# Multimodal Mobility in North Florida

Deliverable 6: Final Report

BDV30 TWO 929-48

Florida State University

Department of Urban and Regional Planning

November 16, 2020


DISCLAIMER: The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the State of Florida Department of Transportation.

## TECHNICAL REPORT DOCUMENTATION

| | | |
|---|---|---|
| **1. Report No.**<br>BDV30-929-48 | **2. Government Accession No.** | **3. Recipient's Catalog No.** |
| **4. Title and Subtitle**<br>*Multimodal Mobility in North Florida* | | **5. Report Date**<br>*October 2020*<br>**6. Performing Organization Code** |
| **7. Author(s)**<br>*Dennis Smith, AICP* | | **8. Performing Organization Report No.**<br>If applicable, enter any/all unique numbers assigned to the performing organization. |
| **9. Performing Organization Name and Address**<br>*Department of Urban and Regional Planning*<br>*330 Bellamy Building*<br>*113 Collegiate Loop*<br>*PO Box 3062280*<br>*Tallahassee, FL 32306-2280* | | **10. Work Unit No.**<br>**11. Contract or Grant No.**<br>BDV30 TWO 929-48 |
| **12. Sponsoring Agency Name and Address**<br>*Freight Logistics & Passenger Operations Administrator*<br>*Florida Department of Transportation*<br>*605 Suwannee Street*<br>*Tallahassee, Florida 32399-0450* | | **13. Type of Report and Period Covered**<br>*Final Report*<br>*February 2020 – October 2020*<br>**14. Sponsoring Agency Code** |
| **15. Supplementary Notes** | | |

**16. Abstract**

This study examines existing conditions and opportunities for increasing high capacity transit along the North Florida Corridor. To better understand how multimodal mobility options are shaped by region, a literature review was conducted, along with preliminary travel demand, economic impact, and safety analyses. Further, outreach efforts aimed to gauge public sentiment as well as expert opinion on interregional transit within the corridor. The findings of the study support the implementation of a series of consensus-based strategies to increase multimodal options to include: engaging in inter-agency co-ordination, undertaking comprehensive ridership and fiscal impact analysis, exploring non-rail mobility options, ensuring future resource assignments consider all possible mobility options, investigating traditional and non-traditional funding sources, and pursuing a broad-based research agenda focused on multimodal mobility for North Florida.

| | | | |
|---|---|---|---|
| **17. Key Words**<br>Multimodal transportation system, North Florida, Interregional transit | **18. Distribution Statement**<br>No restrictions | | |
| **19. Security Classif. (of this report)**<br>Unclassified | **20. Security Classif. (of this page)**<br>Unclassified | **21. No. of Pages**<br>101 | **22. Price** |

## Executive Summary

North Florida, one of the state's three commonly recognized geographic regions, spans the northern portion of Florida from Jacksonville and the Atlantic Ocean in the east to Pensacola and the Alabama border in the west. Much less densely populated than Central or South Florida, this region lacks interregional transit service between its major population centers. The Multimodal Mobility in North Florida study (BDV30 929-48) examines existing conditions and opportunities for increasing high capacity transit between Jacksonville and Pensacola. While focused on all transportation modes, this project is complementary to work conducted by other researchers examining the restoration of passenger rail along the Gulf Coast from New Orleans to Orlando.

This analysis is not a formal planning study, market assessment, or Project Development and Environment (PD&E) study. This research and its resulting findings can serve as a foundation for ongoing dialogue and coordination for advocating for interregional mobility options in North Florida and can prepare FDOT for additional work when market conditions improve.

To provide a comprehensive executive level understanding of existing conditions, barriers and potential implementation strategies, this project consisted of four chapters:

Chapter 1: *Literature Review*

An analysis was conducted of relevant studies and reports addressing passenger rail service, with a focus on those addressing Florida and the southeast region. This literature confirmed that freight rail is not significant to the North Florida economy, but future implementation of passenger rail has the potential to yield considerable benefits as well.

Further, this literature identified potential routes that could optimize ridership and operational cost. Prior to 2005, someone could board a train in Orlando and travel north and west, along the Gulf Coast to New Orleans. Hurricane Katrina damaged the rail infrastructure along this route, and to date, passenger rail service has not returned. Two route options are considered the most viable:

> *Alternative A*: A extension of the daily Amtrak train between the City of New Orleans and Orlando combined with a daily state-supported regional service between New Orleans and Mobile.

*Alternative A1*: The option above minus the state-supported service

The cost for each of these options varies, depending on the estimate. Alternative A would generate approximately 154,000 riders per year and cost about $9.5 million annually to operate. Alternative A1 has an operating cost of $5.5 million and would serve about 138,000 people per year.

Chapter 2: *Travel Demand & Economic Impact*

An analysis using the Florida Statewide Model forecasted travel demand for the Pensacola-Jacksonville corridor. Additionally, economic data supplemented this analysis to determine the economic impact of implementing passenger rail as an alternate transportation option along this corridor. This joint analysis indicated that current population and potential ridership volumes are too low to justify a financially feasible interregional rail system across the North Florida corridor. Sufficient demand to support this alternative is not expected to be realized for several decades and preliminary estimates indicate that the financial cost of passenger rail may be restrictive.

However the economic portion of the analysis suggested that failure to provide alternate transportation options carries socio-economic implications, including constraints to labor mobility, reduced consumer options, underdevelopment of key industries (specifically tourism), and inhibited growth potential for non-urbanized areas along the corridor. A comprehensive assessment should be undertaken to assess the full extent of the costs and benefits from expanding mobility options in North Florida economy, including intercity passenger rail and interregional bus service.

Chapter 3: *Safety Analysis*

The safety analysis examined passenger rail and interregional bus service mobility expansion options. Safety is one of the principal goals of any transportation system. In North Florida, limited transit service has few safety concerns. The biggest safety issue for any rail service is at-grade crossing, particularly in urban areas. The addition of passenger rail service in North Florida would require upgrades to existing freight rail infrastructure, the full incorporation of Positive Train Control, and analysis of potential route and local safety conditions of potential rights-of-way (e.g., the I-10 corridor). Private bus services must comply with Federal Motor Carrier Safety Administration regulations as well as several Florida statutes. Few services currently run in North Florida, but Greyhound and Megabus have excellent safety records locally. There are no safety hot spots for interregional bus service from Pensacola to Jacksonville.

Chapter 4: *Public and Expert Engagement*

Community interest is vital for understanding local travel behavior and desire for more transportation options. Local and subject matter experts offer insights into feasibility, technical procedures, and key decision points. The COVID-19 pandemic and resulting social distancing mandates required a modified public engagement approach. The research team utilized an online survey tool and convened a virtual meeting of local and transportation experts to solicit information and feedback specific to mobility options and opportunities for the North Florida region. Overall, this mixed method approach allowed the team to engage with more than 400 people, ranging from residents near former rail stops to rail executives.

The findings from the research components coupled with insights and feedback from the public engagement process informed the development of strategies that could help ensure that opportunities for increasing multimodal mobility options across North Florida are not overlooked and remain a priority for FDOT and its partners. Seven overarching, consensus-based strategies for increasing multimodal mobility options across the region include:

1. *Coordination*: Fully engage with experts and practitioners in the field of transportation to establish mechanisms for ongoing coordination, such as participation in the Southern Rail Commission and/or creating a State-level inter-agency working group to provide ongoing research and advocacy of multimodal mobility options in North Florida.
2. *Ridership Analysis*: Conduct a comprehensive baseline assessment for passenger rail ridership and establish an ongoing data collection process of demographic and socioeconomic data within the region to evaluate travel behavior and potential ridership.
3. *Fiscal Impact and Feasibility Analysis*: Conduct regional cost analyses to more fully understand and monitor the evolving benefits and costs of various mobility options including inter-regional bus rapid transit (BRT) and passenger rail.
4. *Multi-Modal Options*: Evaluate the feasibility and timeline for implementing interim, non-rail mobility solutions, such as high-end intercity bus service until travel demand more fully justifies investments in passenger rail infrastructure.
5. *Resource Assignment*: Develop polices to identify and preserve existing and planned linear rights-of-way to accommodate the expansion of multi-mobility infrastructure, in alignment with FDOT's Strategic Intermodal System Plan.

6. *Funding*: Explore the feasibility of public private partnerships (P3s) and other creative planning, financing and operating arrangements, such as private concession-based services, to implement mobility options.
7. *Research*: Continue a broad-based research agenda in coordination with the State University System that includes a focus on multimodal mobility in the North Florida region.

Interregional transportation projects often take a decade or more to go from concept to reality. Implementing high capacity transit services, whether bus rapid transit (BRT) or passenger rail, requires understanding market dynamics, forces that determine ridership, and funding. While this study documents systemic limitations to immediate or short term feasibility in rail restoration due to both low regional population levels, which translates into low potential ridership, and physical infrastructure upgrades needed to support passenger rail service, broad public support and enthusiasm for such services, as documented by ridership preference surveys, is evident. Most importantly, this project makes it clear that actions can be taken today to ensure that the preconditions for planning, developing, and operating such services will exist concurrent with emerging demand.

# Table of Contents


DISCLAIMER ii

Technical Report Documentation iii
Executive Summary iv
List of Figures ix
List of Tables x
Introduction 1
Chapter I. Literature Review 5
Chapter II. Travel Demand and Economic Impact Analysis 26
- Travel Demand Analysis 27
- Economic Impact Analysis 30
- Other Considerations 34

Chapter III. Safety Analysis 42
- Literature Review 44
- Rail Policies 45
- Intercity Bus Policies 47
- Rail Equipment and Safety Incidents 50
- Intercity Bus Crashes and Safety Statistics 53

Chapter IV. Public Engagement 54
- Public Engagement Methodology 55
- Community Survey 55
- Expert Panel Engagement 59

Conclusion & Next Steps 67
References 69
Appendix A: User Preference Survey Questionnaire 71
Appendix B: Minutes of the Expert Panel Meeting 78
Appendix C: Expert Panel Meeting Presentation 86
Appendix D: Expert Panel Survey Questionnaire 91

# List of Figures

Figure 1: Intercity Rail Service: Existing and Under Development 1
Figure 2: Study Area Counties, by FDOT District 2
Figure 2: Megaregions in the Year 2050 18
Figure 3: Proposed Gulf Coast Passenger Rail Alternatives 31
Figure 4. 2017 Tourism Performance and Economic Impact for Florida, by Region 37
Figure 5. Employment and Mean Travel Time to Work, by County: 2018 40
Figure 6. Average Job Accessibility and Per Capita Income, by County: 2018 40
Figure 7. Multimodal Mobility in North Florida Survey Responses, by ZIP Code 56
Figure 8. High Speed Rail 75
Figure 9. Region Rail 76
Figure 10. Commuter Rail 76
Figure 11. Intercity Bus Service 77
Figure 12. Bus Rapid Transit 77

# List of Tables

Table 1. Studies covered in Literature Review, by Key Research Areas 4
Table 2. Conceptual Passenger Train Schedules from Amtrak's "Potential Gulf Coast Restoration Options" Report 9
Table 3. Ridership, Revenue, and Cost Projections for Gulf Coast Service Restoration 13
Table 4.Traffic Data along the Florida I-10 Corridor, by County (2015) 28
Table 5.Traffic Data along the Florida I-10 Corridor, by County (2045) 28
Table 6. Definitions of Direct and Indirect Impacts, based on the APTA model 32
Table 7.Impact of Capital Investment 32
Table 8.Impact of Operations & Maintenance 33
Table 9. Commuting Patterns across Selected North Florida Counties 34
Table 10. Major Institutions and Traffic Generators along the Pensacola-Jacksonville Corridor 37
*Table 11. Key Statistics on Travel Time to Work, Employment and Job Accessibility* 38
Table 12.Federal and State Policies Governing Passenger and Freight Rail 44
Table 13.Policies Governing Intercity Bus Travel 47
Table 14. Number of Public Crossings and Incidents since 2010, All Railroads 49
Table 15.Equipment Deployed at Crossings along Florida Gulf/Atlantic Railroad & CSX S Line 50
Table 16. Incidents along the Florida Gulf and Atlantic Railroad & CSX S Line since 2010 51
Table 17. Public Engagement Tools 53
Table 18. Characteristics of the Survey Population 56
Table 19. Organizations and Perspectives Represented 58
Table 20. Summary of Barriers and Strategies Discussed at the Expert Panel Meeting 61

