



**NORTH FLORIDA**

**TPO**

# 2022 ANNUAL MOBILITY REPORT

UPWP Task 5.1

June 2022

## Executive Summary

Understanding the trends and conditions occurring in the North Florida will allow planners and engineers to prioritize resources more effectively as part of the North Florida Transportation Planning Organization's (TPO) Congestion Management Process. The data presented are an essential part of making evidence-based decisions for the investment in mobility in North Florida. The data presented focuses on Clay, Duval, Nassau and St. Johns counties. This report summarizes trends in the following topics:

- People
- Economy
- Safety
- Quantity
- Quality
- Utilization
- Access
- Operations
- System Preservation
- Economic Impacts

These measures were established in the North Florida TPO's Congestion Management Process in 2019, 2045 Path Forward Long - Range Transportation Plan, initiatives to provide mobility to underserved communities and measures adopted by the Federal Highway Administration (FHWA) for metropolitan planning in the Moving Ahead for Progress in the 21st Century Act (MAP-21). These planning requirements were continued in the Infrastructure Investment and Jobs Act of 2021, also known as the Bipartisan Infrastructure Law (BIL).

The data presented in this 2022 Annual Mobility Report is based on regional trends from 2016 to 2020. Data for the 2021 is reported when available. 2020 and 2021 were unprecedented times in North Florida. The COVID-19 pandemic resulted in population growth and changes in travel behavior that have impacted mobility. Some of the impacts of COVID-19 pandemic may carry through 2023 and others are likely to become part of the new normal. The following summarize the results of the analysis.

## People

- North Florida’s population grew by 8.8%, or 127,000 persons, between 2016 and 2020. North Florida’s population grew by 3.2% in 2021 over 2020 outpacing the national growth of only 0.1%, the lowest annual growth in the nation’s history, and Florida’s growth of 1.13%.
- About 42% of people worked from home at least half-time in 2021 due to the COVID-19 pandemic. Less than 10% of workers worked from home full time prior to the pandemic and nearly one-third of commuters are anticipated to work from home at least half time permanently.
- Between 2016 and 2020 persons under 24 who obtained their licenses grew throughout the region (0.4%) reversing a trend that occurred since the 2000’s.
- Poverty within the region has declined since its peak in 2012. The COVID pandemic impacted our residents in 2020 and poverty increased due to lack of employment. Job growth in 2021 continues to reduce poverty in North Florida.
- Nearly 1 in 7 persons under 18 lived in poverty in North Florida in 2020 exceeding the goal of Florida Chamber’s for 10% or fewer children living in poverty.
- Transportation barriers are the third leading cause of missing a medical appointment for older adults across the country and nearly 370,000 persons in North Florida live in medically underserved areas.
- Transportation problems, affecting 8% of women, appeared to be the only significant logistic barrier to timely [prenatal] care.
- Only 43% of low-income persons own vehicles.
- Accessing affordable and nutritious food is a challenge for persons in North Florida.

## Economy

- The gross domestic product in North Florida remained strong despite the COVID-19 pandemic with only a net 0.2% decline between 2019 and 2020. Statewide gross domestic product returned to pre-pandemic levels and grew by 5.5% in real dollars through 2021. When the economy grows so does the demand for mobility.
- Employment in North Florida in December 2021 was 2% over the pre-COVID-19 pandemic levels in March of 2020.

## Safety

- Crashes 2021 increased 15% over 2020. This is the second highest number of crashes ever recorded in North Florida. The number of crashes is believed to result from higher travel speeds.

- Similar trends exist for fatalities (2.5% increase) and injury crashes (10.5% increase) for 2021 over 2020 crashes.
- Regional crash rates exceed the statewide average for all severity types of vehicle crashes.
- North Florida was ranked as the 10th least-safe area for pedestrians by Dangerous by Design in 2020. However, several metropolitan areas in Florida are ranked as more dangerous and North Florida’s bicycle and pedestrian fatal crash rate is less than the statewide average.
- Bicycle and pedestrian crashes are only 3.2% of the total crashes but account for nearly 20% of the social costs of crashes due to their high fatal and serious injury rates.
- The social cost of crashes is \$4.8 billion or 5.9% of our gross domestic product.
- The TPOs goal is to have zero fatalities.

## Quantity

- With the economic recovery vehicle miles traveled are anticipated to increase in 2021-2022 but slower than the growth in gross domestic product due to more residents working from home.
- Aviation travel began to recover in the second half of 2020 and reached 2013 levels for annual passengers in 2021.
- On-time departures at the airport achieved their highest level.
- Transit ridership declined as a result of the safety concerns associated with the COVID-19 pandemic.
- Port container traffic began to recover in 2020.
- There were no cruise ship departures from JAXPORT in 2020 as a result of the COVID-19 pandemic.
- The number of vehicles shipped declined significantly through 2021 due to the COVID-19 pandemic global supply chain interruptions.

## Quality

- Average speeds increased from 2019 to 2020 as a result of lower demand (vehicle miles traveled and generally lower congestion levels).
- Travel delays were 38% of pre-COVID-19 pandemic levels on the state highway system.
- Reliability of travel on the system improved significantly based on the reduction of delays between 2019 and 2020 but returned to 2019 levels in 2021.
- The mid-day period was the most critical period for 43% of the region’s most congested corridors in 2020 because more people worked from home during 2020. In 2021, the peak flows returned to pre-COVID-19 patterns.

## Utilization

- The utilization of the system declined in 2020 consistent with the decline in demand during the COVID-19 pandemic.

## Operations

- The number of incidents (lane closures) and crashes per million vehicle miles traveled on the state highway system increased by nearly 12%.
- The average time to open the road to traffic increased slightly. This is likely a result of the increase of more severe crashes which require other medical personnel to arrive during injuries or the coroner's office to investigate the scene following a fatality before traffic can open.

## System Preservation

- About 83% of pavements on the state highway system in North Florida are in good condition. Pavement conditions in North Florida declined below 90% for the third straight year after being above 90% in the prior 7 years.
- About 94% of bridges on the national highway system in North Florida are in good condition.
- The average age of vehicles operated by the Jacksonville Transportation Authority and Nassau Council on aging increased from 2019 to 2020 (0.3-year average increase) because of less fleet replacement. The Automated Skyway Express (ASE) people mover vehicles in downtown Jacksonville exceeded their service life but are in good working order. A Skyway modernization project is underway. The St. Johns River Ferry vessels are at the end of their service life but are in good working order. The Sunshine Bus Company replaced a vehicle and their average age decreased.

## Access

- About 3.2% of all jobs are located within a one-hour commute for transit services.
- The state highway system is located within one-half mile of 82% of all jobs.
- Nearly 89% of the populations is within one-quarter mile of a transit stop in the urban core of downtown Jacksonville.
- 56.5% of the population has access has access within 5 miles.

## Economic Impacts

- Crashes results in a \$4.8 billion economic loss in North Florida in 2020.
- Congestion results in a \$0.14 billion economic loss in North Florida in 2020.
- Investing in transportation results in a \$40.4 billion economic impact for the residents of North Florida.

## Summary of the MAP-21 Performance Measures

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) jointly issued a Planning Rule in May 2016 to document changes in the statewide and metropolitan planning processes consistent with MAP-21 and the Fixing America's Surface Transportation (FAST) Act. This rule specifies the requirements for state departments of transportation and Metropolitan Planning Organizations (MPO) to implement a performance-based approach to planning and programming. Under this framework, the three FHWA Performance Measures (PM) rules and FTA transit rules established various performance measures required to monitor the performance of safety (PM1), bridge and pavement (PM2), system performance (PM3), and transit asset management (TAM). This document identifies targets and reports progress on these identified performance measures through 2020.

**TABLE 1. PM1 SAFETY PERFORMANCE MEASURES**

<b>Performance Measure</b>	<b>Target</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Number of Fatalities (total)	0	234	232	215	232	266
Rate of Fatalities per 100 million VMT	0	1.378	1.347	1.234	1.301	1.614
Number of Serious Injuries	0	1,195	1,191	880	870	820
Rate of Serious Injuries per 100 million VMT	0	7.037	6.913	5.075	4.879	4.976
Number of Non-motorized Fatalities and Serious Injuries	0	176	175	192	163	179

The safety performance measures help to assess fatalities and serious injuries on all public roads regardless of ownership or functional classification. As required by 23 CFR 490, the North Florida TPO adopted targets for number of fatalities, number of serious injuries, fatality rate, serious injury rate and total number of non-motorized fatalities and serious injuries. These targets align with the Florida Department of Transportation’s adopted targets.

Data in prior years were updated based on the latest information provided by Florida Department of Transportation.

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TABLE 2. PM2 BRIDGE AND PAVEMENT PERFORMANCE MEASURES

Performance Measure	Target	2015	2016	2017	2018	2019	2020
<b>Pavement</b>							
% of Interstate in GOOD Condition	≥ 60%	68.0%	66.3%	57.5%	35.3%	47.0%	
% of Interstate in POOR Condition	≤ 5%	0.0%	0.1%	0.0%	0.5%	0.4%	
% of Non-Interstate NHS in GOOD Condition	≥ 40%	37.2%	32.6%	36.2%	31.5%	31.0%	
% of Non-Interstate NHS Pavements in POOR Condition	≤ 5%	0.5%	0.5%	0.6%	0.4%	0.6%	
<b>Bridge</b>							
% of NHS bridges deck area in GOOD Condition	≥ 50%	-	-	52.1%	51.5%	51.2%	52.2%
% of NHS bridge deck area in POOR Condition	≤ 10%	-	-	0.0%	0.7%	0.9%	0.9%

NHS is the National Highway System (NHS)

Pavement and bridge condition assessment is vital to the continued maintenance of the roadway system. As required by 23 USC 23 CFR 490, the Florida Department of Transportation has adopted initial targets for bridge and pavement conditions. The North Florida TPO adopted the FDOT guidance for performance management of pavement and bridges.

**TABLE 3. PM3 SYSTEM PERFORMANCE**

<b>Performance Measure</b>	<b>Target</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
% of Person Miles Traveled on the Interstate that are Reliable	70%	84%	75%	80%	83%	85%	98%	94%
% of Person Miles Traveled on the Non-Interstate NHS Reliable	50%	59%	60%	85%	86%	87%	94%	94%
Truck Travel Time Reliability (TTTR) Index	2.00	1.64	1.67	1.67	1.59	1.64	1.34	1.39

These are measures to assess the performance of the National Highway System (NHS), freight movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (CMAQ). The North Florida TPO has adopted the Florida Department of Transportation performance targets. Reliability refers to a consistent predictable travel time.

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TABLE 4. PM4 TRANSIT ASSET MANAGEMENT - JTA

Asset Category - Performance Measure	Asset Class	FY 2021 Asset Condition	FY 2022 Target
<b>Equipment</b>			
% of non-revenue service vehicles exceeds UL of 4 years or 100,000 miles	Automobile	95%	100%
	Trucks and Other Rubber Tire Vehicles	57%	66%
	SUVs	38%	48%
	Trucks	76%	85%
	Vans	100%	100%
% of non-revenue service vehicles exceeds UL of 18 years	Boats	0%	100%
<b>Rolling Stock</b>			
% of fleet exceeds UL of 12 years or 500,000 miles	Buses (JTA/CC)	22%	23%
% of fleet exceeds UL of 5 years or 150,000 miles	Cutaways (JTA/CC)	71%	55%
% of fleet exceeds UL of 4 years or 100,000 miles	Vans (JTA/CC)	15%	57%
% of fleet exceeds UL of 25 years	Automated Guideway Vehicle	0%	0%
	Ferryboat	0%	0%
<b>Infrastructure</b>			
% of track segments under performance restriction	Rail Fixed Guideway	0%	8%
<b>Facilities</b>			
% of facilities rated under 3.0 on TERM scale	Admin/Maintenance Facilities	6%	3%
	Passenger/Parking Facilities	3%	3%
	Passenger Facilities	0%	0%
	Parking Facilities	4%	4%

Source: Performance Management in the North Florida TPO's Transportation Improvement Program for Fiscal Years 2022/23 through 2026/27, North Florida TPO. April 2022

The Transit Economic Requirements Model (TERM) calculation is available at <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/asset-management/60361/tam-facility-performance-measure-reporting-guidebook-v1-2.pdf>.

Nassau Council on Aging is part of the FDOT Group Targets identified in Table 6.

TABLE 5. PM4 TRANSIT ASSET MANAGEMENT - THE SUNSHINE BUS

Asset Category - Performance Measure	Asset Class	FY 2020 Asset Condition	FY 2021 Target
<b>Rolling Stock</b>			
% of revenue vehicles that have met or exceeded their useful life benchmark	Cutaway	13%	65%
	Minivan	57%	66%
	Van	0%	0%
<b>Equipment</b>			
% of service vehicles that have met or exceeded their useful life benchmark	Trucks and other rubber tire vehicles	100%	100%
<b>Facilities</b>			
% of facilities rated under 3.0 on TERM scale	Admin/Maintenance Facilities	0%	0%

Source: Performance Management in the North Florida TPO's Transportation Improvement Program for Fiscal Years 2022/23 through 2026/27, North Florida TPO. April 2022

TABLE 6. PM4 TRANSIT ASSET MANAGEMENT - FDOT GROUP 2021 TAM PLAN TARGETS

Asset Category - Performance Measure	Asset Class	FY 2020 Asset Conditions	FY 2021 Performance Target
<b>Revenue Vehicles</b>			
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Automobile	28.6%	≤28%
	Bus	17.0%	≤16%
	Cutaway Bus	14.1%	≤14%
	School Bus	100.0%	≤75%
	Mini-Van	26.6%	≤26%
	SUV	18.2%	≤18%
	Van	47.9%	≤47%
<b>Equipment</b>			
Age - % of equipment or non-revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Non-revenue Automobile	66.7%	≤66%
	Trucks and other Rubber Tire Vehicles	7.1%	≤7%
<b>Facilities</b>			
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Passenger/Parking Facilities	0%	≤0%
	Administration/ Maintenance Facilities	0%	≤0%

Source: Performance Management in the North Florida TPO’s Transportation Improvement Program for Fiscal Years 2022/23 through 2026/27, North Florida TPO. April 2022.

Applies to Nassau Council on Aging.

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## Introduction

Understanding the trends and conditions occurring in the North Florida Transportation Planning Organizations (TPO's) planning area consisting of the Jacksonville-St. Augustine metropolitan statistical area consisting of Clay, Duval, Nassau and St. Johns Counties. The data presented are an essential part of making performance-based decisions for the investment in mobility in North Florida. This report summarizes trends in the following topics:

- People
- Economy
- Safety
- Quantity
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- Economic Impacts

Although performance-based planning has been used in metropolitan planning for decades, the first requirement for use in metropolitan planning was enacted in the Intermodal Surface Transportation Efficiency Act of 1991. The use of performance-based planning techniques were supported and codified in subsequent legislation such as the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012 which required statewide, metropolitan planning and transit agencies to adopt performance and outcome-based programs for states and metropolitan planning organizations (MPOs) to make investments in activities that support national goals. The Bipartisan Infrastructure Law (BIL), also known as the Infrastructure Investment and Jobs Act, was enacted in 2021. The Federal mobility performance measures adopted by the Florida Department of Transportation are summarized in the Executive Summary.

The BIL continues planning programs that provide funding and set procedural requirements for multimodal transportation planning in metropolitan areas and states that result in long-range plans and short-range programs of transportation investment priorities. The planning programs are jointly administered by Federal Transit Agency and the Federal Highway Administration.

This is the North Florida TPO's 11th Annual Mobility Report that follows the process adopted in the 2012 Congestion Management Process. The measures, data and methodologies have advanced over time and were formally adopted in the 2019 Congestion Management Plan. This report also presents the performance measures adopted in 2045 Path Forward Long-Range Transportation Plan.

This report summarizes trends in demographics, travel choices, economic and COVID-19 pandemic impacts on mobility. The COVID-19 pandemic significantly impacted mobility in North Florida in 2020 and 2021 and is anticipated to continue to impact trends for the coming years.

This 2022 Annual Mobility Report presents regional trends from 2016 to 2020. Data for the 2021 are reported when available. Measures are grouped into the categories presented above. The trends, conditions and their interpretation are discussed with each measure. Technical methodologies, data sources and references to the materials are summarized following the trends and conditions.

**Endnotes** provide a summary of the technical methods and sources for all data.



## Population<sup>1</sup>

North Florida's population grew by 8.8%, or 127,000 persons, between 2016 and 2020. This growth outpaced the growth statewide (4.4%). Growth in population places a higher demand for mobility. County estimates of population are not available, but Florida grew by 1.13% in 2021 and North Florida's strong growth outpacing population gains statewide is anticipated to continue through 2022.

The population grew by 0.1% nationally in 2021, the lowest annual growth rate since the nation's founding. North Florida grew by 3.2% outpacing the nation and Florida at 1.13%. Figure 1 shows the percentage change in population between 2016 and 2020.

There are no benchmarks for population growth. Increases are preferred and annual monitoring is conducted.

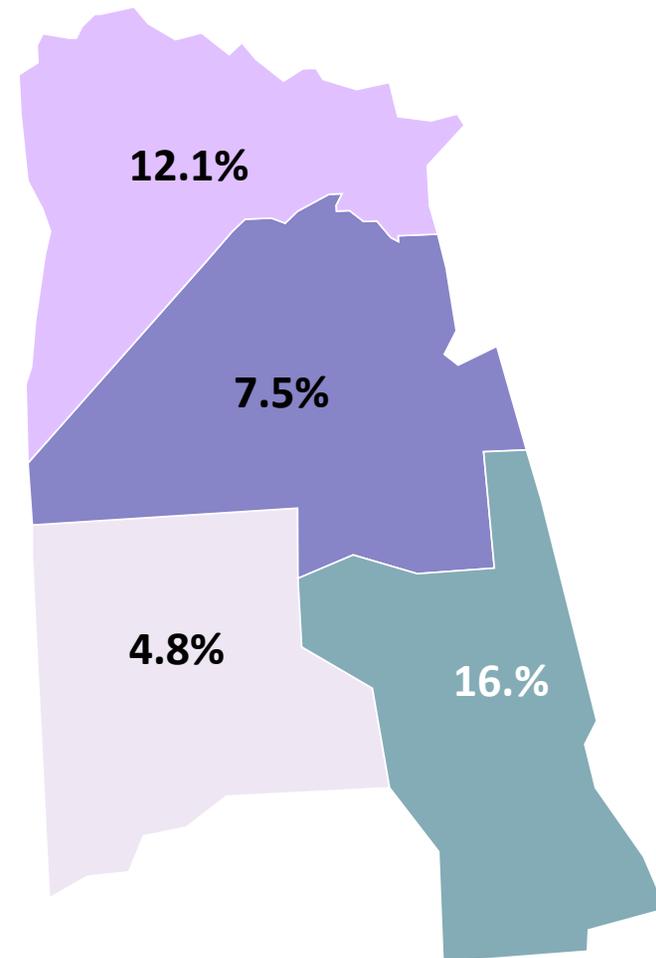


FIGURE 1 CHANGE IN POPULATION (2016-2020)

## Change in Licensed Drivers<sup>2</sup>

There are 104,000 more drivers in North Florida in 2020 than 2016. The percentage of eligible drivers under 24 years old who obtained their drivers' license declined in the late 2000s and 2010s. This trend is reversing in North Florida. A higher percentage of persons under 24 in 2020 obtained their license than in prior years. The percent of licensed drivers declined in St. Johns County. Figure 2 summarizes the change in the percentage of 16-24 years aged persons who have their drivers licenses.

There are no benchmarks for the number of licensed drivers. The number of drivers is an indicator of the amount of travel that may occur.

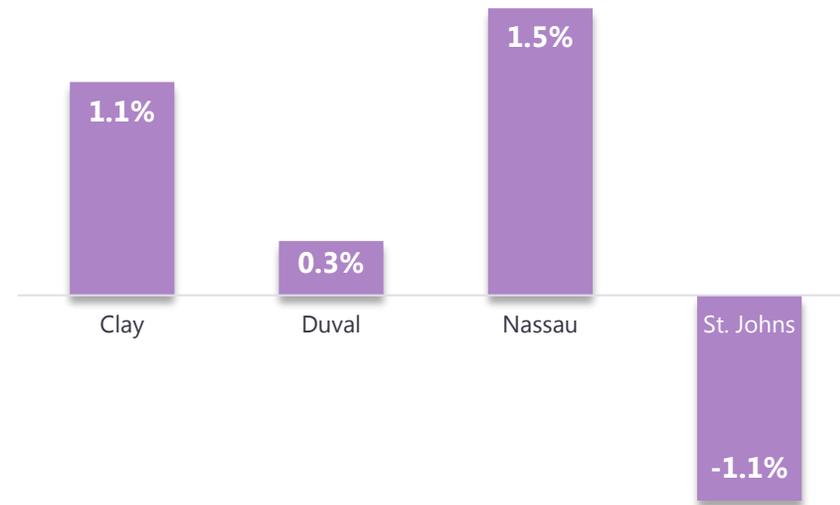


FIGURE 2 CHANGE IN PERCENT OF POPULATION 16-24 WHO ARE BECOMING LICENSED DRIVERS (2016-2020)

### Persons per Vehicle<sup>3</sup>

Vehicle occupancy is reported as the percent of vehicles with a single occupant, also known as single occupancy vehicles (SOV), and the percent of vehicles with more than one occupant, also known as non-single occupancy vehicles (non-SOV). Between 2015 and 2019, non-SOV has increased by 3.1%. From 2018 to 2019 non-SOV travel increased by 1.3% which shows that more travelers are sharing cars. No data is available for 2020. Figure 3 shows the persons per vehicle by percent of vehicles.

Vehicle occupancy should maintain or increase from year to year.

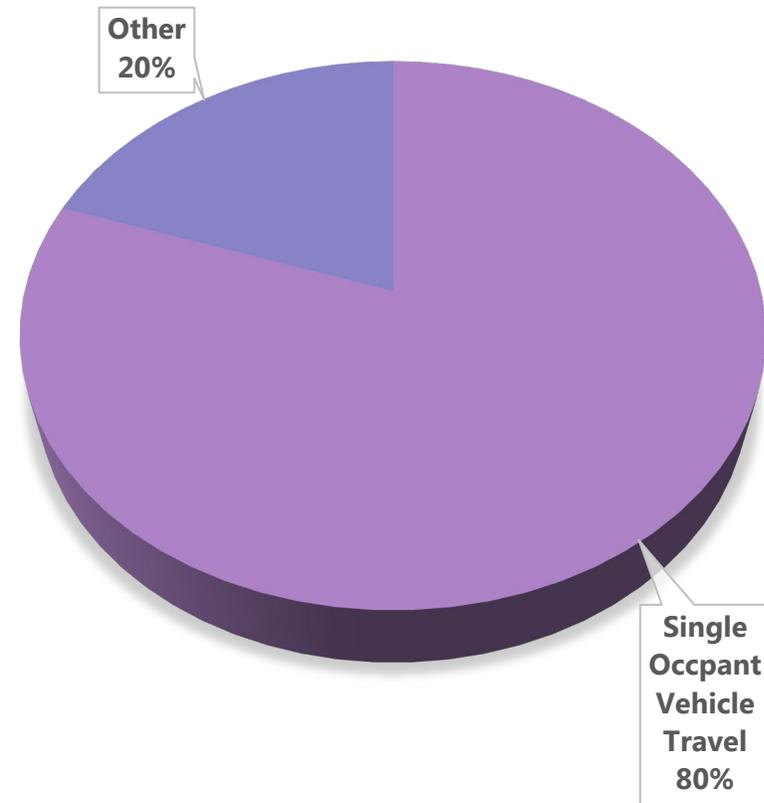


FIGURE 3 PERSONS PER VEHICLE (2019)

## Percent of Population Working from Home<sup>4</sup>

The Bureau of Labor Statistics' American Time Use Survey found that the number of American's working from home full time grew to 42% during the pandemic. Less than 10% of workers worked from home full time prior to the pandemic. A survey of 10,000 companies performed by Stanford University indicates that nearly one-third of workers expect to permanently work remotely following COVID-19. Figure 4 summarizes the trend in persons who work from home.

There are no benchmarks for the number of persons who work from home. This is an indicator of how travel patterns changed during the COVID-19 pandemic and could change long-term.

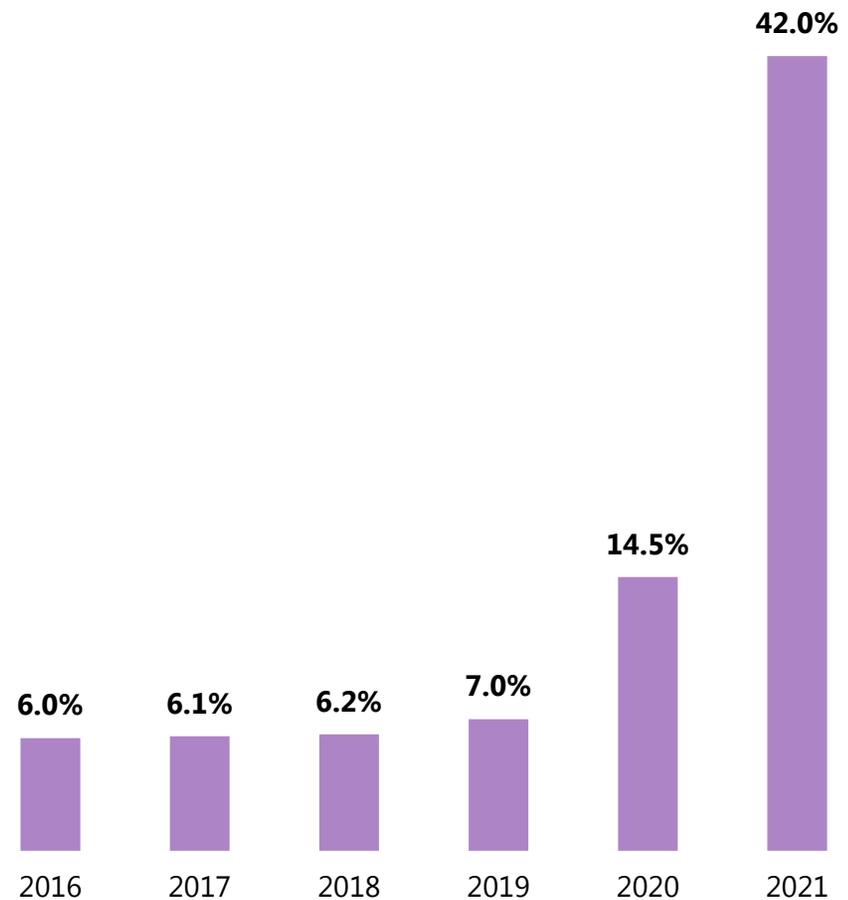


FIGURE 4 PERCENT OF PEOPLE WORKING FROM HOME

## Underserved Communities

Better serving populations that are living in poverty, minorities, households without vehicles, and those living in medically underserved or without access to healthy foods is a priority of the Bipartisan Infrastructure Law BIL.

Executive Order 14008, “Tackling the Climate Crisis at Home and Abroad” creates the Justice40 Initiative, in which the President directs his agencies to invest 40% of total federal funding to “disadvantaged, marginalized, underserved, an overburdened” communities.

To consider progress in addressing these needs a summary of the underserved populations in North Florida are provided.

### Children Living in Poverty<sup>5</sup>

About 46,000 children lived in poverty in our region in 2019 (the latest data is available).

Unemployment grew during the COVID-19 pandemic which likely had an adverse impact on children and increased the number living in poverty during 2020 and early 2021 when compared to 2019. The economic recovery began in mid-2021 and employment grew likely reducing poverty. Figure 5 shows the percent of children who are living in poverty by county.

The Florida Chamber establishes a target to have less than 10% of Florida's population under 18 to live in poverty.

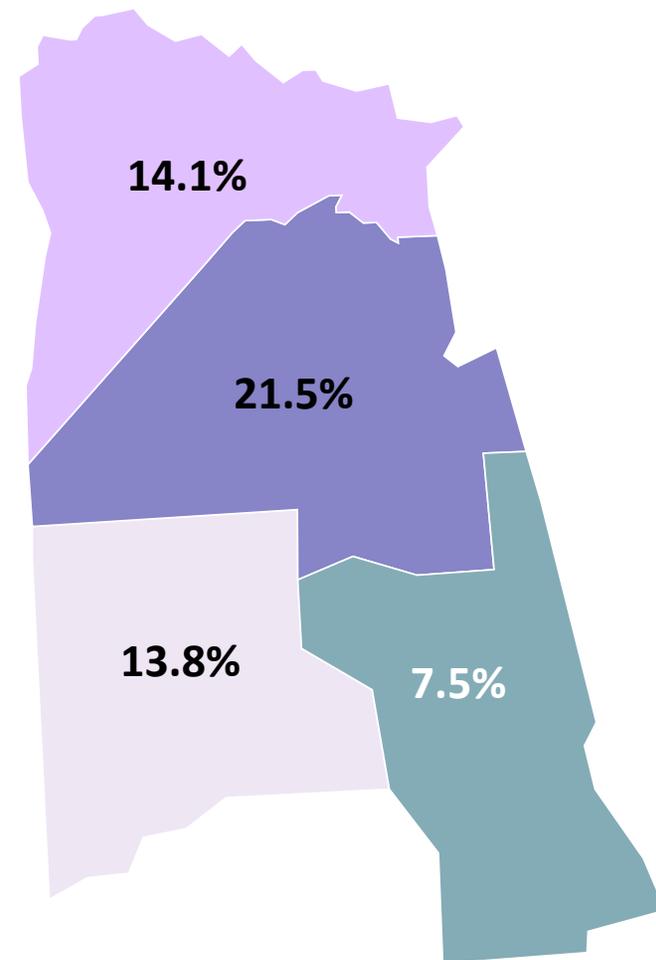


FIGURE 5 CHILDREN LIVING IN POVERTY BY COUNTY (2019)

## Poverty<sup>6</sup>

Poverty within the region has declined since its peak in 2012. Figure 6 shows the change in the percent of population living in poverty by county compared to the nation and Florida. The COVID-19 pandemic impacted our residents in 2020. Job growth occurred in 2021 and so did poverty in North Florida.

- Being poor limits your transportation options.
- Only 43% of low-income persons own vehicles
- Only 3.2% of people live within ¼ mile of a transit stop

There is no benchmark for poverty. Mobility plays a critical role in providing access to employment, medical and health care, education, and other community services and amenities.

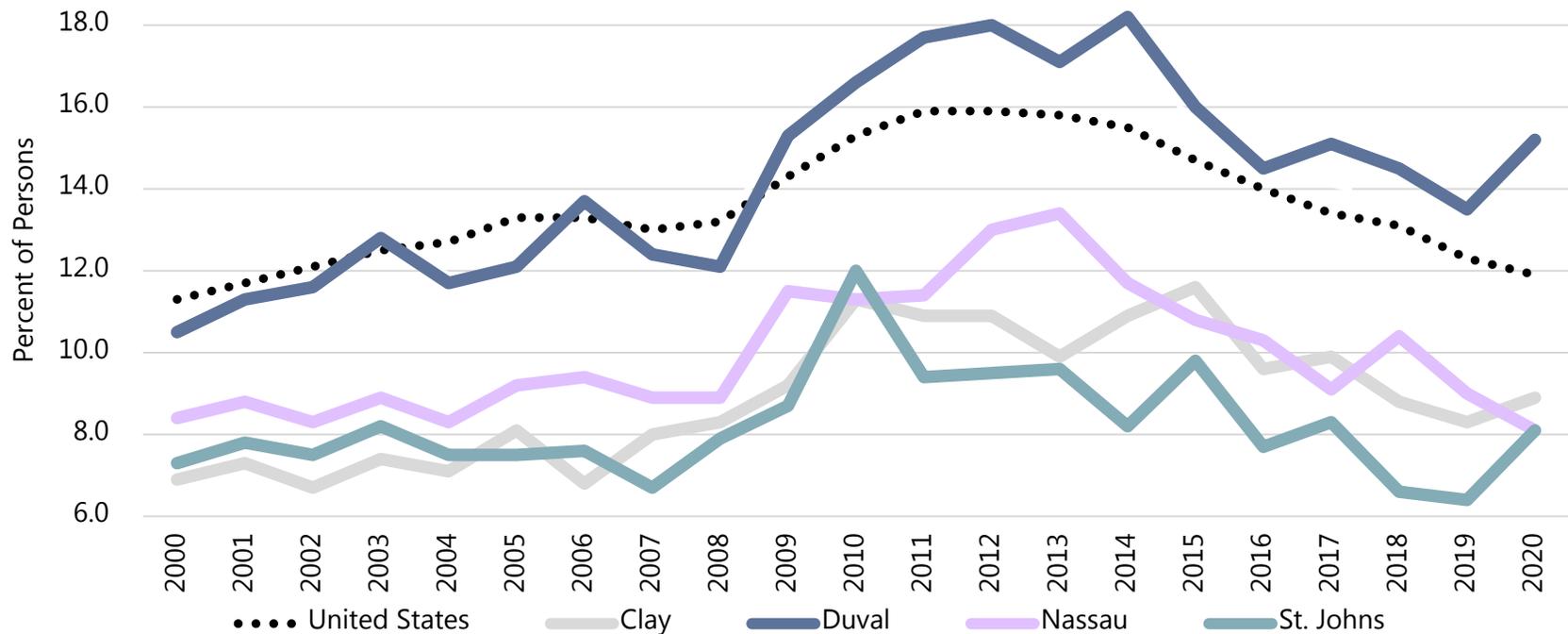


FIGURE 6 PERCENT OF POPULATION LIVING IN POVERTY (2000-2020)

## Medically Underserved<sup>7</sup>

Transportation barriers are the third leading cause of missing a medical appointment for older adults across the country. Medically Underserved Areas/Populations are areas or populations designated by the U.S. Department of Health Resources and Services Administration as having too few primary care providers, high infant mortality, high poverty or a high elderly population. Nearly 370,000 persons in North Florida live in medically underserved areas. There are no benchmarks for population in underserved areas. It is desirable to ensure the population is adequately served. Figure 7 shows the percent of population living in medically underserved areas by county. Figure 8 shows the areas designated as medically underserved in 2019.

