census Bureau. This PIP has been prepared consistent with the Space Coast TPO's PPP.
- Description of the process used, and the public involvement activities undertaken for the TDP.
- Solicitation of comments from FDOT, the TPO, and the local Workforce Development Board (i.e., CareerSource Brevard) on the mission, goals, objectives, alternatives, and 10-year implementation program.
- Notification of outreach activities and effort to FDOT, the TPO, and the Workforce Development Board.

To ensure that Space Coast Area Transit meets these requirements, this PIP will facilitate a public involvement process for the TDP effort that will encompass a range of activities that provide ample opportunity for participation by the required, and other interested, entities.

It should be noted that the PIP is written such as to match the scope of services, while also providing the greatest flexibility possible as the TDP is being developed. While the types of activities are generally set, the exact time frames, formats, or quantities may change to allow Space Coast Area Transit to accomplish the best results with the resources made available for this aspect of the TDP update process.

Public Involvement Objectives

In addition to producing a compliant TDP, the PIP has been designed to ensure that the resulting 10-year plan will provide meaningful outcomes to the communities within Space Coast Area Transit's service area by:

- Providing a multi-faceted communication model that will keep the public, including both current riders and non-riders, and all stakeholder groups informed about the status of the project.
- Clearly defining the TDP purpose and objectives early in the process.
- Identifying and documenting the concerns, issues, and needs from the key stakeholders.
- Providing stakeholders with baseline information about Space Coast Area Transit and keep them fully informed throughout the study.
- Encouraging participation of all stakeholder groups within the project area while paying special attention to underserved communities.
- Using established community infrastructure (i.e., farmer's markets, shopping centers, public transit transfer centers, etc.) as an opportunity to engage the community in-person.
- Providing frequent opportunities and a consistent access point for community input.
- Identifying tools to gather information from stakeholders who cannot participate in meetings, such as via email, online surveys, etc.

Space Coast Area Transit Title VI Program

Space Coast Area Transit, as a public transit agency and recipient of federal and state funding, is required to adhere to federal non-discrimination regulations, including Title VI of the Civil Rights Act of 1964. Space Coast Area Transit maintains a Title VI Program outlining the policies, procedures, services, and steps that will guide the public involvement activities outlined in this PIP to ensure inclusive and representative participation, including those with disabilities, limited English proficiency (LEP), and/or other factors that may hinder their participation. By reference, this PIP integrates the policies and procedures of the agency's Title VI Program into the programs, activities, and services of this PIP.

In accordance with Space Coast Area Transit's Title VI Program, ensuring meaningful participation of minority and low-income populations throughout the TDP process is a major objective of this PIP. The following steps will be taken to provide meaningful access and participation of Title VI protected populations.

- Stakeholder interviews, discussion groups, and meetings will be conducted with organizations and qualified representatives that can articulate the transportation needs of low-income, minority, disabled, and transportation disadvantaged populations.
- Meeting locations and times will be sensitive to the needs of each community to ensure access and participation by as many people as possible, including being located with convenient access to Space Coast Area Transit bus stops.
- TDP outreach materials and documentation will be available online and in printed form, where appropriate. Materials will be evaluated for translation into Spanish based on the audience needs and available resources, consistent with the agency's Language Assistance Plan.

Impacts of COVID-19 on Public Involvement Activities

This TDP is being prepared during the global COVID-19 pandemic with social distancing requirements and safety guidance from federal, state, and local governments and public health agencies evolving and changing frequently. As a result, outreach activities typically done in person may be conducted virtually, either online or by phone, or through an in-person/virtual hybrid option. If used, virtual outreach strategies will be assessed throughout the planning process and efforts will be made to ensure that they provide easy and equitable methods for reaching all segments of the population and receiving feedback.

Project Team

Project Management Team

The Project Management Team will manage the project on behalf of Space Coast Area Transit and provide strategic direction and approval to the Consultant Team. The Project Management Team members, listed in Table 1-1, will coordinate with the Consultant Team regularly, approve major deliverables, and oversee the project's progression.

Table 1-1: Space Coast Area Transit–TDP Project Management Team

Name	Title
Terry Jordan	Transit Director (TDP/COA Project Manager)
Lance Parker	Manager of Operations and Maintenance
Karen Petters	Finance Officer
Carmen Baez	Mobility Manager

Consultant Team

The Consultant Team will conduct day-to-day study activities and manage the study schedule and budget. The Consultant Team is led by Benesch and includes Dan Boyle & Associates (supporting the COA), and Global-5 (supporting the TDP public outreach process). Elisabeth Schuck will serve as the Consultant Project Manager. As the Consultant Team's representative, she will report to the Space Coast Project Management Team and communicate with the agency's Project Manager on a regular basis.

2 TDP Public Involvement Activities

This section presents the variety of public outreach activities selected to ensure the active participation of Brevard County residents, current riders and non-riders, employees, and visitors. The activities include engagement of community stakeholders that interact directly with population groups that represent different perspectives, including but not limited other public agencies, business/economic development, health, diversity, and current Space Coast Area Transit operators.

TDP Review Committee

To ensure the project proceeds in adherence with local objectives and needs, a TDP Review Committee will be formed to assist the Project and Consultant Teams with reviewing and providing comments on all major TDP deliverables.

The following Review Committee meetings are planned in 2022 to support the development of this TDP:

- January 20th – Review the project scope and TDP goals and objectives and the PIP; discuss public transit needs; introduce Tech Memo #1 forthcoming for review.
- Late March/Early April (Date TBD) – Summarize initial outreach findings; confirm public transit needs and preliminary alternatives; review preliminary COA findings.
- Late May/Early June (Date TBD) – Review components of draft TDP (e.g., situation appraisal, goals/objectives, and the 10-year financial/service plan).

Table 2-1 lists of the Review Committee members and the agency/organization they represent.

Table 2-1: Review Committee Membership

Organization	Name
FDOT District 5	Jo Santiago, C.P.M., Transit Intermodal Supervisor Luciana Taylor, Transit Programs Administrator
Space Coast TPO	Sarah Kraum, Senior Transportation Planner
CareerSource Brevard	Jana Bauer, Vice President of Operations
Brevard County Public Works Department	Devin Swanson, Traffic Engineer
Space Coast TPO Local Coordinating Board (LCB)	Andrea Young, LCB Chair, TPO Governing Board Chair, City of West Melbourne Council Member
Transit One	Eva Rey, M.P.A.

On-Board Survey Integration

The Space Coast TPO is completing an on-board survey to obtain information related to the demographics, attitudes, preferences, and habits of Space Coast Area Transit fixed-route bus riders. This survey is designed to serve as a market research tool and not be specifically geared for model input or validation. The information collected will be included in the TDP's public involvement documentation, and the results used to support the needs identification process and subsequent alternatives analysis assessment.

Stakeholder Interviews

Since the understanding of local conditions should include knowledge of the perceptions and attitudes of community decision-makers and leaders towards transit, interviews of key community stakeholders will be conducted for the TDP. The Consultant Team will work with the Project Management Team to identify the appropriate individuals to interview. The Consultant Team will then schedule and conduct the interviews using an interview script that will be developed and submitted to Space Coast Area Transit for review prior to the first interview.