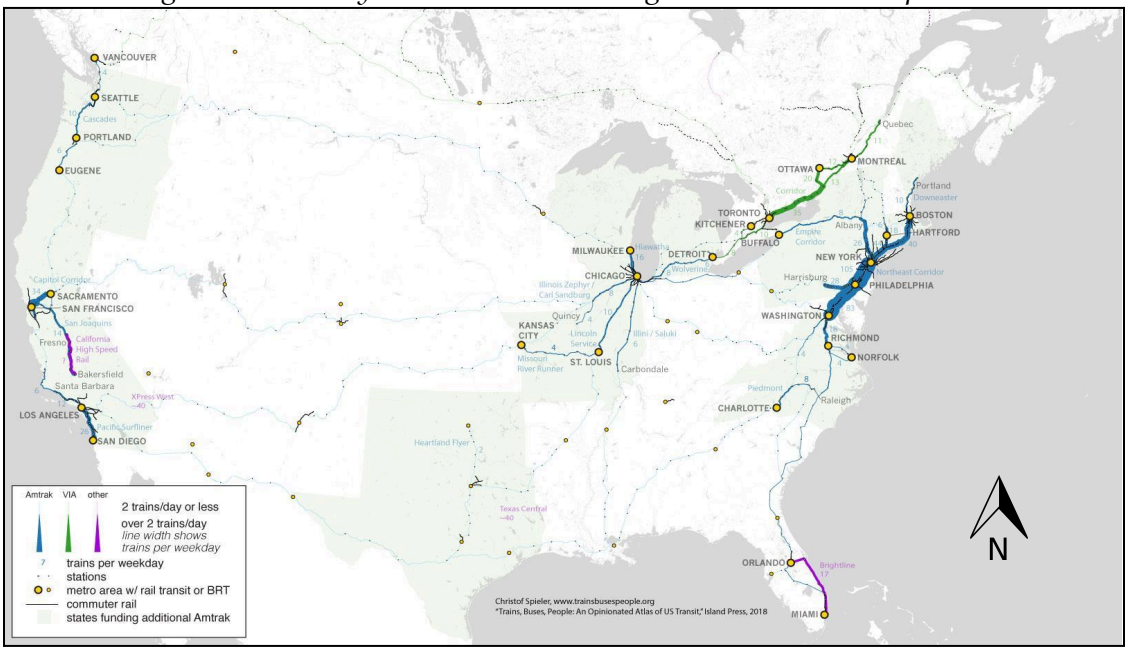
# Introduction

In the aftermath of Hurricane Michael, communities in Florida's Northern Gulf Coast have demonstrated incredible resilience. Many counties, however, continue to struggle to make a full economic recovery and unlock the economic potential of this underserved

region. Increased mobility is essential not just for ensuring disaster recovery and resilience in Florida's Panhandle, but also for maintaining Florida's economic competitiveness. Strategic improvements to a region's mobility system can reignite economic activity and be a key component of long-term economic development initiatives.

The Gulf Coast region has few interregional passenger transit options. National and Regional bus services such as Greyhound, Red Coach, and Megabus all operate within North Florida yet, do not provide direct thru service between Jacksonville and Pensacola, a trip of approximately 360 road miles. Currently, a traveler wanting to make a trip along the corridor corresponding with I-10 and/or US 90 must travel through Orlando, and change buses, extending the trip to 695 road miles, doubling the distance and, due to the transfer, further increasing the travel time. This lack of service, especially in Florida – the nation's third largest state – stands in stark comparison to the more robust mobility options available within and between other highly populated states.

*Figure 1: Intercity Rail Service: Existing and Under Development*



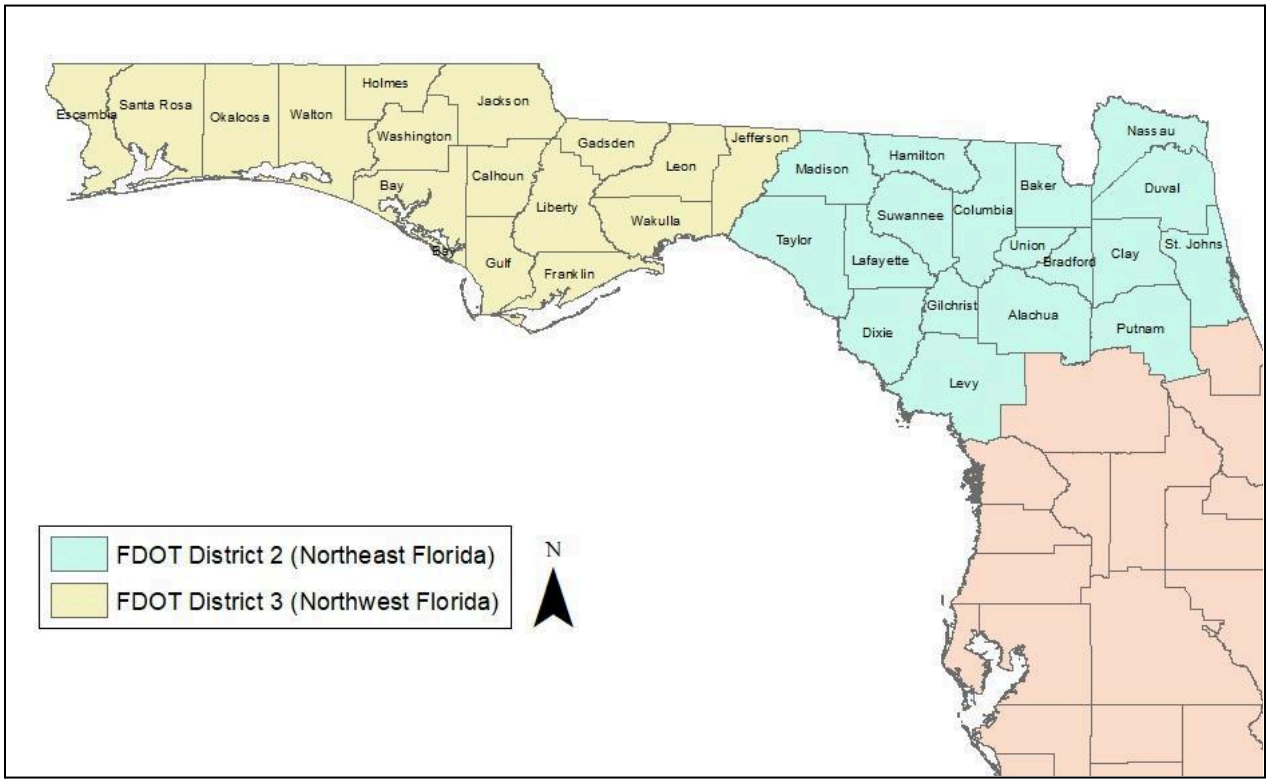

Credit: Cristof Spieler, 2020

National and regional organizations have advocated for and led efforts to study ways to restore passenger rail service between New Orleans and Florida's East Coast. Most of this work has focused on the states of Louisiana, Mississippi, and Alabama, all of which are members of the Southern Rail Commission. To date, few of these regional studies include the Florida Panhandle, and none have advanced as far as those of Florida's counterparts in the central gulf coast states. Development and expansion of transit

service within and between regions in Florida has been focused on Central and South Florida, the more densely populated areas of the state.

North Florida's regional transportation system is primarily comprised of a highway network. While the highway's system services intercity bus travel, it primarily serves personal vehicle travel. Yet, as the region's population continues to grow, our already congested roadways will likely become less efficient over time. Consequently, Florida must consider all mobility options to achieve our transportation goals in a potentially more environmentally sensitive and sustainable manner.

*Figure 2: Study Area Counties, by FDOT District*




While the defined boundaries of Florida's three geographic subdivision are open to interpretation, for the purpose of this study, the North Florida region covers the area of jurisdiction of FDOT District 2 and District 3. This area is comprised of 34 counties, spanning from Jacksonville in the east to the Alabama border in the west. The total estimated 2019 population of these counties is 3,691,539, which is only 17.2% percent of the total state population of 21,477,737. Interstate 10 and US Highway 90 are the

principle east-west links through the corridor. These roadways cross major Interstate and US Highway facilities, including I-75, I-95 and US Highways 27 and 1, to accommodate north-south traffic within the state. Five Metropolitan Planning Agencies are located within this region: North Florida TPO, Capital Regional TPA, Okaloosa-Walton TPO, Bay County TPO and Florida-Alabama TPO.

## Project Objectives

Recognizing the need to evaluate multimodal mobility options in North Florida, the Florida Department of Transportation (FDOT) contracted a team of researchers from Florida State University (the "FSU Research Team") to identify multimodal mobility needs and related opportunities for the state's existing and planned multimodal transportation system. To achieve this goal, the research team documented existing conditions and engaged a task force to develop consensus strategies to address multimodal mobility needs within the study area. The specific project objectives include:

- Summarizing the status of multimodal mobility options in North Florida
- Determining demand for multimodal mobility options
- Estimating potential economic impacts from re-establishing intercity passenger rail service in North Florida
- Identifying any existing or potential safety hazards impacting multimodal mobility options
- Convening public and private sector representatives to validate challenges and opportunities
- Summarizing findings

This research provides the Florida Department of Transportation with a better understanding of the benefits, drawbacks, and feasibility of a range of multi-modal options in North Florida. FDOT is thus better prepared to make informed decisions about the type of mobility investments that could best serve North Florida, when these investments would be most effective, and how investment options may impact local economies.

## Project Tasks

*Multimodal Mobility in North Florida* breaks down the research objectives into six major tasks necessary to complete the project. These tasks are:

- Task 1: Literature review
- Task 2: Analyze travel demand and potential economic impacts
- Task 3: Analyze safety conditions

- Task 4: Establish expert panel and develop consensus list of strategies
- Task 5: Prepare draft purpose and need memo and draft final report
- Task 6: Prepare and submit final report

# Chapter I. Literature Review

A focused literature review was conducted of ten reports, selected by FDOT, pertaining to the expansion of mobility options within the region. An overview of each report was provided, along with a summary of major findings. Each summary is then followed by an evaluation of whether and how the report addresses four key research areas that are

vital considerations for any multimodal mobility initiative: Travel Preferences, Travel Demand, Economic Impact, and Safety, as indicated in Table 1.

*Table 1. Studies covered in Literature Review, by Key Research Areas*

| Study | Travel Preferences | Travel Demand | Economic Impact | Safety | Other |
|---|---|---|---|---|---|
| Report for the Southern Rail Commission on Potential Gulf Coast Service Restoration Options (Amtrak, 2015) | x | x | x | | |
| Report on Operations Modelling Analysis for Implementing Passenger Rail Service on CSX Lines in the Gulf Coast Corridor (HDR Inc, 2016) | | | X | x | Operating Capacity |
| Transit Concept and Alternatives Review Guidance (FDOT, 2016) | | x | x | | |
| Gulf Coast Working Group Report to Congress (The Gulf Coast Working Group, 2017) | x | x | x | x | |
| Florida Rail System Plan- 2018 Update (FDOT, 2018) | x | x | x | x | |
| Restoration of Gulf Coast Passenger Rail Service Economic Impact on Mississippi, Alabama, and Louisiana (Zhang, 2018) | x | x | x | | |
| Gulf Coast Passenger Service Implementation Study and Cost Estimate prepared for FDOT (HNTB Corporation, 2018) | | | x | x | Operating Capacity |
| Improving Intercity Passenger Rail Service in the United States (Goldman, 2019) | | | | x | Funding |
| Reviving Passenger Rail Along America's Gulf Coast (Southern Rail Commission, 2019) | | | x | | Funding |
| FDOT Making Tracks: A Primer for Implementing Transit Fixed Guideway Projects (FDOT, n.d.) | | | x | x | |

1. *Report for the Southern Rail Commission on Potential Gulf Coast Service Restoration Options*

*The Report for the Southern Rail Commission on Potential Gulf Coast Service Restoration Options* (Amtrak, 2015) addressed travel preferences, travel demand and economic impact. The plan evaluated the potential passenger service restoration options along the Gulf Coast. Amtrak was commissioned by the Southern Rail Commission to determine the operating characteristics of these options and forecast performance to identify

which alternative would best serve the region. This report was used as the basis for several other sources of this project, including the SRC's January 2019 *Briefing Book: Reviving Passenger Rail Along America's Gulf Coast* and the Gulf Coast Working Group's *Report to Congress Prepared for: Committee on Commerce, Science and Transportation of the Senate and Committee on Transportation and Infrastructure of the House of Representatives*.

The plan describes the history of passenger rail service in the area, travel demand and restoration options previously studied, and the operational, capital, and infrastructure improvements necessary to reintroduce rail to the Gulf Coast. Along with the previous passenger rail service in the area, this plan documents attractions to rail along the Gulf Coast, such as tourism in the cities along the route and additional connections across the country. Five feasible alternatives are presented, with the Alternatives A and A1 providing the best balance of operating costs and ridership benefits. This document also details the conceptual schedules and required personnel and equipment necessary for each alternative. Regardless of the alternative selected, Amtrak and SRC will need to:

- Approach the host railroads (chiefly CSXT) to identify any infrastructure needs for the proposed service.
- Identify and develop operating and capital funding mechanisms to support any proposed service.
- Identify and build support from institutions which are likely to benefit from, and attract riders to, the proposed Gulf Coast service.
- Work with communities on plans to revitalize station facilities.
- Refine service proposals as a clearer picture emerges of the infrastructure environment and as marketing opportunities are developed along the route.

<u>Preferences</u>

Alternatives A and A1 are the two most preferred options in this plan. These two propose extending a portion of the active *City of New Orleans* rail route from New Orleans to Orlando. Alternative A uses a single daily state-supported train, would generate 153,000 passengers per year, and would require an annual operating funding commitment of $9.49 million. This alternative provided the highest total ridership of any alternative. Alternative A1 would operate without a single daily state-supported and would generate an annual ridership of 138,300 with a funding commitment of $5.48 million annually. This alternative provided the second highest ridership of all the analyzed alternatives with the lowest level of identified operating need. Both alternatives would have a number of train cars that provide amenities attractive to travelers, such as sleeper and dining cars.