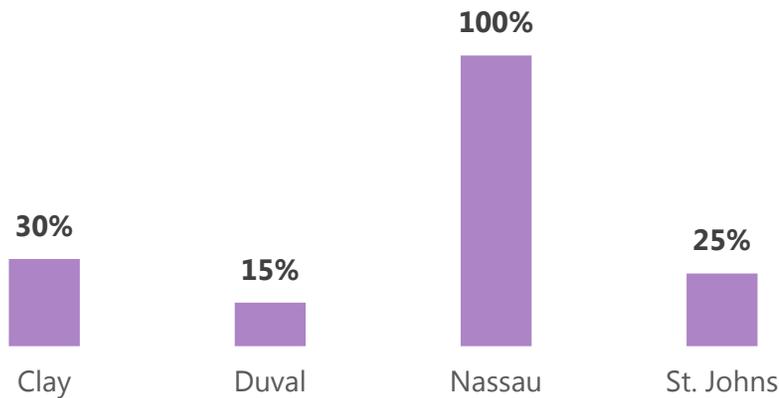


FIGURE 7 PERCENT OF POPULATION MEDICALLY UNDERSERVED (2019)

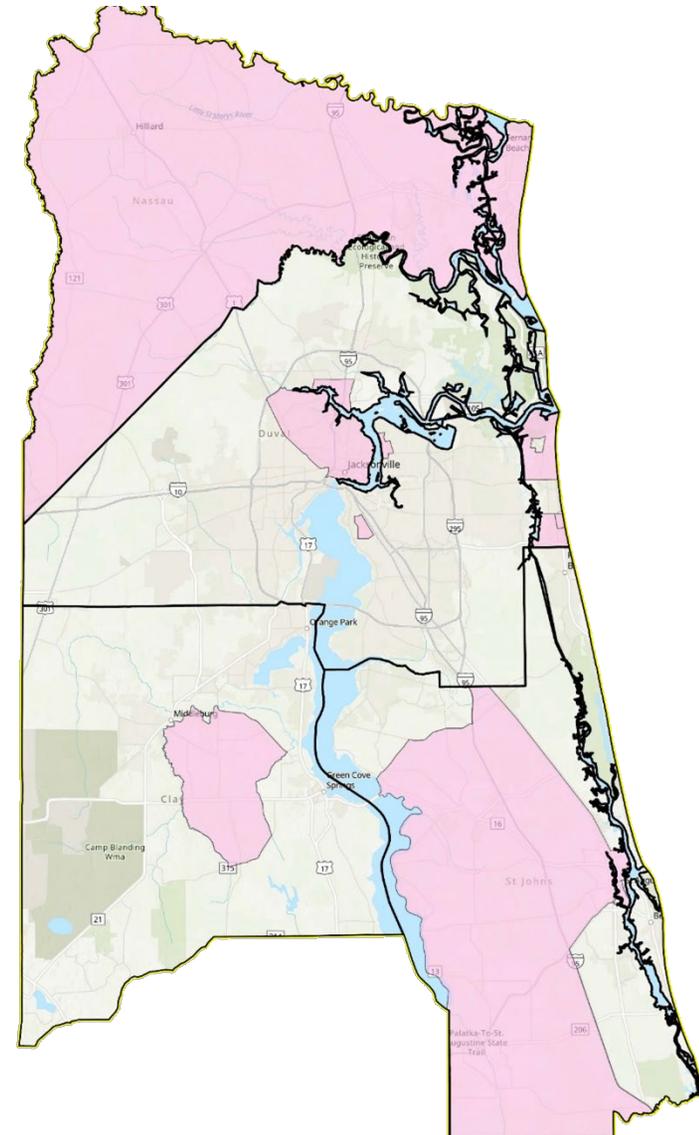


FIGURE 8 MEDICALLY UNDERSERVED AREAS (2019)

### Infant Mortality<sup>8</sup>

One of the most acute mobility issues is associated with serving medically underserved areas and providing mobility to expectant and new mothers to reduce infant mortality. According to the Centers for Disease Control and Prevention, reliable mobility is the only significant logistic barrier for timely prenatal care. Clay County and Duval County exceed the statewide average for the number of infant deaths per 100,000 in population. Figure 9 shows the infant mortality rate by county.

The target is to provide reliable and safe access to all persons and result in zero infant deaths that could be attributed to lack of access.

**Transportation problems, affecting 8% of women, appeared to be the only significant logistic barrier to timely [prenatal] care**

- Centers for Disease Control and Prevention

**Infant Mortality Rate  
(deaths per 100,000 population)**

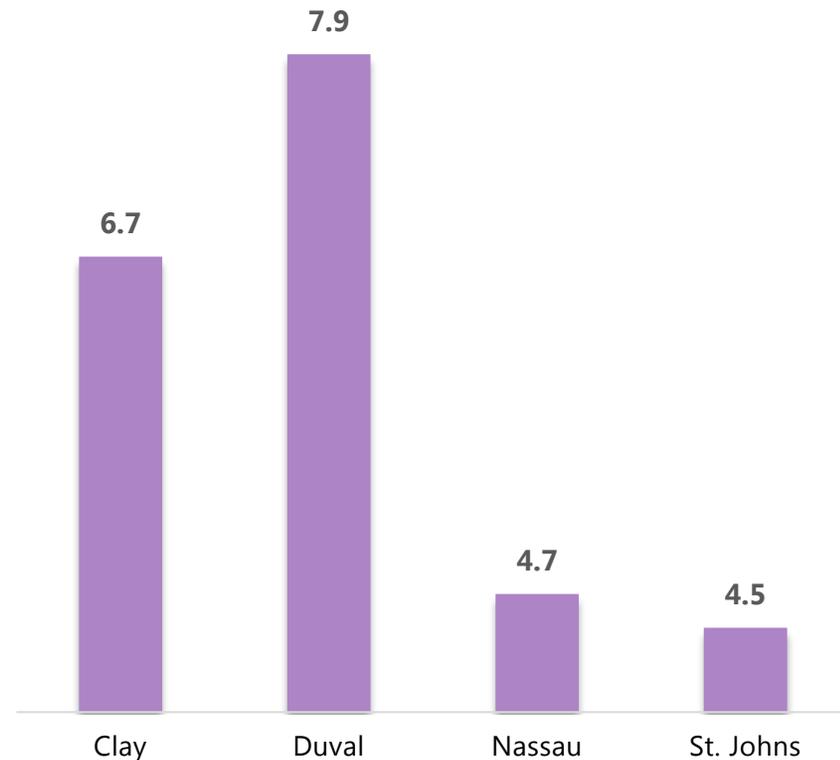


FIGURE 9 INFANT MORTALITY BY COUNTY (2019)

## Food Access<sup>9</sup>

Accessing affordable and nutritious food was a challenge for nearly 800,000 persons in North Florida in 2015 (the latest date statistics are available). The US Economic Research Service of the Department of Agriculture identifies populations whose food security is at risk if they live in low-income areas and do not have a grocery store within 1 mile in an urban area and 10 miles in a rural area. Figure 10 shows the areas without reliable access to healthy foods.

There are no benchmarks for population living with food uncertainty. It is desirable to ensure the population is adequately served.

**Consumer choices about food spending and diet are likely influenced by the accessibility and affordability of food retailers—travel time to shopping, availability of healthy foods, and food prices.**

—US Economic Research Service, 2022

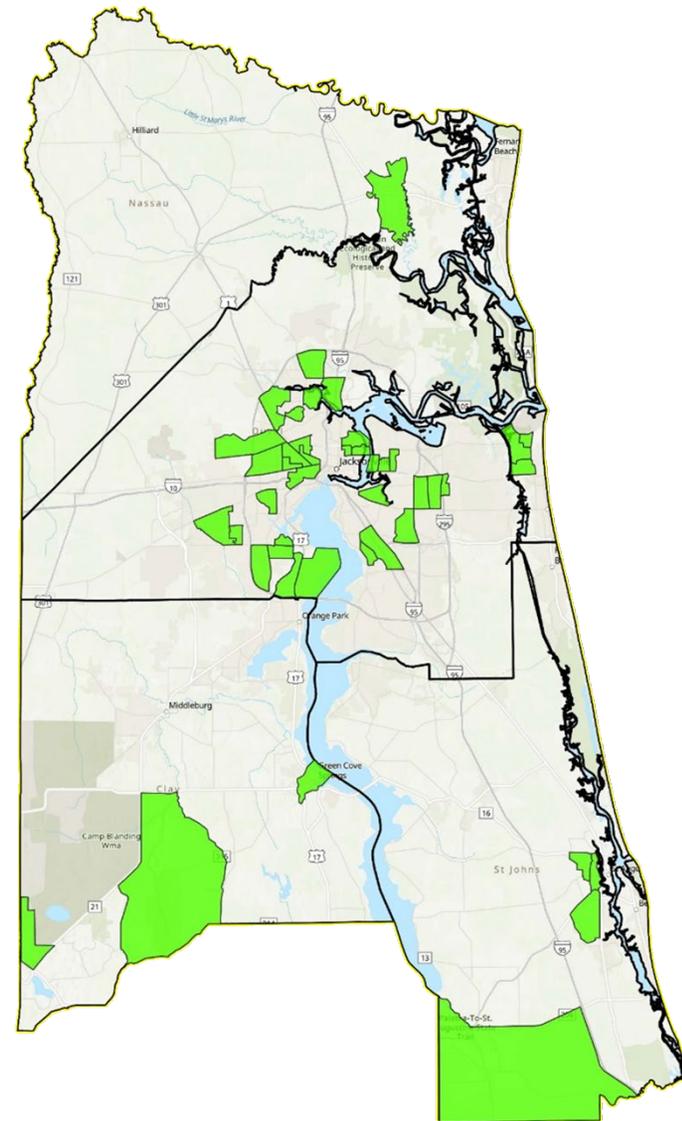


FIGURE 10 AREAS WITH LIMITED FOOD ACCESS (2019)



# Economy



## Gross Domestic Product<sup>10</sup>

The gross domestic product in North Florida remained strong despite the coronavirus pandemic with only a net 0.2% decline between 2019 and 2020. Statewide gross domestic product returned to pre-pandemic levels in the 4th quarter of 2019 and grew at 5.5% in real dollars through 2021. County estimates of gross domestic product are not available for 2021 but similar trends are anticipated. Gross domestic product growth in 2022 is anticipated to slow as a result of continued interruptions in the supply chain, inflation, labor shortages and the Ukrainian-Russian conflict. Vehicle miles traveled and gross domestic product are highly correlated. Vehicle-miles traveled trends in 2021 and 2022 are anticipated to follow the same trend. Figure 11 shows the change in gross domestic income in North Florida by quarter.

There are no benchmarks for gross domestic product. Increases are preferred and annual monitoring is conducted.

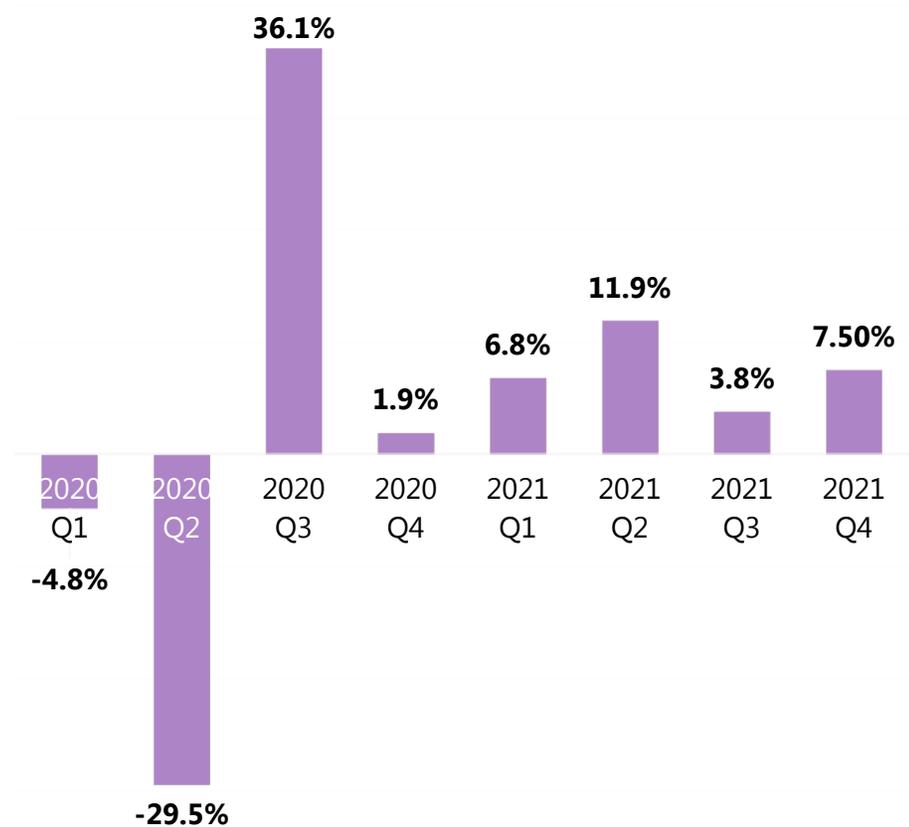


FIGURE 11 CHANGE IN GROSS DOMESTIC PRODUCT BY QUARTER IN FLORIDA (2020-2021)

## Employment<sup>11</sup>

The number of employees within the metropolitan statistical area was impacted during the coronavirus pandemic but has recovered to pre-COVID-19 pandemic levels. Employment in the region exceeded the pre-COVID-19 pandemic levels from March 2020 in January 2021. Unemployment in North Florida decreased from 4.3% to 2.5% from August 2021 to March 2022. The US average unemployment rate is 4.6% in March 2022. Job growth occurred mostly in the “trade, transportation and utilities” sector outpacing changes in other sectors. Economic growth is anticipated to slow in 2022 because of labor shortages, inflation and supply chain challenges. Figure 12 shows the total employment by month in North Florida.

There is no benchmark for employment. Employment is an indicator of economic growth which correlates to gross domestic product and vehicle miles traveled.

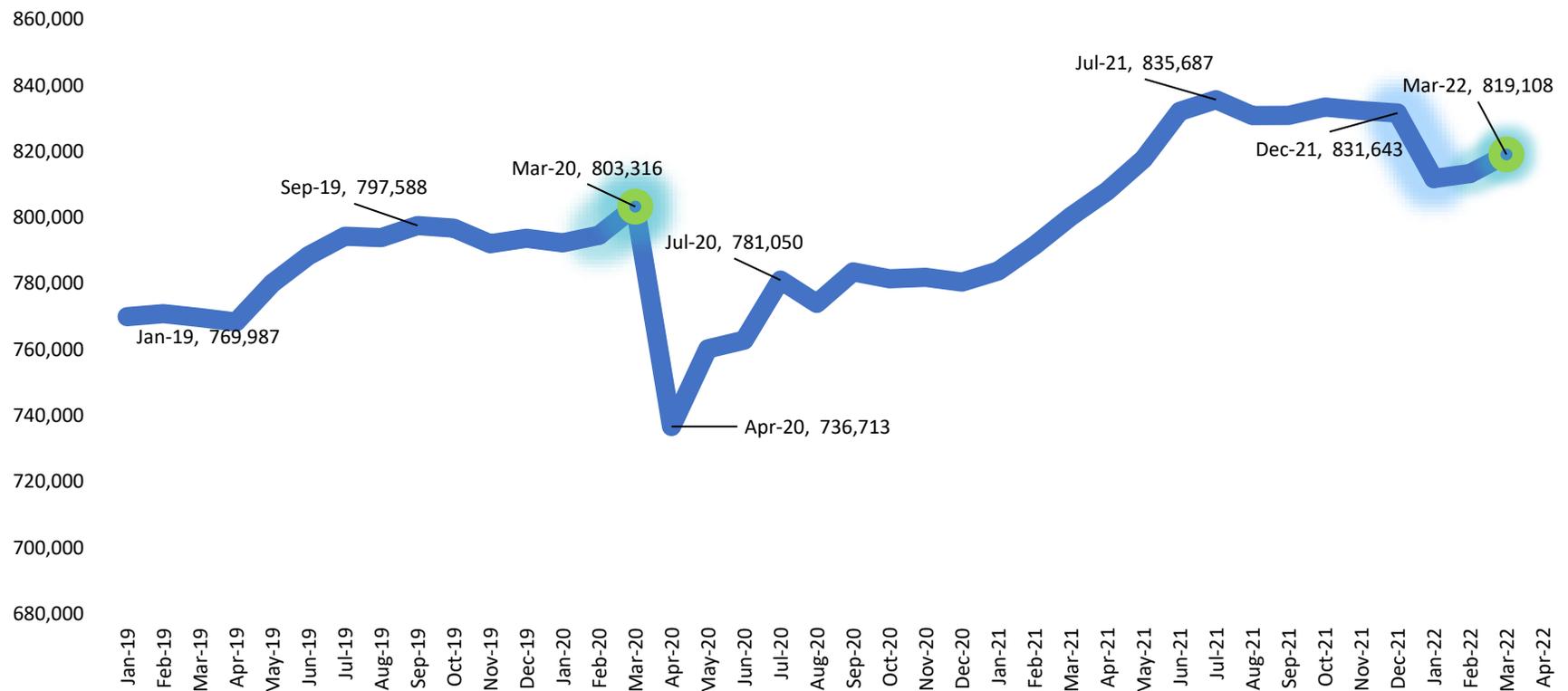


FIGURE 12 EMPLOYMENT BY MONTH (2019-MARCH 2022)

## Logistics and Supply Chains<sup>12</sup>

The global supply chain continues to be impacted by rising gas prices, labor shortages and supply shortages. Figure 13 summarizes the industry wide trends in shipping costs.

Shortages in the number of commercial vehicle drivers, the imbalance of full vs. empty shipping containers and rising fuel costs significantly impact the reliability and on-time arrivals for less-than truck-load and truck-load shipping.

Air carriers are using smaller aircraft to be more efficient with the lower demand for commercial aviation. This reduces the capacity available for air cargo shipments and therefore price. E-commerce is increasingly dependent on aviation to deliver goods to market quickly.

These dynamic conditions impact North Florida's economy and our multimodal transportation network demand.

There is no benchmark for shipping prices. These costs are passed onto the customer.

**Disruptions in the supply chain crisis will not be resolved in 2022.**

-Gardner



FIGURE 13 CHANGE IN SHIPPING COSTS (2021)

## Gas Prices<sup>13</sup>

Gas prices impact the affordability for persons to travel and the costs of goods. Between 2016 and 2020 fuel prices ranged from \$1.73 per gallon to \$2.78 average price of \$2.07 per gallon. Challenges with the global supply chain and rapid increases in demand as part of the global COVID-19 pandemic recovery caused the average price to rise to \$2.87 per gallon in 2020. Gas prices continue to rise because of reduced investments in oil exploration and development capacity over the last seven years constraining supply and the ability to respond to the increase in demand in the COVID-19 recovery in 2021 and 2022, reduced global supply resulting from the embargo on Russian oil and the Ukrainian-Russian war and labor shortages in the industry and trucking. Figure 14 shows the trends in the average cost of gasoline in Florida.

There is no benchmark for gas prices.

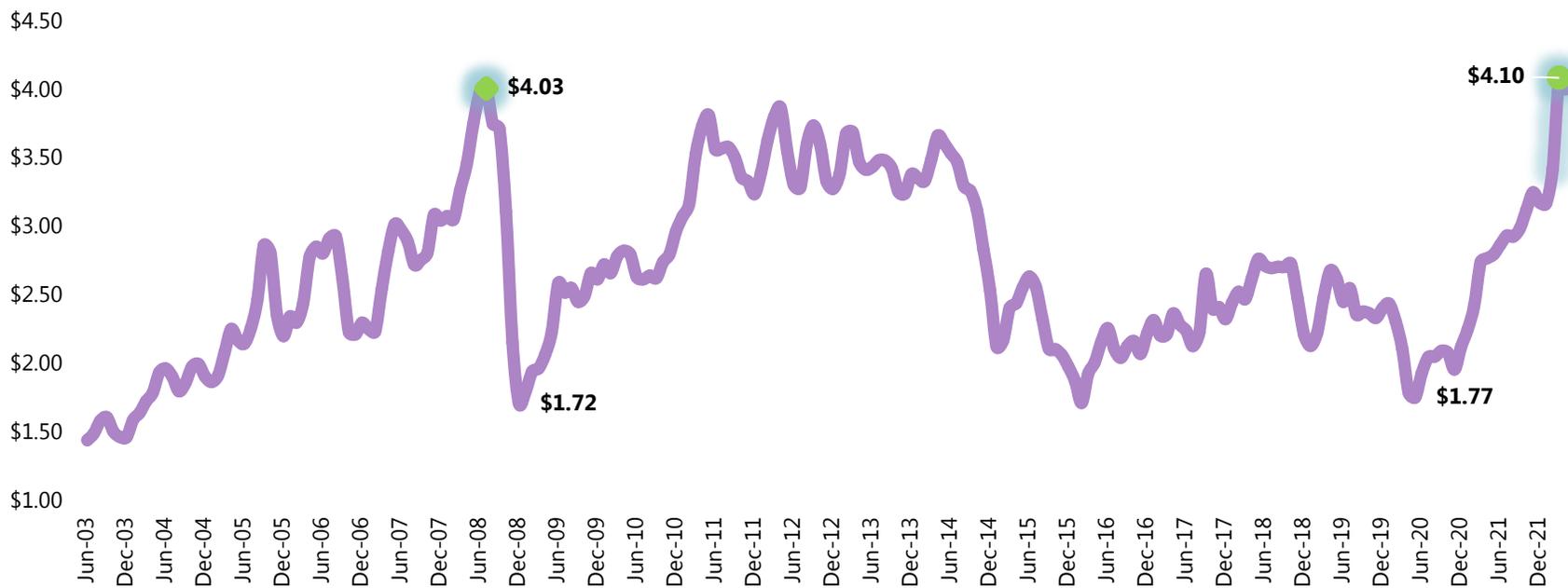


FIGURE 14 FUEL PRICES IN FLORIDA (2019-2021)

## Truck Driver Shortages<sup>14</sup>

One of the major impacts on supply chains and prices today is the shortage of persons who work as truck drivers. Within Florida there is a 20,000 shortfall, or one-quarter of the national shortage in 2022. Figure 15 shows the existing and forecast shortage in truck drivers.

There is no benchmark for the number of truck drivers.

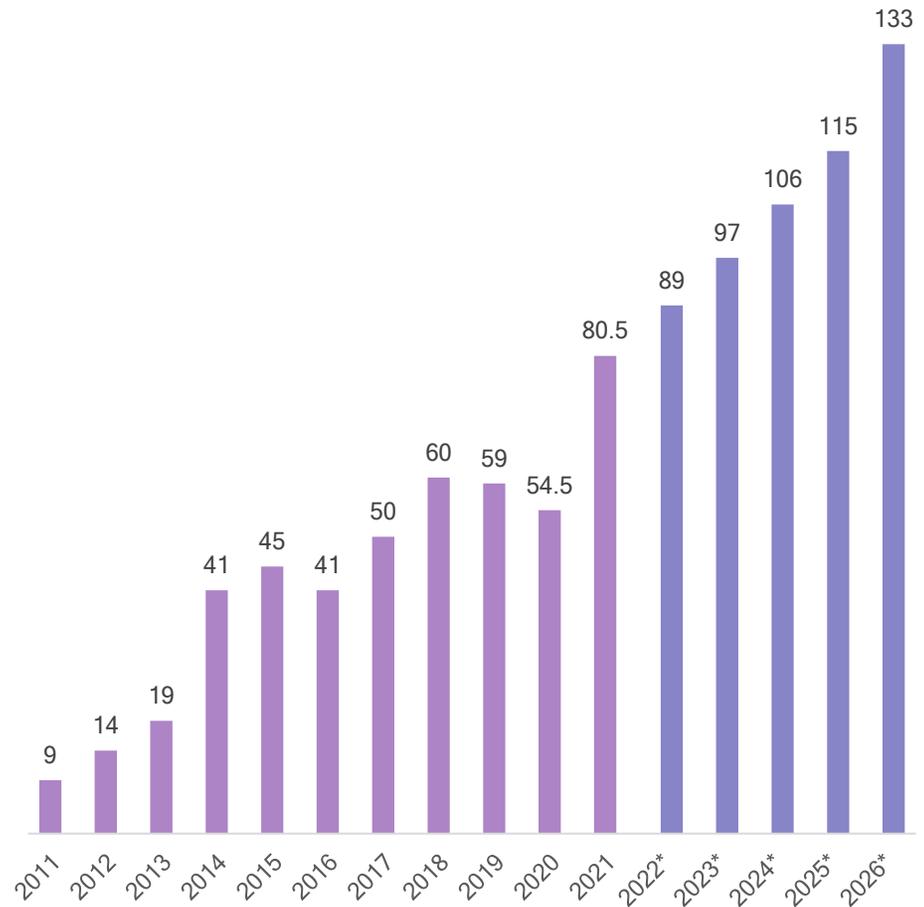


FIGURE 15 NATIONAL EXISTING AND FORECAST TRUCK DRIVER SHORTAGES

## Global Shipping Capacity Shortages<sup>15</sup>

COVID-19 had unprecedented changes on the global shipping market. The consumer goods demand increases combined with reduced upstream production capacity and shortages in the shipping capacity due to labor shortages and imbalances in the container availability resulting in cost increases and delays. Global container shipping capacity has declined since February of 2020 due to the following market conditions that existed in each period shown in Figure 16.

1. Lockdowns reducing labor capacity and reductions of goods production because of labor capacity and demand
  2. Liners reduce sailing capacity
  3. Liners add back sailing capacity to back-fill inventories
  4. Congestion in ports and throughout the supply-chain
  5. Suez Canal blockage reduced global supply changes
  6. Closure of Yantian and Ningbo ports in China
- Ramp up in consumer demand  
 Reduced labor availability in US ports and landside supply chain  
 Imbalance of container traffic and lack of container availability at point of production  
 Trucking and other landside capacity shortfalls

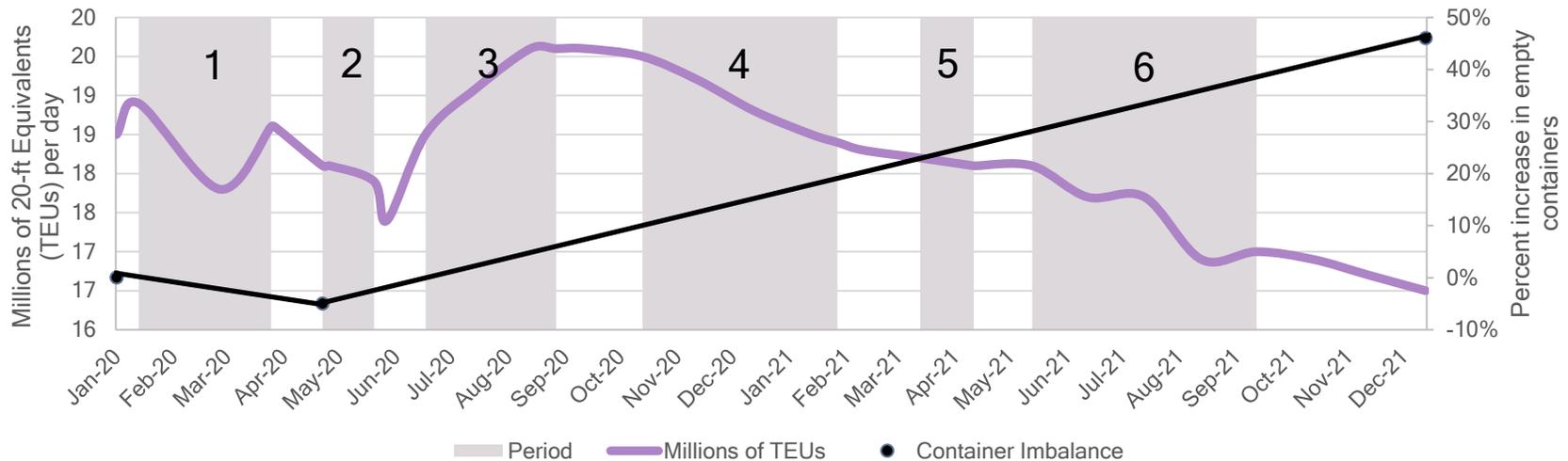


FIGURE 16 GLOBAL CONTAINER SHIPPING SUPPLY



### Total Crashes<sup>16</sup>

Total crashes in 2021 increased 15% over 2020. This is the second highest number of crashes recorded in North Florida. Figure 17 summarizes the number of crashes by county.

The target is to have zero injuries or fatalities resulting from crashes.

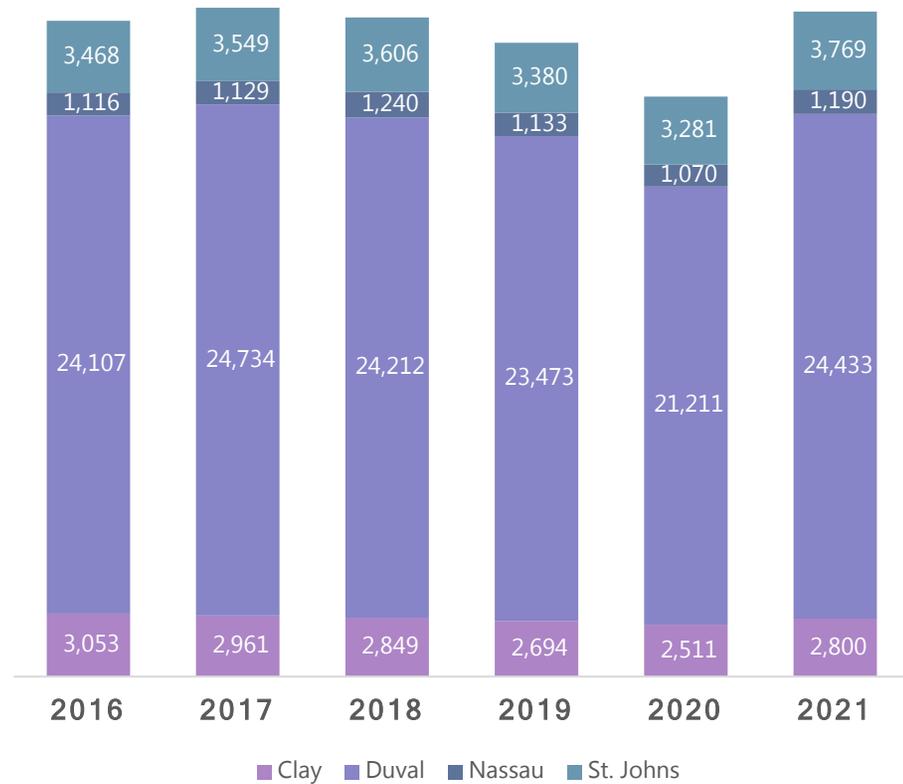


FIGURE 17 TOTAL CRASHES BY YEAR (2016-2021)

### Crash Rate (5-year Rolling Average)<sup>17</sup>

The average number of crashes per year per Million Vehicle Miles Traveled (MVMT) in North Florida has exceeded the statewide average since 2013. Regional crash rates are similar to the statewide averages in recent years. Figure 18 shows the trend in total crash rate in North Florida compared to statewide.

The target is to have zero injuries or fatalities resulting from crashes.

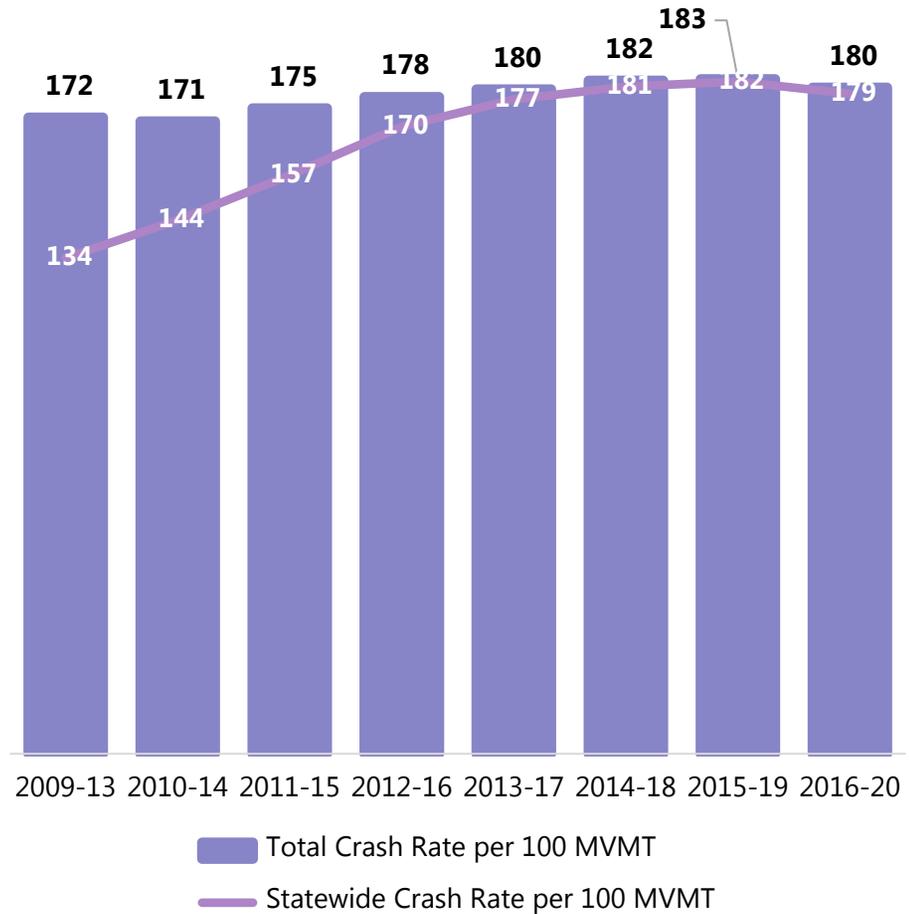


FIGURE 18 TOTAL CRASH RATE 5-YEAR ROLLING AVERAGE PER 100 MILLION VEHICLE MILES TRAVELED (2019-2020)

### Fatalities<sup>18</sup>

266 people were killed on North Florida’s public roads in 2021 which equaled the number of fatalities in 2020. The five-year moving average has risen every year since 2014. Figure 19 summarizes the 5-year rolling average of fatalities in North Florida.

The goal for crash safety is to have zero fatalities.



FIGURE 19 FATALITIES 5-YEAR ROLLING AVERAGE (2013-2021)

### Fatal Crash Rate<sup>19</sup>

The average of number of fatalities per year per MVMT in North Florida exceeds the statewide averages and grew steadily between 2016 and 2020. Figure 20 compares the statewide average fatal crash rate and North Florida's fatal crash rate.

The target is to have zero injuries or fatalities resulting from crashes.

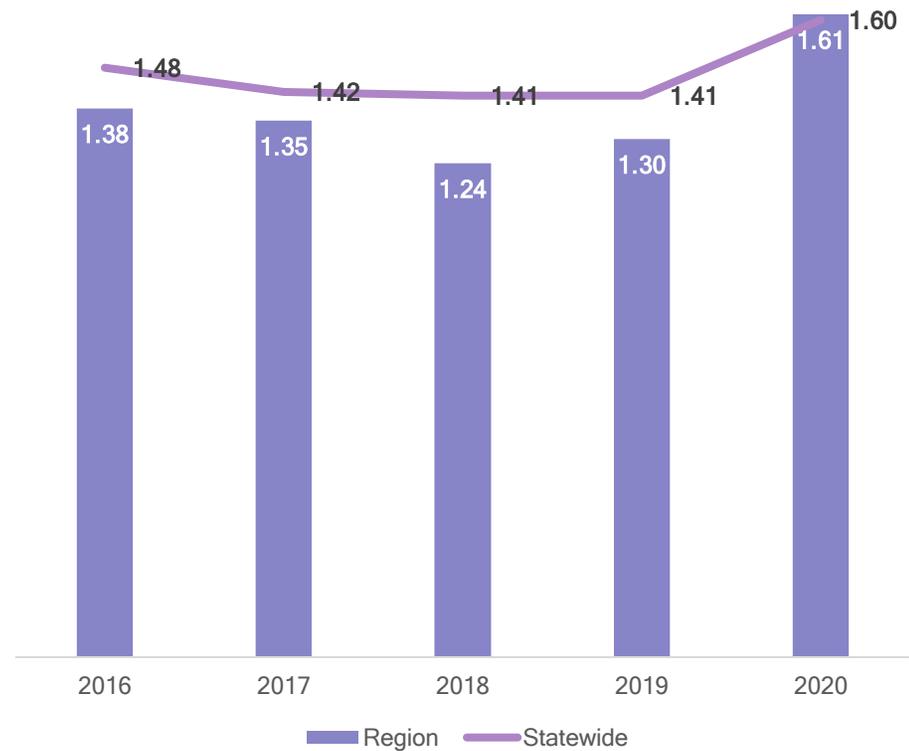


FIGURE 20 FATAL CRASH RATE PER 100 MILLION VEHICLE MILES (2016-2020)

### Injuries from Crashes<sup>20</sup>

Injuries from crashes increased in 2021 compared to 2020 consistent with the increase in vehicle miles traveled and economic recovery from the COVID-19 pandemic. The 2021 data for injury crashes was not classified by severity and is therefore not shown in Figure 21 shows the trend in injuries resulting from crashes.