Table 2-2 provides the initial list of stakeholders identified to be contacted for these interviews. The list will be modified as necessary and the final list of stakeholders, along with the input received, will be documented in the TDP.

Table 2-2: Planned Stakeholder Interview Participants

Stakeholder/Agency
Brevard County Commissioner Rita Pritchett, District 1
Brevard County Commissioner Bryan Lober District 2
Brevard County Commissioner John Tobia, District 3
Brevard County Commissioner/Vice Chair Curt Smith, District 4
Brevard County Commissioner/Chair Kristine Zonka, District 5
Jim Liesenfelt, Brevard County, Assistant County Manager
Tad Calkins, Brevard County Planning & Development Director
Cindy Dittmer, Melbourne Community Development Director
Alix Bernard, Palm Bay Growth Management Director
Titusville Planning Department (Individual TBD)
John Cooper, City of Rockledge, Planning/Building Department Director
Christy Fischer, West Melbourne Planning & Economic Development Director
Courtney Barker, AICP, City of Satellite Beach, City Manager
Stockton Whitten, City of Cocoa, City Manager
James McKnight, City of Cocoa Beach, City Manager
Wendy Ellis, Marketing Coordinator, Space Coast Area Transit

Space Coast TPO Transportation Resiliency Master Plan Forums

As part of its Transportation Resiliency Master Plan, branded “Ride the Wave to Resiliency,” the Space Coast TPO held forums with representatives from various community organizations and other external stakeholders to get input on critical community services and infrastructure in Brevard County, including public transportation.

The first forum was the Transportation Disadvantaged (TD) Community Conversation held on May 12, 2021. This discussion focused on topics such as:

- Understanding the impacts/shocks/stressors and transportation barriers for TD populations
- Identifying key community/TD services currently available
- Identifying other community leaders to engage in specific areas

The second forum was an Economic Stakeholders Work Session held on March 26, 2021, and focused on topics such as

- Challenges business/economic stakeholders face in bringing in new potential employers
- Importance of connectivity between mainland and the beaches
- Reduced congestion as a critical element for enhancing quality of life
- Public transportation needs and relationship to economic growth potential

Table 2-3 lists the organizations represented at these forums. Input provided by these representatives will be reviewed for integration into the TDP public outreach process

Table 2-3: Transportation Resiliency Master Plan Participants

Agency/Organization
TD Community Conversation Participants
Brevard Schools
Brevard Alzheimer's Foundation
Brevard Achievement Center
Aging Matters Brevard
Brevard County
United Way of Brevard
Economic Stakeholders Work Session Participants
Cocoa Beach Regional Chamber of Commerce
Space Coast Office of Tourism
weVENTURE Women's Center at Florida Tech's Bisk College of Business
Melbourne Regional Chamber
Titusville Chamber of Commerce
Florida Small Business Development Center

Discussion Groups

To obtain additional public input for the TDP process, and to supplement input received from community organization representatives from the Space Coast TPO's Ride the Wave to Resiliency planning process, a TDP-specific discussion group workshop will be held. The discussion group will be an invitation-based and include 8–12 participants to provide an intimate meeting setting that permits more in-depth discussion about both general and specific issues and needs. A variety of techniques will be used to encourage participation and elicit perceptions, ideas, preferences, and other input that is important to inform the TDP process.

Community organizations that did not participate in the TPO's Ride the Wave to Resiliency forums and are not represented in other TDP outreach activities will be targeted for participation in the discussion group to broaden the range of overall participation and breadth of input received.

Table 2-4 provides the list of stakeholder agencies/organizations that will be contacted to participate in the discussion group. The list will be modified as necessary and the final list of participants, along with the input received, will be documented in the TDP.

Table 2-4: Planned Discussion Group Participants

Organization
Brevard County Health Department
Canaveral Port Authority
Parrish Medical Center
Brevard Housing and Human Services
Brevard County Libraries
One Senior Place, Seniors Helping Seniors
211 Brevard
Brevard County Council on Aging

Public Workshops

Four public workshops/meetings will be convened during the TDP process. It is envisioned that two of these meetings will be held earlier in the project schedule to educate attendees about the TDP and collect input on mobility gaps and unmet needs. The remaining two meetings are planned to occur later to engage participants in the needs evaluation and prioritization process. The Consultant Team will coordinate with Space Coast Area Transit staff to plan, schedule, and advertise each meeting; to target appropriate venues at locations to ensure geographic coverage; and, to the extent possible, piggyback on other community events to ensure turnout (if in-person workshops are held). As feasible, the meetings will be held at different times (day and evening) to accommodate a variety of work and personal schedules, and all will be publicized at least two weeks before they occur.

Online Surveys

Online surveys are conducted during the TDP process to understand the needs and concerns of persons who cannot participate in other outreach events. Online surveys are also an efficient way to capture input from participants with various perspectives, including current riders, non-riders, residents, employees, and visitors to Brevard County. As part of the on-board survey effort, the Space Coast TPO conducted an online survey to gather information related to transit needs in Brevard County. Input from this survey will be reviewed to identify pertinent information and incorporated into the TDP process, as appropriate.

Once preliminary transit needs have been identified, a subsequent online survey will be conducted for this TDP to help refine and prioritize the potential service alternatives for inclusion in the 10-year plan. The survey will be posted on Space Coast Area Transit's website and distributed via email and social media outlets available to the agency. To help generate interest and increase participation, persons attending other outreach activities within the same timeframe will be invited to take the survey.

Bus Operator Survey

Space Coast Area Transit's fixed-route bus operators have the most opportunity for and greatest depth of contact with existing riders on a day-to-day basis. This provides invaluable knowledge regarding rider insights, concerns, and commendations regarding operations, safety, scheduling, etc. of the system, individual route, or bus stops. To obtain operator and supervisor input, a survey will be

prepared concerning existing services, potential enhancements, and frequent rider complaints/commendations.

Social & Electronic Media Outreach

Space Coast Area Transit will prepare a TDP-specific webpage on its website to provide the public with information on the TDP, including information about outreach opportunities. The Consultant Team will provide the webpage content to the agency to upload to its website.

The Consultant Team also will develop social media content and coordinate with Space Coast Area Transit, Space Coast TPO, and other stakeholders on using their respective social media platforms to reach interested parties.

Agency Meetings & Presentations

The final TDP/COA will be presented to the Brevard County Board of County Commissioners for adoption prior to submittal to FDOT by September 1, 2022. Up to four additional presentations will be provided to other agencies, which may include Space Coast TPO's Board and/or advisory committees, or other key stakeholders.

Post Adoption Outreach Program

Towards the end of the TDP development process, a proposed summary plan for an ongoing annual outreach program that Space Coast Area Transit staff can implement within existing time and resource constraints. The program will be geared specifically to permit the agency to regularly engage the public, stakeholders, and current riders. The resulting input then can be used for ongoing improvement of the system, and as an information resource for subsequent TDP annual progress reports and major updates.

Public Outreach Documentation

This PIP and all public involvement activities undertaken to execute this plan, as well as outcomes from such efforts, will be summarized and documented in the final TDP report.