Travel Demand

Long Distance Train Demand Forecasting Model (pg. 15)

- Long distance customer travel surveys and actual ridership/revenue data were used to create a mathematical model which would, with the necessary inputs, provide users with forecasts of ridership, passenger mileage, and ticket revenue.
- The model utilized existing and historical ridership data, where available, to validate the baseline condition.
- Socio-economic data and forecasts of population, employment, and income, provided by Moody's Economy.com, were assembled for a 30-mile radius around each station area.

Route and Service Change Evaluation Model (pg. 16)

- Once relevant demand data has been generated by the Amtrak Long Distance Train Demand Forecasting Model, Amtrak Finance evaluated the forecast cost of each alternative.
- This model used the demand forecasts to build the service plan based on the proposed train schedules and equipment consists.

PRIIA 209 Methodology (pgs. 16-17)

- Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA 209) requires that all Amtrak routes under 750 miles in length (and outside of the Boston-Washington Northeast Corridor) must be the financial responsibility of the states they operate through.
- The line-item breakdown and representation of costs for state-supported services in this study is shown in the PRIIA 209 methodology format.
- PRIIA 209 requires that states pay for the appropriate share of overhauls of equipment operated in state-supported service through an equipment capital use charge.

Long Distance Financial Figures (pg. 17)

- Long distance trains are not subject to the PRIIA 209 cost methodology.
- The long-distance incremental cost impacts provided in this report represent the total system wide impact.

Fiscal Impact

Total Annual Funding Need and Ridership by Alternative (pg. 36)

- Alternative A: $9.49 million, 153,900 riders
- Alternative A1: $5.48 million, 138,300 riders
- Alternative B: $6.97 million, 38,400 riders
- Alternative B1: $8.26 million, 43,400 riders
- Alternative C: $14.40 million, 69,100 riders

Safety

This plan makes no concrete mention of safety measures included in these alternatives beyond the fact that the previous passenger rail service in the Gulf Coast was suspended immediately prior to Hurricane Katrina.

2. *Operations Modelling Analysis for Implementing Passenger Rail Service on CSX Lines in the Gulf Coast Corridor*

The report on *Operations Modelling Analysis for Implementing Passenger Rail Service on CSX Lines in the Gulf Coast Corridor (HDR Inc., 2016)* addressed operational capacity of potential routes and safety concerns. HDR conducted a study to analyze the estimated infrastructure requirements necessary to implement the Amtrak passenger rail on CSX (freight) rail lines between New Orleans, Mobile, and DeLand. To make these estimates, the study conducted an operations simulation for Alternative A and Alternative A1, by creating four different scenarios (each with different infrastructure) under which each alternative could potentially operate. The four simulation models are as follows.

1. Base Case: a model of the current-day operating conditions of the CSX freight lines based on the year 2020.
2. No-Build Case: a model to estimate the additional infrastructure required to operate CSX freight trains in the year 2040.
3. Build Case (Alternative A): a model to estimate the additional infrastructure, compared to the No-Build case, to operate the proposed long-distance and state-supported corridor passenger trains in 2040, while maintaining the estimated performance of the CSX freight trains simulated in the No-Build Case, and to estimate the on-time performance of the proposed passenger trains.

4. Build Case (Alternative A1): a model to estimate the additional infrastructure, compared to the No-Build case to operate the proposed long-distance and state-supported corridor passenger trains in 2040, while maintaining the estimated performance of the CSX freight trains simulated in the No-Build Case, and to estimate the on-time performance of the proposed passenger trains.

Table 2 on the following page shows the conceptual passenger train schedules from Amtrak's "Potential Gulf Coast Restoration Options" Report (December 2015).

The simulations were conducted for the purpose of determining which scenario would allow for the best "on-time performance." According to the report, on-time performance is defined as "the percentage of all passenger trains of each type (long-distance or corridor) that arrive at their end-point stations at their scheduled arrival time or within the late-tolerance period". This study only considered the impact of capacity improvements, meaning that it did not consider reliability, safety, or station improvements--each of which can also impact on-time performance. It also provides an order-of-magnitude cost estimate for the project. The trains are all confined to the state maximum speed limit, going no faster than 79 miles per hour. The target on-time performance for the simulation was 85% for the long-distance train between New Orleans and Orlando and 90% for the state-supported train between New Orleans and Mobile.

As per the results of the simulation, ***none of the scenarios produced adequate on-time performance results.*** In Alternative A, the state-supported trains had an on-time performance of 66% westbound and 84% eastbound. Meanwhile the long-distance train had an on-time performance in the range of 62-72%. In Alternative A1, the long-distance train had an on-time performance of 76% westbound and 66% eastbound. The biggest challenge to the on-time performance of both option A and A1 are the multiple drawbridges along the route.

*Table 2. Conceptual Passenger Train Schedules from Amtrak's "Potential Gulf Coast Restoration Options" Report*

| Eastbound (Read Down) | | | Direction | | Westbound (Read Up) | |
|---|---|---|---|---|---|---|
| Alternative A Only | Alternatives A and A1 | | Alternatives | | Alternatives A and A1 | Alternative A Only |
| New Orleans-Mobile | City of New Orleans | | Train Time | | City of New Orleans | Mobile- New Orleans |
| TBD 4 | 59 | | Train Number | | 58 | TBD 3 |
| Daily | Daily | | Normal Days of Operation | | Daily | Daily |
| | | Mile | Station | Mile | | 08:23 PM |

| | | | | | | |
|---|---|---|---|---|---|---|
| 08:00 AM | Dp 5:00 PM | 0 | New Orleans, LA (CST) | 767 | Ar 9:30 AM | 06:44 PM |
| 09:13 AM | 06:13 PM | 56 | Bay St. Louis, MS | 711 | 07:47 AM | 06:22 PM |
| 09:35 AM | 06:35 PM | 71 | Gulfport, MS | 696 | 07:25 AM | 06:04 PM |
| 09:53 AM | 06:53 PM | 83 | Biloxi, MS | 684 | 07:07 AM | 05:40 PM |
| 10:17 AM | 07:17 PM | 103 | Pascagoula, MS | 664 | 06:43 AM | 05:00 PM |
| 11:13 AM | 08:18 PM | 143 | Mobile, AL | 624 | 06:03 AM | |
| | 09:12 PM | 188 | Atmore, AL | 579 | 04:10 AM | |
| | Ar 10:39 PM | 247 | Pensacola, FL | 520 | Dp 2:43 AM | |
| | Dp 10:45 PM | 247 | Pensacola, FL | 520 | Ar 2:37 AM | |
| | 11:49 PM | 296 | Crestview, FL | 471 | 01:33 AM | |
| | 01:11 AM | 363 | Chipley, FL (CST) | 404 | 12:11 AM | |
| | 05:00 AM | 449 | Tallahassee, FL (EST) | 318 | 11:10 PM | |
| | 06:14 AM | 505 | Madison, FL | 262 | 09:38 PM | |
| | 07:04 AM | 554 | Lake City, FL | 213 | 08:48 PM | |
| | Ar 8:15 AM | 620 | Jacksonville, FL | 147 | Dp 7:45 PM | |
| | Dp 8:31 AM | 620 | Jacksonville, FL | 89 | Ar 7:25 PM | |
| | 09:36 AM | 678 | Palatka, FL | 37 | 06:01 PM | |
| | 10:21 AM | 730 | DeLand, FL | 5 | 05:15 PM | |
| | 11:02 AM | 762 | Winter Park, FL | 0 | 04:33 PM | |
| | Ar 11:30 AM | 767 | Orlando, FL (EST) | | Dp 4:15 PM | |
| 03:13 | 17:30 | | Total Trip Time | | 18:15 | 03:23 |

*Source: HDR Modeling Report, Table 1.1, p. 7*

Appendix C, the magnitude-of-order cost estimate for the project, provides the estimated costs for fixed bridges. From New Orleans, Louisiana to Bay Minette, Alabama, the cost of fixed bridges would be $28 million for both option A and A1. Meanwhile, South Pensacola to Deland, the cost for fixed bridges would be $10 for both options. These models also monitored the effect on freight trains for each of these models. Performance for freight trains remained similar to the No-Build case; however, time sensitive, intermodal freight train types were significantly degraded as a result of passenger rail implementation.

Notably, this study only examines the operational capacity improvements needed to run the train. It does not provide any evidence on potential ridership. Therefore, there is not sufficient information that speaks to user preferences, travel demand or economic impact.

<u>Safety</u>

An aspect of particular concern to safety is the fact that the parts of the corridor that are within the Florida Panhandle do not have signals and require the trains to use verbal signals controlled by a dispatcher as opposed to automated signals.

3. *Transit Concept and Alternatives Review (TCAR) Guidance*

The *Transit Concept and Alternatives Review (TCAR) Guidance (FDOT, 2016)* addressed travel demand and economic impact. The purpose of the TCAR guidance is to outline the Florida Department of Transportation Transit Office process for early planning and early evaluation of transit projects in Florida. The guidance is intended for use by transit Project Sponsors and their consultants, and by FDOT staff who prepare or review planning and design for transit projects. Although the TCAR Study is not required, it is encouraged if seeking Federal Transit Administration funding and FDOT matching New Starts funds. Due to the growing complexity and cost of project implementation, as well as the need for state funding and strong local agency and community support, FDOT has frequently and increasingly been asked to take a lead role in implementing large transit projects. Projects in Florida follow a five-step development process:

1. Planning and Community Support
2. Programming and Alternatives Screening
3. Project Development and Environment
4. Design and Funding
5. Construction and Operations

<u>Travel Demand</u>

Field observations will identify conditions that are conducive to or an impediment to implementation of transit service and existing corridor travel times (average speed, signal delays, and congested travel times) are critical for calibrating and validating travel demand forecasts. Evaluation measures used during a TCAR Study may include the following:

- Corridor travel time, number of traffic signals, or crossings that may cause delay
- Corridor capacity and level of service
- Estimated trips or market served

- Demographics served
- Connections to Community Redevelopment Areas, Enterprise Zones, Community Development Block Grant areas, and brownfields
- Connections to other transit systems and travel modes
- Constructability and infrastructure need that may impact cost
- Connections to libraries, parks, schools, and other community resources
- Capital costs
- O&M costs

Economic Impact

FTA Project Evaluation and Rating Criteria for Economic Development:

- Growth management
- Transit-supportive corridor policies
- Supportive zoning near transit
- Change in safety
- Tools to implement transit-supportive plans and policies
- Performance of transit-supportive plans and policies
- Potential impact of transit project on regional development
- Plans and policies to maintain or increase affordable housing in corridor

The report does not provide sufficient information on user preferences or safety, beyond including them in the assessment of current and future conditions.

4. *Gulf Coast Working Group Report to Congress, prepared for the Committee on Commerce, Science and Transportation of the Senate and Committee on Transportation and Infrastructure on the House of Representatives*

The *Gulf Coast Working Group Report to Congress (The Gulf Coast Working Group, 2017)* addressed travel preferences, travel demand, economic impact and safety. This report was presented to Congress to consider the passenger service alternatives described in the *Report for the Southern Rail Commission on Potential Gulf Coast Service Restoration Options*. These alternatives included service between New Orleans and Orlando via long-distance train for one daily round trip, and New Orleans and Mobile, AL via a state-supported train for one daily round trip. This report describes the history and existing conditions of passenger rail service in the Gulf Coast leading up to its

suspension following damage caused by Hurricane Katrina in 2005. The proposed restoration plan describes the preferred alternatives and the operational and capital requirements necessary to accomplish those alternatives. The report goes on to describe the funding and steps required to implement recommended improvements to increase efficiency and safety.

Preferences

The GCWG identified the Orlando and Mobile services as preferred because they outperformed the other options studied by Amtrak in terms of ridership demand and operating funding needs. In addition, they are expected to:

- Expand markets for tourism and business travel;
- Reduce vehicular congestion on Interstate 10;
- Improve access to jobs, education, and healthcare;
- Provide support for disaster and emergency response in a region susceptible to coastal storm events.

Travel Demand

- Alternative A generates the highest levels of ridership and passenger miles and provides service to the entire Gulf Coast region.
- Alternative C generates lower ridership than A1 because it would require passengers to and from points north of New Orleans to change trains in New Orleans.
- Alternatives B and B1 have lower ridership and passenger miles because they do not provide rail service between Mobile and Orlando.

Economic Impact

The proposed services (including long-distance service between Orlando and New Orleans and daily state-supported service between Mobile and New Orleans) are anticipated to provide a number of economic benefits to communities, residents, visitors, and businesses across the Gulf Coast region:

- Expanded customer markets for tourism and business travel;
- Improved access to labor markets, educational opportunities, and healthcare; and
- Expanded transportation options.

The projected passengers, miles, revenue, operating cost and operating loss for each alternative are listed in Table 3, split between long distance and state supported trains.