The target is to have zero injuries or fatalities resulting from crashes.



FIGURE 21 INJURIES FROM CRASHES (2016-2020)

### Serious Injury Rate<sup>21</sup>

The number of injuries resulting from crashes per year per MVMT traveled in North Florida steadily declined since 2016 and was below the statewide rate in every year. Figure 22 shows the trend in serious injury rates statewide compared to North Florida.

The benchmark is to have zero fatalities or injuries resulting from crashes.

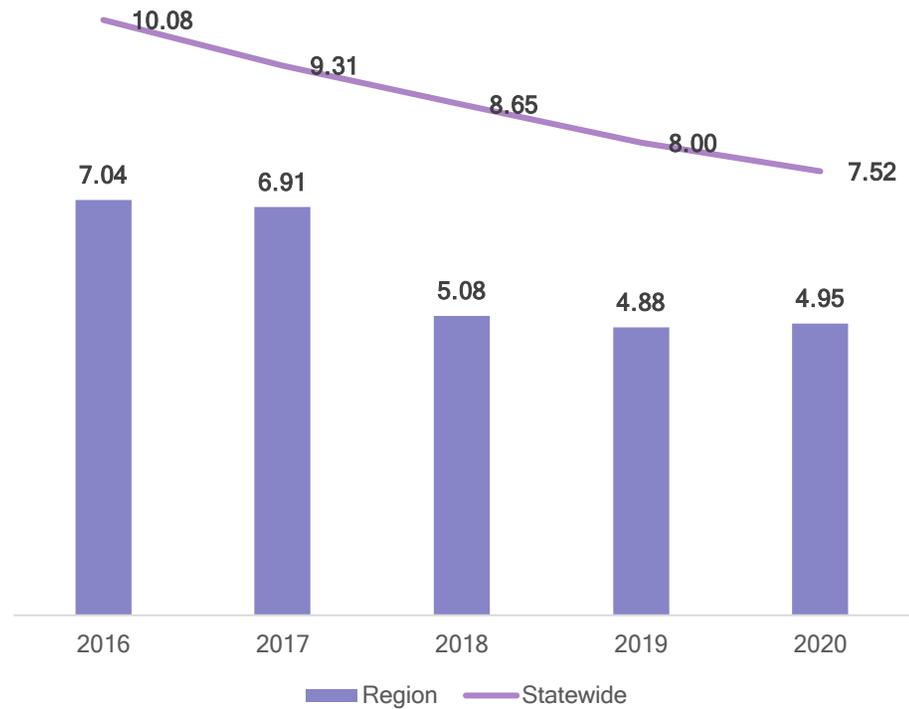
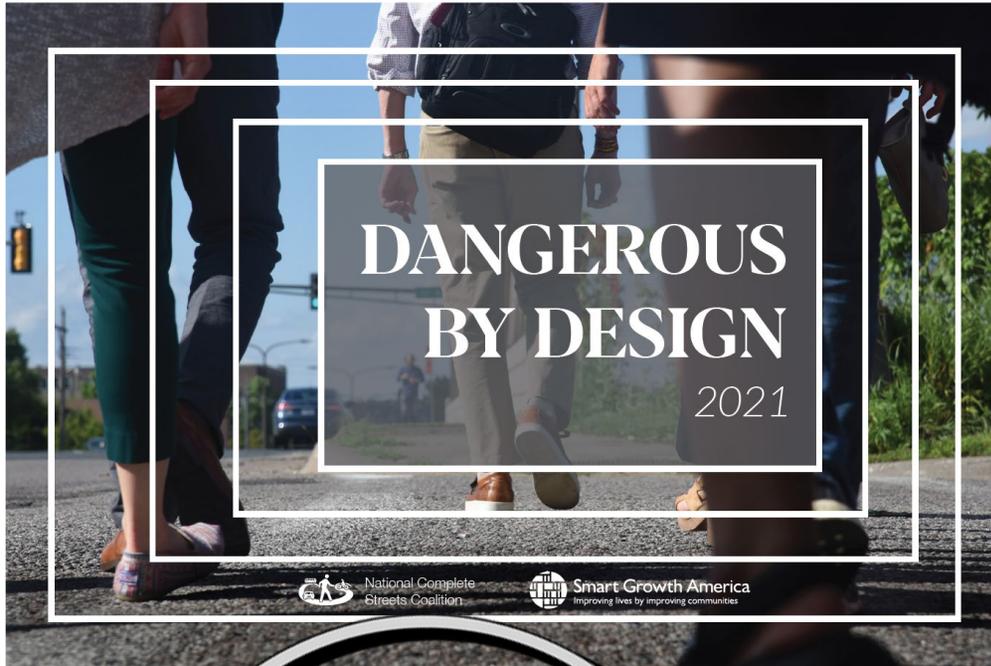


FIGURE 22 SERIOUS INJURY RATES PER 100 MILLION VEHICLE MILES (2016-2020)

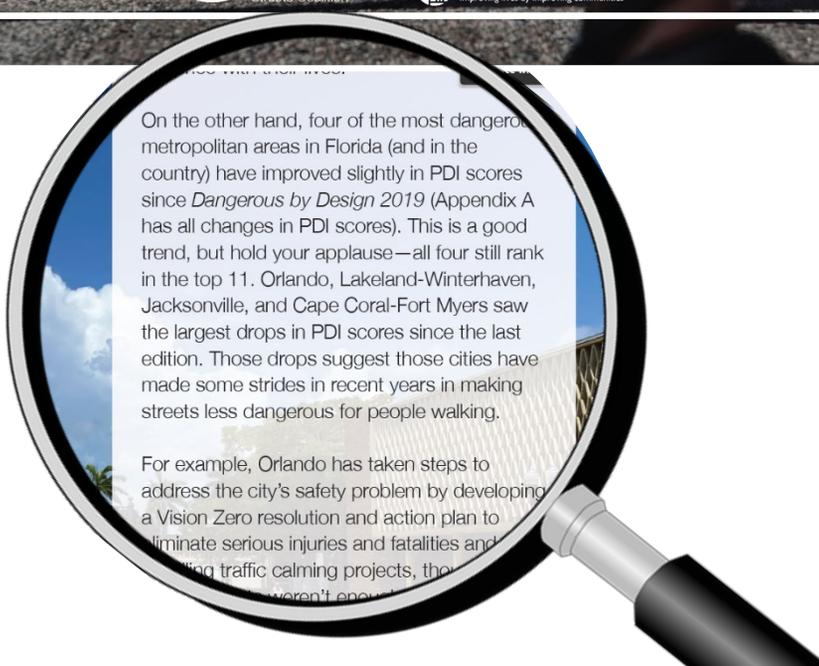


FIGURE 23 BICYCLE AND PEDESTRIAN CRASH TRENDS (2016-2020)



## Bicycle and Pedestrian Fatalities Per 100,000 Population<sup>23</sup>

The Jacksonville metropolitan statistical area was ranked as the 10th least safe area by Dangerous by Design's 2021 pedestrian danger index. The pedestrian danger index is calculated as the number of bicycle and pedestrian fatalities per 100,000 in population divided by the number of cycling or walk trips from the 2017 National Household Travel Survey. Jacksonville had the second largest improvement in the pedestrian danger index in 2021 when compared to 2019.



On the other hand, four of the most dangerous metropolitan areas in Florida (and in the country) have improved slightly in PDI scores since *Dangerous by Design 2019* (Appendix A has all changes in PDI scores). This is a good trend, but hold your applause—all four still rank in the top 11. Orlando, Lakeland-Winterhaven, Jacksonville, and Cape Coral-Fort Myers saw the largest drops in PDI scores since the last edition. Those drops suggest those cities have made some strides in recent years in making streets less dangerous for people walking.

For example, Orlando has taken steps to address the city's safety problem by developing a Vision Zero resolution and action plan to eliminate serious injuries and fatalities and implementing traffic calming projects, though these weren't enough.

Figure 24 summarizes the bicycle and pedestrian crashes per 100,000 persons by county. Table 7 summarizes the rankings of the major metropolitan areas in Florida. These locations and the trends in rankings are shown in Figure 25.

When considering the population by county:

- Nassau County has the highest rate of pedestrian fatalities in the region with a rate of three times the overall regional rate.
- Duval County has the highest rate of injuries for pedestrians and bicyclists.

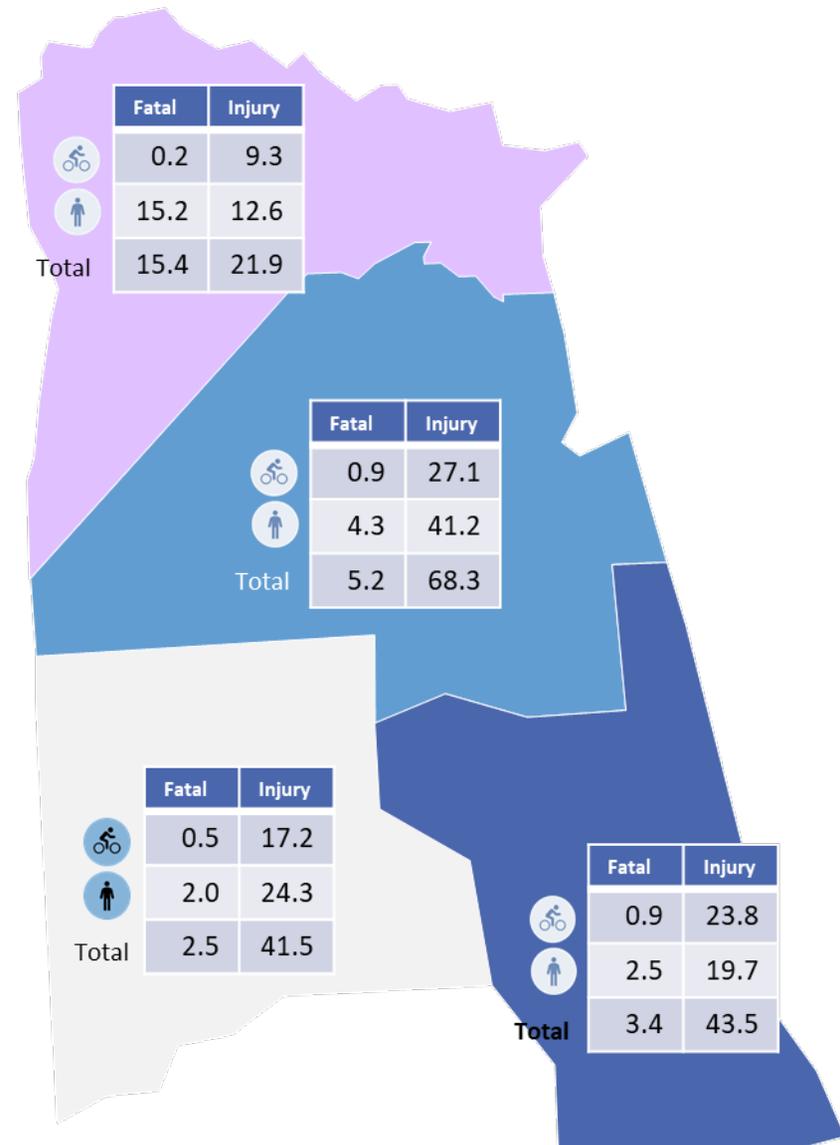


FIGURE 24 BICYCLE AND PEDESTRIAN CRASHES PER 100,000 POPULATION BY COUNTY (2020)

**TABLE 7. DANGEROUS BY DESIGN FLORIDA RANKINGS**

<b>National Rank (1 worst)</b>	<b>Metropolitan Area</b>	<b>Pedestrian Fatalities (2010-2019)</b>	<b>Average Annual Fatalities per 100,000 (2010-2019)</b>	<b>2019 Pedestrian Danger Index</b>	<b>2021 Pedestrian Danger Index</b>	<b>Change</b>
#1	Orlando	740	3.00	313	295	-18
#4	Melbourne	168	2.90	245	261	16
#5	Daytona	235	3.60	265	260	-5
#6	Sarasota	199	2.50	235	248	13
#8	Tampa	968	3.10	205	223	18
#9	Lakeland	162	2.40	231	215	-16
#10	Jacksonville	462	3.10	226	205	-21
#11	Cape Coral	170	3.00	217	192	-24
#13	Miami-Ft. Lauderdale Palm Beach	1,675	2.80	153	172	18

No data was provided for 2020.

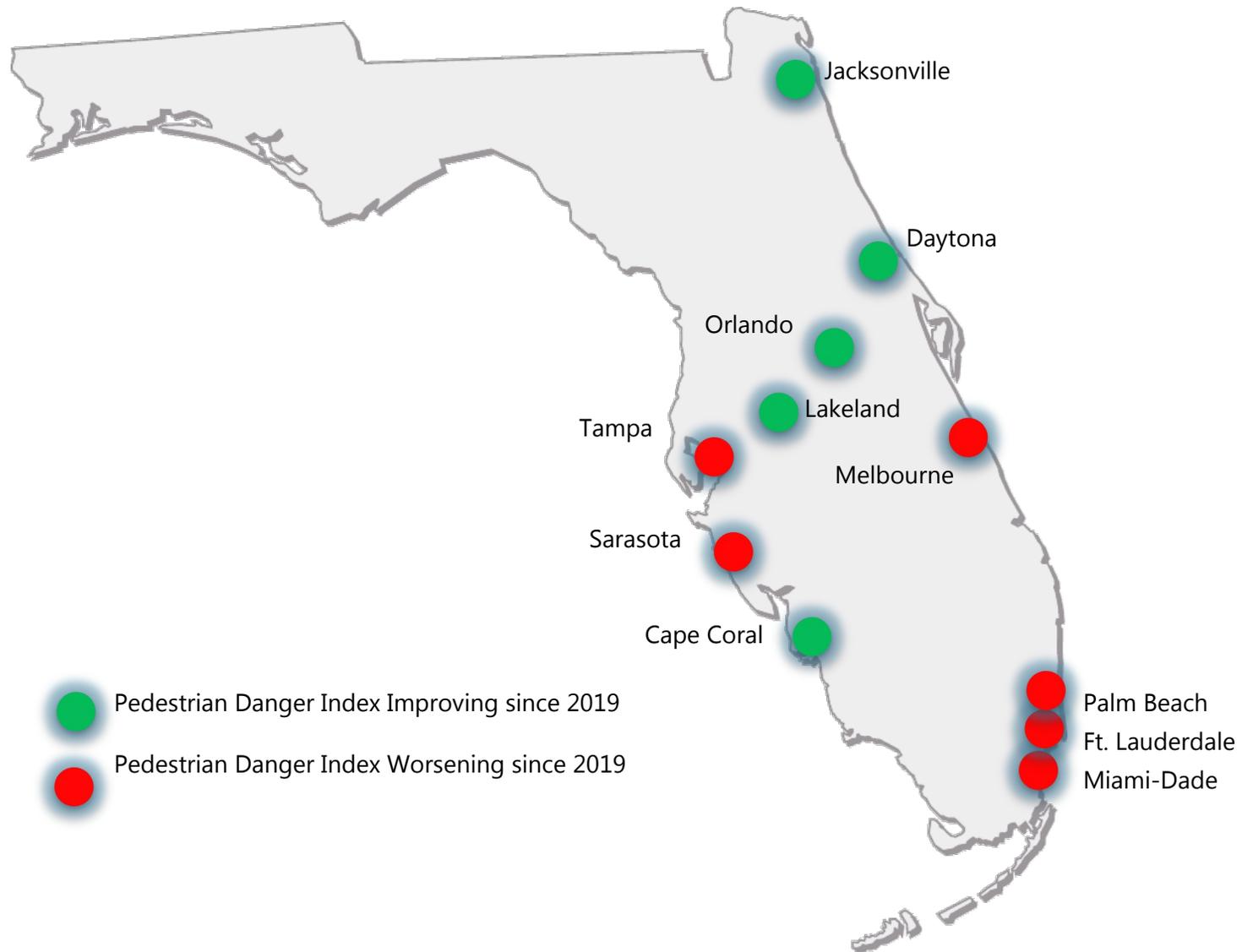


FIGURE 25 DANGEROUS BY DESIGN FLORIDA RANKINGS (2021)



## Vehicle Miles Traveled<sup>24</sup>

Vehicle miles traveled (VMT) is the most direct measure of the travel on roadways and represents the average annual daily traffic (AADT) multiplied by the roadway segment length. This measure is reported annually by Florida Department of Transportation (FDOT) in the Mobility Performance Measure (MPM) data. The COVID-19 pandemic reduced the number of jobs and increased the percentage of employees working at home. These trends led to the largest single year reduction in the vehicle miles traveled observed in North Florida.

Figure 26 shows the trends in annual vehicle miles traveled since 2006.

There is no defined benchmark for vehicle miles traveled. Generally, increases in the quantity traveled, or the number of vehicles served, is preferred. However, consistent with livability and sustainability goals, one objective is to reduce the amount of vehicle travel needed.

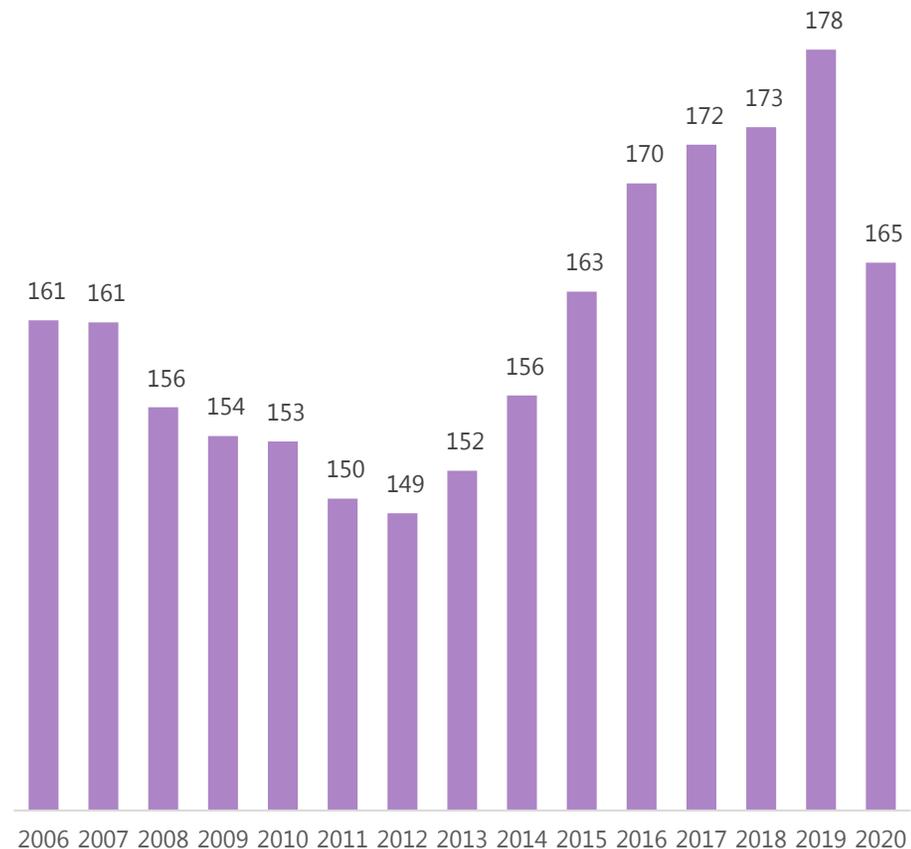


FIGURE 26 100 MILLION VEHICLE MILES TRAVELED PER YEAR (2006-2020)

## Vehicle Miles Traveled and Gross Domestic Product<sup>25</sup>

The COVID-19 pandemic reduced economic growth, the number of jobs and increased the percentage of employees working at home. These trends led to the largest single year reduction in the vehicle miles traveled observed in North Florida. Prior to 2020 there was strong correlation ( $R^2 = 0.97$ ) between vehicle miles traveled and gross domestic product. The correlation between vehicle miles traveled and gross domestic product diverged slightly in 2020 ( $R^2 = 0.93$ ) due to the growth in work from home that reduced travel by maintained gross domestic product. Figure 27 shows the trends in vehicle miles traveled and gross domestic product.

There is no defined benchmark for vehicle miles traveled. Generally, increases in the quantity traveled, or the number of vehicles served, is preferred. However, consistent with livability and sustainability goals, one objective is to reduce the amount of vehicle travel needed.

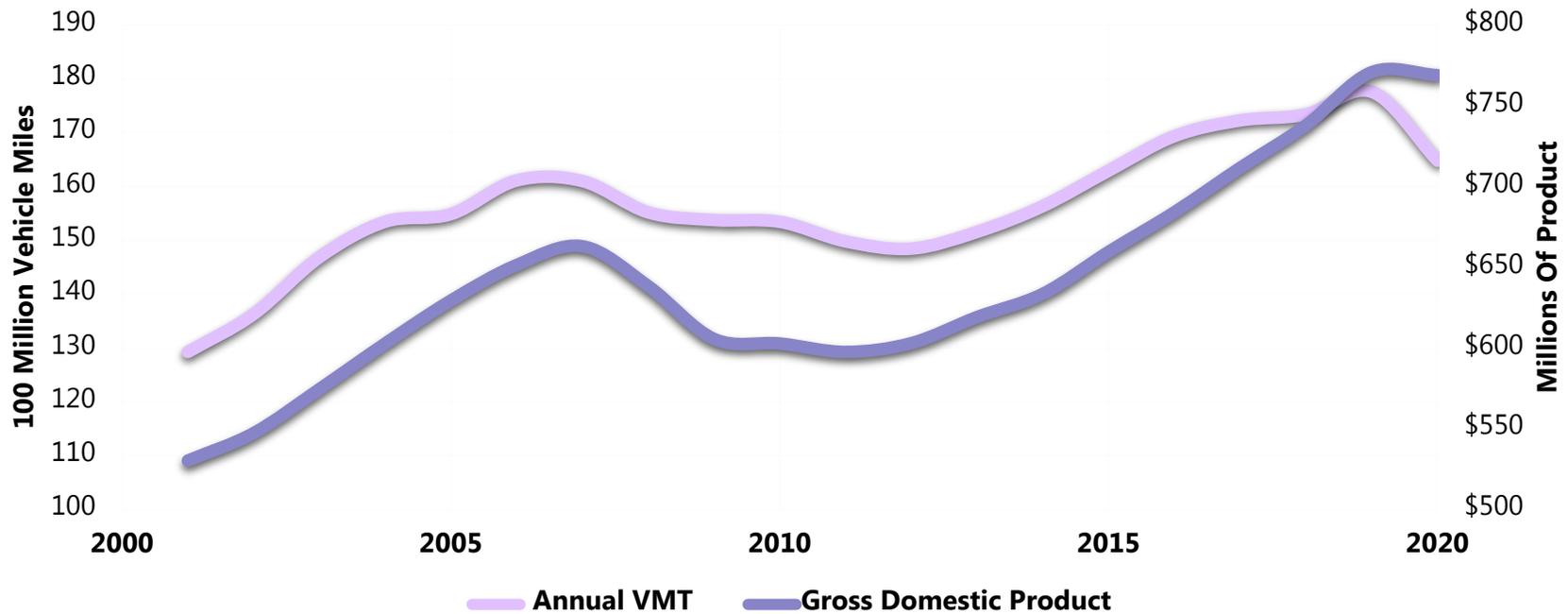


FIGURE 27 100 MILLION VEHICLE MILES TRAVELED PER YEAR VS. GROSS DOMESTIC PROJECT (2000-2020)

## Transit Ridership<sup>26</sup>

Transit use in North Florida continues to be less than one percent of all person miles traveled. Prior to 2020 ridership decreased by 10.28%. This decline is believed to be the result of riders who can afford to use on-demand services such as Lyft and Uber opting for these services rather than public transit. The COVID-19 pandemic had a significant impact on transit ridership in 2020. The Jacksonville Transportation Authority assumed the responsibility for Clay Transit in 2018. Figure 28 summarizes the transit ridership by agency.

Transit ridership should increase from year-to-year.



FIGURE 28 TRANSIT RIDERSHIP BY AGENCY (2016-2020)

### Aviation Passengers<sup>27</sup>

In 2021 passengers traveling at Jacksonville International Airport increase by 27% when compared to 2020 as the recovery from the COVID-19 pandemic began. In June 2021 month-over-month passengers served began to increase when compared to 2020. Figure 29 summarizes the trends in air passengers. Figure 30 shows the month-month growth in air passengers in 2021. Figure 31 shows the top air passenger destinations from Jacksonville International Airport.

There is no defined benchmark for aviation passengers served. Increases are preferred and annual monitoring is conducted.

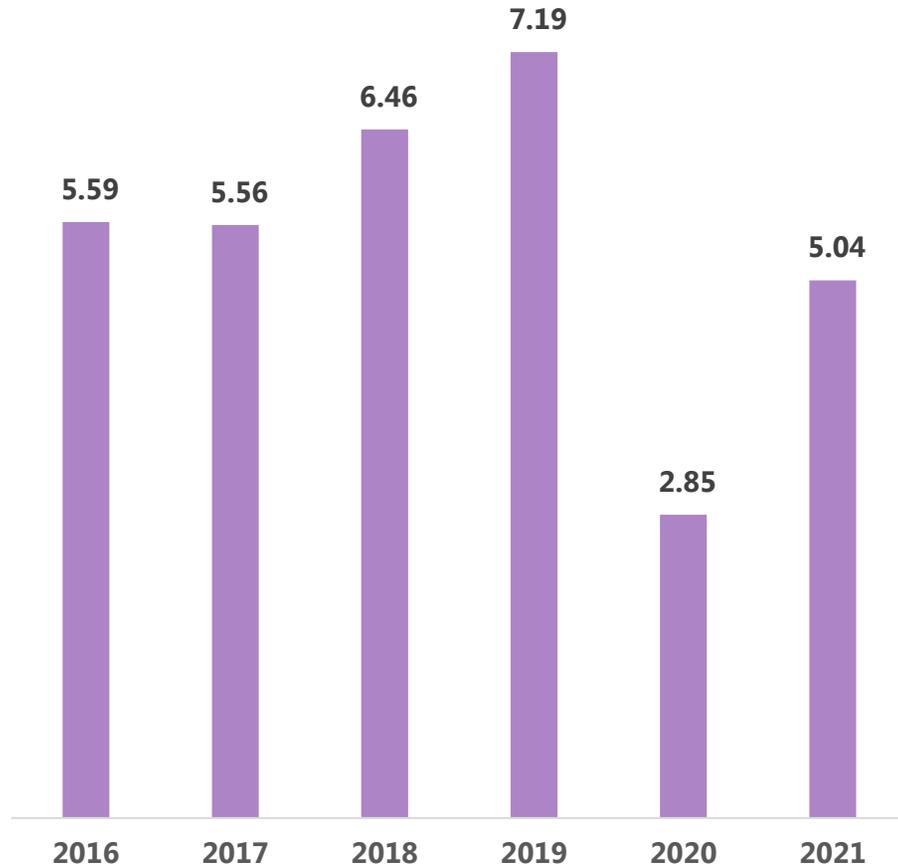


FIGURE 29 MILLIONS OF AIR PASSENGERS PER FISCAL YEAR (2016-2021)

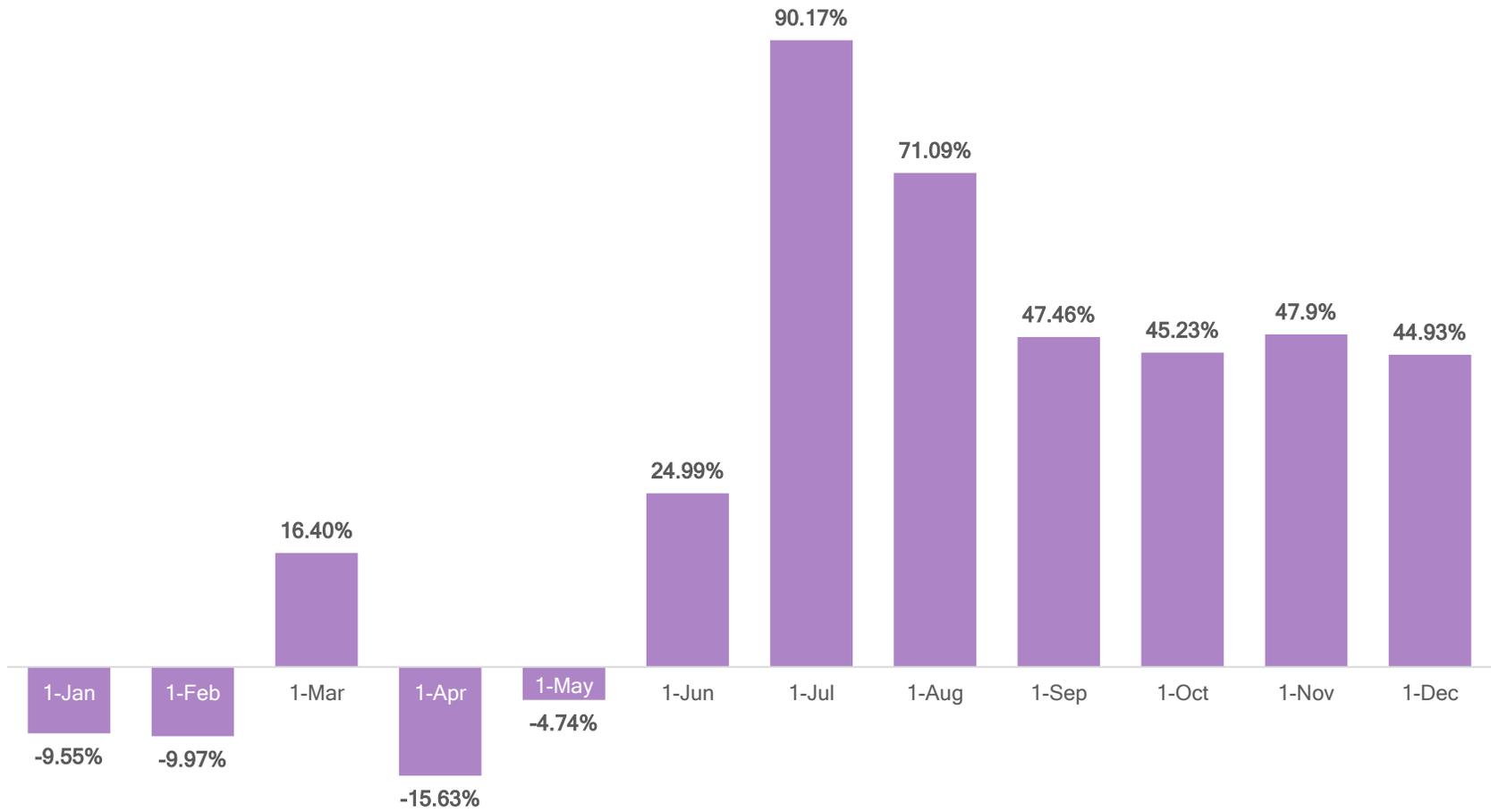


FIGURE 30 CHANGE IN AIR PASSENGERS MONTH-OVER-MONTH (2021)

### Top Air Destinations<sup>28</sup>

Top Destinations	Rank
Atlanta	1
Charlotte	2
Ft. Lauderdale	3
Chicago O'Hare	4
New York JFK	5
Washington Reagan	6
Miami	7
Boston	8
Dallas-Ft. Worth	9
Newark	10

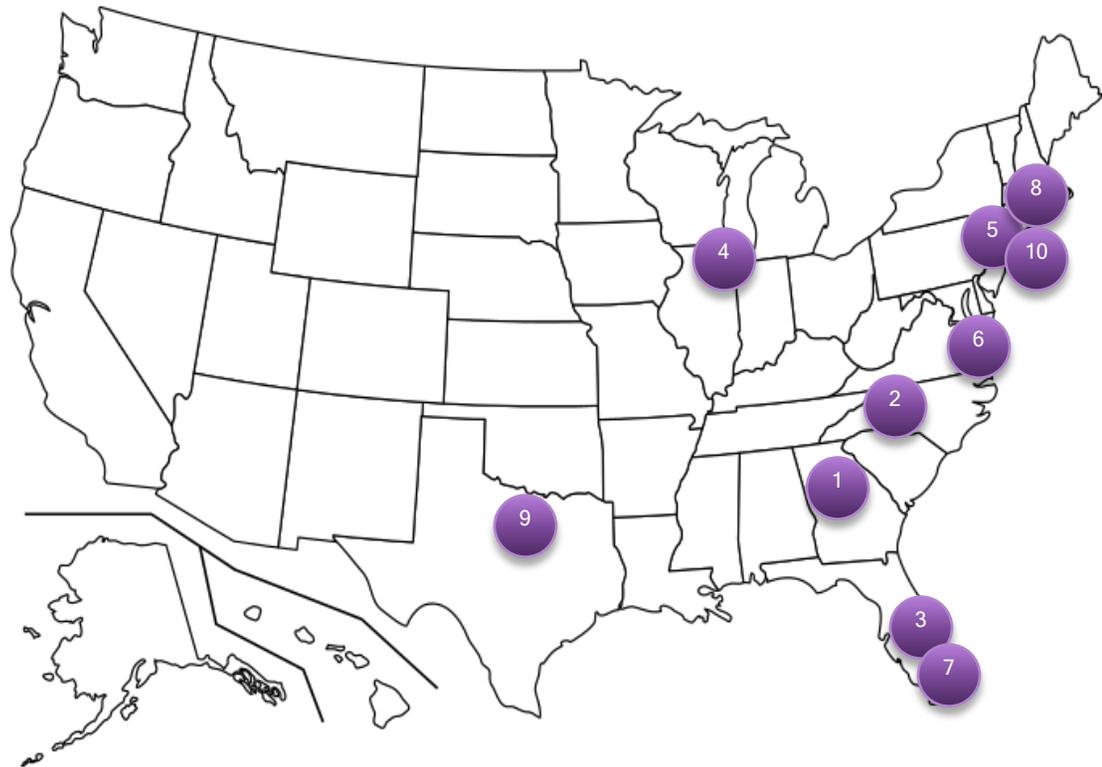


FIGURE 31 TOP 10 AIR PASSENGER DESTINATIONS (2019)

### Air Cargo<sup>29</sup>

Air cargo shipments grew in 2020 compared to 2019 as next-day delivery demand grew during the COVID-19 pandemic. Figure 32 shows the trends in air cargo as reported by the Jacksonville Airport Authority.