Appendix D: Public Outreach Materials

Stakeholder Interview Guide

Space Coast Area Transit
FY 2023-2032 10-Year Transit Development Plan (TDP)
Stakeholder Interview Guide

A. Where Are We Today?

If you have specific thoughts regarding the services Space Coast Area Transit provides (fixed-route bus/trolley, demand response paratransit, or vanpool program), please elaborate.

1) Based on feedback from your constituents how much awareness and support for transit is there in the community? When removing COVID impacts from consideration, have the levels of awareness and support changed in recent years?
2) How do you view Space Coast Area Transit's role in the community? *(e.g., transportation for specific population groups—workers, elderly, low income, individuals with disabilities, tourists; attracting choice riders; to prevent congestion; to reduce emissions; to create economic opportunities)?*
3) Overall, is Space Coast Area Transit responsive to community needs? If not, what do you see as the primary reason(s)?
4) Do you believe that information about Transit Services is readily available in the community? If not, how can this be improved?
5) Do you believe Space Coast Area Transit has a clear and recognizable brand?
6) Do you use Space Coast Area Transit's services? If so, do you think the current fare policy is affordable? What type of fare/pass do you use/prefer? *(e.g., Full Fare [$1.50], Reduced fare [$0.75], 10-Ride Pass [$12.00], 30-day Pass [$42.00]). This can also be answered from the perspective of an organization that serves Space Coast Area Transit riders if the interviewee has insight into fare use/preferences.*

B. Where Are We Going?

7) What is your vision for public transit in the community?
8) What goals would you like to see Space Coast Area Transit accomplish over the next 5 to 10 years?
9) What is happening in the county in terms of growth and development (e.g., affordable housing issues, congestion, etc.)? Where? How can transit best respond to these trends?
10) Do you feel there are adequate regional transportation connections between Brevard and surrounding counties (Volusia, Indian River, Seminole and Orange)? If

not, how would you prioritize them? *Examples include connecting specific locations, later regional services for third shift workers, etc.*

How Do We Get There?

11) What category(ies) of improvements should Space Coast Area Transit focus on over the next 10 years to attract more riders?
    - Existing fixed-route service improvements (hours, frequencies, etc.).
    - Technology and infrastructure improvements for information, comfort, etc. E*xamples include bike racks at bus stops/on buses, Wi-Fi on buses, next bus arrival signs, etc.*
    - Alternative services that complement the existing fixed-route network. This could include implementing mobility on demand-type services in smaller subareas of the county or establishing partnerships with companies like Uber and Lyft to provide first/last mile connections to fixed routes. *(Mobility on demand is on-demand door-to-door transportation service that is more flexible than typical transit services)*
    - Other (please describe)?
12) What areas of the county do you believe is currently not served or underserved by transit that should receive a higher priority?
13) Are there policies, services practices, service changes or barriers that should be changed to help Space Coast Area Transit reach the goals mentioned earlier?

C. Final Thoughts

14) Do you have any additional comments or thoughts to share?

10-Year Transit Development Plan

FY 2023-2032 Update

OPERATOR SURVEY

This survey is part of an effort to improve transit through Space Coast Area Transit's 10-Year Transit Development Plan and your input is greatly appreciated! Please scan the QR code below or go directly to the link shown to take the survey online. Paper surveys are available upon request.

Please complete surveys by **April 10, 2022**.

Enter your name at the end of the survey for a chance to win a $50 Amazon gift card. *Names will only be used for the gift card drawing and all responses will be anonymous.*

https://www.surveymonkey.com/r/SCATBusOperatorCocoa

Please contact **Don McMurphy** with any questions.

Take the survey online here!

Space Coast Area Transit
10-Year Transit Development Plan
Bus Operator Survey – Melbourne Location

Please take a few moments to answer the following questions. This survey is part of an effort to improve transit through Space Coast Area Transit's 10-Year Transit Development Plan. Your input is greatly appreciated! ***Enter your name at the end of this survey for a chance to win a $50 Amazon gift card.*** *All responses are anonymous.*

You may complete this paper survey and leave it in the designated collection box ***OR*** *scan the QR code to take the same survey online.*

1. **How many years have you been an operator for Space Coast Area Transit?**

   ___ <1 ___ 1-3 ___ 4-7 ___ 8-10 ___ 11-19 ___ 20+

2. **The following is a list of possible concerns you may hear from riders. Please read the full list then <u>mark the 3 that you hear most frequently</u>.**

   ___ Need more frequent service
   ___ Fare is too high
   ___ Bus doesn't go where I want
   ___ Bus is late
   ___ Bus leaves stop too early
   ___ Bus is not clean/comfortable
   ___ Safety/security on bus
   ___ Safety/security at bus stop
   ___ Earlier service hours needed. Starting when?_____
   ___ Later service hours needed. Ending when?_____
   ___ Better sidewalk connections to bus stops
   ___ Limited stop bus service. *Please note "where to?" below.*
   ___ Service to other counties. *Please note "where to?" below.*
   ___ More bus shelters/benches
   ___ Lack of Wi-Fi on buses
   ___ Other *(please specify in the space below)*

   _____
   _____
   _____
   _____

3. **Do you think these concerns are valid? Please explain.**

   _____
   _____
   _____

4. **What do riders like about Space Coast Area Transit? Please <u>list the 3 compliments you hear most frequently.</u>**

   _____
   _____
   _____

5. **From your experience, what are specific service improvements that Space Coast Area Transit should consider?** Examples include improving bus running times, adding new destinations, improving service frequency, etc. *If the issue applies to a specific route (or multiple routes), route segment, or other specific location please provide that detail.*

6. **Do you know of any security threats, hazards, safety or operating problems at specific locations?** *Please explain in enough detail to identify location(s).*

7. **What do you like best about being a Space Coast Area Transit bus operator?**

8. **What are the biggest challenges in hiring new Space Coast Aera Transit bus operators or keeping current ones employed?**

9. **Is there any technology that would assist you in doing your job better?**

10. **Please tell us what we can do as a Team to improve Space Coast Area Transit services.**

11. **Name (required if you are entering for a chance to win a gift card):** _____

THANKS FOR YOUR HELP!

Transit Priorities Survey

Space Coast Area Transit is updating its Transit Development Plan to reconfirm the community's vision for public transportation over the next 10 years. Based on data analysis and public input received so far, preliminary recommendations to enhance existing services and for potential new services have been identified. By answering this brief survey, you will help Space Coast Area Transit better understand local transit priorities and how to best meet the community's transit needs over the next 10 years. Even if you do not currently use transit, your input is very important to this process.

Scan here with your phone to take the survey online!