*Table 3. Ridership, Revenue, and Cost Projections for Gulf Coast Service Restoration*

| | Alternatives | A | A1 | B | B1** | C |
|---|---|---|---|---|---|---|
| Projected Annual Passengers | Long Distance Train | 119,100 | 138,300 | | | 69,100 |
| | State Supported Train | 34,800 | | 38,400 | 43,400 | |
| | Total | 153,900 | 138,300 | 38,400 | 43,400 | 69,100 |
| Annual Rail Passenger Miles (millions) | Long Distance Train | 61.30 | 63.00 | | | 24.04 |
| | State Supported Train | 3.80 | | 3.79 | 5.23 | |
| | Total | 65.10 | 63.00 | 3.79 | 5.23 | 24.04 |
| Annual Ticket, Food & Beverage Revenue (millions) | Long Distance Train | $11.96 | $12.25 | | | $4.03 |
| | State Supported Train | $0.76 | | $0.70 | $1.05 | |
| | Total | $12.72 | $12.25 | $0.70 | $1.05 | $4.03 |
| Annual Operating Cost (millions) | Long Distance Train | $17.67 | $17.73 | | | $18.43 |
| | State Supported Train* | $4.54 | | $7.67 | $9.30 | |
| | Total | $22.21 | $17.73 | $7.67 | $9.30 | $18.43 |
| Annual Incremental Operating Loss (millions) | Long Distance Train | $5.71 | $5.48 | | | $14.40 |
| | State Supported Train | $3.78 | | $6.97 | $8.26 | |
| | Total | $9.49 | $5.48 | $6.97 | $8.26 | $14.40 |

* Includes annual equipment capital expense charges to state partners
** State supported train numbers include thruway bus between Mobile and Jacksonville

- Along the entire route from New Orleans to Orlando (Alternative A1) to yield an annual incremental operating loss of $5.48 million.
- If operated as a standalone service, the operation between New Orleans and Mobile (Alternative A1 subtracted from Alternative A) would yield an annual incremental operating loss of $4 million, due primarily to the reduction in passenger volume and other sources of revenue.
- The combined service (Alternative A) would yield an annual incremental operating loss of $9.49 million.

Safety

Several of the funding measures pertain to raising passenger and freight rail safety, including:

- Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program
- Alabama DOT
- Louisiana DOTD
- Proposed Grade Crossing Study
- Mississippi Railroad Corridor Working Group

5. *Florida Rail System Plan – 2018 Update*

The *Florida Rail System Plan – 2018 Update (FDOT, 2018)* addressed travel preferences, travel demand, economic impact and safety. This plan serves as a guide for Florida's freight and passenger rail transportation planning activities and project development plans. It contains a description of Florida's existing rail network for both freight and passenger rail, the challenges and opportunities related to the rail system, and the economic and socio-environmental impacts of both freight and passenger rail.

The State's vision for rail reads as follows: *"A safe, secure, reliable, efficient and well-maintained passenger and freight rail system enhancing quality of life, environmental stewardship, mobility, and economic competitiveness for Floridians through sustainable investments."* The goals related to this vision aim toward safety and security; agility, resilience and quality; efficiency and reliable mobility; increased transportation choices; economic competitiveness; quality places (integrating rail and land use planning); and environment and conservation of energy.

Of the two modes of rail in Florida, freight rail is the most extensive and economically impactful, serving as a critical link to business markets, as an opportunity to expand Florida's economy and as an avenue for managing highway congestion. Freight rail has created 738,840 jobs bringing in a combined $34.2 billion in earnings, as compared to 9,420 jobs and $379.8 million in earnings in passenger rail in the state of Florida.

<u>Preferences</u>

Currently, Florida's existing long-distance Amtrak services (specifically Silver Meteor and Silver Star) fall short of expressed goals (especially for on-time performance and customer service) (p. 2-64). This reflects the limited level of capital investment into passenger rail over the past decades. While these routes do not lie on the Gulf Coast corridor, the performance decline of these passenger rail lines provide insight on the necessity of consistent investment and improvement. Lack of investment and improvement can lead to lower ridership, low customer satisfaction and potential

passengers preferring other modes of transportation. This could also lower potential riders' perceptions of using rail.

From 1999 to 2014, daily vehicle miles traveled (DVMT) in Florida grew 150% more than the growth of the population. At the same time, annual **transit** trips have also outpaced the growth of the population. To illustrate what these trends indicate about user preferences, the report states that "in the most recent 10-year period, DVMT growth has been minimal, while transit trips grew at almost twice the rate of the state population" (p. 2-50).

Travel Demand

The following factors were identified as having an impact on travel demand: *Demographic Growth Factors* (p. 2-44). Florida's population is expected to grow at a faster rate than the entire United States with an expected increase of 36% from 2010 to 2040. This means that Florida will continue to be one of the fastest growing states in the country in the foreseeable future.

*Passenger Demand and Growth* (p. 2-50). Population growth around Amtrak stations shows overall growth. Among North Florida cities, this includes Jacksonville, having a population of 94,277 in 2013 which is projected to increase to 132,197 in 2040.

*Urbanization and Land Use Trends* (p. 2-56). Florida's future urban growth is projected to be concentrated along the east and west coasts of Florida. This includes Jacksonville and Lake City which are located in the northeast. While urban growth is not forecasted to be as robust in the Florida Panhandle (northwest), this area's population is forecasted to grow, nonetheless.

Florida's Panhandle connects to the Gulf Coast megaregion in West Florida and sits between the Piedmont Atlantic Megaregion and the Florida Megaregion. Most of the nation's population and economic expansion is expected to occur in these two emerging megaregions by the year 2050 (Figure 2). "The consequent increase in traffic will strain existing infrastructure beyond capacity and require additional capacity and travel options to avoid gridlock."

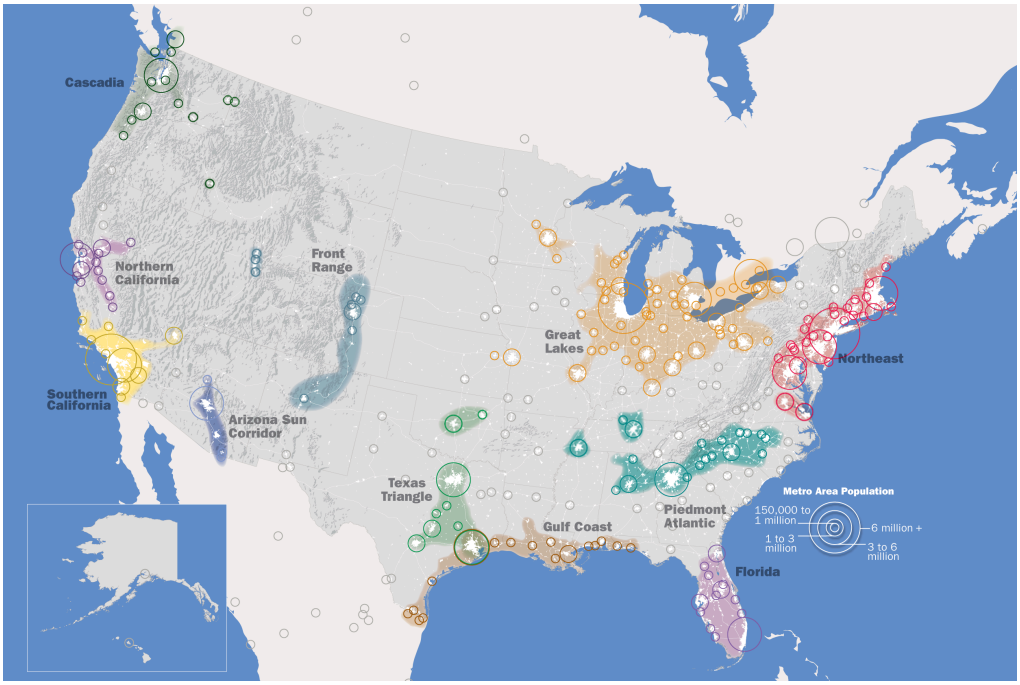
*Performance Evaluation of Passenger Rail Services* (p. 2-24). Amtrak ridership for the Silver Meteor and Silver Star (long distance north-south bound routes) has steadily decreased

from 2012 - 2017. For the Auto Train, ridership increased from 2012 - 2014, then decreased from 2014 - 2017. This was due to Hurricane Sandy and repairs on damaged tracks in 2013. Although these lines are not within the Gulf Coast-North Florida corridor, they are Amtrak-operated lines. The on-time performance of Amtrak rail lines has steadily decreased from 2012 to 2017 (p. 2-25). Ridership for the Tri-Rail increased by 0.3% and on-time performance increased 1.4% (time-period unclear).

Economic Impact

Freight rail is significantly more economically impactful to Florida's economy compared to passenger rail. This report goes into great detail on the impacts of freight rail and related industries on Florida's economy, but provides little information on the current or potential economic impact of passenger rail.

*Figure 2: Megaregions in the Year 2050*




Source: Regional Plan Association. (2008). *Map of Emerging US Megaregions*. [Map]. https://web.archive.org/web/20130325033001/http://www.rpa.org/america2050/sync/elements/america2050map.png

Safety

The number of rail-related injuries in Florida has seen an overall increase from 2008 to 2017. However, the number of train incidents has remained within the range of 16-32 cases from 2008 to 2017. 2013 was the year with the highest number of incidents, which may be connected to the effects of Hurricane Sandy. Train derailments have been the most common type of incidents.

6. *Restoration of Gulf Coast Passenger Rail Service Economic Impact in Mississippi, Alabama and Louisiana*

The report on the *Restoration of Gulf Coast Passenger Rail Service Economic Impact in Mississippi, Alabama and Louisiana (Zhang, 2018)* addressed travel preferences, travel demand and economic impact. This document is primarily focused on the economic benefits of restoring Gulf Coast passenger rail service at the state and county levels for Mississippi, Alabama, and Louisiana. It details the benefits of increased tourism spending, employment, and economic output resulting from railway construction, station renovation, rail service operations, and potential train car maintenance and assembly services provided by Talgo Incorporated. Economic output is reported over four years for railway construction and tourism is measured in increases of 1%, 5%, 10%, and 20%. A significant portion of the latter half of the document lists the tourism attractions throughout the impacted region.

Preferences

This report mentions how auto travel and intercity bus travel are the dominant modes of travel in the study region. At the current time this is primarily due to the proposed railway route being 150 miles in length and the lack of direct air service and no rail service since Hurricane Katrina in 2005. They do presume that the introduction of jobs following the reactivation of the rail service would increase the potential ridership as a commuter service.

Travel Demand

This report describes how travel demand is introduced to the Gulf Coast corridor in the forms of tourism and rail operation, listing: (pg. 14)

- Direct effect of all expenditures generated through direct purchase of goods and services associated with the rail system.
- Indirect effect which occurs from supply chain activity of supporting industry sectors and the subsequent spending generated in the economy.

- Induced effect which occurs when employees of an industry purchases goods and services like housing, food, clothing, and other household spending.

Economic Impact

*Mississippi* (pgs. 4-7)

- Output from construction and renovation: $34,511,898
- Output from railway operations: $6,086,947
- Output from increased tourism spending: $24,296,224 to $485,924,479
- Output from Talgo facilities and operations: $276,725,562

*Alabama* (pgs. 8-9)

- Output from construction and renovation: $5,479,801
- Output from railway operations: $1,840,000
- Output from increased tourism spending: $11,855,857 to $220,439,285

Louisiana (pgs. 10-11)

- Output from construction and renovation: $10,370,904
- Output from railway operations: $3,405,377
- Output from increased tourism spending: $72,900,842 to $364,504,210

Safety

This report does not explicitly describe the impact this passenger rail service would have on reducing travel related injuries.

7. *Gulf Coast Passenger Service Implementation Study and Cost Estimate*

The report on the *Gulf Coast Passenger Service Implementation Study and Cost Estimate (HNTB, 2018)* prepared for FDOT addressed economic impact and safety. The primary purpose of this study was to evaluate the potential for restoration of passenger rail service along the Gulf Coast. This study was meant to complement the studies HDR and the Gulf Coast Working Group were commissioned to identify the infrastructure implementation cost. The Florida Department of Transportation commissioned HNTB to review those reports and provide an independent cost evaluation. HNTB identified three scenarios that were possible under the previous reports' findings.

These scenarios and their estimated costs were:

1. No Build: The required infrastructure to support projected freight only growth in 2040.
2. Build A Scenario: The required infrastructure to sustain daily regional passenger rail service between New Orleans and Mobile and restoration of daily service between New Orleans and Orlando as compared to the "No Build." HNTB Expected Cost: $1,346 Million.
3. Build A1 Scenario: The required infrastructure to sustain the restoration of daily passenger rail service between New Orleans and Orlando as compared to the "No Build." HNTB Expected Cost: $1,247 Million

HNTB's expected costs are lower than those of the CSX estimates, while being more expensive than the GCWG estimates.

Economic Impact

This study is focused primarily on the estimated implementation cost of the different build scenarios chosen from the GCWG report. The Gulf Coast passenger corridor passes through four states. Projects are required in each of these states to support this restoration (Build A Scenario).

- 572 of the 775 miles (73.7%) are in Florida with only $536.2M (39.8%) of the total cost.
- 89 of the 775 miles (11.4%) are in Alabama with only $390.3M (28.9%) of the total cost.
- 74 of the 775 miles (9.5%) are in Mississippi with only $246.6M (18.3%) of the total cost
- 41 of the 775 miles (5.2%) are in Louisiana with only $121.6M (9.0%) of the total cost.

Safety

The implementation of Positive Train Control adds a safety overlay designed to "prevent train-to-train collisions, over-speed derailments, incursions into established work zone limits, and the movement of a train through a switch left in the wrong position". Railroads are mandated to install the system on their higher volume mainlines and all routes with passenger traffic. Adding PTC between Flomaton and

Jacksonville increases safety. Modernizing all the moveable bridges on the route improves reliability and track capacity.