There is no defined benchmark for aviation passengers served. Increases are preferred and annual monitoring is conducted.

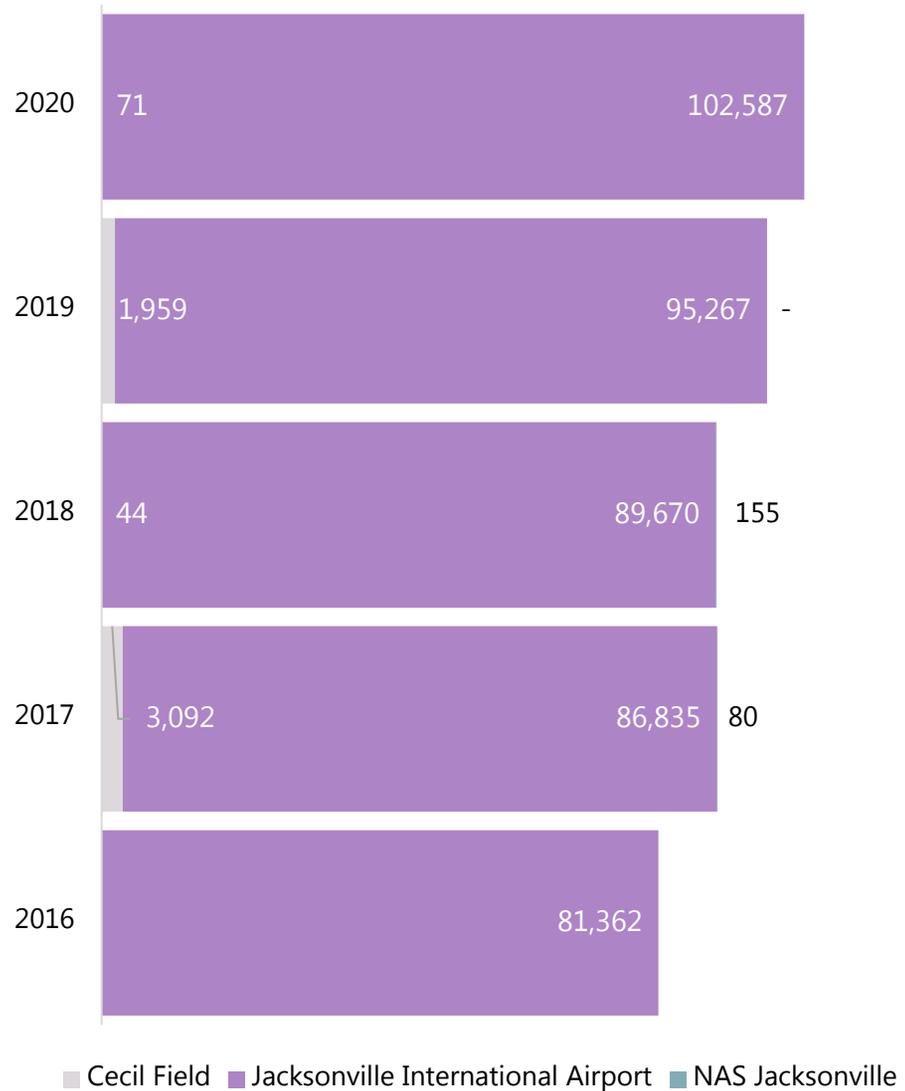


FIGURE 32 AIR CARGO (2016-2020) (UNIT OF MEASUREMENT?)

### Port Cruise Passengers<sup>30</sup>

No cruise ships called on JAXPORT in 2021 due to the COVID-19 pandemic. Carnival Cruise Lines returned to service and made its first vessel call in March 2022. Figure 33 summarizes the trends in cruise passengers.

There is no defined benchmark for cruise passengers. Increases are preferred and annual monitoring is conducted.

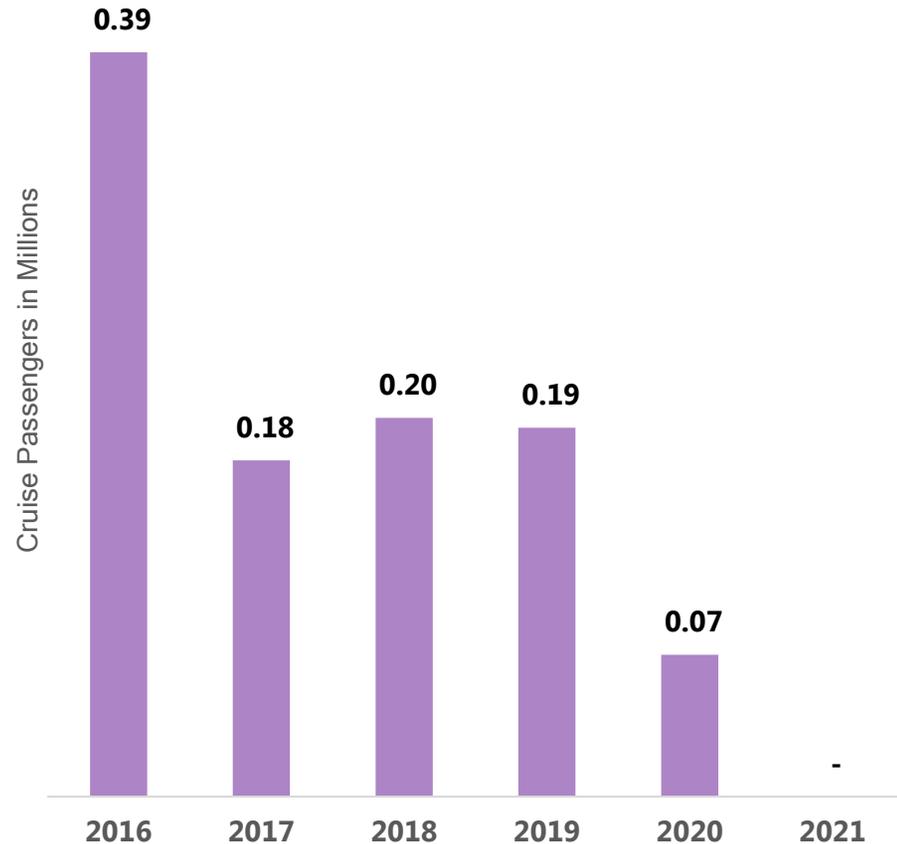


FIGURE 33 PORT CRUISE PASSENGERS (2016-2021) (UNIT OF MEASUREMENT?)

## Port Cargo<sup>31</sup>

JAXPORT is one of the nation’s largest vehicle-handling ports and continued to grow its market share in 2020. JAXPORT also set records for the number of containers moved maintaining its position as the container port in Florida and one of the top 10 in the nation. JAXPORT is working to provide an alternative to other constrained ports for container shipments and expand its market share in breakbulk cargo through harbor deepening, berth enhancements and new handling equipment investments. Figure 34 shows the millions of vehicles shipped from Jaxport facilities. Figure 35 summarizes the containers shipped in 20-ft equivalency units and Figure 36 summarizes the tons of cargo shipped.

The Port of Fernandina experienced significant growth from their fiscal year 2020 to fiscal year 2021 with a 10% increase in the number of containers shipped and a 34% increase in the total tonnage moved.

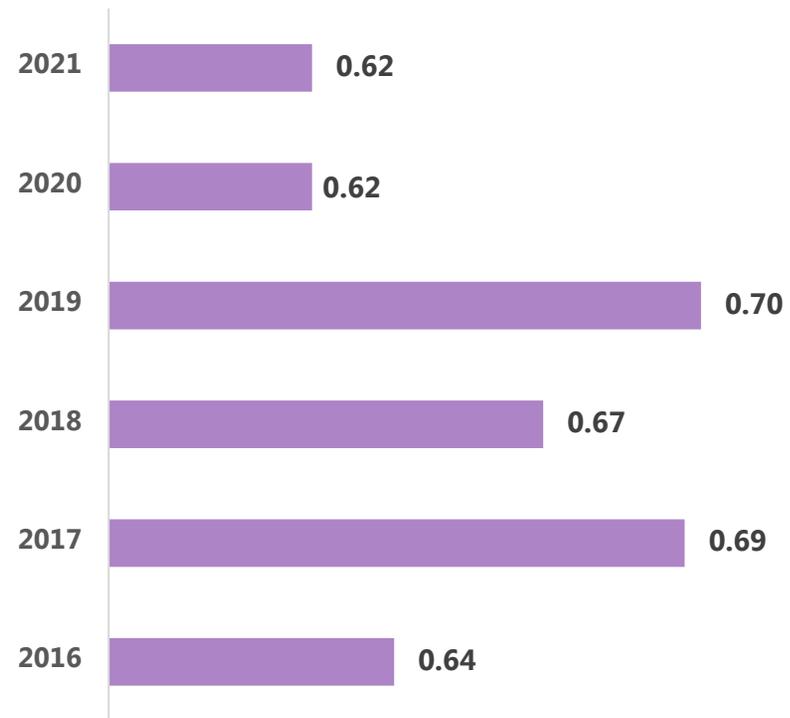


FIGURE 34 JAXPORT MILLIONS OF VEHICLES SHIPPED (2016-2020)

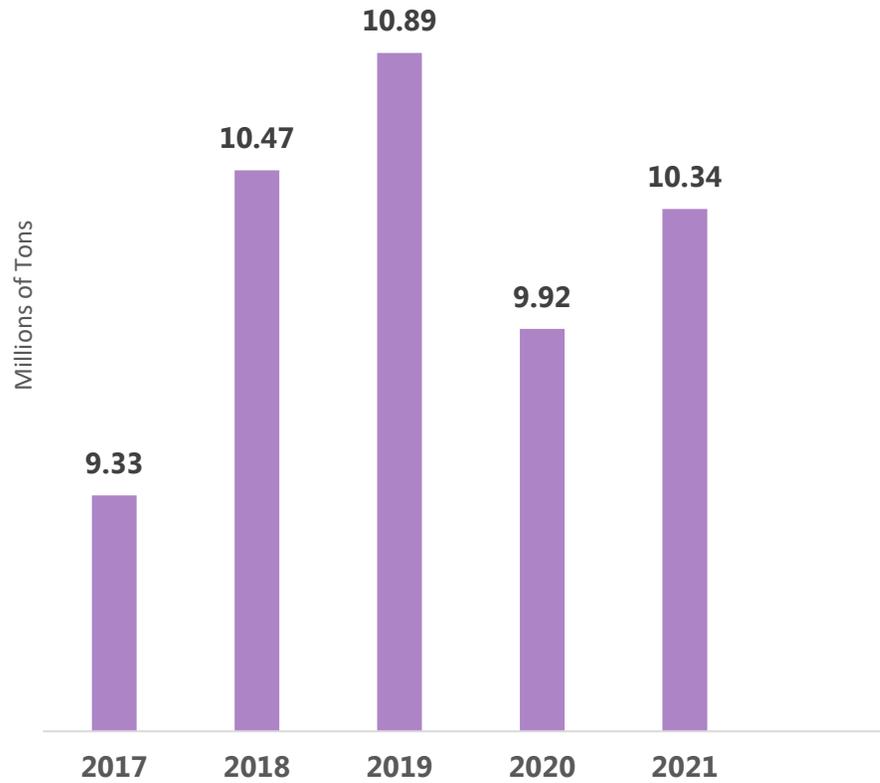


FIGURE 35 JAXPORT TONNAGE BY FISCAL YEAR (2017-2021)

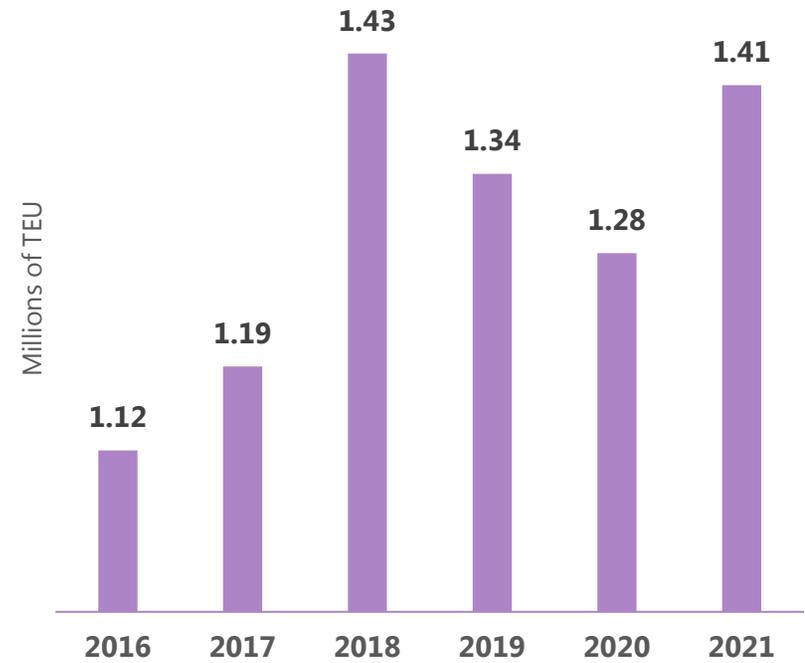


FIGURE 36 JAXPORT MILLIONS OF CONTAINERS (2016-2021)



# Quality



### Travel Speeds<sup>32</sup>

The FDOT MPM data provides average peak hour travel speed by roadway segment for the state highway system. This data can be summarized for the region, by county, and by roadway functional classification. The average speed is reported annually in miles per hour and is calculated by averaging the average peak hour travel speed. Average speeds increased from 2019 to 2020 as a result of lower demand (vehicle miles traveled). Figure 37 summarizes the trends in vehicle speeds by county.

The average travel speed should maintain or increase from year to year.

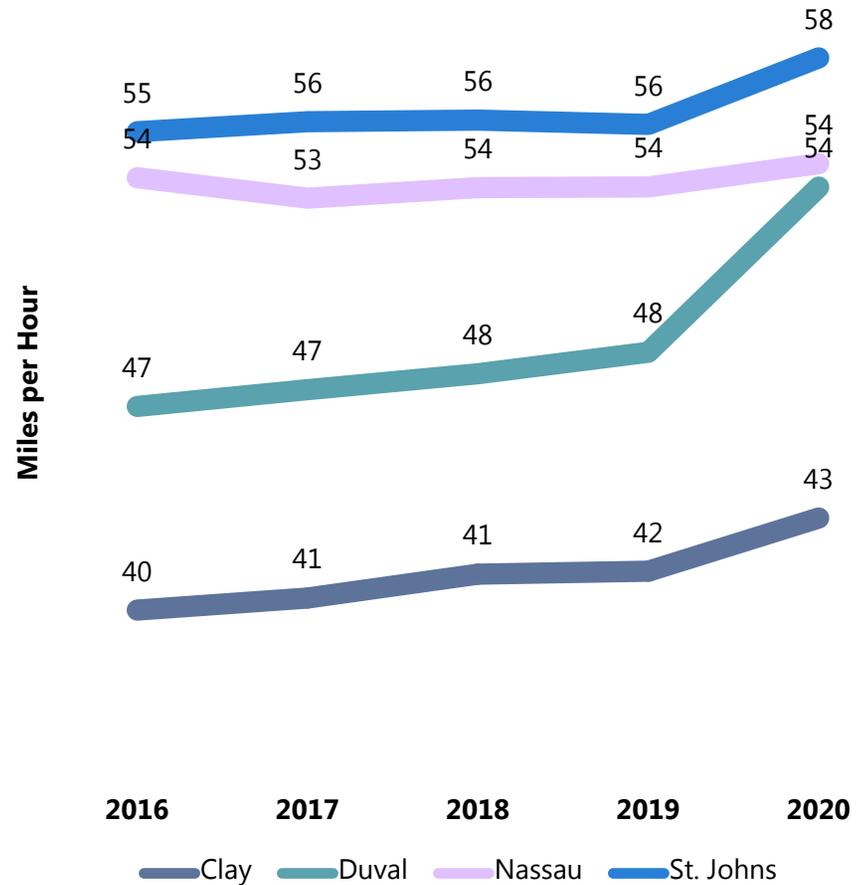


FIGURE 37 AVERAGE SPEED ON THE STATE HIGHWAY SYSTEM (2016-2020)

### Peak Hour Delay on the State Highway System<sup>33</sup>

The FDOT MPM data provides daily delay by roadway segment for the state highway system. This data can be summarized for the region, by county, and by roadway functional classification. The daily delay is reported annually in vehicle-hours per day and is calculated by the sum of the daily delay. Consistent with the increase in speeds, delay declined on the state highway system during the peak hours and on a daily basis. Figure 38 summarizes the change in annual delay by county.

The delay should maintain or decrease for year-to-year.

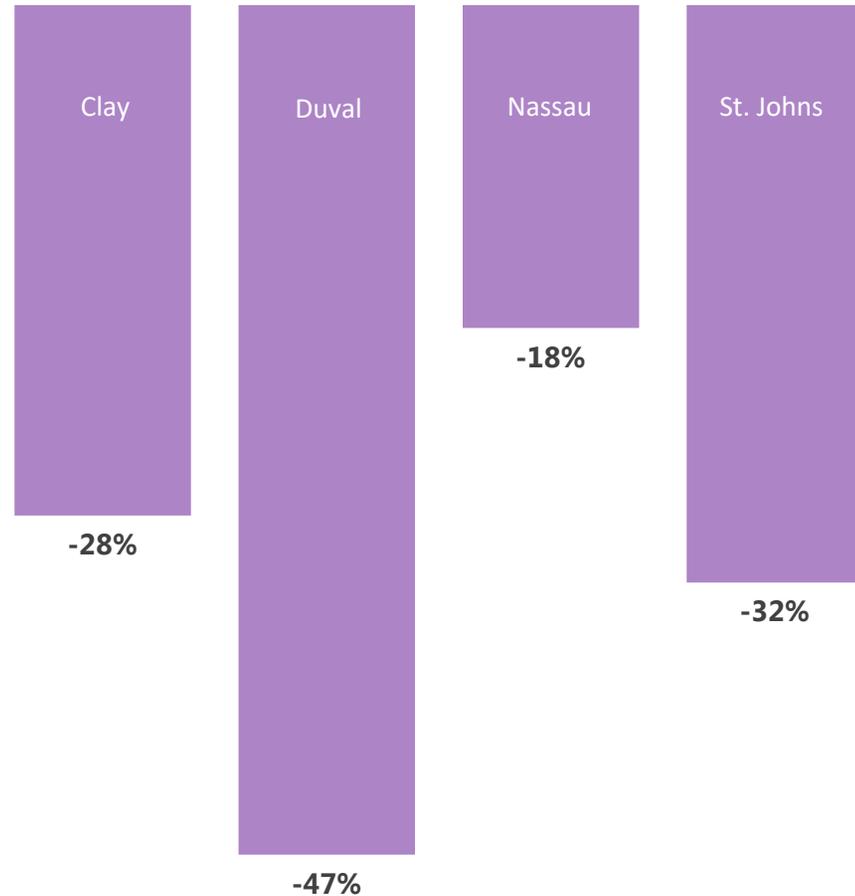


FIGURE 38 PERCENT CHANGE IN ANNUAL DELAY BY COUNTY (2019-2020)

## Average Commute Times<sup>34</sup>

The U.S. Census Bureau reports average commute time through the American Community Survey. The trip time is compiled for each of the four counties in the North Florida TPO planning area. From 2018 to 2019 the average commute time has increased for Clay, Nassau and St. Johns counties while commute time declined for Duval County as shown in Figure 15. Duval residents generally commute within the county while residents in other counties are more likely to travel to another county for work trips. The average commute time for the entire four county region was 27.2 minutes in 2019, a 1.36% decrease from 2018. No new data is available for 2020. The commute times for a 30-minute commute from major employment centers: Downtown Jacksonville, Southpoint Business District, Naval Station Mayport and Naval Air Station Jacksonville are provided on the following pages based on data provided by commute.com. Average trip time should maintain or decline each year. Average commute times are summarized in Figure 39. Figure 40, Figure 41, Figure 42 and Figure 43 summarize 30-minute commute times from four major employment centers.

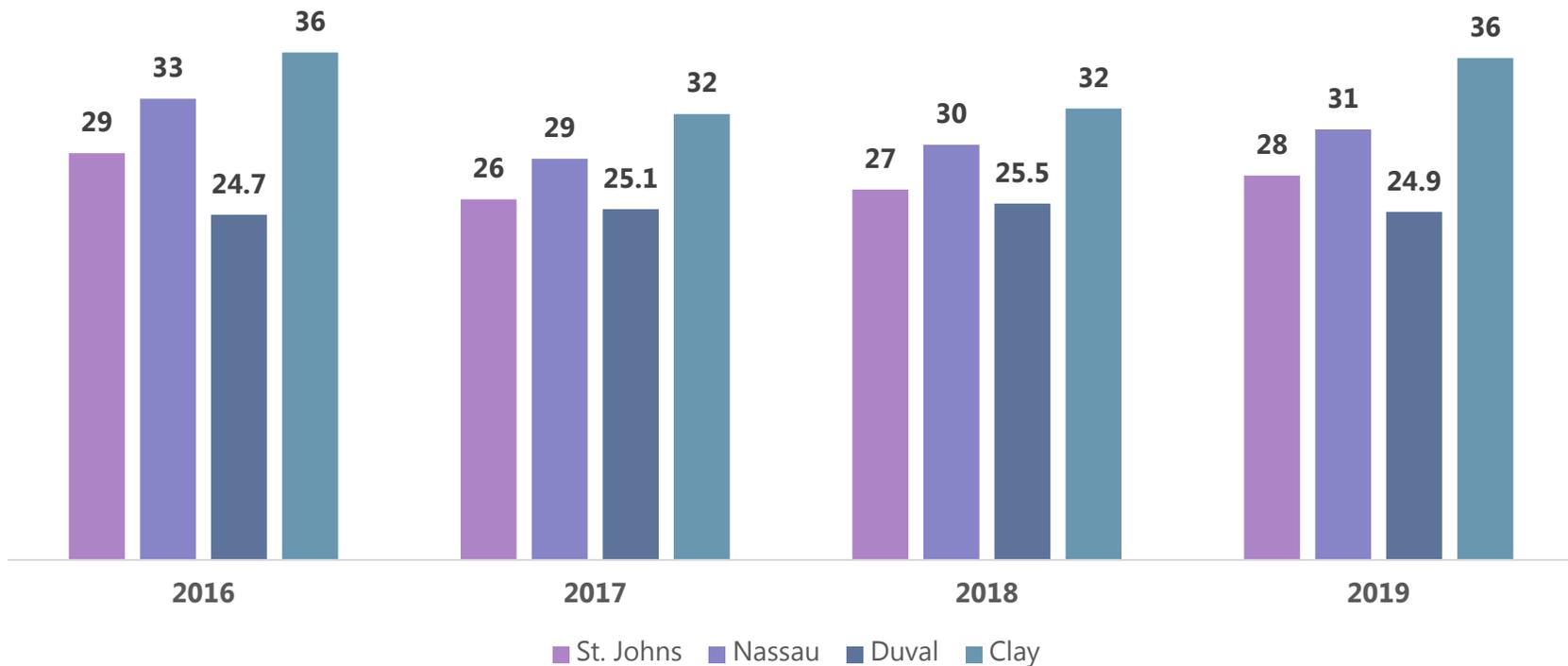


FIGURE 39 AVERAGE COMMUTE TIMES BY COUNTY (2016-2019)

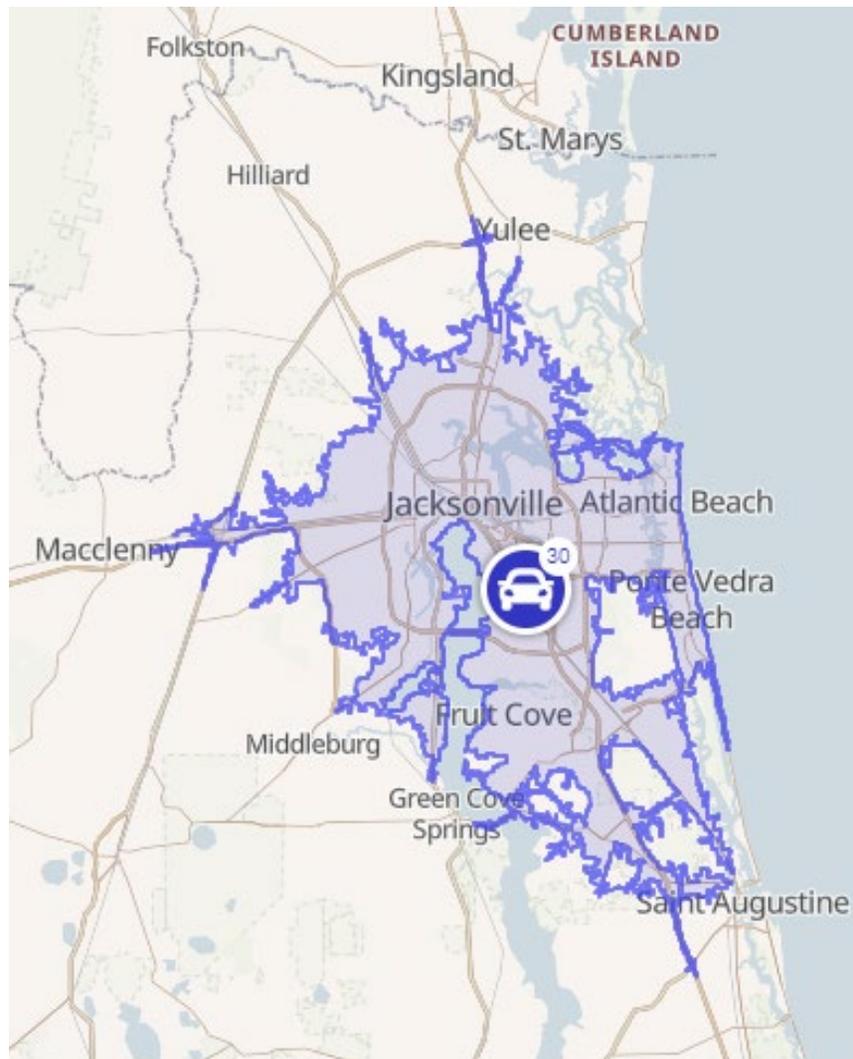


FIGURE 40 30-MINUTE COMMUTE TO THE SOUTHPOINT BUSINESS DISTRICT (2019)

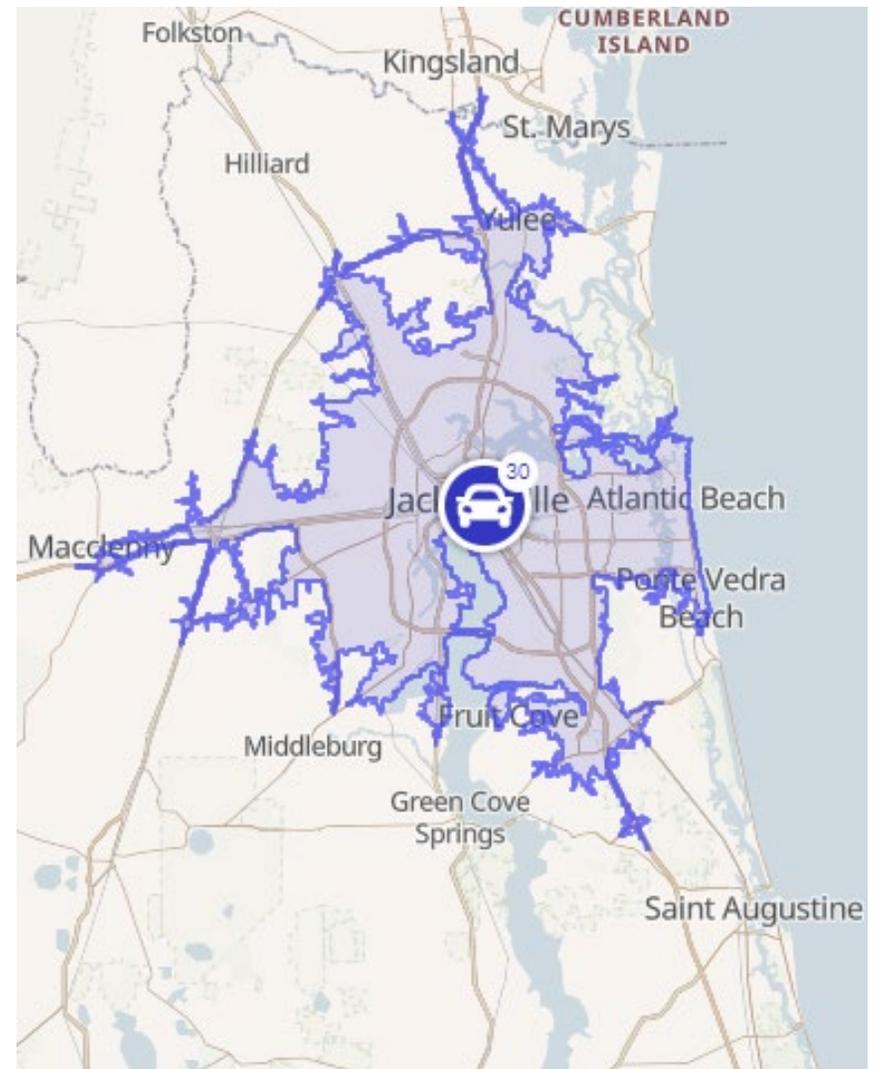


FIGURE 41 30-MINUTE COMMUTE TO DOWNTOWN JACKSONVILLE (2019)

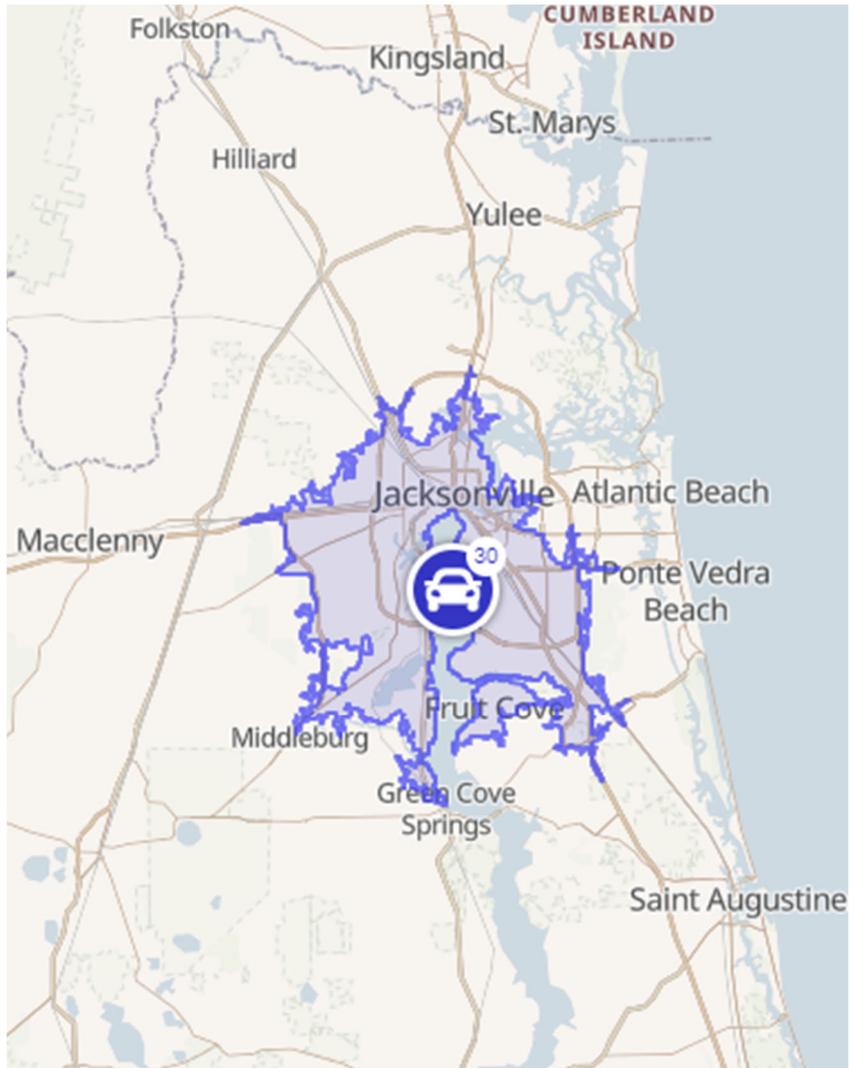


FIGURE 42 30-MINUTE COMMUTE TO NAVAL AIR STATION JACKSONVILLE (2019)

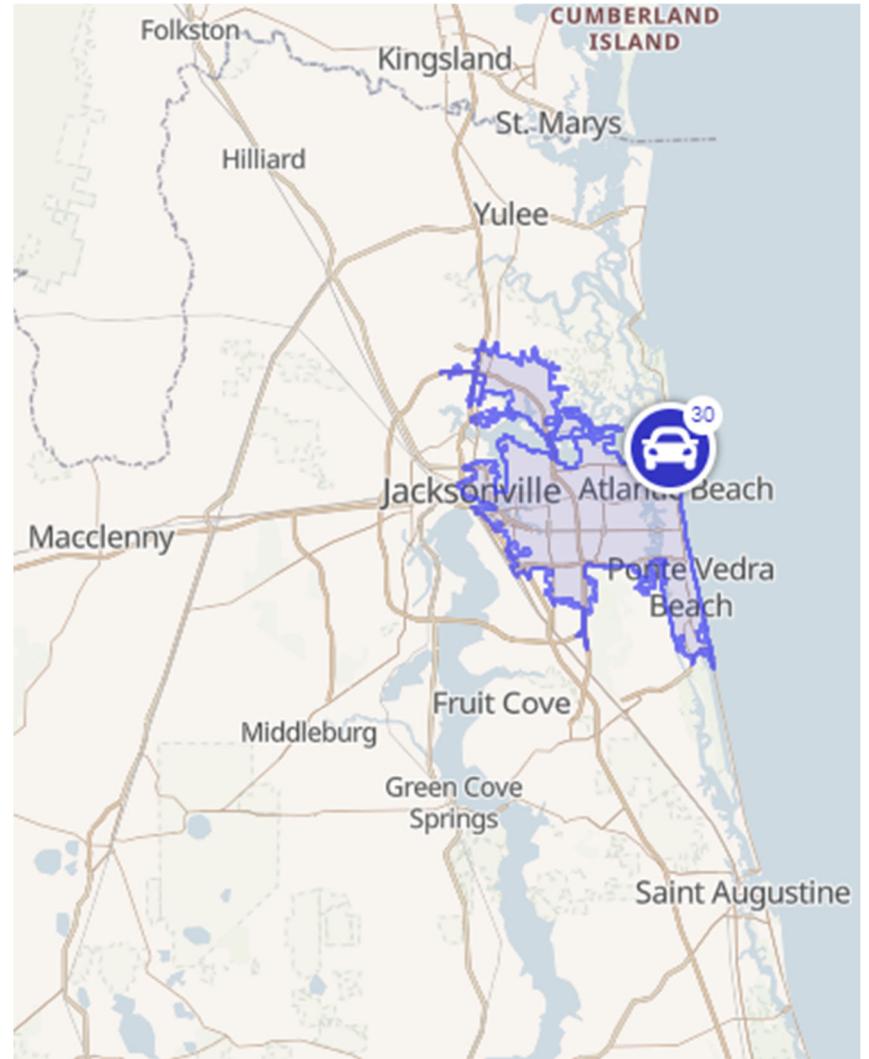


FIGURE 43 30-MINUTE COMMUTE TO NAVAL STATION MAYPORT (2019)

### Duration of Congestion<sup>35</sup>

The duration of congestion is the number of minutes per day that are heavily congested. Consistent with other measures the duration of congestion declined in 2020. The method for calculating the duration of congestion changed in 2020 and these data reflect the new methodology. Figure 44 shows the trend in the duration of congestion by county.