Improvements to Existing Services

1. Please rank the following potential service improvements, with 1 being your top choice, and 4 being your last choice.

Fixed-route bus service should be extended to 9PM weekday evenings.	1	2	3	4
Fixed-route bus headways (how often the bus comes) should be improved to 30 minutes on weekdays.	1	2	3	4
Fixed-route bus service on Sundays should be provided on all routes.	1	2	3	4
Other improvement(s) not listed (if applicable): _____	1	2	3	4

2. If known, list the three routes for which extending evening service to 9 pm is the highest priority to you. _____

3. If known, list three routes for which having 30-minute service is the highest priority to you.
   _____

4. If known, list the three routes for which fixed-route bus service on Sundays should be provided on all routes. For reference, Sunday service is currently provided on Routes 4, 6, 9, 21.
   _____

New Service Improvements

5. Please rank the following potential service improvements, with 1 being your top choice, and 6 being your last choice.

A new bus route connecting Palm Bay and Micco via US 1.	1	2	3	4	5	6
A single beach route along A1A from Cape Canaveral to Melbourne Causeway (eliminates transfer currently required between multiple routes).	1	2	3	4	5	6
A new fixed route connecting Melbourne Square Mall, the Melbourne Orlando International Airport, Eau Gallie Arts District and beaches along A1A.	1	2	3	4	5	6
A new north-south fixed route between East Florida State College and Melbourne Orlando International Airport via Babcock Rd.	1	2	3	4	5	6
A new east-west fixed route via US 192 from A1A/beaches to west of I-95.	1	2	3	4	5	6
Other areas where fixed route services should be expanded: _____	1	2	3	4	5	6

Mobility-on-Demand

Mobility-on-Demand (MOD) provides door-to-door service within a defined service zone using smaller transit vehicles than a traditional bus. The service is on-demand in that you request a ride via a phone app (similar to using the Uber or Lyft app) or by calling a phone number. You can request a ride between any two locations within the zone or be dropped off at a bus stop to complete your trip outside of the zone using the fixed bus route.

6. Should Space Coast Area Transit explore emerging technology-based services such as Mobility-On-Demand to complement the existing fixed-route bus system? Please circle one answer below.
    a. Yes
    b. No
    c. Unsure

7. Would you be more interested in using transit if flexible on-demand services were available where you could schedule a door-to-door ride within 10-15 minutes of your trip? Please circle one answer below.
    a. Yes
    b. No
    c. Unsure

8. Please rank the following potential Mobility-on Demand zones, with 1 being your top choice, and 5 being your last choice.

West Palm Bay (generally north of Malabar Rd. and east of I-95)	1	2	3	4	5
South Palm Bay (generally south of Malabar Rd. and east of Babcock St.)	1	2	3	4	5
Port St. John	1	2	3	4	5
South Brevard County (Micco/Barefoot Bay area)	1	2	3	4	5
Other MOD priority locations: _____	1	2	3	4	5

If you have any comments, please use the space below.

_____

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Space Coast Area Transit está actualizando su Plan de Desarrollo de Tránsito para reconfirmar la visión de la comunidad para el transporte público en los próximos 10 años. De acuerdo al análisis de los datos y las aportaciones del público recibidas hasta la fecha, se han determinado recomendaciones preliminares para mejorar los servicios existentes y posibles servicios nuevos. Al responder esta breve encuesta, ayudaras a Space Coast Area Transit a comprender mejor las prioridades de tránsito local y cómo satisfacer mejor las necesidades de tránsito de la comunidad en los próximos 10 años. Incluso si actualmente no utilizas el transporte público, su participacion es muy importante para este proceso.

Mejoras a los Servicios Existentes

1. Por favor, clasifique las siguientes mejoras potenciales del servicio, siendo 1 su mejor opción, y 4 su última opción.

El servicio de autobús de ruta fija debe extenderse hasta las 9 p.m. de la noche los días laborables.	1	2	3	4
Los avances de los autobuses de ruta fija (con qué frecuencia viene el autobús) deben mejorarse a 30 minutos los días laborables.	1	2	3	4
El servicio de autobús de ruta fija los domingos debe proporcionarse en todas las rutas.	1	2	3	4
Otras mejoras no enumeradas (si aplican): _____	1	2	3	4

2. Enumere las tres rutas para las cuales extender el servicio nocturno a las 9 p.m. es la mayor prioridad para usted.

   _____

3. Enumere las tres rutas para las cuales tener un servicio de 30 minutos es la mayor prioridad para usted.

   _____

4. Enumere las tres rutas para las cuales se debe proporcionar un servicio de autobús de ruta fija los domingos. Como referencia, el servicio dominical se proporciona actualmente en las rutas 4, 6, 9, 21.

   _____

Mejoras en Servicios Nuevos

5. Por favor, clasifique las siguientes mejoras potenciales del servicio, siendo 1 su mejor opción, y 6 su última opción.

Una nueva ruta de autobús que conecta Palm Bay y Micco a través de la US 1.	1	2	3	4	5	6
Una sola ruta de playa a lo largo de la A1A desde Cabo Cañaveral hasta Melbourne Causeway (elimina la transferencia actualmente requerida entre múltiples rutas).	1	2	3	4	5	6
Una nueva ruta fija que conecta Melbourne Square Mall, el Aeropuerto Internacional de Melbourne Orlando, el Distrito de las Artes de Eau Gallie y las playas a lo largo de la A1A.	1	2	3	4	5	6
Una nueva ruta fija norte-sur entre East Florida State College y el Aeropuerto Internacional de Melbourne Orlando a través de Babcock Rd.	1	2	3	4	5	6
Una nueva ruta fija este-oeste a través de la US 192 desde A1A / playas al oeste de la I-95.	1	2	3	4	5	6
Otras áreas donde los servicios de ruta fija deben ser ampliados: _____	1	2	3	4	5	6

Mobility-on-Demand

Mobility-on-Demand (MOD) proporciona servicio puerta a puerta dentro de una zona de servicio definida utilizando vehículos de tránsito más pequeños que un autobús tradicional. El servicio es de puerta a puerta en el sentido de que usted solicita un viaje a través de una aplicación telefónica (similar al uso de la aplicación Uber o Lyft) o llamando a un número de teléfono. Puede solicitar un viaje entre dos ubicaciones dentro de la zona o ser dejado en una parada de autobús para completar su viaje fuera de la zona utilizando la ruta fija de autobús.

6. ¿Debería Space Coast Area Transit explorar servicios emergentes basados en tecnología como Mobility-On-Demand para complementar el sistema de autobuses de ruta fija existente? Por favor, marque con un círculo una sola respuesta.
    a. Si
    b. No
    c. No esta seguro (a)

7. ¿Estaría más interesado en usar el transporte público si hubiera servicios flexibles a pedido disponibles donde pudiera programar un viaje de puerta a puerta dentro de los 10-15 minutos de su viaje? Por favor, marque con un círculo una sola respuesta.
    a. Si
    b. No
    c. No esta seguro (a)

8. Por favor, clasifique las siguientes zonas potenciales de servicio puerta a puerta, siendo 1 su mejor opción, y 5 siendo su última opción.

West Palm Bay (generalmente al norte de Malabar Rd. y al este de la I-95)	1	2	3	4	5
South Palm Bay (generalmente al sur de Malabar Rd. y al este de Babcock St.)	1	2	3	4	5
Port St. John	1	2	3	4	5
Condado de South Brevard (área de Micco/Barefoot Bay)	1	2	3	4	5
Otras ubicaciones prioritarias del MOD: _____	1	2	3	4	5

Si tiene algún comentario, utilice el espacio a continuación.

_____

_____

_____

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Transit Development Plan

Preliminary Service Recommendations

Improvements to Existing Services	Please rank the recommendations 1 through 3 by placing a dot in the box
Extend weekday bus service to 9PM	
30-minute weekday headways on bus routes	
Sunday bus service	
Ranking System: 1 2 3	

Scan the code to take our online survey!