The report does not provide sufficient information on user preferences or travel demand.

8. *Improving Intercity Passenger Rail Service in the United States*

The report *Improving Intercity Passenger Rail Service in the United States (Goldman, 2019)* prepared for Congress addressed issues of funding and safety. This report contains information about the federal government's role in improving passenger rail in the United States. The National Railroad and Passenger Corporation (Amtrak) was created to provide intercity passenger rail service. The two channels of improving intercity rail service have been 1) incremental improvements to existing Amtrak operated rail services and 2) the implementation of a new rail service where none currently exists. The report then goes into detail about funding channels from the federal government toward Amtrak rail projects throughout the country. The report also provides information about different funding opportunities (both loans and grants) available via the federal government for passenger rail projects. The funding opportunities that are most relevant to the proposed Gulf-Coast passenger rail line are highlighted below:

*Grant Programs*

- Consolidated Rail Infrastructure and Safety Improvements Program (CRISI)
- High-Speed Intercity Passenger Rail (HSIPR) Grant Program. Funding from this program had been offered to Florida in the past for high speed rail, but had been turned down
- Federal-State Partnership for State of Good Repair program: created to fund the rehabilitation or replacement of aging infrastructure used for passenger rail service, especially intercity projects.
- Restoration and Enhancements (R&E) program: created to cover the operating costs of reinitiating passenger rail services that have been suspended. It covers the operating costs for the first three years. *This funding opportunity is most relevant to the Multimobility project.*

*Loan Programs*

- Railroad Rehabilitation and Improvement Financing (RRIF) program

- Transportation Infrastructure Finance and Innovation Act (TIFIA) program

This report focused mostly on citing federal support for passenger rail and as such, does not make any substantial mention on user preferences, travel demand, or the economic impact of funding. A Funding opportunity that directly related to rail safety, however, was mentioned.

***Safety***

The Consolidated Rail Infrastructure and Safety Improvements Program (CRISI) is a grant program created under the FAST Act which is mostly used to fund Positive Train Control (PTC) Systems. This technology is primarily a crash-avoidance technology that can allow trains to travel faster in certain contexts (p. 4).

9. *Reviving Passenger Rail Along America's Gulf Coast*

The report on *Reviving Passenger Rail Along America's Gulf Coast (Southern Rail Commission, 2019)* addressed funding and economic impact. The main purpose of this report is to ask for support of Amtrak's national network of long distance and state supported routes as well as the two funding opportunities. Just as the *Improving Intercity Passenger Rail Service (2019)* report above, this report cites the Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant and the Restoration and Enhancement (R&E) grant as important funding opportunities to restore rail lines. CRISI can fund capital to restart and R&E can cover the operating costs. The R&E grants cover the operating costs of enhancing or initiating new rail for three years. It covers up to 80% of operating costs in the first year, 60% in the second year and 40% in the third year. The report uses the economic analysis of Alabama and Mississippi in utilizing these grants to revive rail, as well as the potential economic impacts of the project to connect New Orleans to Mobile. This shows the benefits and impacts of these funding opportunities, which could provide insight on their potential economic impact in the North Florida corridor.

<u>Economic Impact</u>

The Federal Rail Administration applied for CRISI and R&E grants. Trent Lott Center for Economic Development at the University of Mississippi later conducted a study that revealed a 15:1 potential return on investment for Mississippi and over 22:1 potential return on investment for Alabama. These ROIs were quite notable and unique.

*10. Making Tracks: A Primer for Implementing Transit Fixed Guideway Projects*

The publication *Making Tracks: A Primer for Implementing Transit Fixed Guideway Projects (FDOT, u.d.)* addressed economic impact and safety issues. FDOT has developed this primer to assist local communities through the planning and project development phase, which involves the first three steps in developing a major fixed guideway project. These are the steps involved in developing a major fixed guideway project:

1. Planning and Community Support
2. Concept Development and Feasibility Analysis
3. Project Development and Environmental
4. Design and Construction
5. Operational System

Types of rail fixed guideway technologies for consideration include cable car, commuter rail, heavy rail, hybrid rail, inclined plane, light rail, monorail, automated guideway, and streetcar rail. Bus Rapid Transit (BRT), which operates in exclusive rights-of-way, is also considered a fixed guideway project. Premium transit is a term for transit service that moves a higher number of riders, longer distances, more quickly as compared to local transit.

New Starts projects are categorized as capital projects greater than $250 million, while the Small Starts projects have a total capital cost of less than $250 million and seek a federal share of less than $75 million. The maximum federal share for funding New Starts projects is 80% of the project cost, though 50% is a more common funding level. A local match is required for the remainder of the project cost. This primer includes data describing the different forms of fixed lane transit and the various costs and benefits that come with each.

<u>Economic Impact</u>

*Cost per Trip and Cost per Mile*:

- People Mover: $3.20 CPT, CPM depends on structural needs
- Bus Rapid Transit: $3.40 CPT, $3M-$14M CPM
- Streetcar: $2.50 CPT, $10M-$25M CPM
- Light Rail Transit: $3.20 CPT, $14M-$41M CPM
- Self-Propelled Diesel: $10.00 CPT, $4M-$21M CPM
- Commuter Rail: $10.10 CPT, $11M-$14M or Up to $58M+ if new tracks needed CPM
- Heavy Rail: $1.90 CPT, $50M-$250M CPM

*Jobs Created and Increased Business per Mile*:

- People Mover: Unknown JPM and IBPM
- Bus Rapid Transit: ~100-500 JPM, ~$9M-$14M IBPM
- Streetcar: ~300-1000 JPM, ~$30M-$75M IBPM
- Light Rail Transit: ~500-1500 JPM, ~$42M-$123M IBPM
- Self-Propelled Diesel: ~150-750 JPM, ~$12M-$63M IBPM
- Commuter Rail: ~400-500 JPM, ~$33M-$42M IBPM
- Heavy Rail: ~1800-9000 JPM, ~$150M-$750M IBPM

Safety

Operating Speeds and Passenger Capacity per Hour:

- People Mover: 10-45 MPH, 1500-1800 PPH
- Bus Rapid Transit: 10-65 MPH, 800-1000 PPH
- Streetcar: 10-40 MPH, 1000-1200 PPH
- Light Rail Transit: 30-65 MPH, 2000-2300 PPH
- Self-Propelled Diesel: 30-65 MPH, 1000-1200 PPH
- Commuter Rail: 30-65 MPH, 2500-3000 PPH
- Heavy Rail: 50-80 MPH, 3200-9200 PPH

## Chapter II. Travel Demand and Economic Impact Analysis

This chapter provides an assessment of projected travel demand and an analysis of potential economic impacts if intercity passenger rail were re-established in North Florida. The travel demand assessment looks at medium to long-term forecasts of inter-city travel demand along the North Florida corridor while the evaluation of economic impacts is associated with the potential implementation of new multimodal mobility options in the corridor.

To this end, the FDOT's Florida Statewide Model was used to quantify travel demand along the I-10 corridor. A preliminary economic impact assessment was undertaken to identify the economic benefits that would be derived from implementing a passenger rail system along the corridor and outlying areas. This section broadly gauges the monetary impacts of a project of this magnitude on the North Florida corridor and identifies the main dynamics affecting travel patterns and economic opportunities in the region.

At present, population density is not sufficient to justify an inter-regional rail system across the North Florida corridor based solely on latent demand. Further, the critical mass required to support a viable passenger rail is not expected to be realized for several decades. While the financial viability of passenger rail may currently be unfeasible, failure to provide alternate transportation options, even limited solutions, translates to higher socio-economic costs borne by the North Florida economy. Limited connectivity along this corridor was found to constrain economic growth in the following ways:

- Restricted business connectivity across the corridor increased the difficulty of daily intra-regional commute and restricted consumers' ability to purchase services outside of their metro area.

- Key industries with high growth potential, such as tourism, remain untapped as accessibility posed a significant barrier to expansion.
- North Florida is relatively less developed; however, infrastructure improvements could drive increased economic activity for businesses without the congestion and density of other places; and
- Disaster resilience options are limited as buses are the only mode of public transportation available during periods of emergency evacuation and recovery.

**Travel Demand Analysis**

This section presents an overview of the progress and methods used to analyze travel demand along the I-10 corridor. Our research team investigated several options to gather the data to perform this required analysis. To complete this task, the team relied on secondary data, using GIS shapefiles of the Florida Statewide Model (FLSWM) Version 6.0 (Passenger & Freight) (Updated October 14, 2016), provided by FDOT.

In the original scope of work, FDOT intended for the Florida Statewide Model to be used along with the Federal Transit Authority's Simplified Trips-on-Project Software (STOPS) model to forecast demand for inter-regional passenger service via rail and bus. After joint consulting, the FSU – FDOT project team decided the STOPS model would not be the most effective analysis tool as it is primarily focused on trips within city limits, and does not take into account the inter-regional travel demand at the level needed.

The research team then determined that the regional models for Northeast and Northwest Florida would permit the kind of larger scale regional analysis needed for this effort. The CUBE software by Citilabs would have provided the research team with expanded functionality to better showcase large-scale personal travel demand but was unavailable to FSU in the timeframe needed due to COVID-19, licensing, and budgetary limitations. Instead, the research team worked through an FDOT contractor to obtain the loaded statewide networks as GIS shapefiles in order to effectively view and interpret the data.

<u>Methodology</u>

The research team received the loaded networks for 2015 and 2045 from FDOT as GIS shapefiles, which allowed us to extract the data without the use of the CUBE software

interface. As these shapefiles contained the fully loaded networks, the projected data included the I-10 corridor that the research team was focused on. Within GIS, the road networks corresponding to I-10 were isolated and the data was extracted from those selections. After isolating the 250 I-10 road networks, the data was opened in Microsoft Excel and averaged by county (Tables 4, 5). Sixteen counties had road networks corresponding to the I-10 corridor. The data was catalogued in the following categories:

- Total Vehicles, Total of both auto and truck trips by peak season weekday average daily traffic
- VMT, Vehicle miles of travel using link traffic volume and distance in miles
- VHT, Vehicle hours of travel using link traffic volume and time in hours
- Daily Capacity, Link capacity using spdcap daily equivalent capacity factored by FSUTMS "unroad" factor
- Volume Capacity, Ratio traffic volume to Daily Capacity

These categories were defined using the *FSUTMS Powered by CUBE/VOYAGER Data Dictionary*[1] and the *Northwest Florida Regional Planning Model 2010 Model Validation Report*[2] by FDOT District Three Planning Office.

Results

Using the data from the isolated counties containing I-10 road networks, the traffic data shows that vehicle usage of I-10 is expected to increase significantly from 2015 to 2045. Some key findings from Tables 4 and 5 indicate that:

- The total vehicle usage on I-10 is expected to increase from an annual average daily traffic (AADT) of 18,450.04 in 2015 to an AADT of 25,362.93 in 2045, a 37.5 percent increase.
- Without expansions to the current daily capacity, projected roadway volume is expected to increase from an average volume to capacity ratio of 0.64 in 2015 to an average of 0.88 in 2045.
- All sixteen counties are expected to see increases in volume, with Santa Rosa, Jefferson, Madison, Suwanee, Columbia, Baker, Nassau, and Duval counties reaching almost full or beyond full capacity (Table 4).
- The VMT grows from an average of 31,777.19 miles during 2015 to an average of 44,860.66 miles in 2045.
- The VHT increases from an average of 495.74 in 2015 to an average of 797.07 in 2045.

[1] Systems Planning Office. (2005). FSUTMS POWERED BY CUBE/VOYAGER DATA DICTIONARY.
[2] Beaty, D., & Deffenbaugh, A. (2015). Northwest Florida Regional Planning Model 2010 Model Validation Report.

## Conclusion

When comparing the 2015 and 2045 loaded networks, the data shows that as time progresses the travel demand for the I-10 will increase to the point that road networks will reach their capacity sometime after 2045. Without the implementation of roadway improvements or other modes of transport to offload some of the demand, the I-10 corridor will be slowed down by congestion. At an average of 0.88 across the sixteen relevant counties, volume capacity on I-10 will be reaching the limits of the roadway networks for several counties identified in the scope of this project.