The average duration of congestion should maintain or decrease from year to year.

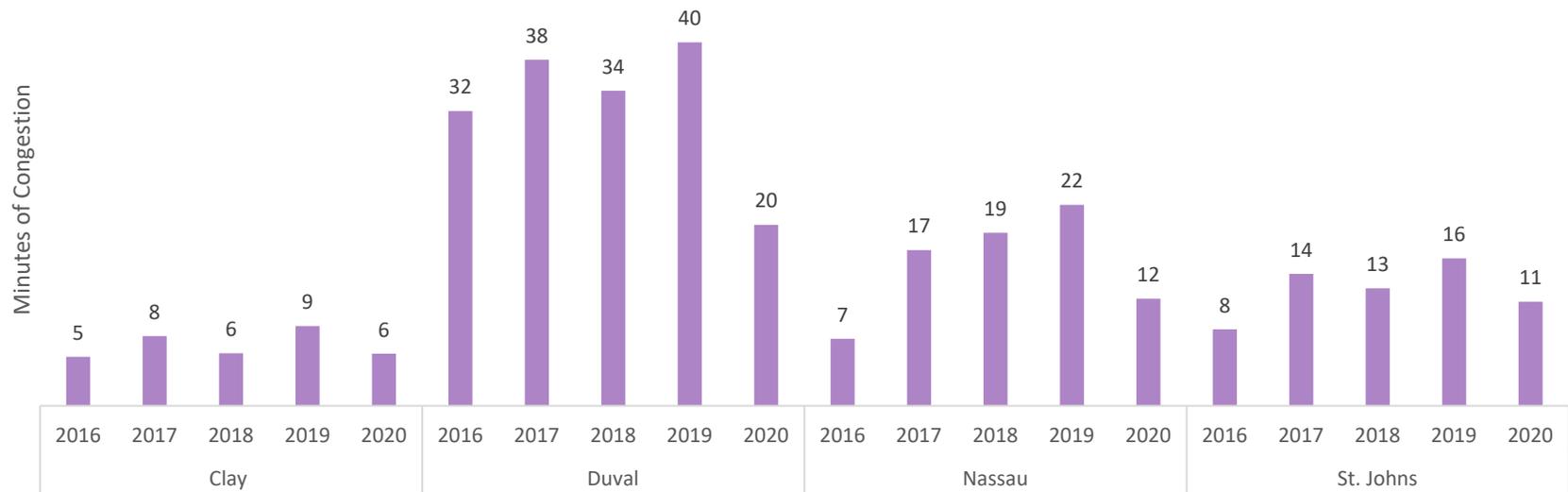


FIGURE 44 DURATION OF CONGESTION BY COUNTY (2016-2020)

### Percent of Travel Congested<sup>36</sup>

Consistent with other measures the percent of daily travel congested declined in 2020. The percent of travel congested should maintain or decrease from year to year. Figure 45 summarizes the percent of travel that is mildly or heavily congested by county.

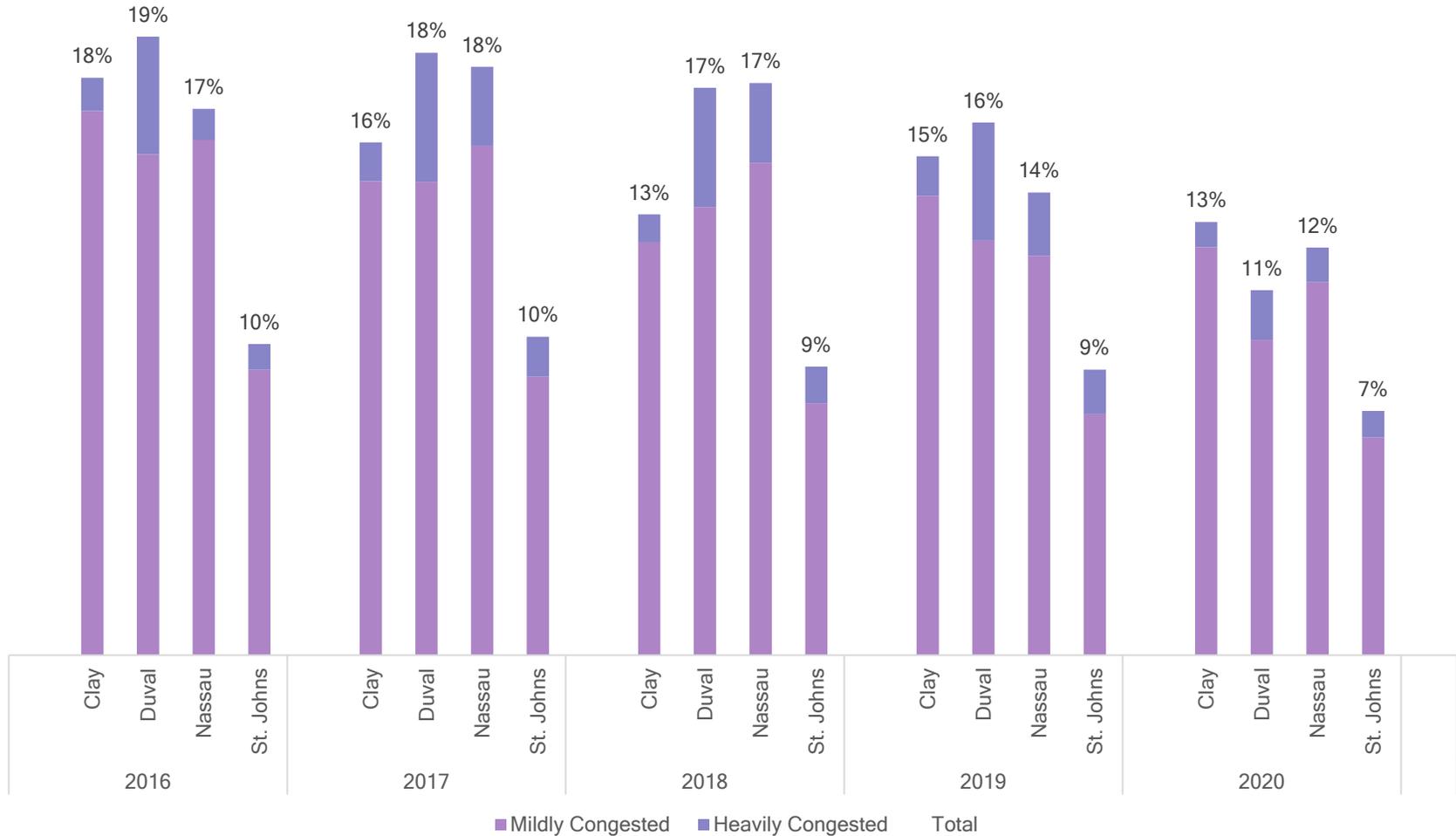


FIGURE 45 PERCENT OF TRAVEL CONGESTED BY COUNTY (2016-2020)

### Systemwide Planning Time Index<sup>37</sup>

The systemwide planning time index represents a ratio of the 95<sup>th</sup> percentile travel time to a reference speed. This ratio means that it will arrive at your destination 95 percent of the time within the buffer of your expected speed. For example, you have a 95 percentile change of arriving within 13.4 minutes if your expected travel time was 10 minutes in 2020. Figure 46 summarizes the systemwide planning time index for North Florida.

Consistent with other congestion-related measures the planning time index improved in 2020 compared to 2019.



FIGURE 46 SYSTEMWIDE PLANNING TIME INDEX (2016-2020)

### Systemwide Combination Truck Planning Time Index<sup>38</sup>

The systemwide combination truck planning time index shows the variability in the state highway system by reporting the buffer needed to arrive at a destination within a planned time 95 percentile time. Figure 47 summarizes the combination truck systemwide planning time index.

Consistent with other congestion-related measures the planning time index improved in 2020 compared to 2019.

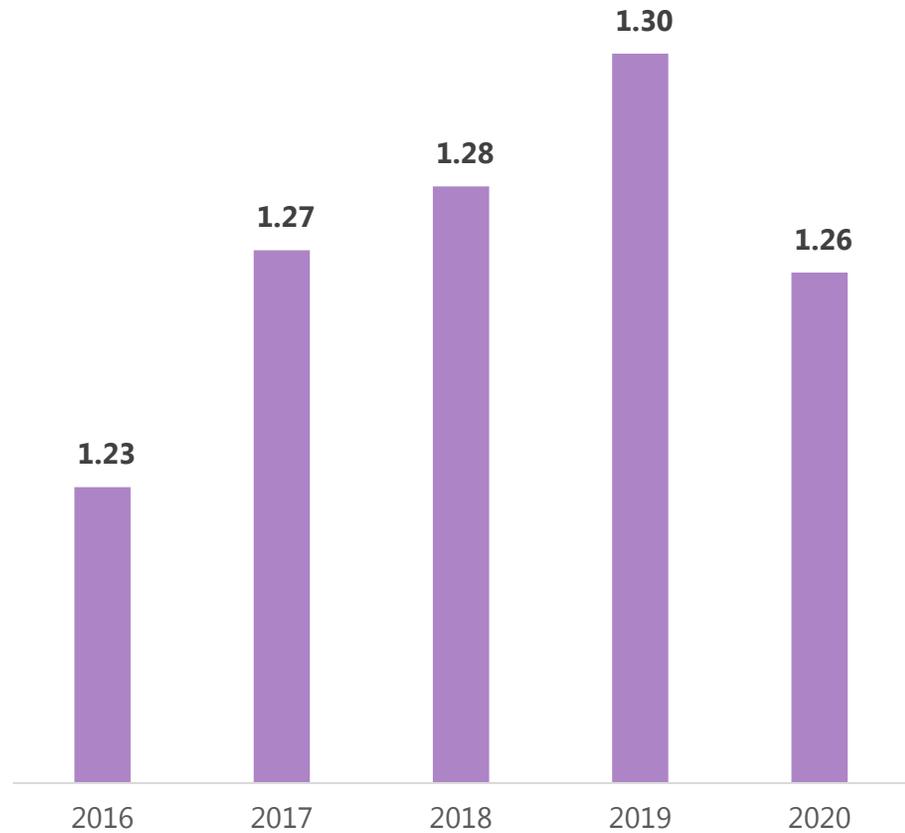


FIGURE 47 COMBINATION TRUCK SYSTEMWIDE PLANNING TIME INDEX (2016-2020)

### Level of Travel Time Reliability on Congested Corridors<sup>39</sup>

More detailed analysis of the travel time reliability for was performed on the most congested corridors within the region. This index is the ratio of the 80<sup>th</sup>-percentile travel time and the median travel time. For a 10-minute trip with a level of travel time reliability of 2.5 you have an 80% chance of arriving within 25-minutes. The larger the level of travel time reliability the more variable the travel times are along each corridor. There was a smaller variability of travel times in 2020 than in 2021 due to the changes in traffic from the COVID-19 pandemic similar to other mobility measures. The variability of travel patterns during peak periods in 2021 exceed 2020 and was similar to 2019.

The goal is for 95% of the vehicle-miles traveled within a corridor or system be reliable (level of travel time reliability of 1.50 or less) along a corridor of on Strategic Intermodal System facilities in North Florida. Table 8 summarizes the level of travel time reliability on the Strategic Intermodal Facilities. Table 9 summarizes the level of travel time reliability for the non-Strategic Intermodal Facilities. Maps showing the magnitude and location of the least reliable facilities are provided in Figure 48, Figure 49 and Figure 50.

Additional detail on the congested corridors is provided in Appendix A.

TABLE 8. LEVEL OF TRAVEL TIME RELIABILITY STRATEGIC INTERMODAL SYSTEM

Facility	Direction	2019	2020	2021
I-10	Eastbound	1.20	1.03	1.08
I-10	Westbound	1.06	1.04	1.12
I-295 East Beltway	Northbound	1.19	1.07	1.10
I-295 East Beltway	Southbound	1.38	1.03	1.05
I-295 West Beltway	Northbound	1.02	1.02	1.03
I-295 West Beltway	Southbound	1.02	1.02	1.03
I-95	Northbound	1.18	1.02	1.05
I-95	Southbound	1.03	1.02	1.03
SR-200 (Buccaneer Trail)	Eastbound	1.08	1.08	1.16
SR-200 (Buccaneer Trail)	Westbound	1.11	1.10	1.17
US 1 (Philips Highway)	Northbound	1.11	1.07	1.09
US 1 (Philips Highway)	Southbound	1.10	1.08	1.08
US 17	Northbound	1.09	1.06	1.08
US 17	Southbound	1.14	1.06	1.13

No values exceed the threshold of 1.5.

**TABLE 9. LEVEL OF TRAVEL TIME RELIABILITY NON-STRATEGIC INTERMODAL SYSTEM**

<b>Facility</b>	<b>Direction</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
US 90 (Beach Boulevard)	Eastbound	1.11	1.08	1.09
US 90 (Beach Boulevard)	Westbound	1.12	1.09	1.14
SR-10 (Atlantic Boulevard)	Eastbound	1.13	1.08	1.10
SR-10 (Atlantic Boulevard)	Westbound	1.08	1.09	1.11
SR-13 (San Jose Boulevard)	Northbound	1.11	1.14	1.11
SR-13 (San Jose Boulevard)	Southbound	1.10	1.09	1.10
SR-21 (Blanding Boulevard)	Northbound	1.20	1.18	1.24
SR-21 (Blanding Boulevard)	Southbound	1.10	1.10	1.08



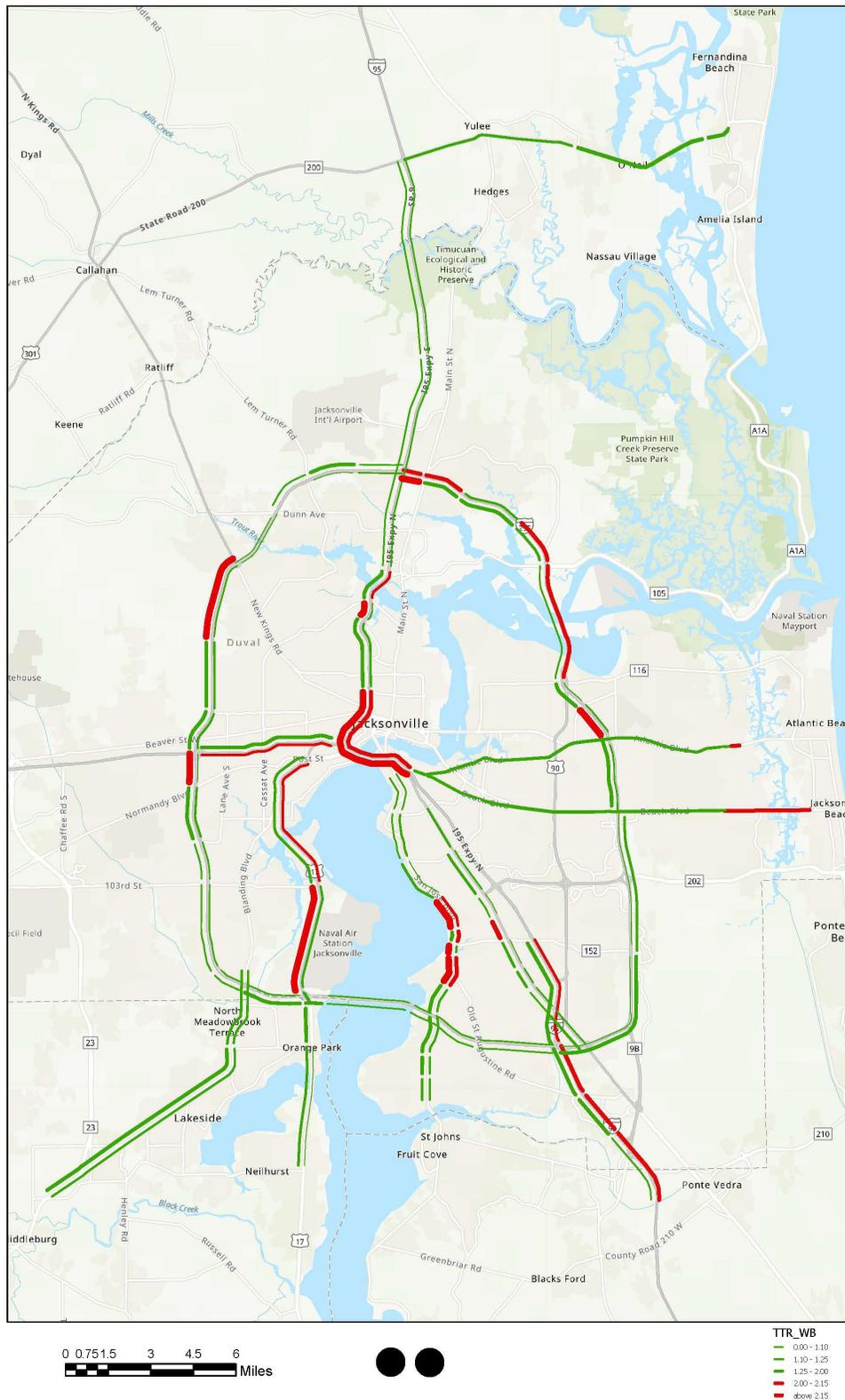


FIGURE 49 LEVEL OF TRAVEL TIME RELIABILITY (2020)

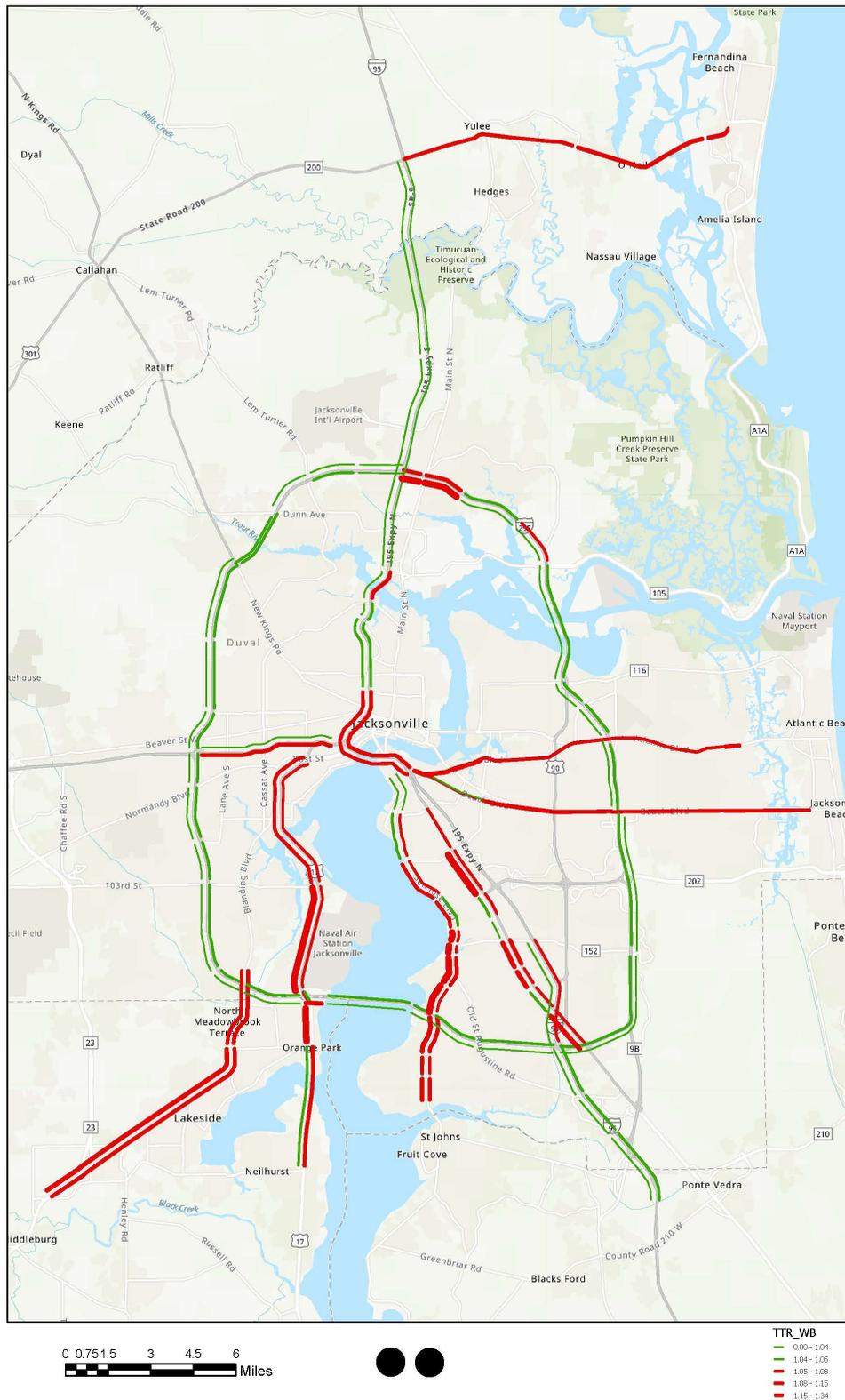


FIGURE 50 LEVEL OF TRAVEL TIME RELIABILITY (2021)

## Truck Travel Time Reliability<sup>40</sup>

More detailed analysis of the truck travel time reliability was performed on the most congested corridors within the region. This index is the ratio of the 95<sup>th</sup>-percentile travel time and the median travel time. The larger the Truck Travel Time Reliability Index the more variable the travel times are along each corridor. For a trip lasting 10 minutes with a truck travel time reliability of 1.2 you have a 95% chance of arriving within 12 minutes. There was a smaller variability of travel times in 2020 than in 2021 due to the changes in traffic from the COVID-19 pandemic similar to other mobility measures. The variability of travel patterns during peak periods in 2021 returned to 2020 trends. The travel time variability on I-295 East Beltway is smaller in 2021 compared to 2020.

The goal is to achieve 95% of the vehicle-miles traveled to be reliable (based on a critical value of 2.0 or more) on Strategic Intermodal System facilities in North Florida. Table 10 through Table 12 and Figure 51 through Figure 56 summarize the truck travel.

Additional detail on the congested corridors is provided in Appendix A.

TABLE 10. TRUCK TRAVEL TIME RELIABILITY ON SIS FACILITIES (2019)

Facility	Direction	Corridor	Critical Value	Critical Segment	Critical Period
I-10	Eastbound	2.11	2.11	I-295 to Stockton Street	Weekday 6 -10 a.m.
I-10	Westbound	1.32	1.32	Stockton Street to I-295	Weekday 4 - 8 p.m.
I-295 East Beltway	Northbound	1.86	2.78	I-95 to SR-152 (Baymeadows Road)	Weekday 4 - 8 p.m.
I-295 East Beltway	Southbound	2.92	6.76	SR-152 (Baymeadows Road) to I-95	Weekday 4 - 8 p.m.
I-295 West Beltway	Northbound	1.22	1.62	Commonwealth Avenue to Pritchard Road	All Days 8 p.m. -6 a.m.
I-295 West Beltway	Southbound	1.55	2.53	I-10 to SR-228 (Normandy Boulevard)	Weekday 4 - 8 p.m.
I-95	Northbound	2.04	2.61	North of Old St. Augustine Road to I-295	Weekday 6 -10 a.m.
I-95	Southbound	1.70	2.86	SR-111 (Edgewood Avenue) to SR-115 (Lem Turner Road)	Weekday 4 - 8 p.m.
SR-200 (Buccaneer Trail)	Eastbound	1.48	1.63	Amelia Island Pkwy to Sadler Road	Weekday 6 -10 a.m.
SR-200 (Buccaneer Trail)	Westbound	1.83	2.24	Chester River Road to I-95	Weekday 4 - 8 p.m.
US 1 (Philips Highway)	Northbound	1.68	2.31	SR-202 (JT Butler Boulevard) to SR-109 (University Boulevard)	Weekday 6 -10 a.m.
US 1 (Philips Highway)	Southbound	1.53	2.24	Chester River Road to I-95	Weekday 4 - 8 p.m.
US 17	Northbound	1.54	2.05	SR-134 (Timuquana Road) to SR-228 (McDuff Avenue)	Weekday 6 -10 a.m.
US 17	Southbound	1.73	3.05	SR-134 (Timuquana Road) to Collins Road	Weekday 4 - 8 p.m.

Red values indicate the target of 2.0 is exceeded. Orange values indicate values that exceed the target of 1.75 that was applicable in 2019 but not the 2.0 target.

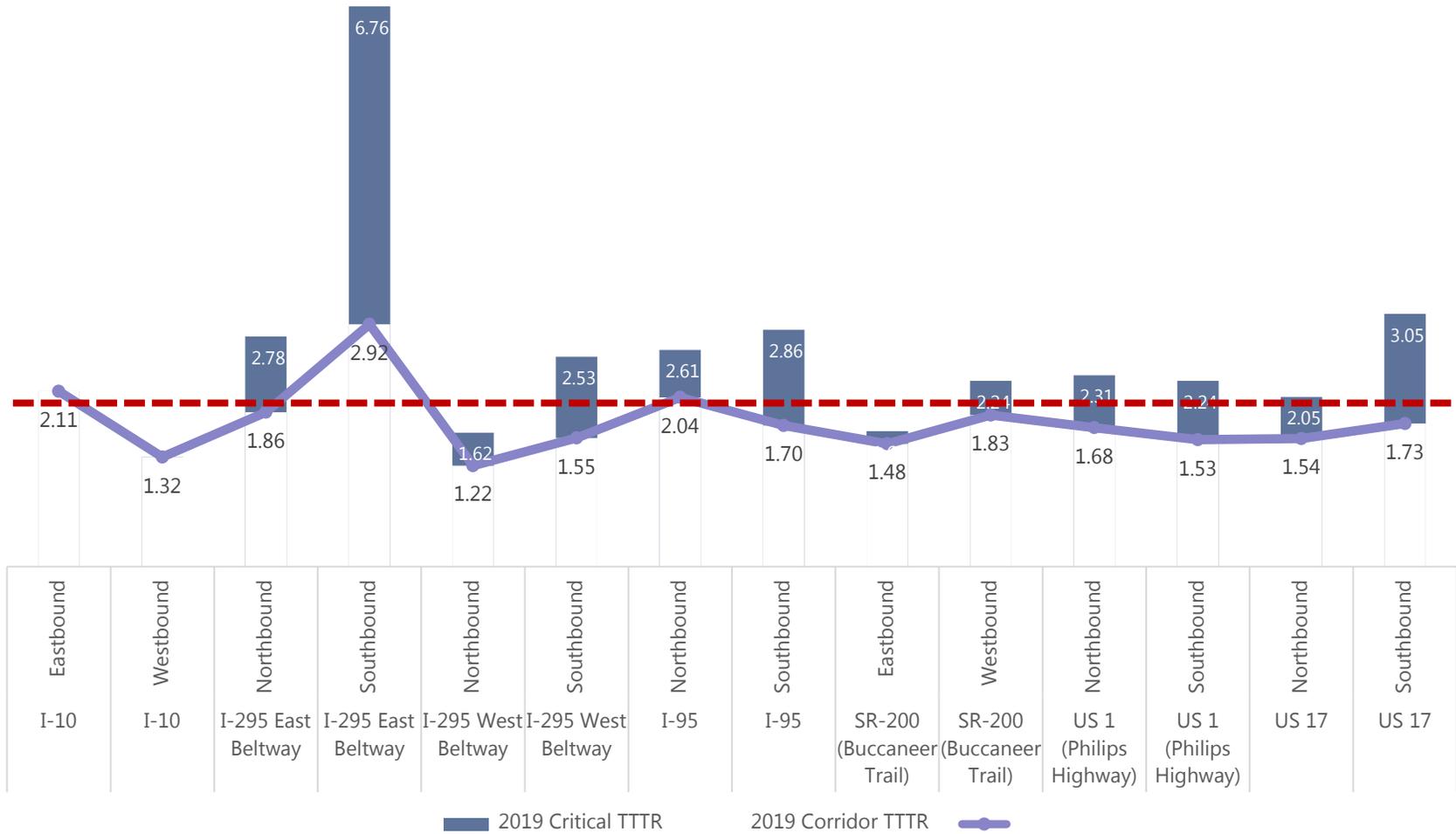


FIGURE 51 TRUCK TRAVEL TIME RELIABILITY (2019)

TABLE 11. TRUCK TRAVEL TIME RELIABILITY ON SIS CORRIDORS (2020)

Facility	Direction	Corridor	Critical Value	Critical Segment	Critical Period
I-10	Eastbound	1.11	1.13	I-295 to Stockton Street	<i>Weekday 10 a.m. -4 p.m.</i>
I-10	Westbound	1.17	1.20	Stockton Street to I-295	<i>Weekday 10 a.m. -4 p.m.</i>
I-295 East Beltway	Northbound	1.48	<b>11.31</b>	I-95 to SR-152 (Baymeadows Road)	<i>All Days 8 p.m. - 6 a.m.</i>
I-295 East Beltway	Southbound	1.20	<b>3.32</b>	SR-152 (Baymeadows Road) to I-95	<i>Weekday 10 a.m. -4 p.m.</i>
I-295 West Beltway	Northbound	1.06	1.12	Commonwealth Avenue to Pritchard Road	<i>Weekday 10 a.m. -4 p.m.</i>
I-295 West Beltway	Southbound	1.06	1.08	I-10 to SR-228 (Normandy Boulevard)	<i>Weekday 10 a.m. -4 p.m.</i>
I-95	Northbound	1.07	1.11	North of Old St. Augustine Road to I-295	<i>Weekday 10 a.m. -4 p.m.</i>
I-95	Southbound	1.06	1.09	SR-111 (Edgewood Avenue) to SR-115 (Lem Turner Road)	<i>Weekday 10 a.m. -4 p.m.</i>
SR-200 (Buccaneer Trail)	Eastbound	1.48	1.63	Amelia Island Pkwy to Sadler Road	<i>All Days 8 p.m. - 6 a.m.</i>
SR-200 (Buccaneer Trail)	Westbound	1.27	1.30	Chester River Road to I-95	Weekday 4- 8 p.m.
US 1 (Philips Highway)	Northbound	1.19	1.41	SR-202 (JT Butler Boulevard) to SR-109 (University Boulevard)	Weekday 6 -10 a.m.
US 1 (Philips Highway)	Southbound	1.15	1.29	Chester River Road to I-95	<i>Weekday 6 -10 a.m.</i>
US 17	Northbound	1.16	1.23	SR-134 (Timuquana Road) to SR-228 (McDuff Avenue)	Weekday 6-10 a.m.
US 17	Southbound	1.15	1.31	SR-134 (Timuquana Road) to Collins Road	<i>Weekday 6-10 a.m.</i>

Red values indicate the target of 2.0 is exceeded. No values exceeded the target of 1.75 that was applicable in 2020 that were not also greater than 2.0.

***Bold Italics critical periods are different than 2019.*** There were no changes in the critical segments.

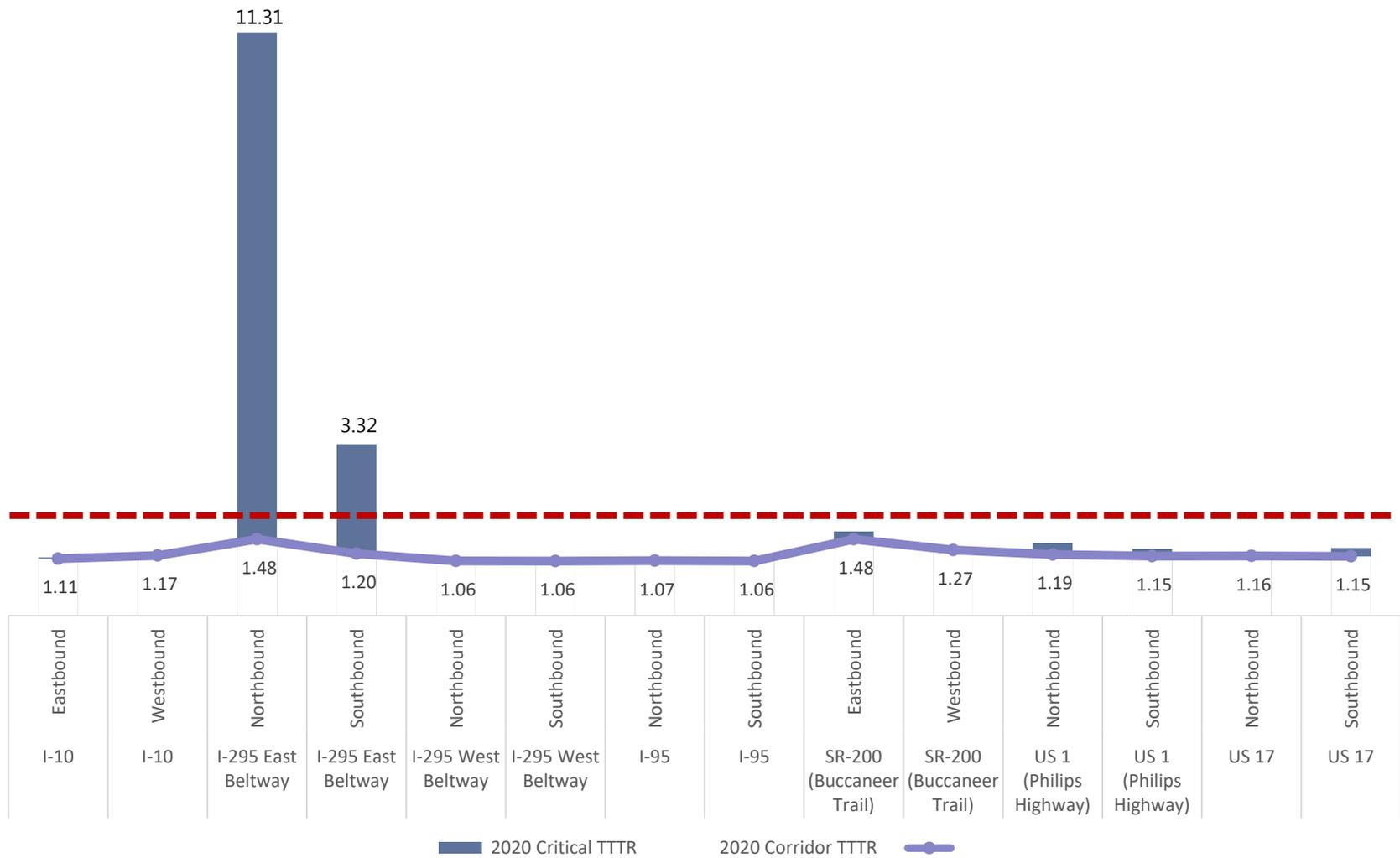


FIGURE 52 TRUCK TRAVEL TIME RELIABILITY (2020)

TABLE 12. TRUCK TRAVEL TIME RELIABILITY ON SIS CORRIDORS (2021)

Facility	Direction	Corridor	Critical Value	Critical Segment	Critical Period
I-10	Eastbound	2.11	2.11	I-295 to Stockton Street	Weekday 4 -8 p.m.
I-10	Westbound	1.32	1.32	Stockton Street to I-295	Weekday 4 -8 p.m.
I-295 East Beltway	Northbound	2.13	6.76	I-95 to SR-152 (Baymeadows Road)	Weekday 4 - 8 p.m.
I-295 East Beltway	Southbound	1.45	2.78	SR-152 (Baymeadows Road) to I-95	Weekday 4-8 p.m.
I-295 West Beltway	Northbound	1.22	1.62	Commonwealth Avenue to Pritchard Road	All Days 8 p.m. -6 a.m.
I-295 West Beltway	Southbound	1.55	2.53	I-10 to SR-228 (Normandy Boulevard)	Weekday 4 -8 p.m.
I-95	Northbound	2.03	2.86	North of Old St. Augustine Road to I-295	Weekday 6am-10am
I-95	Southbound	1.70	2.86	SR-111 (Edgewood Avenue) to SR-115 (Lem Turner Road)	Weekday 4 -8 p.m.
SR-200 (Buccaneer Trail)	Eastbound	1.48	1.63	Amelia Island Pkwy to Sadler Road	Weekday 6am-10am
SR-200 (Buccaneer Trail)	Westbound	1.27	1.30	Chester River Road to I-95	Weekday 4 -8 p.m.
US 1 (Philips Highway)	Northbound	1.11	1.23	SR-202 (JT Butler Boulevard) to SR-109 (University Boulevard)	Weekday 6am-10am
US 1 (Philips Highway)	Southbound	1.10	1.18	Chester River Road to I-95	Weekday 4 -8 p.m.
US 17	Northbound	1.54	2.05	SR-134 (Timuquana Road) to SR-228 (McDuff Avenue)	Weekday 6am-10am
US 17	Southbound	1.73	3.05	SR-134 (Timuquana Road) to Collins Road	Weekday 4 -8 p.m.