VOLUSIA
SEMINOLE
ORANGE
OSCEOLA
INDIANRIVER
TITUSVILLE
COCOA
ROCKLEDGE
CAPE CANAVERAL
COCOA BEACH
SATELLITE BEACH
INDIAN HARBOUR BEACH
MELBOURNE
WEST MELBOURNE
MALABAR
PALM BAY
GRANT-VALKARIA
Indian River
Atlantic Ocean
Miles
0 1.5 3 6

Transit Development Plan

Preliminary Service Recommendations

New Services

Please rank the potential new bus routes 1 through 5 by placing a dot in the corresponding box.

Ranking System: 1 2 3 4 5

A1A Beach Trolley

Melbourne Square Mall/Melbourne Orlando International Airport/ Eau Gallie/Beaches

A1A to west of I-95 via US 192

Eastern Florida State College to Melbourne Orlando International Airport

Palm Bay to Micco via US 1

Scan the code to take our online survey!

Miles
0 1.5 3 6

Transit Development Plan

Preliminary Service Recommendations

Mobility-on-Demand (MOD)

- Flexible point-to-point service within defined service zone
- Rides requested via phone app (like Uber or Lyft) or phone call
- Connections to bus system for transit trips outside the zone
- Mobility for ALL (public transit service like fixed-route bus)

Potential MOD Service Areas

Please rank the potential MOD service areas 1 through 4 by placing a dot in the corresponding box.

Ranking System: 1 2 3 4

Port St. John

West Palm Bay

South Palm Bay

Micco/Barefoot Bay

Scan the code to take our online survey!

Space Coast Area Transit

Miles

0 1.5 3 6

2023-2032 Transit Development Plan
Comment Card

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2023-2032 Transit Development Plan
Comment Card

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Appendix E: Plans Review

Table E-1: Local Plans, Policies and Program Review

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Space Coast Area Transit TDP FY 2020 Annual Progress Report (2021)	Brevard County	Space Coast Area Transit	Purpose is to annually evaluate progress of 10-year TDP as a requirement under State of Florida Transit Block Grant Program. Progress Report is minor update of TDP that documents Space Coast Area Transit's achievements and progress towards implementing goals of TDP.	The 10-Year Implementation Plan remains same as initially documented in 2018–2027 TDP Major Update due to lack of new funding. Corridors with proposed route improvements such as later service and increased frequencies that are unfunded will be reviewed and incorporated in the development of alternatives. Projects added from previous TDP include: • Alternative 20: Sebastian and South County • Alternative 21: Canaveral National Seashore • Six bay transfer station in City of Cocoa • Alternative 1 has been moved to tenth year due to lack of funding.
Space Coast Area Transit FY 2018–2027 TDP Major Update (2017)	Brevard County	Space Coast Area Transit	Purpose is to provide a 10-year vision for fixed-route and paratransit services. TDPs are a requirement to receive State of Florida Transit Block Grant Program funds. Major update is a technical review of baseline conditions and system performance and includes robust public outreach process which helps to develop 10-Year vision for transit system.	10-Year Implementation Plan identifies improvements to existing fixed route services and introduces five fixed-route and two flex route services to following areas, each of which require new funding sources: • Palm Bay-Malabar • Malabar-Degroodt Bayside • Malabar-San Filippo-Bayside • Melbourne-Sebastian via US-1 • Palm Bay-Barefoot Bay-Sebastian via US-1 • Port St. Johns Flex • Citrus-Canaveral-Cocoa Flex

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Space Coast Area Transit TDSP Major Update (2020)	Brevard County	Space Coast TPO & Space Coast Area Transit	Purpose is to maintain and improve transportation services for TD and to serve as framework for performance evaluation. As required by Florida CTD, TDSP contains development, service, cost/revenue allocation, and rate structure justification components.	Identified needs include: • Transportation services to disadvantaged populations including, east of I-95 between SR 528, and the southern region of the county—Palm Bay, Malabar, and Micco. • Additional transportation to the northern portion of Brevard County surrounding I-95. • Increased frequencies and later evening hours on fixed-route transit system – recognized that scheduling has been impacted by Covid-19 pandemic. • Continue the examination of transfer points for improved mobility across north and south portions of county and access to transportation services in surrounding counties. • Continued bus stop accessibility improvements based on needs and priorities outlined in the Bus Stop Accessibility completed since the last TDSP update. • Coordination with municipalities for the cleaning and installation of bus stop shelters • Expand number of volunteers in Volunteers in Motion program. • Continue effort to gain additional funding for expanding paratransit system, Volunteers in Motion program, and agency vanpool. Strategies developed include: • Maintain coordination of existing contracts and the execution of new ones • Ensuring maximized utilization of available services through maintaining ADA guidelines and improving the quality of surrounding infrastructure of bus stops • Monitoring the quality of the services offered and to maintain minimum standards set forth • Increase funding for TD trips in order to keep up with demand • Keeping program accountable and continue planning efforts

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Space Coast Area Transit ADA Bus Stop Assessment (2015)	Brevard County	Space Coast TPO & Space Coast Area Transit	Purpose is to conduct comprehensive inventory and assessment of access to and from, security at, and operations of bus stops to ensure compliance with ADA.	Implementation and financial plan identifies when improvements should occur based on relative priority of improvements and anticipated level of funding that would be available. Total improvements estimated to cost $8.02 million based on planning-level estimates, with annual revenue of approximately $150,000. Since completion of study, bus stop improvements made each year throughout county based on priorities outlined in study. *Accessing Space Coast Area Transit* also created to illustrate City and County profiles and provide snapshot of bus stop accessibility in various areas of Brevard County.
Space Coast TPO 2045 Long-Range Transportation Plan (LRTP) (2020)	Brevard County	Space Coast TPO	Purpose is to provide common vision for community's future transportation needs and guides investment of public funds in transportation facilities over next 20 years. LRTP includes strategies using multiple modes of transportation for moving people and goods, lists transportation projects for all modes, funded and unfunded, anticipated over next 20 years.	LRTP objective is to improve economic development with connected multimodal system. Plan develops package of transportation investments to address anticipated future congestion to point where system operates at acceptable performance levels. The Plan also outline safety goals (Vison Zero Action Plan), and environmental & resiliency goals for the future. Notable non-committed unfunded future transit projects in the plan: • Bus Rapid Transit (BRT) projects throughout major corridors in the urbanized area of Brevard County. • Three proposed intermodal facilities serving Orlando Melbourne International Airport and passenger rail stations in downtown Cocoa and in the SR-528/US-1 area (passenger rail service between south Florida and airport currently under construction).