*Table 4.Traffic Data along the Florida I-10 Corridor, by County (2015)*

| | Total Vehicle | VMT | VHT | Daily Capacity | Volume Capacity |
|---|---|---|---|---|---|
| Escambia | 18,711 | 11,157 | 185.15 | 47,838 | 0.44 |
| Santa Rosa | 17,071 | 16,193 | 272.12 | 30,450 | 0.62 |
| Okaloosa | 11,531 | 51,430 | 742.99 | 28,285 | 0.47 |
| Walton | 11,114 | 39,728 | 573.35 | 28,014 | 0.46 |
| Holmes | 12,670 | 42,764 | 618.27 | 28,014 | 0.52 |
| Washington | 12,002 | 9,564 | 137.93 | 28,014 | 0.50 |
| Jackson | 12,821 | 27,598 | 399.27 | 28,014 | 0.53 |
| Gadsden | 15,974 | 20,972 | 310.59 | 27,469 | 0.64 |
| Leon | 19,407 | 27,332 | 410.54 | 41,594 | 0.54 |
| Jefferson | 18,665 | 24,347 | 365.94 | 28,014 | 0.75 |
| Madison | 17,560 | 48,998 | 730.16 | 28,014 | 0.70 |
| Suwanee | 17,870 | 17,779 | 263.68 | 28,014 | 0.72 |
| Columbia | 18,001 | 52,162 | 777.88 | 28,285 | 0.72 |
| Baker | 19,556 | 22,356 | 341.08 | 29,343 | 0.75 |
| Nassau | 24,512 | 71,112 | 1196.70 | 30,450 | 0.88 |
| Duval | 47,737 | 24,944 | 606.21 | 52,517 | 0.96 |
| Total | 18,450 | 31,777 | 495.74 | 32,020 | 0.64 |

*Table 5.Traffic Data along the Florida I-10 Corridor, by County (2045)*

| | Total Vehicle | VMT | VHT | Daily Capacity | Volume Capacity |
|---|---|---|---|---|---|
| Escambia | 26,998 | 16,658 | 298.86 | 47,838 | 0.65 |
| Santa Rosa | 25,435 | 23,691 | 773.08 | 30,450 | 0.92 |
| Okaloosa | 18,765 | 82,915 | 1273.25 | 28,285 | 0.76 |
| Walton | 17,481 | 61,661 | 932.15 | 28,014 | 0.72 |
| Holmes | 19,753 | 66,464 | 1014.90 | 28,014 | 0.80 |
| Washington | 18,563 | 14,632 | 219.73 | 28,014 | 0.76 |
| Jackson | 19,429 | 41,581 | 631.57 | 28,014 | 0.80 |

| | | | | | |
|---|---|---|---|---|---|
| Gadsden | 21,787 | 29,199 | 466.59 | 27,469 | 0.88 |
| Leon | 26,690 | 37,925 | 658.63 | 41,594 | 0.74 |
| Jefferson | 26,438 | 33,880 | 567.19 | 28,014 | 1.02 |
| Madison | 25,686 | 71,204 | 1186.95 | 28,014 | 1.00 |
| Suwanee | 26,062 | 26,073 | 428.12 | 28,014 | 1.01 |
| Columbia | 25,227 | 70,752 | 1154.21 | 28,285 | 0.99 |
| Baker | 25,514 | 29,518 | 529.32 | 29,343 | 0.97 |
| Nassau | 28,899 | 83,838 | 1777.17 | 30,450 | 1.04 |
| Duval | 53,079 | 27,781 | 841.41 | 52,517 | 1.06 |
| Total | 25,363 | 44,861 | 797.07 | 32,020 | 0.88 |

**Economic Impact Analysis**

Restoring passenger rail in North Florida has the potential to significantly increase the economic competitiveness of the region. Connecting major urban hubs such as New Orleans, Mobile, Pensacola, Tallahassee, and Jacksonville could lower transportation costs and increase the economic competitiveness of these urban areas.

While a comprehensive and in-depth analysis of economic impacts will be necessary if the North Florida passenger rail restoration project moves forward, this section provides a preliminary assessment of the immediate economic impacts of restoring passenger rail between the Pensacola-Jacksonville corridor. Time and resource limitations constrained this analysis to estimating the economic impact of capital investment and operations of the rail component during the construction and initial operations phase of the project. This section, however, also provides a more general framework for understanding the socio-economic implications of implementing this project.

Methodology

Economic impact assessment methodologies typically employ input/output models from software packages such as *REMI*, *Implan* and *Trendis.* These models use estimates of spending within specific sectors of the regional economy to forecast their direct and indirect impacts through the life cycle of the project. For this report, we focused on the estimated impacts of building or upgrading the rail line to allow for passenger transport as well as the ongoing impacts of operations and maintenance. The analysis does not include forecasts of economic impacts around specific transit stations or locations, or the impacts of mode shifts on highway mobility along the corridor. For this analysis, the American Public Transit Association (APTA) Economic Impact Assessment Tool, which is methodologically grounded in traditional input-output estimating techniques,

provided preliminary estimates of the specific impact of this transit project on the economy.

APTA's model is widely used to create preliminary estimates of the economic impacts of transit project construction and operations. The model requires two main inputs: capital costs and operating costs. Capital costs are made up of construction cost, vehicle purchases, and other capital expenditures. Operating costs consist of labor cost, purchased transportation expenses, and other operating expenses. The APTA model's methodology considers whether goods and services will be purchased outside the region or inside the region. The estimated size of the impact is limited to those goods and services purchased within the local region, as opposed to being spent on imports outside of the defined region. For example, the model accounts for the fact that transit vehicle purchases are made through manufacturers outside the region (and state). Only those purchases and expenditures made within the transit project region are considered in calculated impacts. To achieve this, the model uses regional economic data for the specific impact area (obtained from IMPLAN) to translate the impact of input cost into direct effects and multiplier effects within the broader economy.

## Geographic Scope

The geographic region defined for the model included those counties identified in the Amtrak/HDR report where train stops would be made. These stops parallel the I-10 corridor from Pensacola to Jacksonville (see Figure 3).

*Figure SEQ Figure * ARABIC 3: Proposed Gulf Coast Passenger Rail Alternatives*

Source: HDR, Inc. (2016). *Modelling Operations Analysis for Implementing Passenger Rails Service on CSX Lines in the Gulf Coast Corridor*. [Map]

Assumptions of the Model

The following simplifying assumptions were made when estimating input cost:

- **Construction costs** for the rail line were based on a 2016 HNTB Study commissioned by FDOT. Costs were identified for the Build A1 option by extracting the project cost from Pensacola to Jacksonville.

- **Vehicle purchases and Other Capital Expenses** were assumed to be zero. The study indicates that the passenger rail service is expected to be an extension of the Gulf Coast Passenger Rail, hence the existing equipment identified with the A1 Consist Proposal (2015 Amtrak Report for the Southern Rail Commission) would be used for this service. In addition, any new of equipment would likely be purchased from manufacturers outside the regional impact of the study area.

- **Operating Cost** were based on the 2015 Amtrak projections which estimated annual incremental cost of $17.73mn for 63mn passenger miles. Operating costs were then calculated based on the estimated passenger miles and the cost per passenger mile. The number of passenger miles from Pensacola to Jacksonville reflect the share of miles for this route as a portion of the total miles for the entire route (New Orleans to Orlando). The cost per passenger miles was calculated by taking the incremental cost of $17.7mn and dividing it by the estimated passenger miles for the entire route. Further, the distribution of operating cost among labor, purchased transportation and other expense categories reflected a proportional distribution similar to expenses on Amtrak's Consolidated Profit and Loss Statements for 2019 and 2018.

Model Interpretation and Results

The model estimates the economic impact using four macroeconomic indicators: employment[3], labor income, value added, and output. These are disaggregated to show the direct, indirect, and induced effects. Induced effects reflect the influences on the local economy from changes in household spending whenever income changes. The general APTA model captures the following outputs, as explained in Table 6 below:

*Table 6. Definitions of Direct and Indirect Impacts, based on the APTA model*

| | Capital Investment | Operations & Maintenance |
|---|---|---|
| Direct | Reflects the number of jobs generated from construction, services and manufacturing, to the extent that Vehicle and Equipment purchases are sourced from the local economy | Indicates the number of jobs the transit agency has on staff, its annual payroll, the annual output generated by its transportation services and the value added of these services |
| Indirect | The magnitude of the indirect response is dependent on the regional multiplier | Reflects 'outside of agency' purchases that are adjusted for local procurement and other cycles of business to business transactions that were catalyzed by locally fulfilled agency requirements |
| Induced | | Reflects how many staff live in the region, and whether that is in line with what the IMPLAN regional data indicates for a general commuter rate, and the effects from other instances of wage creation from other cycles of indirect activity. |

Source: Adapted from APTA "My Economic Impact Tool and How to Use it" (n.d.), last accessed September 1, 2020, https://www.apta.com/wp-content/uploads/Resources/resources/APTA-My-Economic-Impact-Tool-How-to-Use-It.pdf

Tables 7 and 8 below show the projected economic impact of restoring the CSD rail from Pensacola to Jacksonville, based on the HNTB study. For this analysis, capital investment cost is based solely on the construction cost required to restore the CSD rail. The estimates reflect an assumed life span for the construction project of five years. The table shows that investing in this project, will directly support 4,034 jobs during the five-year period, with earnings amounting $229.5mn.

*Table 7.Impact of Capital Investment*

[3] Employment figures represent the number of jobs and not Full Time Equivalents

The employment impacts include a comprehensive estimate of potential jobs created during the construction phase, including activities such as upgrading rail infrastructure, urban planning, surveying, engineering, contract management and equipment operators. The total output generated from this project is valued at $616.9mn, of which value-added amounts to $305.0mn. When the total impact is accounted for by including indirect and induced effects, employment almost doubles to 7,404 jobs with an earning potential of $418.5mn. At the same time, the project is expected to generate total output of $1.2bn, of which $627.8mn represents value added.

*Table 8.Impact of Operations & Maintenance*

| Impact Type | Employment (# jobs) | Labor Income ($M) | Value Added ($M) | Output ($M) |
|---|---|---|---|---|
| Direct Effect | 142 | 4.47 | 4.47 | 9.20 |
| Indirect (Supplier) Effect | 53 | 2.75 | 3.66 | 7.05 |
| Induced (Income Responding) Effect | 16 | 0.81 | 1.43 | 2.40 |
| Total Effect | 211 | 8.02 | 9.56 | 18.65 |

In contrast to capital investment, operations and maintenance reflect annual activity and so the economic impact is expected to be recurrent on an annual basis. The introduction of a passenger train service is expected to support 211 jobs, of which 142 are directly employed by the rail operations. Total wage expenditure will amount to $8.0mn, which consist of direct effects ($4.5mn), indirect effects ($2.8mn) and induced effects ($0.8mn). Annual total output generated from this project will amount to $18.7mn, of which half is directly attributed to passenger rail operations. While the

| Impact Type | Employment (# jobs) | Labor Income ($M) | Value Added ($M) | Output ($M) |
|---|---|---|---|---|
| Direct Effect | 4,034 | 229.49 | 305.02 | 616.90 |
| Indirect (Supplier) Effect | 1,526 | 93.95 | 154.24 | 292.94 |
| Induced (Income Responding) Effect | 1,843 | 95.09 | 168.51 | 283.41 |
| Total Effect | 7,404 | 418.52 | 627.78 | 1,193.25 |

value added derived from this activity amounts to $9.6mn, of which a little less than half ($4.5mn) comes from the direct impact.

**Other Considerations**

Labor Mobility Patterns

Interregional transportation has a direct impact on labor mobility. Intercity job mobility is extremely important for some North Florida counties as Table 9 shows for counties along Florida's I-10 corridor. According to ACS data many rural counties rely heavily on their access to jobs and markets in nearby urban counties.

*Intra-county labor mobility* ratios compare the volume of inter-county work commuters between counties – intercounty commuting -- relative to within-county commuters. A ratio (%) of one (100%) would imply as many people commute to jobs outside the county as those who work within the county. A ratio of greater than one (100+1%) implies more people commute to nearby counties for their jobs than work within the county. This ratio allows for easier comparisons among counties with various population sizes, densities, and economic concentrations. Economists, for example, find that urban areas tend to have "thicker" labor markets – a larger and more varied employment – that provide more opportunities for workers with more diverse and varied skill sets. These thick labor markets are a draw for residents within commuting distance even if they must travel from outside the county to take the jobs.

In 2019, intra-county labor mobility ratios were high for four out 15 counties, moderate for four and low for the remaining seven[4]. Counties with the lowest labor mobility ratios were, not surprisingly, also the three largest in size in population and economic activity: Duval (7%), Leon (4%) and Escambia (6%). However, Duval and Leon, also recorded the highest share of resident workers that use transit. Smaller, typically more rural adjacent counties recorded the highest mobility ratios but the lowest percent of resident workers that commute by transit. Baker, Jefferson, Gadsden, and Santa Rosa were found to have ratios in excess of 100%, but the resident worker share of transit use was less than 0.3%.

The implications for transit use and service provision are unclear. Despite the relative significance of interregional travel to these counties, transit may not be an available option for these commuters. The dispersed nature of rural population may make traditional fixed route bus service inefficient or uneconomical without more direct connections and the ability to provide travel speeds competitive with the automobile. This dynamic may also reflect the greater affordability of transit in more densely populated counties. Transit systems are not often economically feasible for smaller counties with low population densities.

[4] Intra-county mobility ratios were assessed as high if ratios exceeded 100%, moderate if ratios fell between 50% and 100% and low if ratios were less than 50%.