Red values indicate the target of 2.0 is exceeded. The critical periods reverted to the 2019 peak periods.

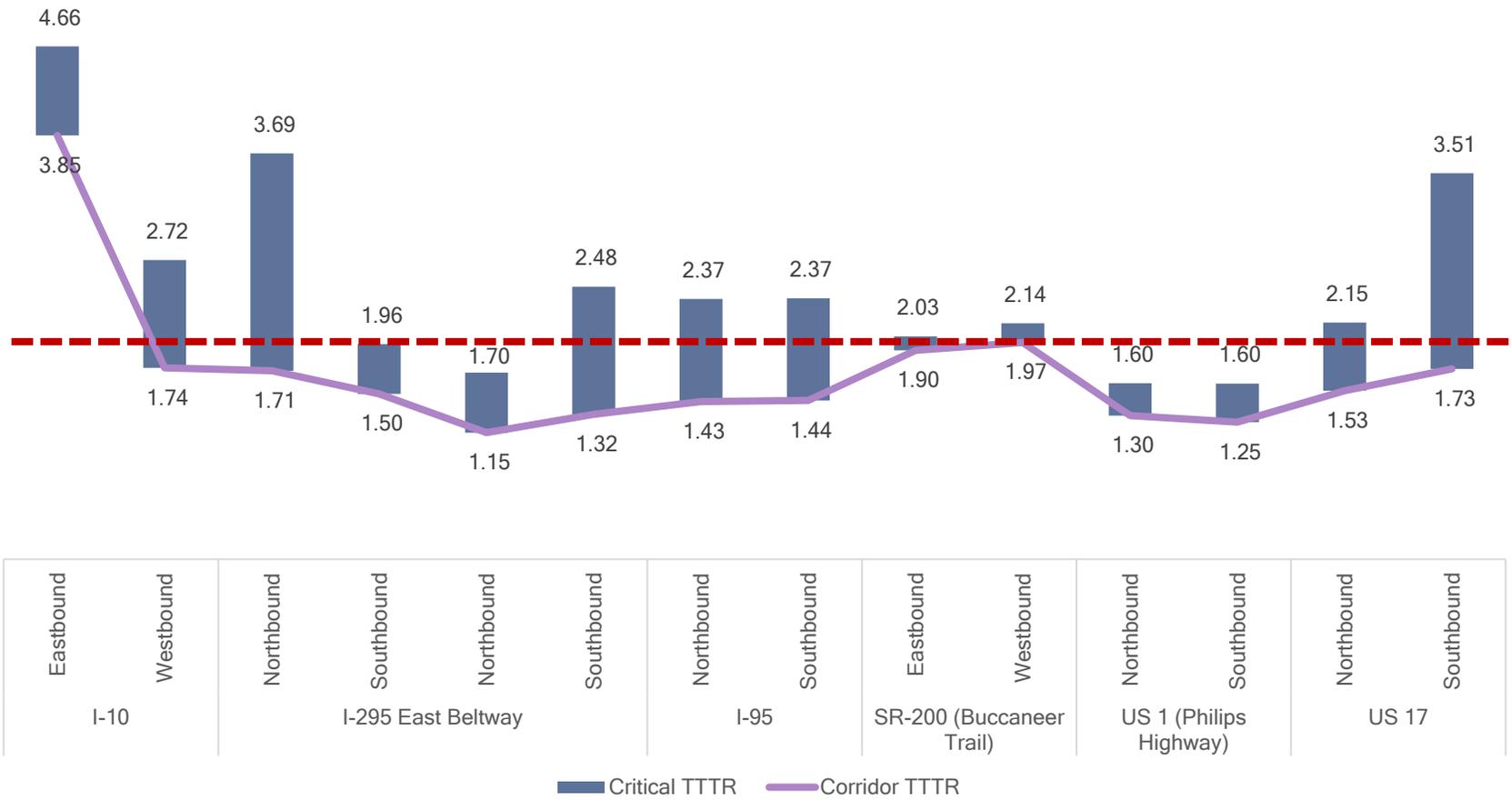
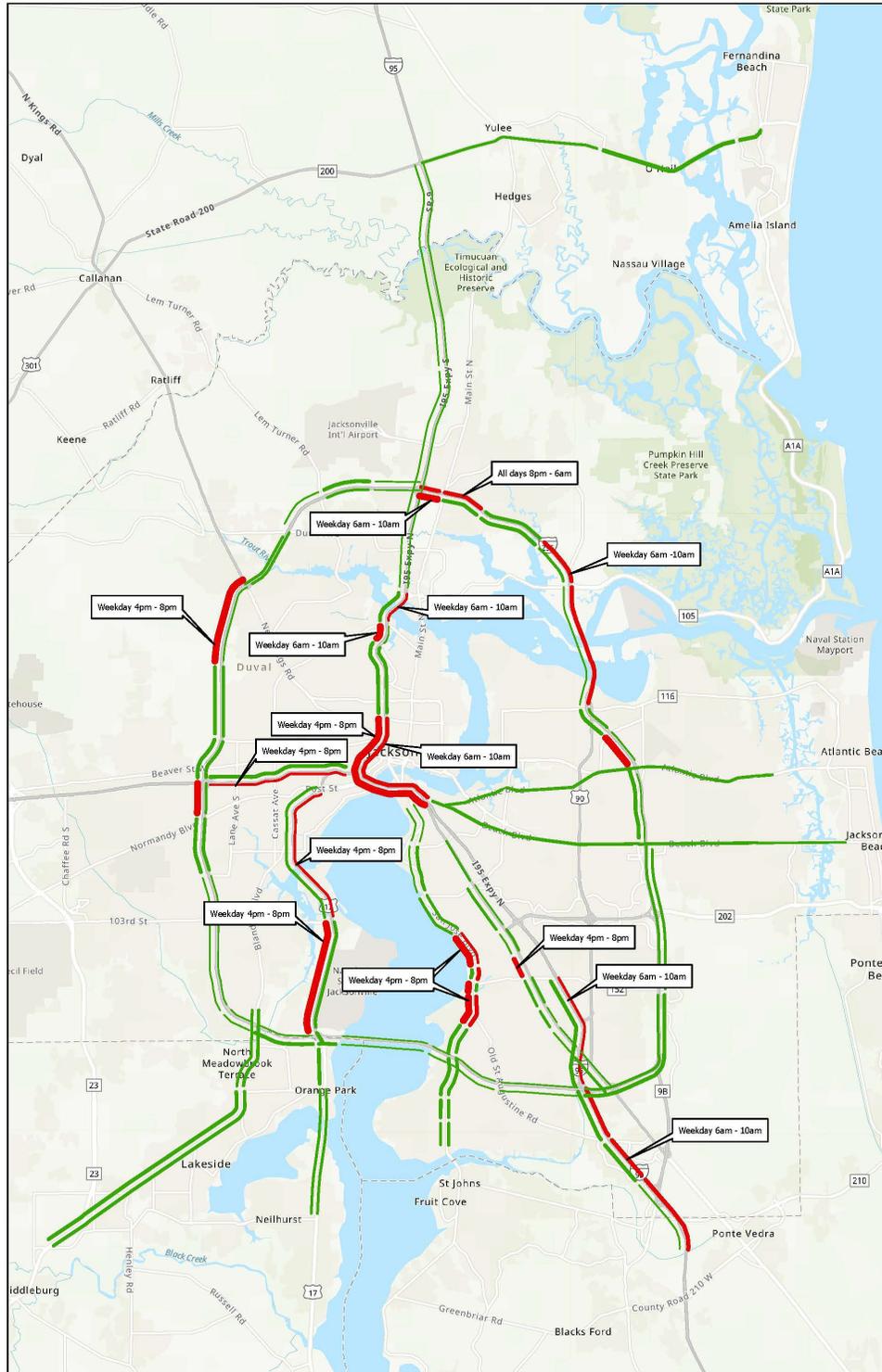


FIGURE 53 TRUCK TRAVEL TIME RELIABILITY (2021)



0 0.75 1.5 3 4.5 6 Miles

TTR\_WB  
 0:00 - 1:10  
 1:10 - 1:25  
 1:25 - 2:00  
 2:00 - 2:15  
 2:15 - 5:00

FIGURE 54 TRUCK TRAVEL TIME RELIABILITY (2019)

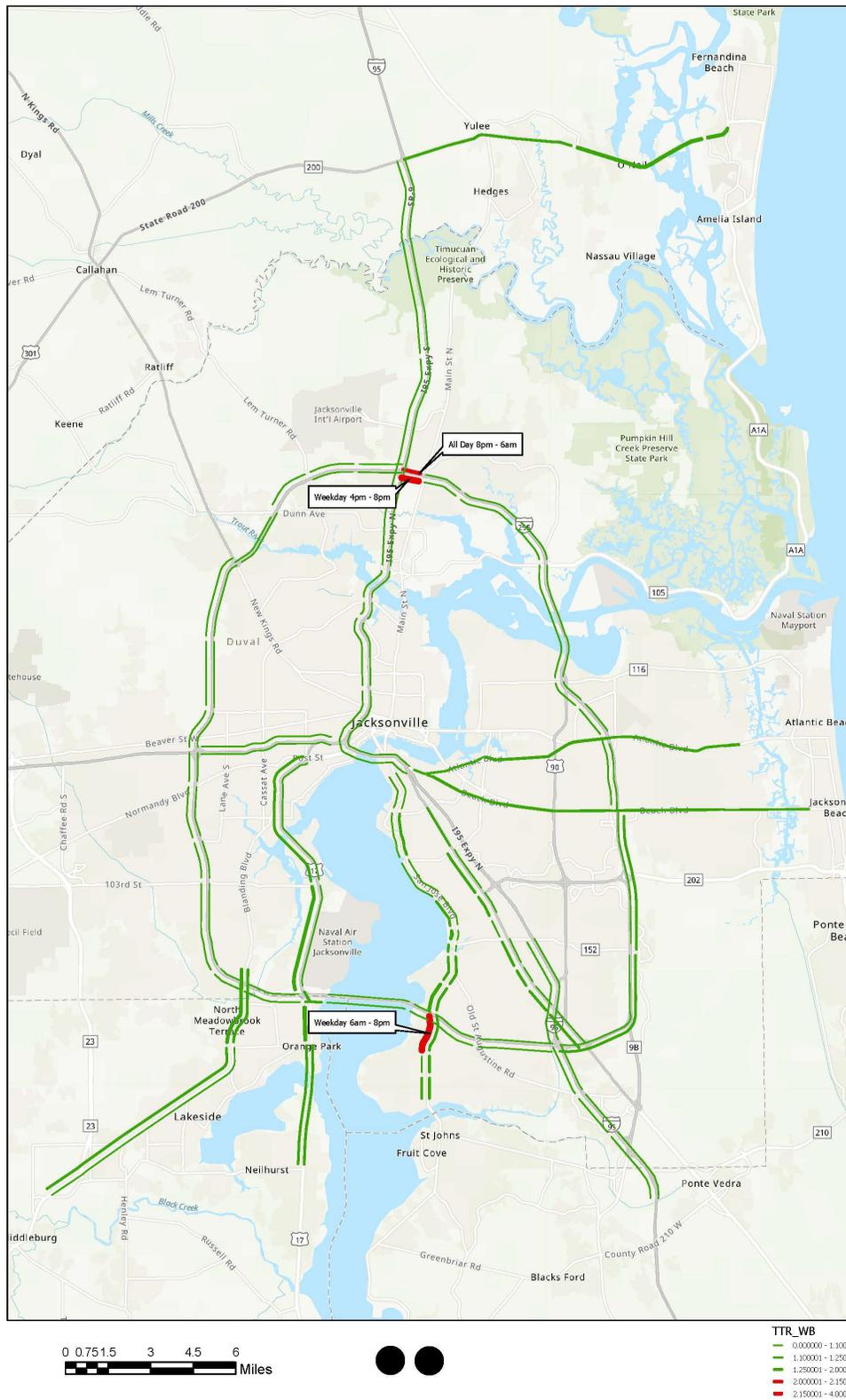


FIGURE 55 TRUCK TRAVEL TIME RELIABILITY (2020)

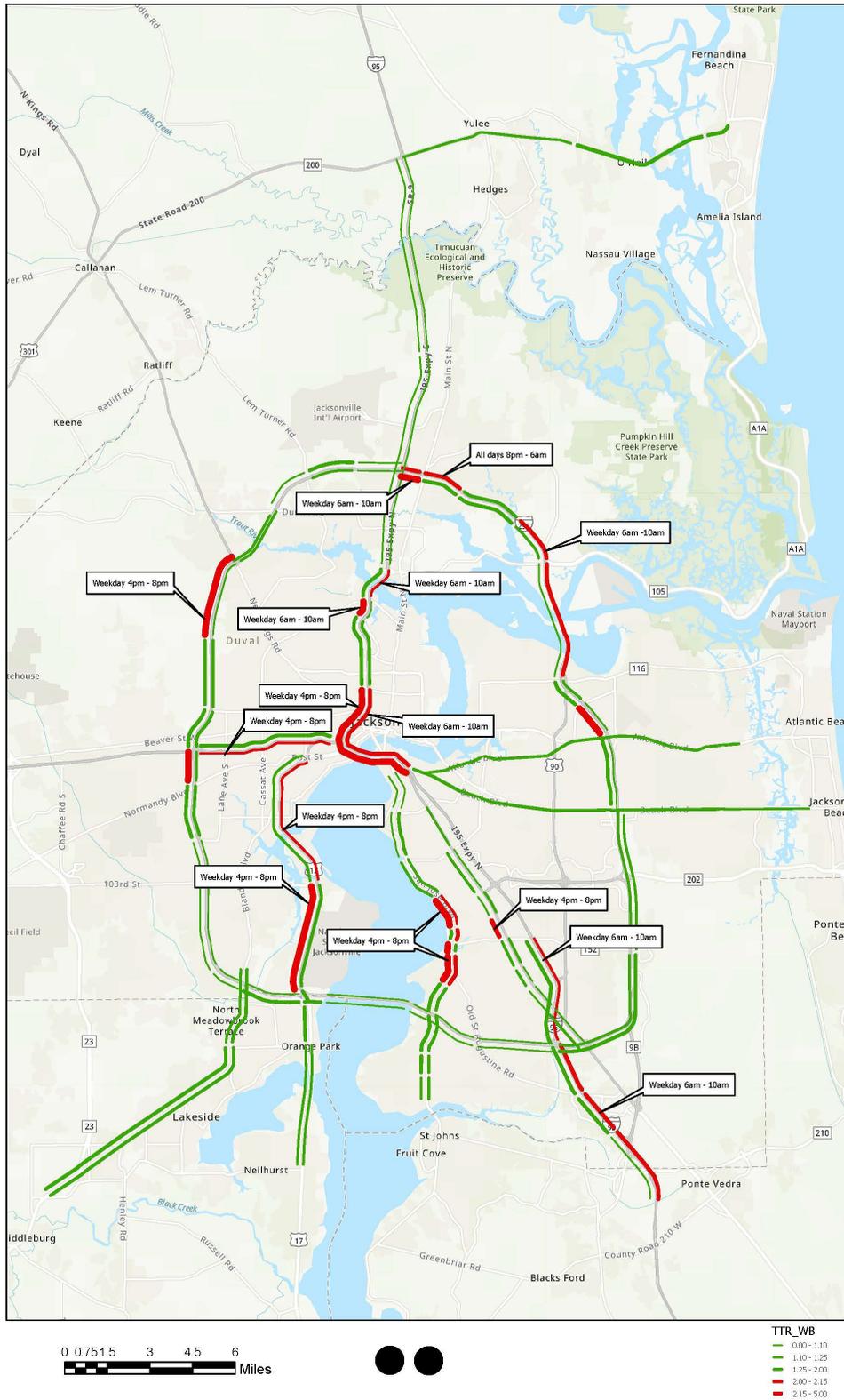


FIGURE 56 TRUCK TRAVEL TIME RELIABILITY (2021)

### Aviation On-time Departure<sup>41</sup>

The percent on-time departures from the Jacksonville International Airport improved in 2020 compared to 2019. Aviation reliability is shown on Figure 57.

There is no defined benchmark for on-time departures.

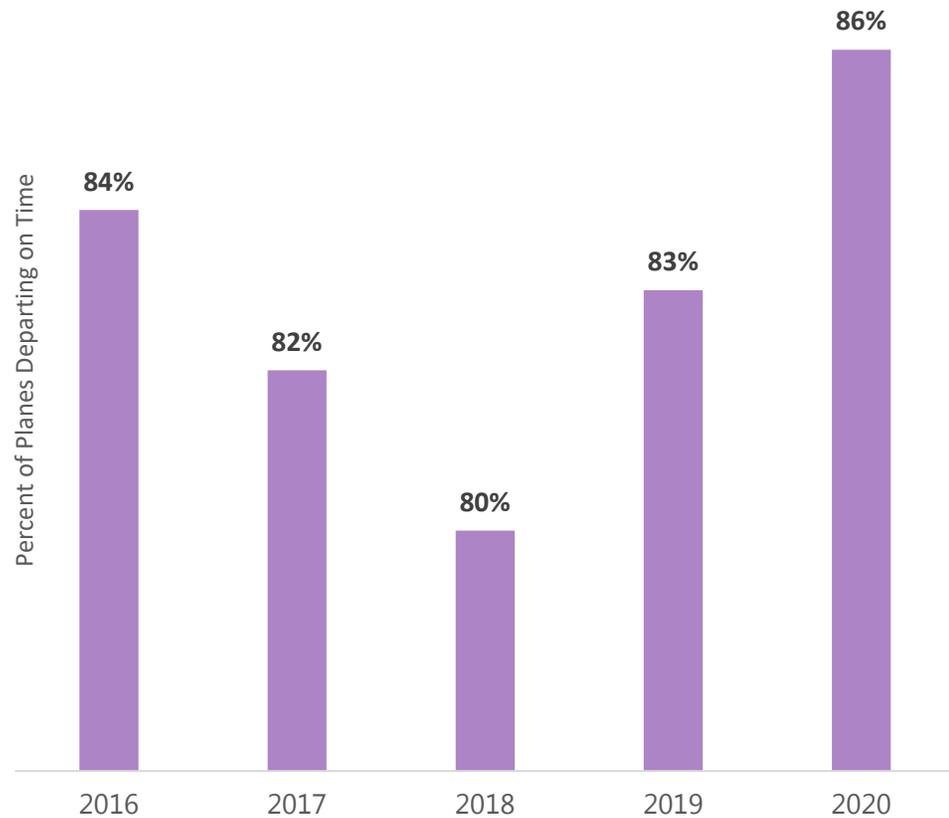


FIGURE 57 AVIATION ON-TIME DEPARTURE (2016-2020)



## Vehicles per Lane Mile<sup>42</sup>

Consistent with other measures the vehicles per lane mile on the state highway system declined in 2020 in all counties within the region except for the non-urbanized areas of St. Johns which County which reflects the significant growth in home construction in the county. Figure 58 summarizes the trends in vehicles per lane mile on the state highway system.

The vehicles per lane mile should maintain or decrease from year to year.

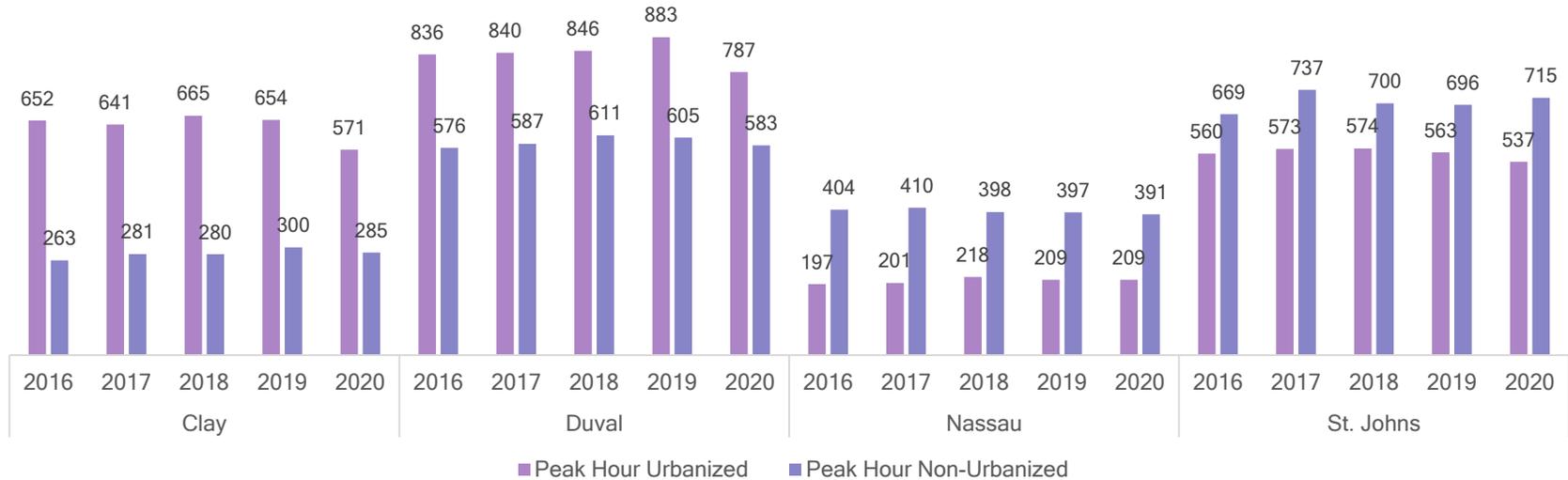


FIGURE 58 VEHICLES PER LANE MILE (2016-2020)

### Percent of Miles Congested<sup>43</sup>

Consistent with other measures the percent of travel congested during the peak hour declined in 2020. Figure 59 summarizes the trends in the number of miles of the state highway system are mildly or heavily congested.

The percent of lane miles congested should maintain or decrease from year to year.

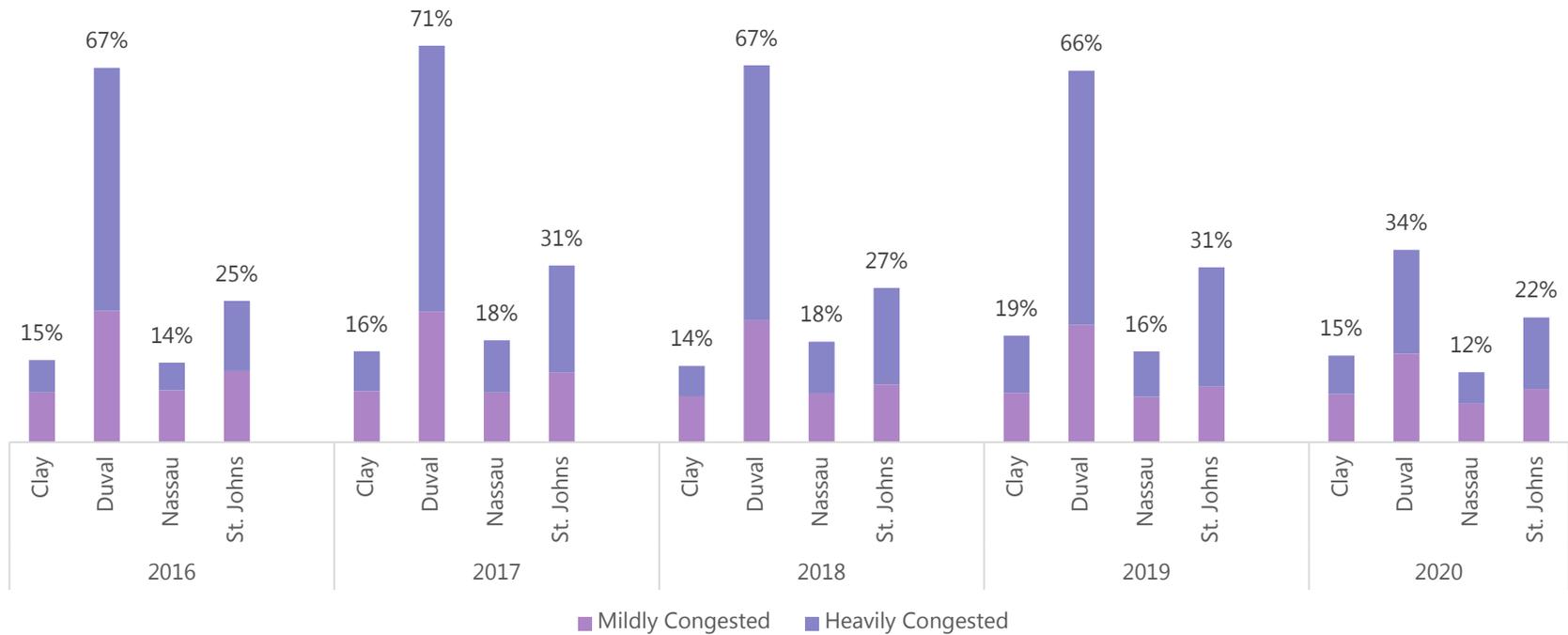
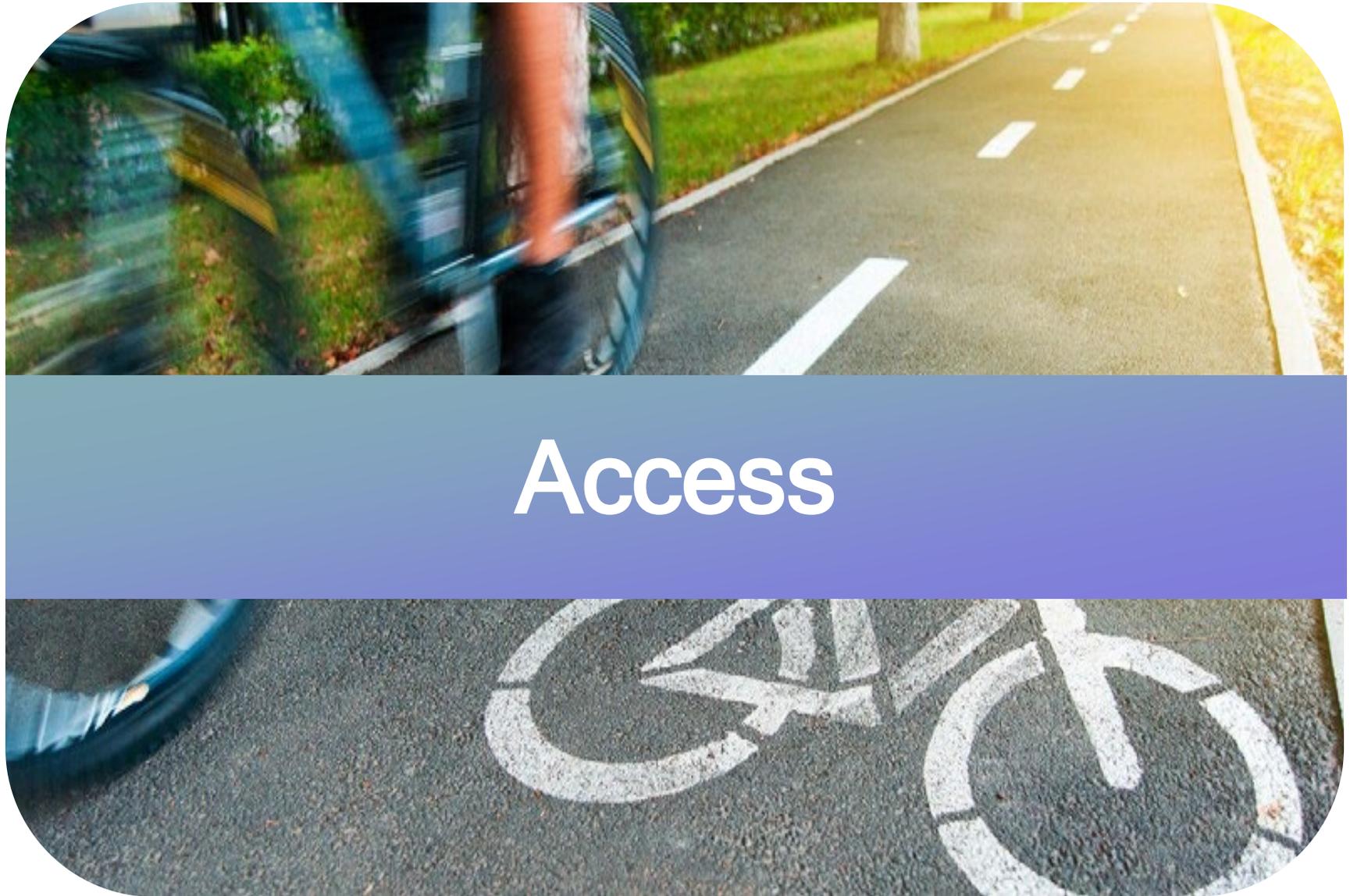


FIGURE 59 PERCENT OF MILES MILDLY OR HEAVILY CONGESTED (2016-2020)



### Access to Jobs from the State Highway System<sup>44</sup>

The total number of jobs identified in the North Florida TPO region was 706,597, and 82% of identified jobs were within one-half mile of state roads and 20% are within one-half mile of an Interstate System Highway in 2019.

The goal is to maintain or improve access to jobs.



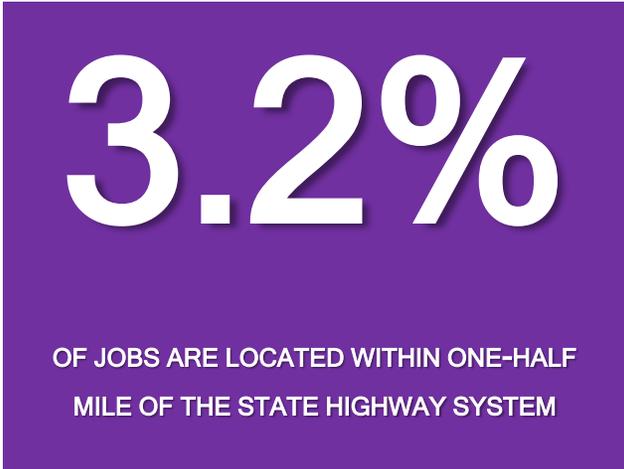
82%

OF JOBS ARE LOCATED WITHIN ONE-HALF  
MILE OF THE STATE HIGHWAY SYSTEM

### Access to Jobs by Transit with a 60-minute Commute<sup>45</sup>

Three transit agencies operate in North Florida: The Jacksonville Transportation Authority (Clay and Duval County and a connector to Nassau County), The Sunshine Bus in St. Johns County and the Nassau Council on Aging. Combined, these services provide access to over 51,000 jobs within a 60-minute commute in 2019.

The goal is to optimize the transit services to provide access to jobs based on each agencies ability to render those services. An increased emphasis on serving populations of persistent poverty, households with limited access to automobility and other underserved communities are needed.



3.2%

OF JOBS ARE LOCATED WITHIN ONE-HALF  
MILE OF THE STATE HIGHWAY SYSTEM

### Population with Access to Transit<sup>46</sup>

Access to transit is a significant need in underserved communities and a focus for the transit agencies within the region. On a regional basis the ability of populations to transit is low. However, in the urban core of Jacksonville nearly 89% of the populations is within one-quarter mile of a transit stop. Figure 60 shows the location of transit stops in the region. Figure 61 summarizes the access to this stops.

The target is to provide transit access to 95% of the population.