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Space Coast TPO Transportation Improvement Program (TIP) FY 2021-2025 (2021)	Brevard County	Space Coast TPO	Identifies each transportation project of be implemented over next five years. Purpose is to provide realistic forecast of projects with committed local, state, federal, and other funds and serves as TPO's short range plan. With a list of funded transportation projects that is developed annually and updated throughout the year with community input.	Develop plans consistent with current funding levels and provide update of ongoing projects. Transit projects in TIP include: • Bus service along SR 520 in Cocoa demonstration project (2022 to 2025) • Beach Trolley demonstration project along A1A (2022 to 2025) • Capital and operating for fixed-route service
Brevard County Comprehensive Plan (1988)	Brevard County	Brevard County	Primary policy document concerning land use, transportation, and other planning matters for Brevard County. Mission of Transportation Element is to a safe, convenient, and energy-efficient transportation system that supports community and enhances mobility while minimizing impacts to neighborhoods, and environment.	Notable transit-related policies and strategies include: • Develop transportation alternatives to accommodate existing and proposed major trip generators. • Recognize interrelationship of land use patterns and transportation needs. • Establish Complete Streets policies to enable safe access for community.
City of Cocoa 2020–2030Comprehensive Plan (2020)	City of Cocoa	City of Cocoa	Primary policy document concerning land use, transportation, and other planning matters. Mission is to provide safe efficient, and comprehensive multimodal transportation system available to all residents and visitors.	Notable transit-related policies and strategies include: • Develop plan that allows and encourages accessibility to public transit • Incorporate "Smart Growth" principles • Connectivity to public transit • Urban Mixed-Use District

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
City of Cocoa Beach Comprehensive Plan (2015/Revised 2019)	City of Cocoa Beach	City of Cocoa Beach	Primary policy document concerning land use, transportation, and other planning matters. Mission is to provide functional transportation network to ensure safe, convenient and sustainable accessibility and mobility to all users.	Notable transit-related policies and strategies include: • Encourage Space Coast Area Transit to locate transit routes along Minutemen Causeway. (currently no service) • Develop opportunities to accommodate bicyclists, peds, transit, and other travel modes. • Provide as many modal options as possible (park-and-ride lots, commercial/recreational facilities). • Encourage Space Coast Area Transit to locate transit routes along Minutemen Causeway.
Town of Grant-Valkaria Comprehensive Plan (2011)	Town of Grant-Valkaria	Town of Grant-Valkaria	Primary policy document concerning land use, transportation, and other planning matters. Purpose is to provide safe, convenient, and energy- efficient transportation system that supports community and enhances mobility of people and goods while minimizing impacts to neighborhoods, cultural resources, and natural habitats.	Notable transit-related policies and strategies include: • Develop land use patterns and site planning that can be economically and conveniently served by transit, bicycle, and pedestrian modes.

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
City of Melbourne Comprehensive Plan (2020 Supplement)	City of Melbourne	City of Melbourne	Primary policy document concerning land use, transportation, and other planning matters. Purpose is to provide safe, efficient, convenient system for motorized and non-motorized users of Melbourne transportation network.	Notable transit-related policies and strategies include: • Urban Core Activity Center policies to reinforce the Downtown Melbourne Activity Center (DMAC), the Eau Gallie Activity Center (EGAC), the Midtown Activity Center (MAC) areas as compact, mixed-use activity centers • Ensure that lands within the MU land use category, especially along major transportation corridors (U.S. 1, U.S. 192, SR A1A, Wickham Road, Eau Gallie Boulevard (SR 518), NASA Boulevard (SR 508), Airport Boulevard, Sarno Road, Babcock Street, and St. Johns Heritage Parkway), are designed at a scale that is compatible with the nature of these corridors and taking advantage of the public transportation system and connectivity to other parts of the City and surrounding jurisdictions.
City of Palm Bay Comprehensive Plan (2011, Amended 2019)	City of Palm Bay	City of Palm Bay	Primary policy document concerning land use, transportation, and other planning matters. Mission is to a safe, balanced, efficient, and comprehensive transportation system that adequately serves needs of all residents and visitors of Palm Bay.	Notable transit-related policies and strategies include: • Develop increased ridership for mass transit and paratransit service. • Promote use of multimodal transportation. • Mobility plan that supports mobility needs. • Reduce congestion and support urban infill and redevelopment of land.
City of Rockledge Comprehensive Plan (2011, 2020 Supplement)	City of Rockledge	City of Rockledge	Primary policy document concerning land use, transportation, and other planning matters. Mission is to provide safe and efficient transportation system that offers variety of transportation mode options.	Notable transit-related policies and strategies include: • Develop streets designed to accommodate a mix of travel modes including vehicles, bikes, transit, and pedestrians, • Establish increased density bonuses for transit-oriented development projects.

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
City of Satellite Beach Comprehensive Plan (2014/Amended 2019)	City of Satellite Beach	City of Satellite Beach	Primary policy document concerning land use, transportation, and other planning matters. Mission is to a transportation system that ensures safe and efficient movement of people and goods based on major trip generators, public facilities, and TD special needs.	Notable transit-related policies and strategies include: • Develop comprehensive, integrated multimodal street network by promoting transportation planning strategies and private development activities. • Provide safe and convenient on-site pedestrian circulation. • Require cross-access connection/easements or joint driveways. • Implement and improve upon, as resources permit, recommendations of Citizens' Ad Hoc Bicycle/ Pedestrian Committee for development of network of recreation trails connecting significant destinations in city.
City of Titusville Comprehensive Plan (2014/EAR 2018)	City of Titusville	City of Titusville	Primary policy document concerning land use, transportation, and other planning matters. Mission is to provide safe, convenient and energy-efficient transportation system that promotes multiple modes of transportation for goods and people to encourage stability and improved quality of life.	Notable transit-related policies and strategies include: • Provide bicycle and pedestrian ways through development of plans, land development regulations, or other development controls. • Promote development of Complete Streets. • Develop bicycle and pedestrian infrastructure and amenities and by seeking to provide wider sidewalks. • Seek funding to participate with Space Coast Area Transit in provision of bus shelters along transit routes. • Develop bicycle and pedestrian master plan in coordination with Space Coast TPO. • Increase transit routes and frequencies. • Develop systemwide multimodal transportation network plan.

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
City of West Melbourne Comprehensive Plan (2010)	City of West Melbourne	City of West Melbourne	Primary policy document concerning land use, transportation, and other planning matters. Mission is to provide for mobility needs of city's residents, businesses, and visitors by supporting safe, accessible, and efficient transportation system.	Notable transit-related policies and strategies include: • Create pedestrian environment through enhanced landscapes, streetscapes, and public infrastructure. • Develop multimodal transportation system that provides connectivity throughout Brevard County area. • Support expansion of city's bike-pedestrian network by considering bike pedestrian facilities as components of standard design criteria for new and reconstructed roads. • Develop comprehensive, integrated, multimodal street network by coordinating transportation planning strategies and private development activities.
Aurora Road Corridor Study (2018)	City of Melbourne - Aurora Road from Wickham Road to Stewart Avenue	Space Coast TPO	Explores alternatives that improve pedestrian and bicycle facilities as well as address safety issues, traffic operations, and transit needs.	The study identifies multimodal issues and opportunities such as upgrading transit stops to make them ADA compliant and install shelters and benches for high ridership stops and enhancing pedestrian safety and comfort where pedestrian gaps exist, especially for students walking to and from schools.
Sarno Road Corridor Study (2017)	City of Melbourne – Sarno Road from Eau Gallie Blvd to I-95	Space Coast TPO, City of Melbourne, Brevard County, FDOT	Explore road improvement opportunities that would improve pedestrian and bicycle facilities as well as to address safety issues, traffic operations, and transit movements along the corridor.	Comments received during a design charette include a need for improved bus stops and shelters. Improvements for specific stop locations were not identified, however short-term and mid-term improvements include a general need for enhanced pedestrian connections to existing sidewalks at transit stops and installing transit amenities at high usage transit stops along corridor at an estimate cost of $5,000 - $16,000 per stop.