*Table 9. Commuting Patterns across Selected North Florida Counties*

| | Workers that commute within County (1) | Commuter Outflow from County (2) | Commuter Inflows into the County (3) | Share of Resident Workers commuting by Transit | Commuter Outflow/ Workers within County (2/1) | Commuter Outflow/ Workers within County (3/1) |
|---|---|---|---|---|---|---|
| Duval | 391,695 | 25,884 | 30,106 | 1.94% | 7% | 8% |
| Baker | 4,670 | 5,209 | 5,374 | 0.00% | 112% | 115% |
| Columbia | 18,680 | 5,895 | 6,178 | 0.14% | 32% | 33% |
| Suwanee | 9,960 | 5,529 | 5,729 | 0.19% | 56% | 58% |
| Madison | 3,695 | 1,495 | 2,114 | 0.00% | 40% | 57% |
| Jefferson | 1,685 | 2,910 | 3,031 | 0.08% | 173% | 180% |
| Leon | 132,470 | 5,219 | 6,955 | 1.82% | 4% | 5% |
| Gadsden | 6,915 | 8,981 | 9,246 | 0.22% | 130% | 134% |
| Jackson | 12,090 | 2,847 | 3,686 | 0.06% | 24% | 30% |
| Washington | 4,400 | 3,751 | 4,190 | 0.29% | 85% | 95% |
| Holmes | 2,695 | 2,483 | 3,650 | 0.24% | 92% | 135% |
| Walton | 17,510 | 7,123 | 8,372 | 0.15% | 41% | 48% |
| Okaloosa | 82,850 | 7,821 | 9,572 | 0.44% | 9% | 12% |
| Santa Rosa | 33,590 | 34,644 | 37,057 | 0.08% | 103% | 110% |
| Escambia | 125,825 | 7,395 | 13,120 | 0.71% | 6% | 10% |

Source: ACS Community Survey, 2017

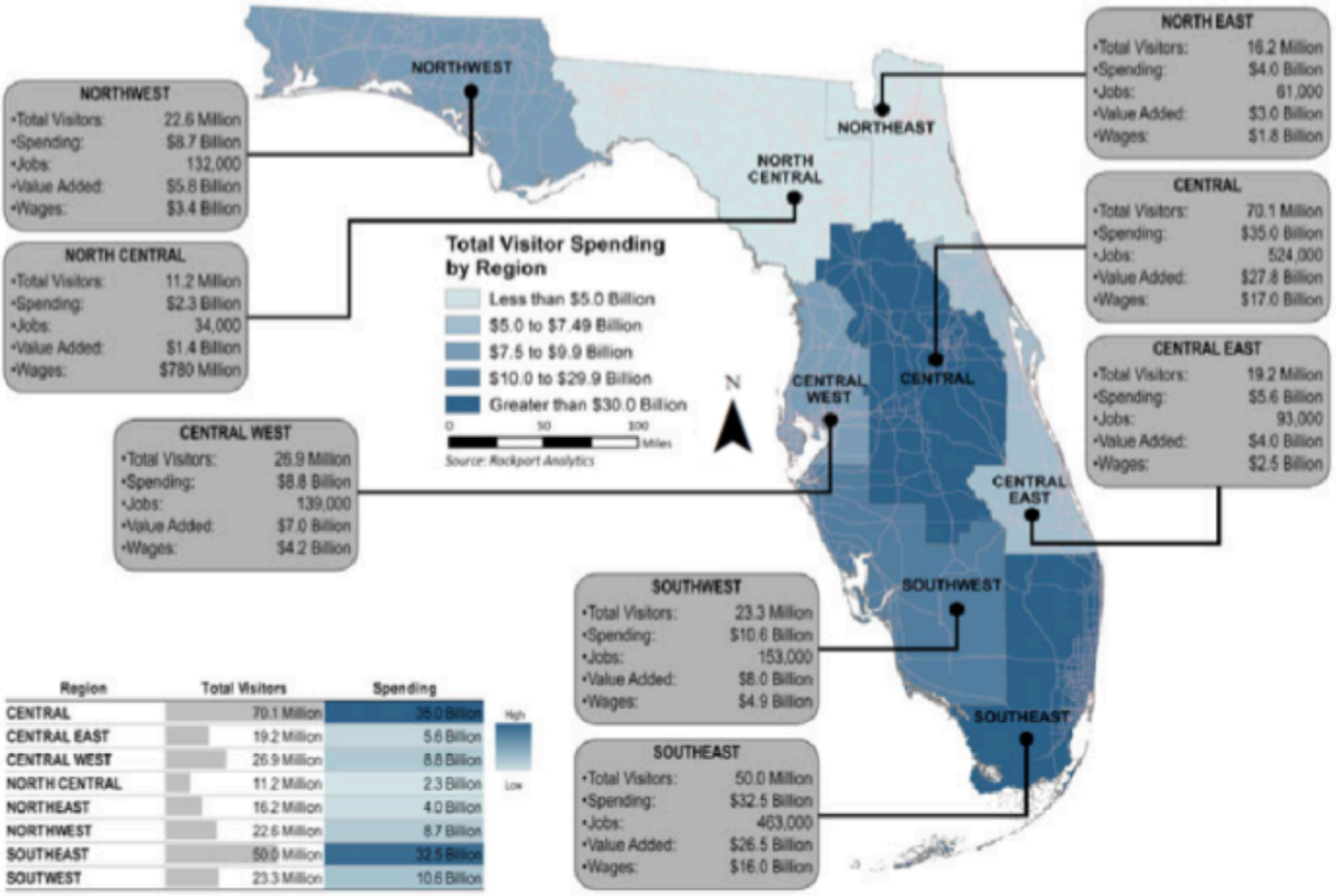
## Tourism in North Florida

Tourism and recreation are cornerstones of Florida's economy, contributing $91.3bn to the state's economy overall. Disney World resorts alone employ 70,000 people, the largest concentration of employees in a single location in the nation. The Florida Everglades in South Florida contributes more than $100 million to the Florida economy. Unfortunately, the I-10 corridor lags other regions in economic category despite its internationally recognized beaches along the northern Gulf Coast.

In 2018, tourism expenditures across North Central and Northeast Florida were the lowest among the major tourism regions in the state (Rockport Analysis 2020). Figure 4 below illustrates that these two regions recorded less than $5 billion in tourism expenditures for 2018 and generated the lowest number of tourism-related jobs in the state while the industry generated 1.5mn overall. While several factors can be attributed to this outcome – historical conditions, competing industries, level of tourism-specific investment - tourism performance is also influenced by mobility options.

Table 10 below was extracted from the 2015 Amtrak Study showing the potential traffic generators along the proposed A1 Pensacola-Jacksonville passenger rail route. While not generating specific forecasts, tourism factors as a potentially significant draw for potential passengers given the region's beaches and access to competitive sports venues. Further studies, however, are necessary to obtain a comprehensive understanding of the potential impact of introducing a rail option in North Florida on tourism activity.

*Figure SEQ Figure * ARABIC 4. 2017 Tourism Performance and Economic Impact for Florida, by Region*




Source: VisitFlorida. (2018).*Picking Up the Pace: Florida's Tourism Performance Jumps into a Higher Gear* https://www.visitflorida.org/media/30679/florida-visitor-economic-impact-study.pdf

*Table 10. Major Institutions and Traffic Generators along the Pensacola-Jacksonville Corridor*

| | Colleges/ Universities | Tourism, Leisure, Entertainment | Government/ Defense | Conventions/ Group Travel or Businesses |
|---|---|---|---|---|
| **Pensacola, FL** | | | | |
| Pensacola Blue Wahoo | | X | | |
| Pensacola NAS | | | X | |
| University of West Florida | X | | | |
| | | | | |
| **Crestview** | | | | |
| Gateway to Eglin AFB | | | X | |
| Gateway to Ft. Walton Beach/Destin | | X | | |
| | | | | |
| **Chipley** | | | | |
| Gateway to Baptist College of Florida | X | | | |
| Gateway to Panama City/Beaches | | X | | |
| | | | | |
| **Tallahassee** | | | | |
| Florida A&M University | X | | | |
| Florida State Capital | | | X | |
| Florida State University | X | | | |
| | | | | |
| **Madison** | | | | |
| Access to camping/campgrounds | | | X | |
| | | | | |
| **Lake City** | | | | |
| Osceola National Forest | | | X | |
| | | | | |
| **Jacksonville** | | | | |
| Access to convention | | | | X |
| Access to SunRail Connecting Service | | | | |
| AutoNation Cure Bowl Russell Athletic Bowl, Buffalo Wild Wings Citrus Bowl (NCAA) | | X | | |
| Gateway to Disney World, Sea World, Universal Studios | | X | | |
| Global tourist destination | | X | | |
| Major League Baseball spring training | | X | | |

| | | | | |
|---|---|---|---|---|
| Orlando Magic (NBA) | | X | | |

*Source:* Amtrak. (2015). *Report for the Southern Rail Commission on Potential Gulf Coast Service Restoration Options*

## Lower Growth and Quality of Transportation along the North Florida Corridor

An empirical link exists between the quality of transport networks and household welfare. In addition to job mobility and access to goods and services, better road networks and efficient public transport systems reduce cost associated with automobile ownership. At an aggregate level, the quality of transportation also influences economic growth patterns, as a person's relocation decisions are affected by access to jobs, education and a higher standard of living. These effects can be self-reinforcing.

A cursory look at the relationship between household income, job accessibility, commute times and employment for counties along Florida's I-10 corridor shows that higher quality and more dense transportation networks reduce travel times and thus improve mobility. Job accessibility looks at the number of jobs that can be reached within a specific time threshold.

*Table 11. Key Statistics on Travel Time to Work, Employment and Job Accessibility across selected North Florida Counties*

| | Mean Travel Time to Work (min) | Employment | Per capita Income ($) | Average Job Accessibility by Auto[1] | Average Job Accessibility by Transit[1] |
|---|---|---|---|---|---|
| **Duval** | 24.9 | 457,959 | 30,012 | 429,953 | 5,318 |
| **Baker** | 30.1 | 4594 | 24,070 | 35,728 | 481 |
| **Columbia** | 24.8 | 18,651 | 23,901 | 32,517 | 883 |
| **Suwanee** | 27 | 8289 | 21,755 | 20,435 | 475 |
| **Madison** | 27.2 | 2827 | 19,223 | 14,075 | 415 |
| **Jefferson** | 29.9 | 1628 | 23,448 | 57,744 | 118 |
| **Leon** | 20.9 | 97668 | 29,754 | 155,475 | 5,500 |
| **Gadsden** | 31.7 | 7936 | 20,158 | 77,671 | 476 |
| **Jackson** | 23 | 9192 | 18,862 | 21,365 | 509 |
| **Washington** | 30.8 | 3853 | 18,112 | 13,860 | 416 |
| **Holmes** | 27.8 | 1816 | 18,574 | 12,857 | 201 |
| **Walton** | 28.2 | 21377 | 33,731 | 27,809 | 354 |
| **Okaloosa** | 23.7 | 61422 | 31,901 | 61,035 | 2,536 |
| **Santa Rosa** | 29.6 | 26637 | 30,094 | 90,298 | 612 |
| **Escambia** | 22.1 | 106907 | 26,730 | 135,496 | 3,799 |
| *Assumes AM peak period and a 30-minute threshold* | | | | | |

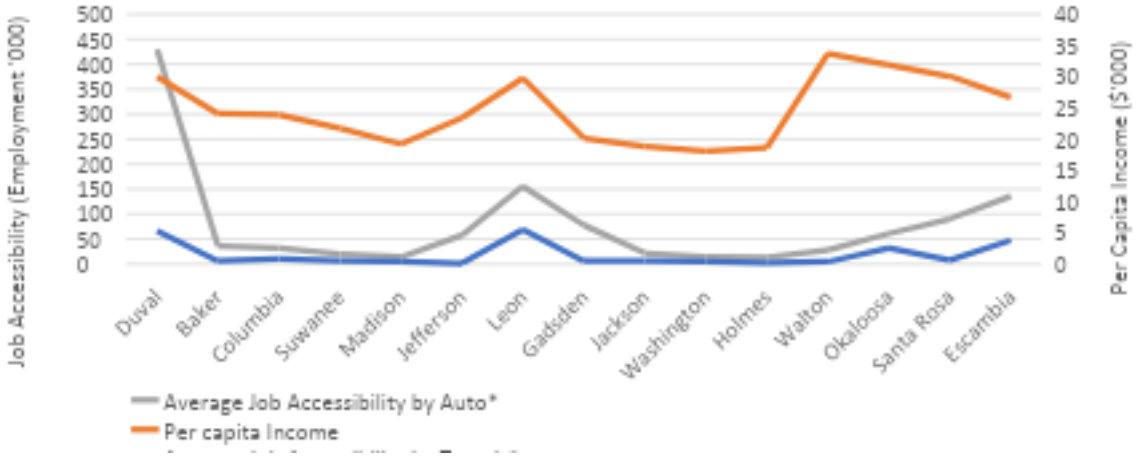
Source: ACS County Business Patterns 5-year estimate, 2014-2018
2018 Auto Accessibility Report: Florida
2018 Transit Accessibility Report: Florida

Figure 5 indicates that in most cases counties with higher levels of employment – Leon, Escambia and Okaloosa - have the lowest commute times, averaging between 20 to 23 minutes. In contrast, counties with employment below 2,000 persons experience average commute times ranging between 27 to 30 minutes. While this relationship is expected, the availability of jobs and the quality of transportation networks are a few push factors away from small communities and reinforce movement to larger urban centers.

Figure 6 shows how job accessibility in the region is largely related to per capita income. With the exception of counties clustered close to Escambia, those counties with per capita income levels that exceeded $25k recorded the highest job accessibility by auto (greater than 100K) and transit (greater than 3.5K). While counties such as Washington, Holmes and Madison recorded per capita incomes that were less than $20k a year and average job accessibility by auto ranging between 12,000 to 14,000 jobs, while accessibility by transit ranged between 200 to 420 jobs.