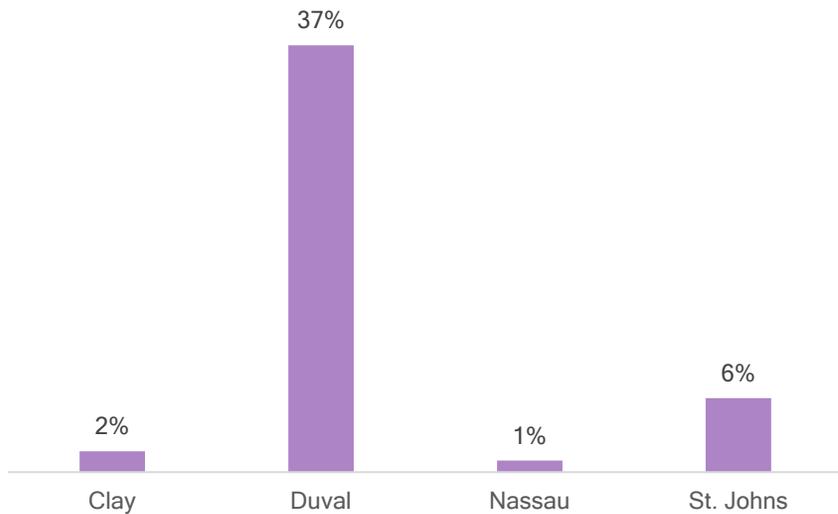


FIGURE 61 PERCENT OF POPULATION WITHIN ONE-QUARTER MILE OF TRANSIT STOPS (2020)

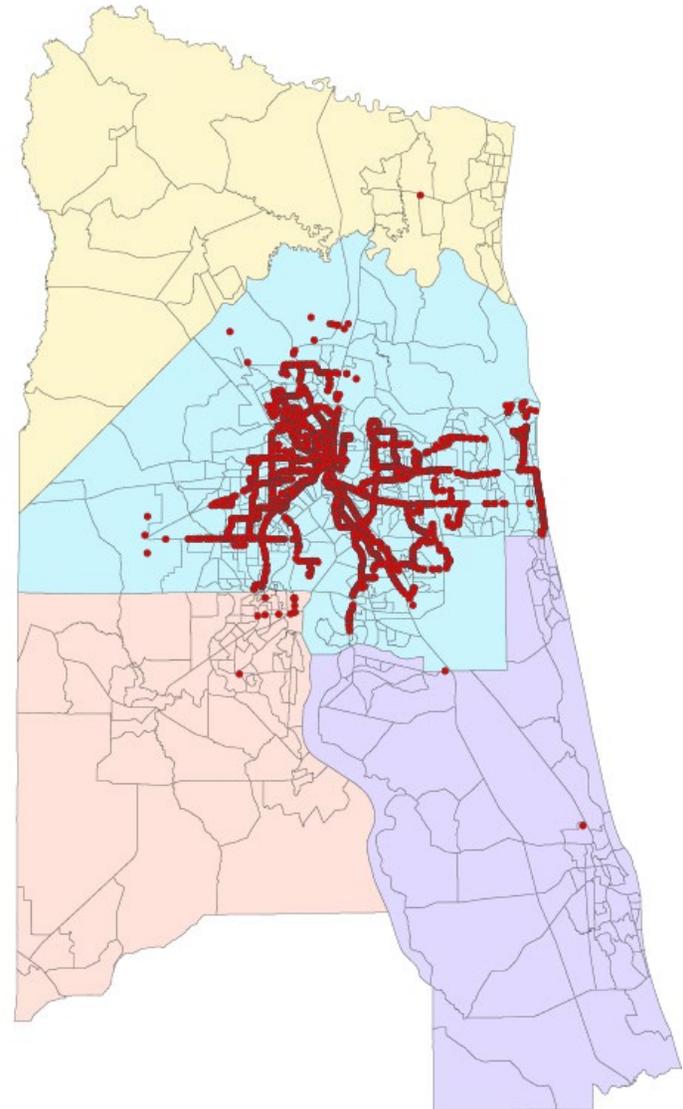


FIGURE 60 TRANSIT STOPS (2021)

### Access to Park-n-Ride Facilities<sup>47</sup>

The Jacksonville Transportation Authority manages 11 park-n-ride facilities in North Florida and 56.5% of the population has access within 5 miles. The park-n-ride lots in North Florida are shown on Figure 62 and the accessibility by county is shown in Figure 63.

The goal is to provide 95% of the population access to transit. Access to park-n-ride lots within 5 miles is one component of this accessibility.

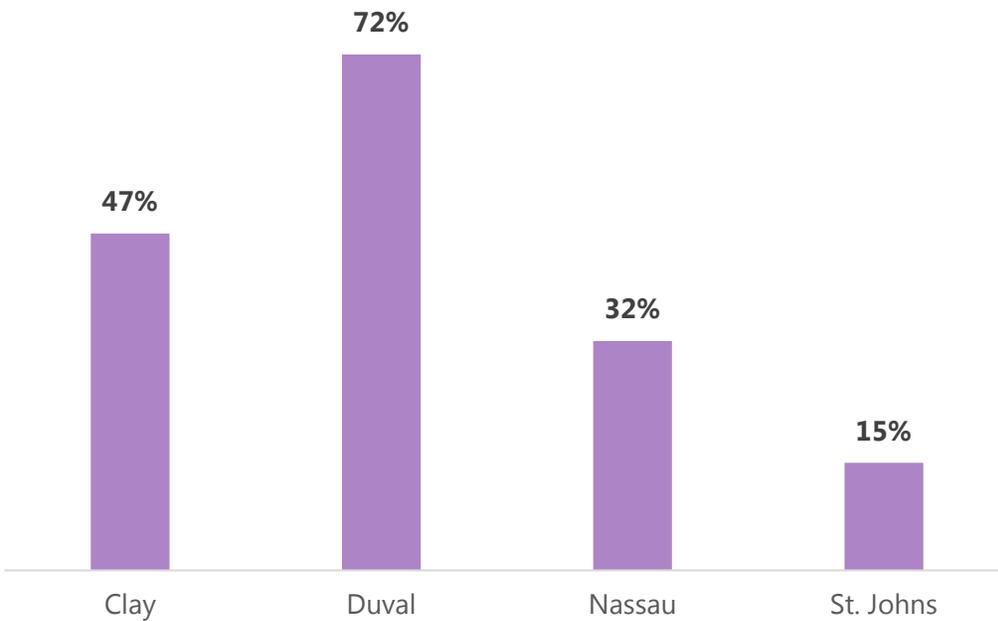


FIGURE 63 ACCESS TO PARK-AND-RIDES BY COUNTY (2020)

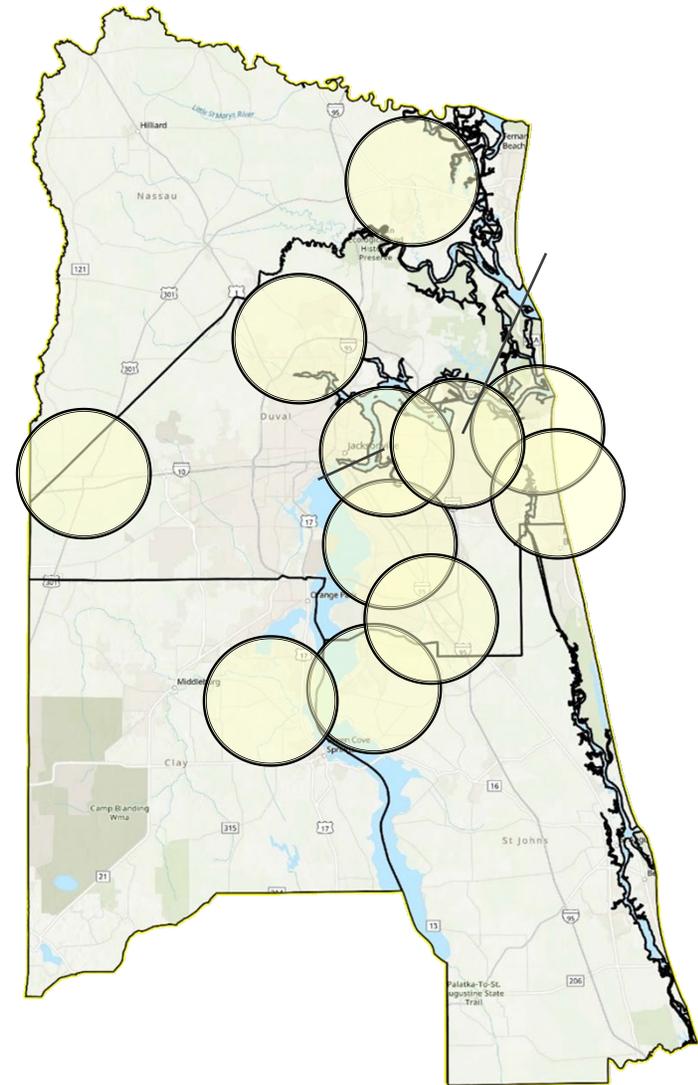


FIGURE 62 ACCESS TO PARK-AND-RIDE LOTS (2020)

## Bicycle and Pedestrian Facilities<sup>48</sup>

FDOT established context sensitive solutions that identify where it is appropriate to provide sidewalk and bicycle lanes on the state highway system based on the area type and functional classification of the roadway. For example, bicycle lanes and sidewalks are prohibited on freeways since they are unsafe considering the high speed of traffic. Figure 64 shows the access to bicycle facilities on the state highway system.

The goal is to provide 100% coverage of the state highway system for bicycles and pedestrians where appropriate.

**TABLE 13. BICYCLE LANES AND SIDEWALK COVERAGE ON THE STATE HIGHWAY SYSTEM (2020)**

<b>County</b>	<b>Bicycle Lane Coverage</b>	<b>Sidewalk Coverage</b>
Clay	81%	79%
Duval	57%	63%
Nassau	82%	45%
St. Johns	87%	60%
<b>Region</b>	<b>70%</b>	<b>62%</b>



# Operations

## Events<sup>49</sup>

The number of lane closures or other events such as abandoned vehicles, debris in the roadway, road work or crashes increased in 2020 and 2021 in spite of a decline in vehicle miles traveled. Figure 64 shows the trends in the number of events in FDOT District 2. The number of events in North Florida alone is not available.

There is no target for the number of events that occur.

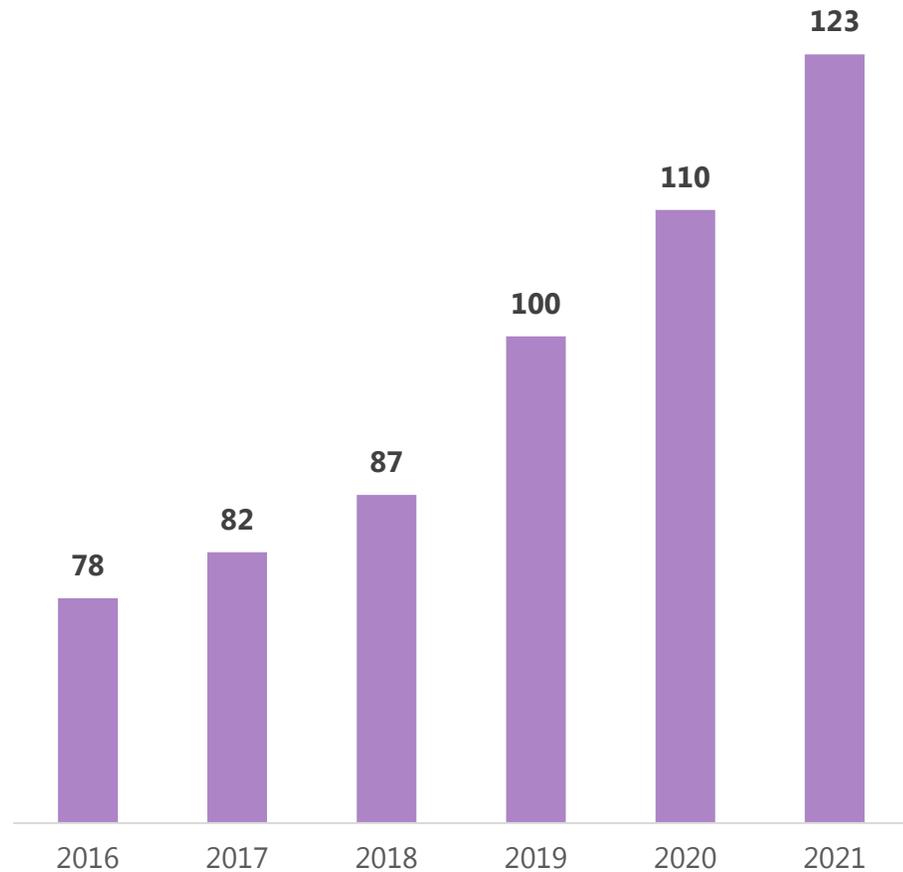


FIGURE 64 EVENTS PER 100 MILLION VEHICLE MILES TRAVELED  
(2016-2021)

### Time to Open Roads<sup>50</sup>

FDOT, law enforcement, emergency personnel and the Coroner’s Office can be engaged in incidents. This is relatively easy when the incident is not crash-related. During some incidents the time to open the road to traffic and restore or clear the road to normal traffic conditions can be impacted by the conditions of the crash that are beyond FDOT’s or law enforcement’s control. For example

- Emergency response personnel to respond and treat injured persons.
- Specialized response teams must remove hazardous materials before the road can be opened to traffic.
- The local coroner must investigate the scene. The time to open the road to traffic is typically 1-hour when a fatality occurs.
- The FDOT and law enforcement agencies work to open the road to traffic and restore the traffic conditions as soon as possible.

Figure 65 summarizes the time to open roads trend.

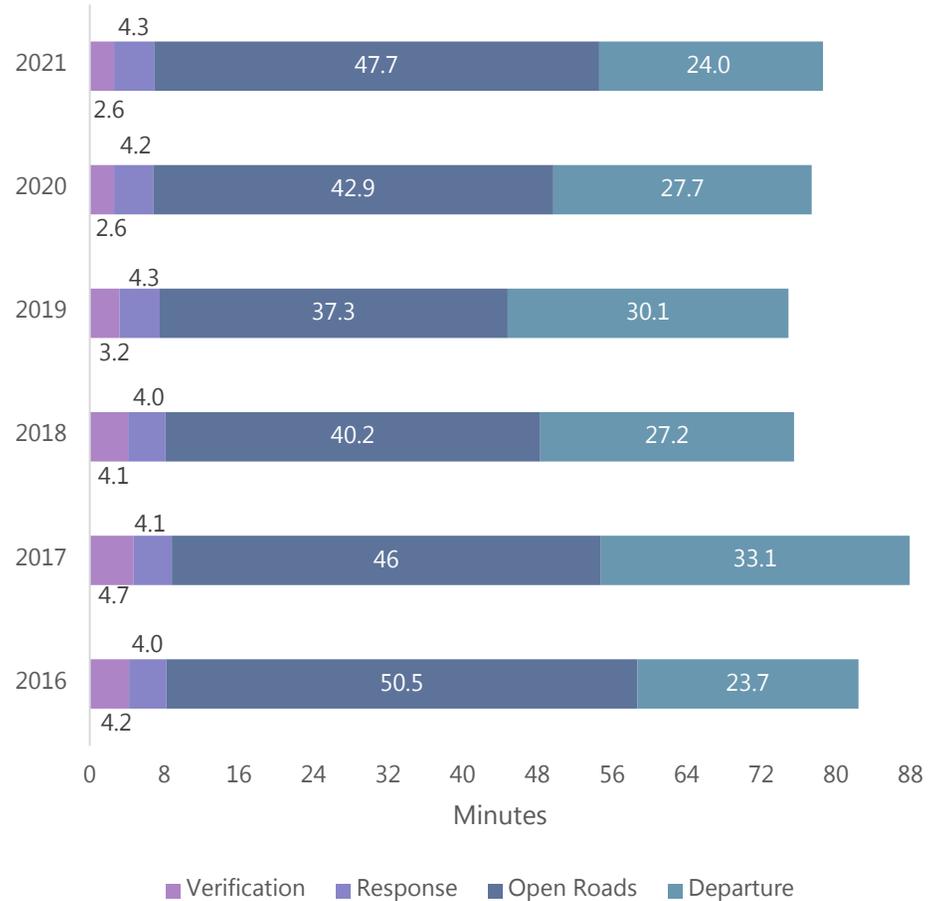


FIGURE 65 TIME TO OPEN ROADS (2016-2021)



# System Preservation

### Pavement Condition<sup>51</sup>

About 83% of pavements on the state highway system in North Florida are in good condition. Less than 90% of the pavement on state highways was rated good or better was below 90% for the last three years. Figure 66 shows the trend in the percent of pavement on the state highway system that is in good or better condition.

The Federal Highway Administration requires state departments of transportation to report the rideability of pavement using the International Roughness Index. The Florida Department of Transportation's applies this metric for the national highway system and state highway system. The goal for pavement condition is maintain 80% of pavement on the state highway system in good condition.

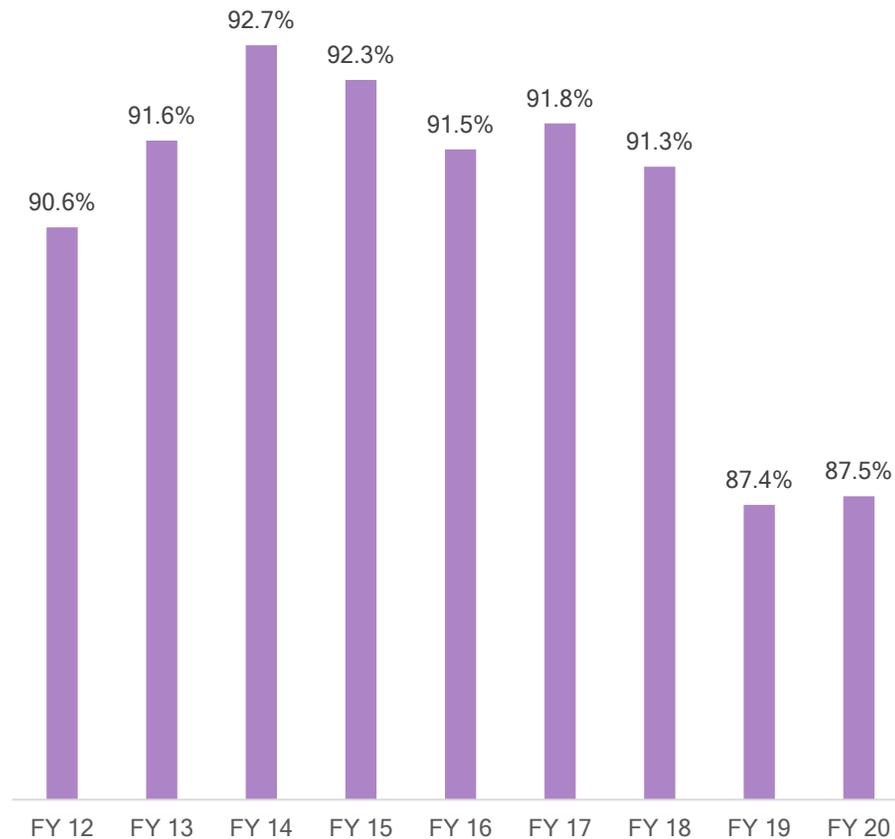


FIGURE 66 PERCENT OF PAVEMENT IN GOOD OR BETTER CONDITION (FY12 - 20)

### Bridge Condition<sup>52</sup>

About 94% of the deck area on bridges on the national highway system in North Florida are in good condition. Figure 67 summarizes the trend in bridge deck area that is rated good or better.

The Federal Highway Administration requires state departments of transportation to report on the bridge condition using criteria established as part of the National Bridge Inventory System. The Florida Department of Transportation adopted a goal to maintain 50% all bridges in good condition.

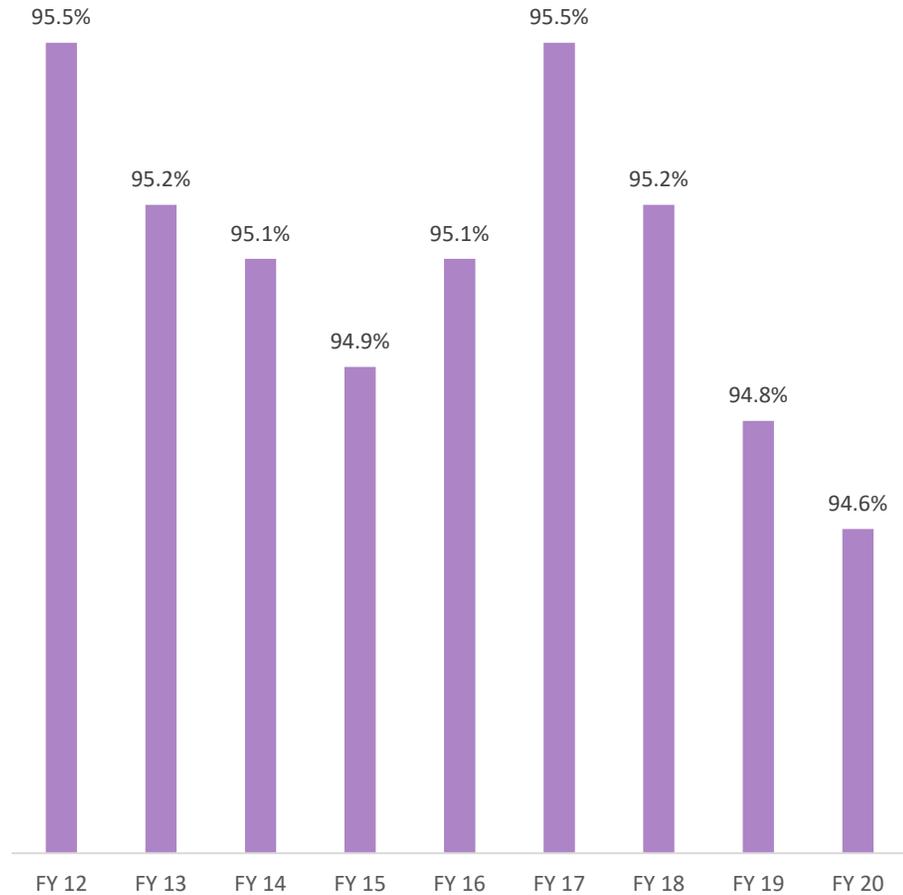


FIGURE 67 PERCENT OF BRIDGE DECK IN GOOD OR BETTER CONDITION

## Average Age of Transit Vehicles<sup>53</sup>

Maintaining transit vehicles and systems in a state of good repair is one of the highest priorities for any transit system to ensure safe, dependable and accessible services are provided.

The average age of vehicles operated by the Jacksonville Transportation Authority and Nassau Council on aging increased from 2019 with limited fleet replacement (0.3-year average increase) for each. The Sunshine Bus Company replaced a vehicle and their average age decreased.

The Jacksonville Transportation Authority assumed the operations of Clay Transit in 2018 and those vehicle are shown as part of the Jacksonville Transportation Authority's fleet beginning in 2018.

The service life for transit vehicles varies by type and are not analyzed as part of this report. Most buses have a service life of 12 years of 250,000 miles. Smaller buses such as shuttles have a service life of 4 to 7 years and between 50,000 and 175,000 miles.

The people mover vehicles on the Automated Skyway Express in downtown Jacksonville exceed their predicted service life. The vehicles are currently 21 years old. A Skyway Modernization Program is underway.

The Mayport Ferry vessel, the Jean Ribault, carries vehicles and people and was launched in Jacksonville in 1996 making it 24 years old but is in a good state of repair. The Jacksonville Transportation Authority assumed operations of the ferry from the City of Jacksonville in 2016.

Figure 68 shows the average age of vehicles for each agency.



FIGURE 68 AVERAGE AGE OF TRANSIT VEHICLES (2016-2020)



# Economic Impacts

### Social Costs of Crashes<sup>54</sup>

The costs of fatalities, injuries and other crashes burdens the economy in the billions of dollars annually. Lost wages, pain and suffering, medical expenses and property loss are a few of the external costs resulting from crashes.

Bicycle and pedestrian crashes result in \$973 million per year. They represent less than 1% of crashes but 20% of the social costs.

Vehicle crashes result in \$3,819 million per year in social costs.

The total social costs of crashes in North Florida is \$4.8 billion per year, or 5.9% of our region's gross domestic product.

The target is to have zero injuries or fatalities resulting from crashes.

Figure 69 shows the percent of the social cost of crashes by mode.

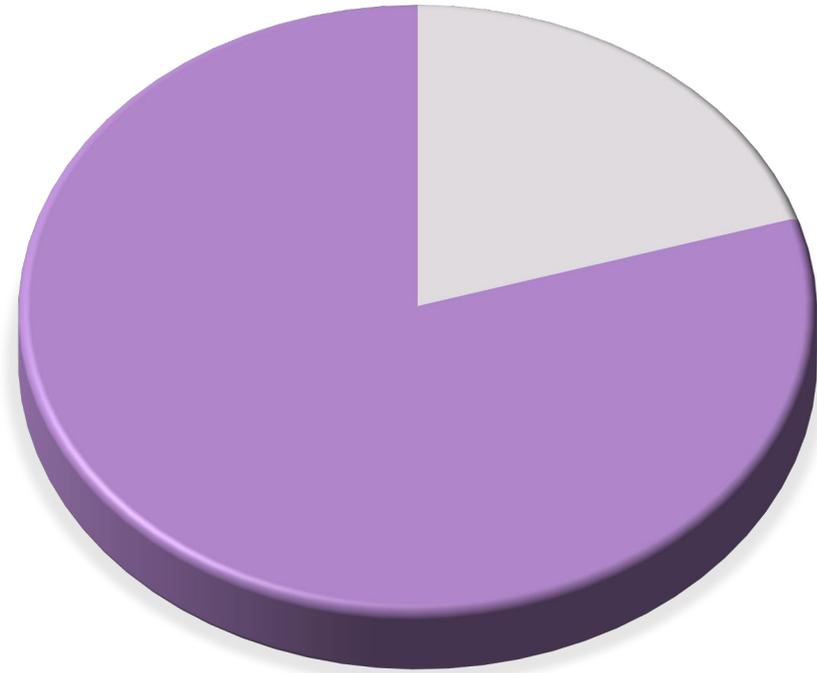


FIGURE 69 SOCIAL COST OF CRASHES (2020)

### Social Costs of Congestion<sup>55</sup>

The social costs of congestion include direct costs borne by the traveler in fuel consumption, lost travel time, additional vehicle depreciation and maintenance costs. The external costs, or those not paid directly by the traveler, included are from emissions which result in additional health care costs caused from increase cancer rates, loss of earnings associated with them the negative health impacts. The costs of climate change associated with greenhouse gas emissions for carbon dioxide and oxides of nitrogen are also included. Figure 70 summarizes the social costs of congestion.

The social cost of congested decreased in 2020 as a result of the COVID-19 pandemic similar to other measures of congestion.



FIGURE 70 SOCIAL COST OF CONGESTION (2016-2020)

## Economic Benefits of Investing in Transportation Infrastructure<sup>56</sup>

### Highways

Based on a study of the macroeconomic impacts of the Florida Department of Transportation's Annual Work every dollar invested in transportation returns a \$4 economic return. The Florida Department of Transportation invested \$769 million in Clay, Duval, Nassau and St. Johns counties in the 2020-2021 Work Program resulting in an economic benefit of \$3.1 billion contributing to 4% of the region's gross domestic product. The 2022-2023 fiscal year work program will be the largest investment in history.

### Multimodal

The reduction of the persons served and cargo shipped caused by the COVID-19 pandemic will reduce the estimated annual economic impact of investments in multimodal travel when compared to pre COVID-10 pandemic conditions. The full economic benefit of the ports, aviation and transit based on pre COVID-19 pandemic conditions are summarized below.

- North Florida's ports generated 138,500 jobs in Florida and supports nearly \$31.1 billion in annual economic output for the region and state. The lack of cruise service and reduction in cargo shipments reduced this impact in 2020.
- Jacksonville Aviation Authority's four-airport system contributes more than \$6 billion annually to the local economy. Declining passengers and cargo reduced this impact in 2020.
- The Jacksonville Transportation Authority's operations generated more than \$73.6 million in labor compensation, saved customers more than \$23.4 million in transportation costs and spurred \$118.6 million in total added value. Declining passengers and congestion levels reduced this impact in 2020.

### Total

The total benefit for investment \$40.4 billion for North Florida.

There are no benchmarks for the economic benefit but the larger the benefit the better.



# Summary

Understanding the trends and conditions occurring in the North Florida will allow planners and engineers to prioritize resources more effectively as part of the North Florida Transportation Planning Organization’s (TPO) Congestion Management Process. The data presented are an essential part of making evidence-based decisions for the investment in mobility in North Florida. The data presented focuses on Clay, Duval, Nassau and St. Johns counties. This report summarizes trends in the following topics:

- People
- Economy
- Safety
- Quantity
- Quality
- Utilization
- Access
- Operations
- System Preservation
- Economic Impacts

These measures were established in the North Florida TPO’s Congestion Management Process in 2019, 2045 Path Forward Long - Range Transportation Plan, initiatives to provide mobility to underserved communities and measures adopted by the Federal Highway Administration (FHWA) for metropolitan planning in the Moving Ahead for Progress in the 21st Century Act (MAP-21). These planning requirements were continued in the Infrastructure Investment and Jobs Act of 2021, also known as the Bipartisan Infrastructure Law (BIL).

The data presented in this 2022 Annual Mobility Report is based on regional trends from 2016 to 2020. Data for the 2021 is reported when available. 2020 and 2021 were unprecedented times in North Florida. The COVID-19 pandemic resulted in population growth and changes in travel behavior that have impacted mobility. Some of the impacts of COVID-19 pandemic may carry through 2023 and others are likely to become part of the new normal. The following summarize the results of the analysis.

## People

- North Florida’s population grew by 8.8%, or 127,000 persons, between 2016 and 2020. North Florida’s population grew by 3.2% in 2021 over 2020 outpacing the national growth of only 0.1%, the lowest annual growth in the nation’s history, and Florida’s growth of 1.13%.

- About 42% of people worked from home at least half-time in 2021 due to the COVID-19 pandemic. Less than 10% of workers worked from home full time prior to the pandemic and nearly one-third of commuters are anticipated to work from home at least half time permanently.
- Between 2016 and 2020 persons under 24 who obtained their licenses grew throughout the region (0.4%) reversing a trend that occurred since the 2000's.
- Poverty within the region has declined since its peak in 2012. The COVID pandemic impacted our residents in 2020 and poverty increased due to lack of employment. Job growth in 2021 continues to reduce poverty in North Florida.
- Nearly 1 in 7 persons under 18 lived in poverty in North Florida in 2020 exceeding the goal of Florida Chamber's for 10% or fewer children living in poverty.
- Transportation barriers are the third leading cause of missing a medical appointment for older adults across the country and nearly 370,000 persons in North Florida live in medically underserved areas.
- Transportation problems, affecting 8% of women, appeared to be the only significant logistic barrier to timely [prenatal] care.
- Only 43% of low-income persons own vehicles.
- Accessing affordable and nutritious food is a challenge for persons in North Florida.

## Economy

- The gross domestic product in North Florida remained strong despite the COVID-19 pandemic with only a net 0.2% decline between 2019 and 2020. Statewide gross domestic product returned to pre-pandemic levels and grew by 5.5% in real dollars through 2021. When the economy grows so does the demand for mobility.
- Employment in North Florida in December 2021 was 2% over the pre-COVID-19 pandemic levels in March of 2020.

## Safety

- Crashes 2021 increased 15% over 2020. This is the second highest number of crashes ever recorded in North Florida. The number of crashes is believed to result from higher travel speeds.
- Similar trends exist for fatalities (2.5% increase) and injury crashes (10.5% increase) for 2021 over 2020 crashes.
- Regional crash rates exceed the statewide average for all severity types of vehicle crashes.
- North Florida was ranked as the 10th least-safe area for pedestrians by Dangerous by Design in 2020. However, several metropolitan areas in Florida are ranked as more dangerous and North Florida's bicycle and pedestrian fatal crash rate is less than the statewide average.

- Bicycle and pedestrian crashes are only 3.2% of the total crashes but account for nearly 20% of the social costs of crashes due to their high fatal and serious injury rates.
- The social cost of crashes is \$4.8 billion or 5.9% of our gross domestic product.
- The TPOs goal is to have zero fatalities.

## Quantity

- With the economic recovery vehicle miles traveled are anticipated to increase in 2021-2022 but slower than the growth in gross domestic product due to more residents working from home.
- Aviation travel began to recover in the second half of 2020 and reached 2013 levels for annual passengers in 2021.
- On-time departures at the airport achieved their highest level.
- Transit ridership declined as a result of the safety concerns associated with the COVID-19 pandemic.
- Port container traffic began to recover in 2020.
- There were no cruise ship departures from JAXPORT in 2020 as a result of the COVID-19 pandemic.
- The number of vehicles shipped declined significantly through 2021 due to the COVID-19 pandemic global supply chain interruptions.

## Quality

- Average speeds increased from 2019 to 2020 as a result of lower demand (vehicle miles traveled and generally lower congestion levels).
- Travel delays were 38% of pre-COVID-19 pandemic levels on the state highway system.
- Reliability of travel on the system improved significantly based on the reduction of delays between 2019 and 2020 but returned to 2019 levels in 2021.
- The mid-day period was the most critical period for 43% of the region's most congested corridors in 2020 because more people worked from home during 2020. In 2021, the peak flows returned to pre-COVID-19 patterns.

## Utilization

- The utilization of the system declined in 2020 consistent with the decline in demand during the COVID-19 pandemic.

## Operations

- The number of incidents (lane closures) and crashes per million vehicle miles traveled on the state highway system increased by nearly 12%.
- The average time to open the road to traffic increased slightly. This is likely a result of the increase of more severe crashes which require other medical personnel to arrive during injuries or the coroner’s office to investigate the scene following a fatality before traffic can open.

## System Preservation

- About 83% of pavements on the state highway system in North Florida are in good condition. Pavement conditions in North Florida declined below 90% for the third straight year after being above 90% in the prior 7 years.
- About 94% of bridges on the national highway system in North Florida are in good condition.
- The average age of vehicles operated by the Jacksonville Transportation Authority and Nassau Council on aging increased from 2019 to 2020 (0.3-year average increase) because of less fleet replacement. The Automated Skyway Express (ASE) people mover vehicles in downtown Jacksonville exceeded their service life but are in good working order. A Skyway modernization project is underway. The St. Johns River Ferry vessels are at the end of their service life but are in good working order. The Sunshine Bus Company replaced a vehicle and their average age decreased.

## Access

- About 3.2% of all jobs are located within a one-hour commute for transit services.
- The state highway system is located within one-half mile of 82% of all jobs.
- Nearly 89% of the populations is within one-quarter mile of a transit stop in the urban core of downtown Jacksonville.
- 56.5% of the population has access has access within 5 miles.

## Economic Impacts

- Crashes results in a \$4.8 billion economic loss in North Florida in 2020.
- Congestion results in a \$0.14 billion economic loss in North Florida in 2020.
- Investing in transportation results in a \$40.4 billion economic impact for the residents of North Florida.

## Endnotes

<sup>1</sup> U.S. Census County Populations Totals: 2010 - 2020. <https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-counties-total.html> Retrieved: March 21, 2022. U.S. Census County Populations Totals: 2021 Population Estimates. U.S. Census Bureau QuickFacts: Duval County, Florida. Retrieved April 26, 2022.

<sup>2</sup> The number of licensed drivers by age group was retrieved by year from the Florida Department of Highway Safety and Motor Vehicles. <https://www.flhsmv.gov/resources/driver-and-vehicle-reports/>. Retrieved April 1, 2022.

<sup>3</sup> Persons per vehicle were provided by the FDOT Sourcebook and are based on the 2019 American Community Survey <https://www.census.gov/programs-surveys/acs>. The non-Single Occupancy Vehicle (SOV) travel includes travel via carpool, van, public transportation, commuter rail, walking, or bicycling and telecommuting. Retrieved April 1, 2022.

<sup>4</sup> Bureau of Labor Statistics American Time Use Survey. [American Time Use Survey Home Page \(bls.gov\)](https://www.bls.gov). Retrieved April 1, 2022. Stanford University Institute for Economic Policy Research. <https://siepr.stanford.edu/publications/policy-brief/how-working-home-works-out> The Stanford study conducted a survey of 2,500 US residents aged 20 to 64, earning more than \$20,000 per year in 2019 carried out between May 21-29, by QuestionPro on behalf of Stanford University. Sample reweighted to match current CPS. Retrieved March 22, 2022.