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
The Minton Road Feasibility Study (2021)	City of West Melbourne and City of Palm - Minton Road from Palm Bay Road to US 192	Space Coast TPO	Provides recommendations to address the existing congestion and safety issues along the corridor and incorporate multi-modal improvements to facilitate pedestrian, bicycle, and transit movements.	Several bus stop improvements were identified to improve access and transit rider comfort: • All stops for Route 20 along the corridor require improvements for ADA compliant boarding and alighting areas. • City of West Melbourne wants to include shelters for the Route 20 stops. • In the preferred alternative, the eight transit stops between Eber Boulevard and Helen Street were modified to incorporate the new shared use paths and meet ADA compliance. A space for a pedestrian shelter is provided at each transit stop at the back of the shared use path. • The two transit stops located between Helen Street and US 192 were not modified due to the corridor improvements.
Wickham Road Operational Analysis (2018)	Wickham Road between Eau Gallie Blvd and Lake Washington Rd	Space Coast TPO	Evaluates and identifies multi-modal solutions to facilitate pedestrian/bicycle/transit movement along the corridor and to address congestion and safety issue	The study identifies areas with high pedestrian and bicycle crashes and several pedestrian gaps along the corridor. Three signalized intersections with incomplete pedestrian facilities include: • Aurora Road; • Northgate Plaza; and • Lake Washington Road

Table E-2: Regional Plans, Policies and Program Review

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
LYNX 2018–2027 TDP Major Update (2021)	Seminole and Orange Counties	Central Florida Regional Transportation Authority (dba LYNX)	Purpose is to provide a 10-year vision for fixed-route and paratransit services in the county as requirement to receive State of Florida Transit Block Grant Program funds. Major update is a technical review of baseline conditions and system performance and includes robust public outreach process which helps to develop 10-Year vision for transit system.	There are no existing public transit connections from Orange County to Brevard. While there is an emphasized need for enhancing current service by increasing service frequency and spans, and adding new fixed-route services, new regional connections to Brevard County were not identified as a proposed transit service improvement.
VOTRAN TDP Annual Update 2020	Volusia County	Votran	Purpose is to provide a 10-year vision for fixed-route and paratransit services in the county as requirement to receive State of Florida Transit Block Grant Program funds. Major update is a technical review of baseline conditions and system performance and includes robust public outreach process which helps to develop 10-Year vision for transit system.	Transit connections from Volusia to neighboring counties, including Brevard, were identified as a regional transportation need in a stakeholder workshop, however no new regional transit connections to Brevard were identified as a proposed transit improvement.
GoLine TDP Annual Update 2021	Indian River County	Indian River County MPO	Purpose is to provide a 10-year vision for fixed-route and paratransit services in the county as requirement to receive State of Florida Transit Block Grant Program funds. Major update is a technical review of baseline conditions and system performance and includes robust public outreach process which helps to develop 10-Year vision for transit system.	• Identifies a significant share of workers commuting from Brevard County to Indian County (2,500 commuters). • US-1 between CR 510 and the Brevard County Line was identified as one of the most congested corridors that should be considered as a potential candidate for congestion management strategies. • No new regional connections to Brevard County were identified as a need.

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Central Florida Regional Transit Study (2018)	Brevard, Flagler, Lake, Marion, Orange, Osceola, Polk, Seminole, Sumter, and Volusia Counties	Central Florida MPO Alliance	The study provides assistance for the analysis and decision-making of technical staff and policy makers regarding potential cross-jurisdictional transit projects. The study will help support transit agencies, MPO / TPOs, and FDOT with the coordination of transit planning efforts and to support long range transportation plan (LRTP) development.	Identifies high priority transit investments for 2040 and 2060. The study outlines both operational and capital needs in the ten-county area. Following are suggested improvements relevant to Space Coast Area Transit TDP are: • Two new fixed routes between Melbourne and Sebastian via US 1 and between Palm Bay-Barefoot Bay- Sebastian • Four proposed circulator routes; Palm Bay-Malabar, Malabar-Degroodt-Bayside Lake Plaza, Malabar-San Filippo-Bayside Lake Plaza, and Minton-St. John's Heritage Parkway • A new Flex route, and addition of new park and ride locations in the area. • Commuter rail stop placed at Melbourne international airport and Space Coast Regional Airport
Brightline	Miami-Dade, Broward, Palm Beach, Martin, St. Lucie, Indian River, Brevard, Volusia, and Osceola counties	Privately funded passenger rail system.	Brightline regional passenger rail service between South Florida and Orlando (future expansion to Tampa and Jacksonville).	• Brightline service resumed service in November 2021 since shutting down in March 2020. • Existing Brightline stops include West Palm Beach, Ft. Lauderdale, and Miami Central stations. • Brightline stops at Aventura and Orlando are under construction; completion of the connection to Orlando from West Palm Beach is anticipated in 2022. • After passenger rail service to Orlando is established, the company has expressed interest in adding a future station in Cocoa on the Space Coast and the Treasure Coast (Fort Pierce or Stuart). • A Brightline station in Boca Raton is agreed to. • Stations at Port Miami, a Treasure Coast station, Disney Springs, and Tampa are planned expansions or are in negotiations/discussion. The Central Florida Expressway Authority passed a resolution allowing Brightline to study high-speed rail along that corridor; coordination with FDOT is still needed for the final leg to connect between Orlando and Tampa.

Plan Title (Most Recent Update)	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Space Coast Passenger Rail Station Location Study (2016)	Brevard County	Space Coast TPO	The TPO worked with various local municipalities to identify candidate locations and evaluate the viability of these locations as a potential station for express passenger rail services.	• The SCTPO recommends locations along SR 528 and US 1 as the preferred site of the future inter-regional express rail stations in Brevard County • These locations allow for connection to major areas such as port Canaveral along with the position to serve future Brightline expansion northward to Jacksonville • The SCTPO also recommends the former Cocoa passenger rail station for redevelopment into a Brightline station based on the proximity to urban destination, developable land, and access to regional roadway network in place.

Table E-3: State and Federal Plans, Policies and Program Review

Plan Title / Most Recent Update	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
State of Florida Transportation Disadvantaged 5-Year/20-Year Plan	Florida	Florida Commission for the Transportation Disadvantaged (FCTD)	Purpose is to accomplish cost-effective, efficient, unduplicated, and cohesive transportation disadvantaged services within its service area	Develop and field-test model community transportation system for persons who are transportation disadvantaged; create strategy for FCTD to support development of universal transportation system.
FDOT Complete Streets Implementation Update: Handbook and Design Manual	Florida	FDOT	Developed as way to create alternative transportation systems to facilitate "Complete Streets" focused design	Plan includes: • Revising guidance, standards, manuals, policies, and other documents. • Updating how decision-making is processed. • Modifying evaluation of performance. • Managing communication between agencies. • Updating training and education in agencies.

Plan Title / Most Recent Update	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Florida Transportation Plan (FTP)	Florida	FDOT	Serves as guide as Florida's long-range transportation plan, as required by State and Federal law	Supports development of state, regional, and local transit services through series of related goals and objectives, emphasizing new and innovative approaches by all modes to meet needs today and in the future. Most recent update emphasizes: • Safety and security for Florida's residents, visitors, and businesses. • Resilient and quality infrastructure. • Connected, efficient, and reliable mobility for people and freight. • Transportation choices that improve equity and accessibility. • Transportation solutions that strengthen Florida's economy. • Mobility solutions that enhance Florida's communities. • Transportation systems that enhance Florida's environment.
Accessing Transit Design Handbook for Florida Bus Passenger Facilities, Version III	Florida	FDOT	Provides guidance to state and local governments and transit agencies in the design, location, and installation of transit facilities consistent with state and federal laws, regulations, and best practices	• Supports the development of transit facilities and amenities accessible for all individuals and compliant with federal and state regulations, including the ADA. • Provides guidelines and best practices for multiple bus components (e.g., curb side facilities, streetside facilities, etc.), agency coordination, safety and security, and consideration of needs, costs, and location, among other factors.
FTA Circular 4702.1B: *Title VI Requirements and Guidelines for Federal Transit Administration Recipients*	United States	US DOT / FTA	49 CFR Part 21 effectuates the provisions of the Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color, or national origin under any program or activity receiving federal financial assistance from the US Department of Transportation (DOT). Recipients of FTA funds are required to prepare a Title VI Program, the guidelines for which are documented in this Circular.	Provides direction, guidance, and procedures to FTA recipients to: • Ensure that the level and quality of its public transportation service is provided in a nondiscriminatory manner; • Promote full and fair participation in public transportation decision-making without regard to race, color, or national origin; and • Ensure meaningful access to transit-related programs and activities by persons with limited English proficiency.

Plan Title / Most Recent Update	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
FTA Circular 4703.1: *Environmental Justice Policy Guidance for Federal Transit Administration Recipients*	United States	US DOT / FTA	Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* requires that environmental justice and non-discrimination principles be incorporated into transportation planning and decision-making processes. This circular provides guidance for recipients of FTA funds to incorporate environmental justice principals into plans, projects, and activities that receive funding from FTA.	Supports Executive Order 12898 and US DOT Order 5610.2(a), *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (May 2012*), a key component of DOT's strategy to promote the principles of environmental justice in all DOT programs policies and activities by: • Avoiding, minimizing, and mitigating disproportionately high and adverse effects. • Ensuring the full and fair participation by all potentially affected communities. Preventing the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income persons.
Executive Order 13985: *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*	United States	US DOT	Building on prior federal regulations related to non-discrimination, this directive requires that the Federal Government pursue a comprehensive approach to advancing equity for all people who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality, including those with respect to geography, gender identify, and sexual orientation	Promotes the equitable delivery of government resources and benefits, including those for public transportation by: • Requiring each federal agency to assess its programs and policies to determine if underserved communities and their members face systemic barriers in accessing benefits and opportunities available pursuant to those policies and programs. • Requiring that government agencies consult with members of historically underserved communities, and evaluate opportunities to increase coordination, communication, and engagement with community-based and civil rights organizations. Supports the advancement of equity in a comprehensive manner across federal agencies by establishing an Interagency Working Group on Equitable Data to evaluate existing data sources, identify inadequacies in existing federal data collection programs, policies, and infrastructure across agencies, and inform strategies for addressing any such deficiencies identified.

Plan Title / Most Recent Update	Geographic Applicability	Responsible Agency	Overview	Key Considerations/Implications for the TDP
Infrastructure Investment and Jobs Act	United States	117th US Congress/ Biden Administration	Senate bill to provide $550 billion in additional spending for various capital programs. Signed into Public Law 117-58 on November 15, 2021.	• Largest federal investment in public transit ever and largest investment in passenger rail since the creation of Amtrak. • Reauthorization of federal transit programs under the FAST Act for an additional five years. • New investments and reauthorization provide $89.9B in guaranteed funding for public transit over the next five years. Based on a summary from the Council of State Governments:[6] • Increase baseline levels of funding in contact authority from Mass Transit account of the Highway Trust Fund for transit programs administered by the FTA - $19B • State of good repair grants to transit agencies- $5B • Capital Investment Grants to support new and expanded commuter light rail, bus, and ferry services - $8B • Funding to improve mobility for seniors and Individuals with disabilities- $2B • Funding of state and local governments for the purchase or lase of zero-emission and low-emission buses under the Low-No-Program - $5B • Includes $66 billion in funding for rail: $7.2 billion annually for five years for federal-state partnership grants for intercity passenger rail; $1 billion annually for five years for competitive Consolidated Rail Infrastructure and Safety Improvement grants.

[6]The Council of State Governments: "Infrastructure Investment and Jobs Act: Public Transit Infrastructure and Safety" Infrastructure Investment and Jobs Act: Public Transit Infrastructure and Safety – The Council of State Governments (csg.org)

Appendix F: Performance Measures and Indicators

Once the proposed transit services are implemented, Space Coast Area Transit should focus on monitoring the following indicators and performance measures on a quarterly basis for its fixed-route services as part of the recommended performance-monitoring program:

- Passenger Trips
- Revenue Hours
- Revenue Miles
- Passenger Trips per Revenue Hour

Fixed-route services typically take up to three years to become productive. Performance data associated with new fixed-route services should be reviewed and interpreted with caution. Although adjustments and modifications are encouraged, the discontinuation of routes based solely on performance-based data is discouraged within the first three years.

Evolution, Methodology, and Process

The scoring process is based on trips per mile and trips per hour, weighted equally to derive an overall route score. A route's score for a specific measure is based on a comparison of the measure as a percentage of the system average for that measure. Individual measure scores are then added together and divided by two to achieve a final aggregated score for each route. This aggregate score offers an indication of a particular route's performance for the two measures when compared to the system-wide average for these measures. Higher scores represent a better overall performance when compared to other routes.

Using a comparative performance evaluation can be beneficial, but precautions should be taken when using the final scores and rankings, as the goals associated with different areas of the county and specific goals for routes may not be reflected in the selected measures being compared. The overall process is particularly useful for highlighting routes that have comparative performance-related issues. Once established, these routes can be singled out for more in-depth observation in future quarters to better determine the specific changes that may help mitigate performance issues associated with the route(s).

Once a route's score has been established, routes can be ranked to show the highest performing routes and the lowest performing routes. Using rankings in this manner can be a useful proxy for determining how certain routes compare to other routes in the system, as well as highlighting changes in route performance overtime.

To help track the performance variation overtime, three levels of performance were developed:

- Level 1 – Good (≥ 75%)
- Level 2 – Monitor (30-74%)
- Level 3 – Requires attention (≤ 29%)

Fixed-routes falling within Level 1 show efficient performance compared to the average level of performance at all levels of the agency. Routes grouped within Level 2 exhibit varying levels of performance-based problems, problems that require more detailed analysis (e.g., increased marketing efforts, ride-checks, on-board surveys, etc.) to aid in identifying changes to be made to improve the overall functionality of the routes. Routes categorized as Level 3 exhibit poor performance and low efficiency and face more extreme recommendations such as truncation of the route, reduction in the route's revenue hours, and lastly, the discontinuation of the route.