<sup>5</sup> North Florida TPO. Ladders of Opportunity: Improving Lives Through Mobility, 2021. [Ladders-of-Opportunity-Final-Report.pdf \(northfloridatpo.com\)](https://www.northfloridatpo.com). Retrieved April 1, 2022. Calculated based on the percent of children living in poverty identified by The Florida Chamber Florida Scorecard ([thefloridascorecard.org](https://www.thefloridascorecard.org)) times the population under 18 in each county from the US Census at <https://www.census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates/2020-evaluation-estimates/2010s-counties-total.html> Retrieved: March 21, 2022.

<sup>6</sup> US Census Small Area Income and Poverty Estimates (SAIPE) Program. [Small Area Income and Poverty Estimates \(SAIPE\) Program \(census.gov\)](https://www.census.gov). Retrieved April 1, 2022. Poverty thresholds are available at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>.

<sup>7</sup> North Florida TPO. Ladders of Opportunity: Improving Lives Through Mobility, 2021. [Ladders-of-Opportunity-Final-Report.pdf \(northfloridatpo.com\)](https://www.northfloridatpo.com). Retrieved April 1, 2022. Areas based on data provided by the U.S. Department of Health Resources and Services Administration (HRSA). Medically Underserved Areas/Populations are areas or populations designated by HRSA as having too few primary care providers, high infant mortality, high poverty or a high elderly population. Health Professional Shortage Areas (HPSAs) are designated by HRSA as having shortages of primary medical care, dental or mental health providers and may be geographic (a county or service area), population (e.g. low income or Medicaid eligible) or facilities (e.g. federally qualified health center or other state or federal prisons) <https://data.hrsa.gov/tools/shortage-area/mua-find> and <https://bhw.hrsa.gov/shortage-designation/muap-process> Governors may also designate areas of their state as shortage areas specifically for the purpose of Rural Health Clinic (RHC) certification. They are identified as governor's exemption areas.

<sup>8</sup> Florida Department of Health Bureau of Community Health Assessment Division of Public Health Statistics and Performance Management <http://www.flhealthcharts.com/charts/DataViewer/InfantDeathViewer/InfantDeathViewer.aspx?indNumber=0053>. Retrieved April 1, 2022.

<sup>9</sup> North Florida TPO. Ladders of Opportunity: Improving Lives Through Mobility, 2021. [Ladders-of-Opportunity-Final-Report.pdf \(northfloridatpo.com\)](#). Retrieved April 1, 2022. Data provided by University of North Florida Brooks Center for Nutrition and Food Security [https://www.unf.edu/brooks/Center for Nutrition and Food Security/](https://www.unf.edu/brooks/Center%20for%20Nutrition%20and%20Food%20Security/). Map data provided by Florida Department of Agriculture and Community Services <https://roadmaptohealth.fdacs.gov/> and US Department of Agriculture <https://www.newswise.com//articles/university-of-north-florida-launches-new-center-for-nutrition-and-food-security>. Percent of population with limited food access is based on a low access tract at 1 mile for urban areas and 10 miles for rural areas per the Florida Department of Agriculture and Community Services.

<sup>10</sup> Gross Domestic Product by State, 3rd Quarter 2021. <https://www.bea.gov/data/gdp/gdp-state> Retrieved March 21, 2022. Gross Domestic Product was calculated as the sum of the value added from all industries.

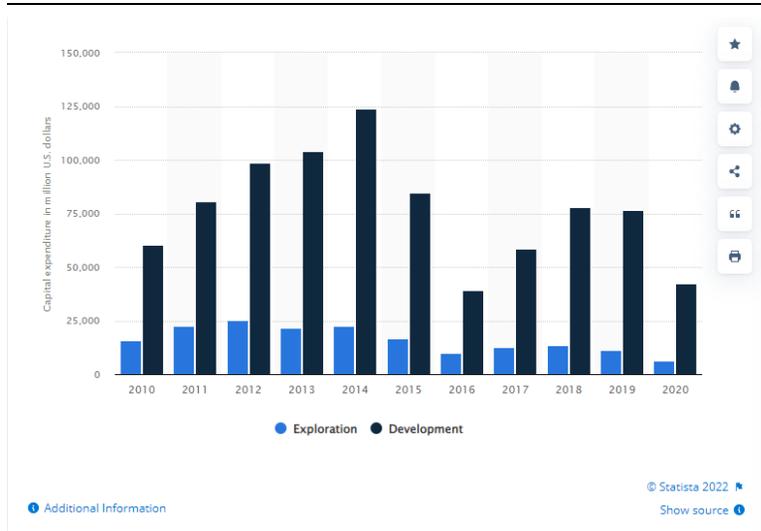
<sup>11</sup> The data was obtained from the Bureau of Labor Statistics Local Area Unemployment Statistics, Series Id: LAUMT122726000000006, Not Seasonally Adjusted for Jacksonville, FL Metropolitan Statistical Area. Metropolitan Area Employment and Unemployment - March 2022 (bls.gov) Retrieved May 5, 2022.

<sup>12</sup> 2022 Market Outlook for Ocean, Air and Road Transportation Services. Retrieved February 9, 2022. Quote based on an interview performed with Todd Misemer Director of Global Supply Chain, Gardner. May 1, 2022.

<sup>13</sup> U.S. Energy Information Administration. Florida Regular Conventional Retail Gasoline Prices. [https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pets&s=emm\\_epmru\\_pte\\_sfl\\_dpg&f=m](https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pets&s=emm_epmru_pte_sfl_dpg&f=m) Retrieved May 11, 2022.

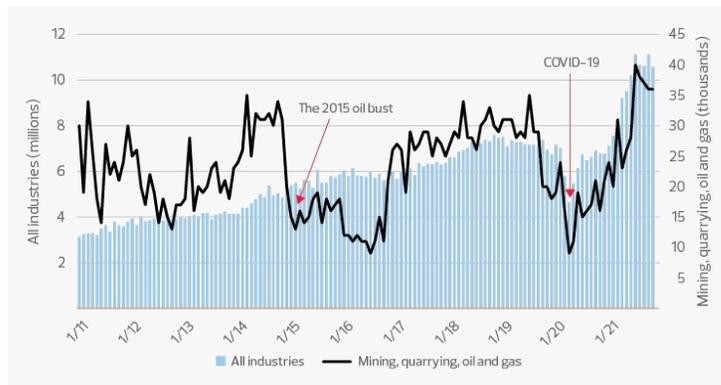
Investment trends in capacity expansion and the impact the Ukraine-Russian war <https://www.mordorintelligence.com/industry-reports/global-oil-and-gas-capex-industry>.

The decline in exploration and development began in 2015 and the reduced investment has resulted in the lack of capacity to respond to the rapid increase in demand that occurred during the COVID-19 pandemic recovery. The United States oil and gas industry had a capital expenditure (capex) on development of 42.6 billion U.S. dollars in 2020, while capex on exploration came to around 6.2 billion U.S. dollars. This is a considerable decrease in comparison to 2010, when capex on development and exploration stood at 60.5 and 15.6 billion U.S. dollars, respectively. <https://www.statista.com/statistics/294604/us-gas-and-oil-industry-expenditures-on-exploration-and-development/> Retrieved May 11, 2022.



Labor shortage remains a major challenge for oil and gas: Spring 2022 outlook. <https://realeconomy.rsmus.com/labor-shortage-remains-a-major-challenge-for-oil-and-gas-spring-2022-outlook/>. Retrieved May 11, 2022.

### U.S. job vacancies



Source: U.S. Bureau of Labor Statistics; Bloomberg; RSM Canada LLP

<sup>14</sup> Based on research published by the American Trucking Association in 2021, 180 truck drivers are needed nationally and the Florida Trucking Association reports that nearly 25% of that demand is needed in Florida. <https://theapopkavoice.com/stories/floridas-trucking-industry-is-working-to-end-driver-shortage.14428>. Retrieved May 11, 2022.

<sup>15</sup> American Trucking Association [ATA Driver Shortage Report 2021 Executive Summary.FINAL .pdf \(trucking.org\)](#) Retrieved May 11, 2022. The statistics of 25% of the shortfall is in Florida is based on an interview with Alix Miller, Chief Executive Officer of the Florida Trucking Association on May 1, 2022.

<sup>16</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. Crash data for 2021 was obtained from the Florida Department of Highway Safety and Motor Vehicles (FDHSMV). The fatal and injury crashes are certified for the latest year of publication. Property-damage- only facilities are not certified by FHSMV. FDOT reviews the property-damage-only crashes and certifies the data. This process typically lags a year behind. Some property-damage only crashes are not reported to law enforcement. <https://www.flhsmv.gov/traffic-crash-reports/crash-dashboard/>. Retrieved March 1, 2022. In future years, the FDOT Safety Office is migrating toward a single reporting system in 2022 that will the Crash Analysis Reporting System (CARS) and Signal4Analytics.

<sup>17</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. Crash rates are calculated based on the total crashes divided by the total vehicle miles traveled.

$$Crash\ Rate = \frac{\sum_{n=1}^n Crashes}{\sum_{n=1}^n 100\ MVMT_n}$$

<sup>18</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The 2021 crash statistics were obtained from the Florida Department of Highway Safety and Motor Vehicles (FDHSMV): Crash Facts. Crash Dashboard - Florida Department of Highway Safety and Motor Vehicles (flhsmv.gov). Data is provided by county for each of the crash types for total crashes, fatalities, injuries, bicycle and pedestrian crashes. Retrieved: March 22, 2022. It was confirmed with FDHSMV that the 2021 data for fatalities and injuries are certified before posting the FDHSMV report. Property damage only crashes are not.

<sup>19</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The 2021 crash statistics were obtained from the Florida Department of Highway Safety and Motor Vehicles: Crash Facts. Crash Dashboard - Florida Department of Highway Safety and Motor Vehicles (flhsmv.gov). Data is provided by county for each of the crash types for total crashes, fatalities, injuries, bicycle and pedestrian crashes. Retrieved: March 22, 2022. It was confirmed with FDHSMV that the 2021 data for fatalities and injuries are certified before posting the FDHSMV report. Property damage only crashes are not. Vehicle miles traveled was developed using the FDOT Reports of Highway Mileage and Travel (DVMT) (fdot.gov). which is the source data in the FDOT Sourcebook. <http://fdotsourcebook.com/>. Referenced: March 3, 2020.

Limited research speculates that the increase in fatal crashes may be a result of the increase in speed resulting in higher speed crashes and less congestion resulting in more aggressive driver behavior. <https://tti.tamu.edu/researcher/road-safety-study-during-the-pandemic-shows-risk-of-death-or-injury-is-greater-when-roads-are-clearer/>. Retrieved June 6, 2022.

<sup>20</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

The 2021 crash statistics were obtained from the Florida Department of Highway Safety and Motor Vehicles: Crash Facts. Crash Dashboard - Florida Department of Highway Safety and Motor Vehicles (flhsmv.gov). Data is provided by county for each of the crash types for total crashes, fatalities, injuries, bicycle and pedestrian crashes. Retrieved: March 22, 2002. It was confirmed with FDHSMV that the 2021 data for fatalities and injuries are certified before posting the FDHSMV report. Property damage only crashes are not.

<sup>21</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

<sup>22</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

<sup>23</sup> Smart Growth America [Dangerous By Design 2021 - Smart Growth America](#). Retrieved March 1, 2022. The pedestrian danger index is calculated as the number of bicycle and pedestrian fatalities per 100,000 in population divided by the number of cycling or walk trips from the 2017 National Household Travel Survey. [Dangerous by Design 2021 - Smart Growth America](#) Dangerous by Design estimates the number of pedestrian trips using the U.S. Department of Transportation, Federal Highway Administration, 2017 National Household Travel Survey. URL: <http://nhts.ornl.gov>. Retrieved March 16, 2022. The pedestrian danger index is calculated as follows.

$$PDI = \frac{\sum_{n=1}^n (F_b + F_p)_n}{\sum_{n=1}^n \frac{P_n}{100,000} * \sum_{n=1}^n (T_b + T_p)_n}$$

Where:

$n$  = county

$F_b$  = bicycle fatalities

$F_p$  = bicycle facilities

$P_n$  = population

$T_b$  = bicycle trips

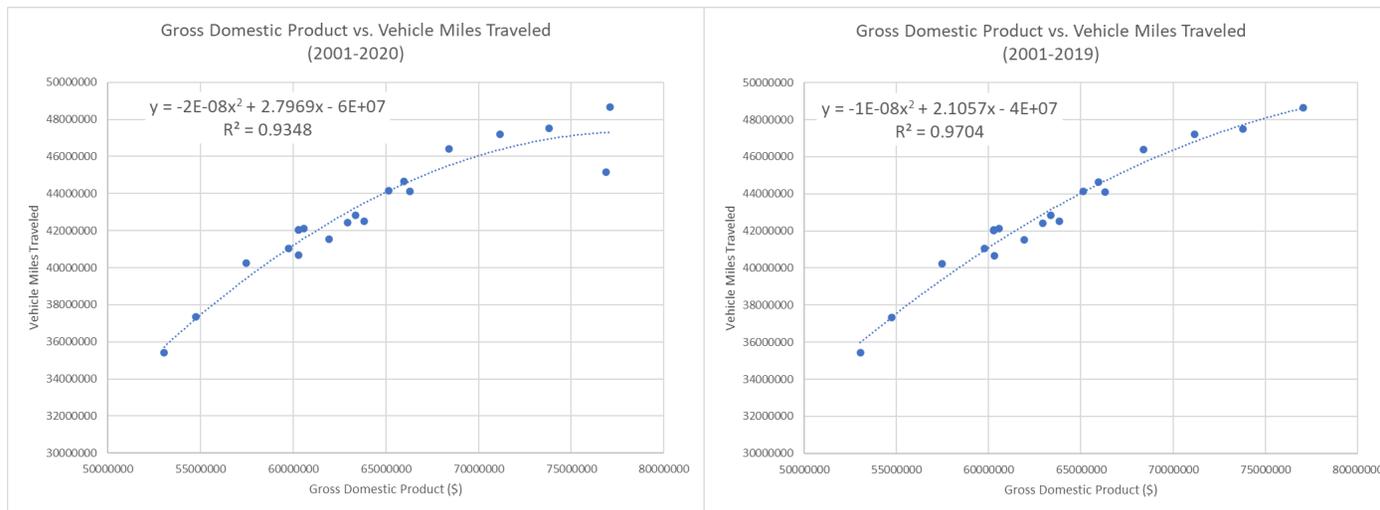
$T_p$  = pedestrian trips

<sup>24</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. Vehicle miles traveled (VMT) is the most direct measure of total travel the roadways and represents the average annual daily traffic (AADT) multiplied by the roadway segment length. This measure is reported annually by FDOT in the Mobility Performance Measure (MPM) data.

$$VMT = \sum_{n=1}^n (l_n * volume_n)$$

Vehicle miles traveled was reported using the FDOT [Reports of Highway Mileage and Travel \(DVMT\) \(fdot.gov\)](https://fdot.gov/reports/highway-mileage-and-travel-dvmt/), which is the source data in the FDOT Sourcebook. <http://fdotsourcebook.com/>. Referenced: March 3, 2020.

<sup>25</sup> The correlation of Vehicle Miles Traveled (VMT) and Gross Domestic Product (GDP) for the period 2000 to 2020 resulted in an R<sup>2</sup> of 0.93 with the polynomial equation of  $VMT = -2E-08 * GDP^2 + 2.7969 * GDP - 6E+07$ . A plot of the correlation is shown below. The divergence that occurred from increased work at home behaviors is shown in the final year of the analysis below. Removing the year 2020 when influenced during COVID-19 and the increased work at home trend, the R<sup>2</sup> improved to 0.97 based on  $VMT = -1E-08 * GDP^2 + 2.1057 * GDP - 4E+07$ .



<sup>26</sup> 2021 Florida Transit Information and Performance Handbook. [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/transit/documents/2021-transit-and-performance-handbook.pdf?sfvrsn=7f72a567\\_2](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/transit/documents/2021-transit-and-performance-handbook.pdf?sfvrsn=7f72a567_2) Retrieved May 17, 2022.

"The percent of adults who reported reducing their transit or ride-sharing trips, substituting online shopping for in-person store trips, or living with at least one member of the household teleworking." <https://www.bts.gov/covid-19>. Retrieved June 17, 2022.

- <sup>27</sup> Jacksonville Aviation Authority Monthly Transportation Report <https://www.flyjacksonville.com/PDFs/transportation-report.pdf>. Retrieved May 11, 2022.
- <sup>28</sup> Jacksonville Aviation Authority Comprehensive Annual Report [Jacksonville International Airport \(flyjacksonville.com\)](https://www.flyjacksonville.com). Retrieved March 1, 2022.
- <sup>29</sup> Jacksonville Aviation Authority Comprehensive Annual Report [Jacksonville International Airport \(flyjacksonville.com\)](https://www.flyjacksonville.com). Retrieved March 1, 2022.
- <sup>30</sup> Jaxport Fiscal Year 2022 Statistics. [Statistics | Jacksonville Port Authority \(JAXPORT\)](#). Retrieved March 1, 2022.
- <sup>31</sup> Jaxport Fiscal Year 2022 Statistics. [Statistics | Jacksonville Port Authority \(JAXPORT\)](#). Retrieved March 1, 2022.
- <sup>32</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The FDOT Forecasting and Trends Office may a major methodology update for this year’s Sourcebook. Speed estimates are now based exclusively on probe vehicle data reported by Regional Integrated Transportation Information System (RITIS). » [RITIS CATT Lab \(umd.edu\)](#).
- <sup>33</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The level of congestion methodology was updated for this year’s reporting as summarized in the following table. Source: FDOT Source Book Methodology Update, April 21, 2022.

Area Type	Roadway Type	Heavily Congested	Mildly Congested	Uncongested
Urbanized Areas	Arterial PSL ≤ 35 mph	≤ 13 mph	> 13 and ≤ 22 mph	> 22 mph
	Arterial PSL ≥ 40 mph	≤ 18 mph	> 18 and ≤ 31 mph	> 31 mph
	Two-Lane Highway	≤ 66.7% of FFS	> 66.7% and ≤ 83.3% of FFS	> 83.3% of FFS
	Multilane Highway	≤ 66.7% of FFS	> 66.7% and ≤ 83.3% of FFS	> 83.3% of FFS
	Freeway (PSL <50 mph)	≤ 66.7% of FFS	> 66.7% and ≤ 83.3% of FFS	> 83.3% of FFS
	Freeway (PSL 55 mph)	≤ 45 mph	> 45 and ≤ 50 mph	> 50 mph
	Freeway (PSL 60 mph)	≤ 45 mph	> 45 and ≤ 55 mph	> 55 mph
	Freeway (PSL 65 mph)	≤ 45 mph	> 45 and ≤ 60 mph	> 60 mph
	Freeway (PSL 70 mph)	≤ 45 mph	> 45 and ≤ 65 mph	> 65 mph
Non-Urbanized Areas	Arterial PSL ≤ 35 mph	≤ 17 mph	> 17 and ≤ 22 mph	> 22 mph
	Arterial PSL ≥ 40 mph	≤ 23 mph	> 23 and ≤ 31 mph	> 31 mph

Two-Lane Highway	≤ 66.7% of FFS	> 66.7% and ≤ 83.3% of FFS	> 83.3% of FFS
Multilane Highway	≤ 66.7% of FFS	> 66.7% and ≤ 83.3% of FFS	> 83.3% of FFS
Freeway (PSL <50 mph)	≤ 66.7% of FFS	> 66.7% and ≤ 83.3% of FFS	> 83.3% of FFS
Freeway (PSL 60 mph)	≤ 50 mph	> 50 and ≤ 55 mph	> 55 mph
Freeway (PSL 65 mph)	≤ 50 mph	> 50 and ≤ 60 mph	> 60 mph
Freeway (PSL 70 mph)	≤ 50 mph	> 50 and ≤ 65 mph	> 65 mph
Freeway (PSL 75 mph)	≤ 50 mph	> 50 and ≤ 70 mph	> 70 mph

$$Vehicle\ Hours\ of\ Delay = \sum Vehicle\ Volume \times (Travel\ Time - Travel\ Time\ at\ uncongested\ conditions)$$

$$CT\ Hours\ of\ Delay = \sum CT\ Volume \times (CT\ Travel\ Time - CT\ Travel\ Time\ at\ uncongested\ conditions)$$

When calculating the duration of congestion at a segment level, each hour of each day is categorized as heavily congested, mildly congested, or uncongested (per the new “% by Congestion” performance measure). The duration of congestion is taken as the number of hours categorized as heavily congested.

<sup>34</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. Maps were provided by <https://commutetimemap.com>. CommuteTimeMap uses GTFS and transit data to create isochrones for the areas which do not have sufficient GTFS data.

<sup>35</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. At an areawide level, segments with at least 15-minutes of heavy congestion are selected as the portion of the system susceptible to heavy congestion. The average number of hours heavily congested, weighted by lane-miles, is calculated as the area’s duration of congestion.

$$Duration\ of\ Congestion = \frac{\sum_{i=1}^{\# Segments} Lane\ Miles_i \times \sum_{j=1}^{24} Probability\ Hour\ is\ Heavily\ Congested_{i,j}}{\sum_{i=1}^{\# Segments} Lane\ Miles_i}$$

given that Segment *i* has at least 15 minutes of heavy congestion

<sup>36</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The methodology for this measure was updated for this year’s report. The levels of congestion used in this method were established in the table shown above.

$$\% \text{ Travel Heavily Congested} = \frac{\sum VMT \text{ when travel speeds meet heavily congested threshold}}{\sum VMT} \times 100$$

$$\% \text{ Travel Mildly Congested} = \frac{\sum VMT \text{ when travel speeds meet mildly congested threshold}}{\sum VMT} \times 100$$

<sup>37</sup> The methodology for this measure was modified for this years’ reporting. The benchmark travel time was changed from free flow travel time to travel time at reference speed. The reference speed would be defined as the 85<sup>th</sup> percentile speed during weekday off-peak hours (9 am to 4 pm and 7 pm to 10 pm). The system level performance measure is reported using the FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

$$\text{Planning Time Index} = \frac{\text{Travel Time}_{95\text{th percentile}}}{\text{Travel Time}_{\text{reference speed}}}$$

The new methodology’s use of the 9 am to 4 pm and 7 pm to 10 pm period to assess the reference speed is not consistent with the free-flow speed used in the Highway Capacity Manual. The use of an alternate 85<sup>th</sup> percentile to establish the benchmark speed is also inconsistent with use of a median speed. This may result in under reporting the variability in the planning time index since a lower reference speed is used. This method is used for the systemwide reporting to be consistent with the FDOT method.

The FDOT Sourcebook only reports data by county. The county values were weighted by vehicle-miles traveled to calculate the systemwide planning time index for North Florida.

<sup>38</sup> The methodology for this measure was modified for this years’ reporting. The benchmark travel time is recommended to be changed from free flow travel time to travel time at reference speed. The reference speed would be defined as the 95<sup>th</sup> percentile speed during weekday off-peak hours (9 am to 4 pm and 7 pm to 10 pm). The system level performance measure is reported using the FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

To calculate the value in each county for the state highway system was weighted by vehicle miles traveled to calculate the regional planning time index. This measure is not directly available in the Sourcebook exports.

The new methodology’s use of the 9 am to 4 pm and 7 pm to 10 pm period to assess the reference speed is not consistent with the free-flow speed used in the Highway Capacity Manual. The use of an alternate 85<sup>th</sup> percentile to establish the benchmark speed is also inconsistent with the 95<sup>th</sup> percentile concept. This may result in under reporting the variability in the planning time index since a lower reference speed is used. This method is used for the systemwide reporting consistent with the FDOT method.

<sup>39</sup> Level of Travel Time Reliability (LOTTR) is in the congested corridor analysis is the ratio of the 80<sup>th</sup> percentile travel time to the median (50<sup>th</sup> percentile) travel time. The corridor level measures reported were calculated using BlueToad data for April 1 - May 30 of the year noted.

$$LOTTR = \frac{\sum_{n=1}^n (R_{vn} * VMT_n)}{\sum_{n=1}^n VMT_n}$$

where:

$$R_{vn} = \frac{80\% \text{ } tt}{50\% \text{ } tt}$$

The LOTTR metric is calculated for the following time periods:

- AM Peak - 6:00am - 10:00am on Monday - Friday
- Mid-day - 10:00am - 4:00pm on Monday - Friday
- PM Peak - 4:00pm - 8:00pm on Monday - Friday
- Weekends - 6:00am - 8:00pm on Saturday and Sunday

If the LOTTR is less than 1.5 for all four time periods the segment is considered reliable. If the segment LOTTR exceeds 1.5 for any of the four time periods it is considered unreliable.

Source: Florida and MAP-21 Performance Measures: Methodology and Data Sources: April 2022.  
 Additional information is available at [https://ops.fhwa.dot.gov/publications/tt\\_reliability/ttr\\_report.htm](https://ops.fhwa.dot.gov/publications/tt_reliability/ttr_report.htm)

<sup>40</sup> Truck Travel Time Reliability (TTTR) used in the congested corridor analysis is the ratio of the 95<sup>th</sup> percentile travel time to the median (50<sup>th</sup> percentile) travel time. The corridor level measures reported were calculated using BlueToad data for April 1 - May 30 of the year noted.

$$TTTR = \frac{\sum_{n=1}^n (R_{tn} * VMT_n)}{\sum_{n=1}^n VMT_n}$$

where:

$$R_{tn} = \frac{95\% \text{ } tt}{50\% \text{ } tt}$$

The TTTR is evaluated for the following periods.

- AM Peak - 6:00am - 10:00am on Monday - Friday
- Mid-day - 10:00am - 4:00pm on Monday - Friday

- PM Peak - 4:00pm - 8:00pm on Monday - Friday
- Weekend - 6:00am - 8:00pm on Saturday - Sunday
- Overnight - 8:00pm - 6:00am on all days of the week

If the TTTR threshold is exceeded for any of the five periods, the segment is considered unreliable. Before 2021 a corridor is considered reliable if the truck travel time reliability was less than 1.75. Beginning in 2021 the truck travel time reliability benchmark is 2.0.

The table shows the TTTR when the percentiles are calculated across all segments (corridor) and the TTTR within the critical segment. The critical segment is the segment that when calculated alone has the highest TTTR. The critical period for the critical segment is also provided.

Source: Florida and MAP-21 Performance Measures: Methodology and Data Sources: April 2022.

Additional information is available at [https://ops.fhwa.dot.gov/publications/tt\\_reliability/ttr\\_report.htm](https://ops.fhwa.dot.gov/publications/tt_reliability/ttr_report.htm)

<sup>41</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

<sup>42</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022.

<sup>43</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The methodology for this measure was updated from prior measures which based on the level of congestion on generalized LOS thresholds. This new methodology updates the values based on the thresholds in the table above. The % of travel is then weighted by vehicle miles traveled.

$$\% \text{ Travel Heavily Congested} = \frac{\sum VMT \text{ when travel speeds meet heavily congested threshold}}{\sum VMT} \times 100$$

$$\% \text{ Travel Mildly Congested} = \frac{\sum VMT \text{ when travel speeds meet mildly congested threshold}}{\sum VMT} \times 100$$

<sup>44</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The FDOT calculates job accessibility as “a cumulative opportunity” metric – it reflects the total amount of jobs reachable by auto within a 30-minute travel time threshold. It is calculated for each census block... This calculation assumes a departure time of 8:00 a.m. in order to represent job accessibility during the morning peak period”. The FDOT Sourcebook: Methodology and Calculation Routines, 2017.

<sup>45</sup> FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The FDOT calculates job accessibility as “a cumulative opportunity” metric – it reflects the total amount of jobs reachable by transit within a 60-minute travel time threshold. It is calculated for each census block... This calculation assumes a departure time of 8:00 a.m. in order to represent job accessibility during the morning peak period”. The FDOT Sourcebook: Methodology and Calculation Routines, 2017.

- 46 FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The percentage of the population within a half-mile of fixed-route transit. The FDOT Sourcebook: Methodology and Calculation Routines, 2017.
- 47 FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The percentage of the population within a 5-mile radius of a park-n-ride facility. The FDOT Sourcebook: Methodology and Calculation Routines, 2017.
- 48 FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. The percentage of centerline miles of non-freeway SHS facilities that have sidewalks and/or shared-use paths available to pedestrians. The FDOT Sourcebook: Methodology and Calculation Routines, 2017.
- 49 FDOT SunGuide Software Performance Report. Retrieved May 1, 2022. This data is for the entire 18 county district consisting of Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor, and Union.
- 50 FDOT SunGuide Software Performance Report. Retrieved May 1, 2022. This data is for the entire 18 county district consisting of Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor, and Union.
- 51 FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. More information about the international roughness index and FDOT’s collection of the data is available <https://www.fdot.gov/materials/pavement/performance/pes/index.shtm>
- 52 FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. More information about the assessment of bridge conditions is available at <https://www.fdot.gov/maintenance/bmrm.shtm>
- 53 National Transit Database Vehicle Statistics Table. [NTD Data | FTA \(dot.gov\)](#). Retrieved May 4, 2022.
- 54 The social costs of crashes were estimated using the FDOT’s fatal and major injury were used to estimate the social costs of crashes as reported in the FDOT’s 2022 Design Manual [2022fdm122varexcept.pdf \(windows.net\)](#).

Severity	Cost per Crash	Bike Ped Average	Automobile Average	Social
Social Cost of Fatal (K)	\$ 10,670,000	77	149	\$ 2,415,688,000
Social Cost of Severe Injury (A)	\$ 872,612			\$ -
Social Cost of Major Injury (B)	\$ 174,018	870		\$ 151,465,267
Social Cost of Minor Injury (C)	\$ 106,215		20,173	\$ 2,142,760,167
Social Cost of Minor Injury (O)	\$ 7,700		10,632	\$ 81,867,940

<sup>55</sup> The social costs of congestion were estimated using the following

- Value of travel time was estimated based on the average rate for the Texas Transportation Institute Annual Mobility Report [Urban Mobility Report – Mobility Division \(tamu.edu\)](#). Retrieved May 14, 2022. Analysis for the urban limits of the City of Jacksonville only. A summary of the data in the Urban Mobility Report is provided in the following table.

Year	Measure	Units	2016	2017	2018	2019	2020
Population	Persons	(000)	1,120	1,150	1,160	1,165	1,165
Auto Commuters	Commuters	(000)	578	593	598	601	601
Freeway	Daily Vehicle-Miles of Travel	(000)	12,967	13,537	13,645	14,504	13,503
Arterial Street	Daily Vehicle-Miles of Travel	(000)	9,712	9,625	9,856	9,891	9,209
Cost Components	Value of Time		17.91	18.12	18.71	19.14	20.17
	Commercial Value of Time	(\$/hour)	50.20	52.14	54.71	49.49	55.24
	Average State Gasoline Cost	\$/gallon	2.12	2.28	2.77	2.48	2.26
	Average State Diesel Cost	\$/gallon	2.31	2.48	3.15	2.85	2.71
Annual Excess Fuel Consumed	Total Gallons	(000)	11,788	11,921	12,678	14,458	5,730
	Gallons per Auto Commuter		15	15	16	18	7
Annual Hours of Delay	Total Delay (Person-Hours)	(000)	33,935	34,792	37,025	40,733	16,143
	per Auto Commuter		46	46	49	53	21
Travel Time Index	Value		1.19	1.19	1.20	1.21	1.06
Commuter Stress Index	Value			1.24	1.23	1.28	1.09
Freeway Planning Time Index	95th Percentile Value			1.68	1.61	1.66	
Annual Congestion Cost	Total Dollars	(million)	707	737	795	863	355
	per Auto Commuter (\$)		924	942	1,008	1,089	448
Truck-based Statistics	Total Delay(Person-Hours)	(000)	1,425	1,461	1,473	1,501	567
	Total Gallons	(000)	2,202	2,227	2,288	2,362	893
	Annual Cost	(million)	72	76	80	73	30
Annual Greenhouse Gases (CO2) Produced	Excess Due to Congestion	(tons)				144,394	57,225
	Due to All Travel	(tons)				4,596,532	1,821,662
	Excess Due to Truck Congestion	(tons)				25,891	9,783
	Due to Truck Travel	(tons)				998,471	377,285

- The cost of congestion for combination trucks was estimated in the FDOT Source Book <https://www.fdot.gov/planning/fto/default.shtm> Retrieved March 1, 2022. This measure monetizes the cost of delay experienced by the freight industry by (1) calculating the average marginal cost of labor per hour and (2) multiplying that by the amount of hours of delay for combination trucks. The average marginal cost of labor per hour is obtained as the sum of marginal driver wages and driver benefits, obtained from the annual report titled *An Analysis of the Operational Cost of Trucking*, from American Transportation Research Institute (ATRI). The number of hours of delay for combination trucks is taken from the process used for the Source Book to calculate said measure.

- Deflation factors were provided using the FHWA’s Benefit-Cost Analysis Guidance for Discretionary Grant Programs, as Revised March 2022. <https://www.transportation.gov/sites/dot.gov/files/2022-03/Benefit%20Cost%20Analysis%20Guidance%202022%20%28Revised%29.pdf> Retrieved on May 11, 2020
- The following were used to estimate impacts of emissions and fuel prices based on the 2019 Congestion Management Process. [https://northfloridatpo.com/uploads/Studies/performance/2019\\_NFTP\\_CMP.pdf](https://northfloridatpo.com/uploads/Studies/performance/2019_NFTP_CMP.pdf)

Factor	Value
Emission Factor NOx (grams per hour of delay)	4.20
Emission Factor VOC (short-ton per hour of delay)	10.70
Emission Factor CO2 (short-ton per hour of delay)	1,389.0
Damage Factor per Metric Ton of NOx	\$7,508.00
Damage Factor per Metric Ton of VOC	\$1,905.00
Damage Factor per Metric Ton of CO2	\$47.00
Cost of Emissions per hour of delay NOx	\$0.0315
Cost of Emissions per hour of delay NOx	\$0.0225
Cost of Emissions per hour of delay NOx	\$0.0720
Total Cost per Hour of Delay	\$0.1260
Conversion factor for gallons to ml	0.0026
Fuel consumption (ml/hour of delay)	575
Average fuel price	\$2.485
Congested days per year (annual to typical weekday)	300

<sup>56</sup> Highway data from [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/policy/economic/2020-florida-macroeconomic-analysis-technical-report.pdf?sfvrsn=fb59bcd7\\_2](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/policy/economic/2020-florida-macroeconomic-analysis-technical-report.pdf?sfvrsn=fb59bcd7_2) Retrieved May 17, 2022

Jaxport data from <https://www.jaxport.com/corporate/jobs/economic-impact/#:~:text=Cargo%20activity%20through%20the%20Port,to%20a%20newly%20released%20study>. Retrieved May 17, 2022.

Airport data from <https://www.flyjacksonville.com/content2015.aspx?id=2057>. Retrieved May 17, 2022.

JTA data from [jta\\_economic\\_impact\\_study\\_report\\_2018.pdf](jta_economic_impact_study_report_2018.pdf) (<npr-brightspot.s3.amazonaws.com>). Retrieved May 17, 2022.