*Figure 5. Employment and Mean Travel Time to Work, by County: 2018*


*Figure 6. Average Job Accessibility and Per Capita Income, by County: 2018*



Further Analysis

These estimates are preliminary. While they provide a general understanding of the potential impact, they should not be considered as definitive. Further in-depth research needs to be completed to fully understand the options available for multimodal mobility expansions. A comprehensive study must include a Ridership Analysis, Fiscal Impact and Feasibility Analysis, and Cost-Benefit Analysis:

*Ridership Analysis*

Ridership analysis is an important step in understanding the potential impact of mobility expansion in the region. This process requires a comprehensive baseline assessment, as well as, ongoing data collection within the region to evaluate travel behavior and potential ridership.

*Fiscal Impact and Feasibility Analysis*

A more complete and thorough economic impact analysis would require:

- developing more robust of construction and operating cost estimates specific to the North Florida Corridor;
- calibrating costs to local labor-market conditions including the availability of skilled and unskilled labor suited to transit and transportation work.
- examining station area impacts from new public investments in infrastructure, including the demand for commercial, retail, and residential demand.
- examining broader economic and market impacts reflecting new transit investments; and
- estimating potential mobility impacts due to mode shifts and changes in travel behavior.

*Cost/Benefit Analysis*

The impact of interregional passenger rail could have far reaching effects. Choices about commuting and travel between major urban areas could be significantly impacted as accessibility improves. Similarly, the project could induce more travel from outside the state, either via tourism or commercial activities (e.g., business travel to the state

Capital). More completely understanding these impacts will require a more detail analysis of travel demand within specific market segments that appeal to passenger rail travelers.

Further analysis should help to more fully understand the relationship between commute times, mobility, employment, and economic growth. Florida's I-10 corridor links diverse regional economies, ranging from military installations (Pensacola) to beach communities, universities and the state capital (Tallahassee), to a major urban area (Jacksonville). A more complete understanding of how a long-term investment in a rail alternative will impact mobility and commute patterns would help understand the intercounty and intra-county economic linkages and patterns. Moreover, a more detailed analysis would allow for more sophisticated understanding of the network impacts of a rail alternative in terms of accessibility to a privately funded and operated system.

# Chapter III. Safety Analysis

This chapter presents a general overview of the safety concerns associated with passenger transit between the region's metropolitan areas. The high-level review identifies the potential safety issues, applicable policies governing intercity transit, and safety considerations that affect the corridor's readiness for passenger service.

Overall, several findings will inform the preparation for increasing multi-mobility options in North Florida:

- Few policies govern intercity bus services, such as Greyhound, Megabus, and Red Coach. At the state level, Florida Statute 341.031 and 341.051 define intercity bus service and potential public funding sources for adding or maintaining intercity bus service.
- Rail has a significant number of safety-related policies, applicable at both the federal and state level. In most cases, a state statute aligns and enforces federal policy. The primary categories for rail safety policies: sound, crossings, communications, and trespassing.
- The most glaring safety issue on the existing rail is the lack of Positive Train Control. The Rail Safety Improvement Act of 2008 and subsequent amendments require any intercity passenger rail operation to have Positive Train Control. However, the PTC requirement does not apply since the Florida Gulf and Atlantic Railroad is a Class III railroad and does not operate passenger rail. PTC compliance only applies once passenger rail is implemented.
- The Florida Gulf and Atlantic Railroad is a Class III railroad and does not operate passenger rail. PTC compliance only applies once passenger rail is implemented.
- In the last decade, 27 safety incidents regarding rail, motor vehicles, and pedestrians have occurred along the North Florida corridor. Three locations – one in Duval County, one in Columbia County, and one in Okaloosa County – are responsible for multiple incidents.
- There are 121 safety incidents during the same time between Escambia and Duval County, but the majority of these incidents are in Duval County and not on the east-west rail line. Currently, insufficient information exists to reliably analyze the safety issues at crossings in downtown or high-dense land use environments in North Florida.
- The existing safety equipment at crossings aligns with the existing freight rail use. The standard crossing gates are present at nearly 80% of the crossings.

- The implementation of passenger rail will require a more detailed examination of the existing equipment and the creation of a plan to upgrade to Quiet Zones or quad gates. The speed of trains and the frequency of trains will change at the crossings, which necessitates a more detailed analysis as a next step. During the Expert Panel meeting, MPOs in the corridor said they were in contact with Rail USA officials regarding $30-40 million in needed safety upgrades. These upgrades will maintain the existing freight speeds along the line.

In North Florida, bus and rail are the possible modes of intercity travel. Previously, several studies examined passenger rail along the Gulf Coast. To date, no literature focuses specifically on intercity bus travel in North Florida. National level research and studies applicable to other corridors informed our methodology.

**Literature Review**

In a previous task, the research team compiled summaries and relevant findings from ten reports relating to the restoration of Gulf Coast passenger rail. Half of these reports did not contain any concrete information on safety considerations. The general impression is that rail safety was not a focus of these studies' scopes. Additionally, the reports omit the impact of passenger rail service on the reduction of travel-related injuries. The reports that did mention safety contained information about incidents, policy, and equipment.

In terms of incidents and injuries, the number of rail-related injuries in Florida has seen an overall increase from 2008 to 2017. However, the number of train incidents has hovered within the range of 16-32 cases annually from 2008 to 2017. These are statewide numbers, and the incidents are concentrated in Central and South Florida. Train derailments have been the most common type of incidents.

The majority of the existing rail line within the Florida Panhandle require verbal signals controlled by a dispatcher instead of the recommended automated signals, according to the Gulf Coast Implementation Study Report. Verbal signals are sufficient for the current freight rail usage along the Florida Gulf and Atlantic Railroad, owned by Rail USA. They can slow down train speeds, though.

All Class I and commuter rail railroads are mandated to install Positive Trail Control (PTC), a hardware and software-based communications technology system designed to reliably and functionally prevent train-to-train collisions, overspeed derailments,

incursions into established work zone limits, and movements of trains through switches in the wrong position. Adding PTC between the Alabama border and Jacksonville is required in order to provide passenger rail. Modernizing all the moveable bridges on the route will improve reliability and track capacity. However, automating the signals on this corridor or installing PTC is a rather costly upgrade.

Several funding programs are available to upgrade this corridor, including:

- Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program
- Alabama DOT
- Louisiana DOTD
- Proposed Grade Crossing Study
- Mississippi Railroad Corridor Working Group

Of the funding programs mentioned above, CRISI is mostly used to fund PTC systems and safety infrastructure upgrades.

Overall, the existing research base indicates that this corridor does not have the necessary foundations for the level of safety required for passenger rail. In order to satisfy federal regulations, however, safety measures to modernize the rail system along the corridor may be necessary.

**Rail Policies**

*Table 12.Federal and State Policies Governing Passenger and Freight Rail*

| Policy Name | Description |
|---|---|
| *Federal (for the policies independent of corresponding state legislation)* | |
| 49 CFR Part 222 Train Horn Rule | Engineers must sound horns for at least 15 seconds but no more than 20 seconds in advance of a public grade crossing.<br>If the train is traveling faster than 60 mph, horn starts within ¼ mile of crossing<br>Horn: Two long, one short, one long blast; must be between 96 and 110 decibels |
| 49 US 20157 Positive Train Control | Every Class 1 railroad and entity that provides regularly scheduled intercity and commuter rail service must have a FRA-certified PTC system by December 31, 2020 |
| 49 CFR 270 Railroad System Safety Program | Intercity Passenger Rail systems are required to develop and implement a system safety program. The rule was clarified in |

| Policy Name | Description |
|---|---|
| | 2020, stating it is the responsibility of each individual railroad, not the state to develop a SSP |
| *State* | |
| Chapter 316: Uniform Traffic Control | |
| 316.0775 | It is criminal mischief to interfere with traffic control devices or signs at crossings |
| 316.087 | Cannot drive on the left side of the road when crossing |
| 316.1576 | Must have clearance overhead and below when crossing a railroad track |
| 316.159 | Governs who must stop or slow down prior to crossing a railroad track: any motor vehicle with passengers for hire (does not include a taxi), Vehicle with explosive substances or flammable liquid, commercial vehicles not already specified |
| 316.170 | Moving heavy equipment at railroad grade crossings – applies to equipment with speeds less than 10 mph. Must give notice to railroad when crossing |
| 316.171 | Railroad is responsible for traffic control devices, but local jurisdiction must install them. The devices include pavement markings, advance warning signs, and be MUTCD compliant |
| 316.1945 | Cannot stop, stand, or park a vehicle on any railroad track |
| Chapter 335: State Highway System | |
| 335.141 | FDOT has regulatory authority over public highway/railroad crossings. FDOT and railroad companies work together on identifying and funding projects that reduce hazards at grade crossings. The railroad is responsible for implementation of traffic control devices. If the crossing existed prior to 1972, railroad is responsible for 100% of funding. FDOT is authorized to regulate a train's speed |
| Chapter 337: Contracting | |
| 337.405 | It is a misdemeanor in the 2nd degree to tamper with the trees or other vegetation within the right of way |
| Chapter 341: Public Transit | |

| Policy Name | Description |
|---|---|
| 341.320 | Authorizes the Florida Rail Enterprise |
| Chapter 351: Railroads and Public Utilities | |
| 351.03 | All grade crossings must comply with the Manual for Uniform Traffic Control Devices. The highway signage is installed by the jurisdiction, not the railroad. Trains must emit an audible signal within 1,500 ft of a crossing, except if FDOT and FRA authorize a quiet zone. A visual warning device is required if train switching blocks a public road in darkness |
| 351.034 | Trains must come to a complete stop, and when stopped be cut, separated, or moved to allow passage of an emergency vehicle |
| Chapter 860: Offenses Concerning Aircraft, Motor Vehicles, Vessels, And Railroads | |
| 860.04 | It is a misdemeanor to ride or attempt to ride a train with intent to ride for free |
| 860.05 | It is a felony in the 3rd degree to interfere with the train, cars, or engine |
| 860.07 | It is a misdemeanor to give signals to train if it affects its movement or operation |
| 860.08 | It is a felony in the 3rd degree to interfere with railroad signals |
| 860.09 | It is a felony in the 3rd degree to interfere with railroad tracks |
| 860.11 | Cannot interfere with the movement of cattle on tracks |
| 860.121 | It is a felony in the 3rd degree to shoot at or throw an object at a train |

**Intercity Bus Policies**

In terms of policy and safety regulations for intercity bus service, the Code of Federal Regulations lists inspection and maintenance requirements. It also includes rules applicable to hours of service for commercial vehicles carrying passengers. In terms of equipment regulations, the regulations include specifications for braking systems, lights, emergency exits, tires and seatbelts.

*Table 13.Policies Governing Intercity Bus Travel*

| Policy Name | Description |
|---|---|
| §341.031 | Defines "intercity bus service" as "regularly scheduled bus service for the general public which operates with limited stops over fixed routes connecting two or more urban areas not in close proximity." It also defines an "eligible bus carrier", which is "a private company that has operated defined intercity bus service in the state with formal authority." |
| §341.051 | Identifies how federal and state funding can support intercity bus service: The public transit department is authorized to receive federal grants for public transit, commuter assistance, and intercity bus service or facilities. The applicable department is authorized to fund up to 100 percent of the cost of any eligible intercity bus service project and to advance up to 80 percent of the capital cost of any project that will assist Florida's transit systems and intercity bus services in becoming fiscally self-sufficient. |
| §396.3 Inspection, repair, and maintenance | Every motor carrier and intermodal equipment provider must systematically inspect, repair, and maintain, or cause to be systematically inspected, repaired, and maintained, all motor vehicles and intermodal equipment subject to its control. |
| § 396.7 - Unsafe Operations | Commercial motor vehicles must not be operated in such a condition as to likely cause an accident or a breakdown of the vehicle. |
| Annual Inspection – §396.17 | Every commercial vehicle, including each segment of a combination vehicle requires periodic inspection that must be performed at least once every 12 months. The original or a copy of the periodic inspection report must be retained by the motor carrier for 14 months from the report date. |
| Roadside Inspection Reports – § 396.9 | Any driver who receives a roadside inspection report must deliver it to his/her employing motor carrier. The motor carrier official must examine the roadside inspection report. Within 15 days after the inspection, the motor carrier must sign the report to certify that all violations have been corrected and return it to the address indicated. |
| §395.5 Maximum driving time for passenger-carrying vehicles. | No motor carrier shall permit or require any driver used by it to drive a passenger-carrying commercial motor vehicle, nor shall any such driver drive a passenger-carrying commercial motor vehicle: |

| Policy Name | Description |
|---|---|
| | (1) More than 10 hours following 8 consecutive hours off duty; or<br>(2) For any period after having been on duty 15 hours following 8 consecutive hours off duty.<br>No motor carrier shall permit or require a driver of a passenger-carrying commercial motor vehicle to drive, nor shall any driver drive a passenger-carrying commercial motor vehicle, regardless of the number of motor carriers using the driver's services, for any period after—<br>(1) Having been on duty 60 hours in any 7 consecutive days if the employing motor carrier does not operate commercial motor vehicles every day of the week: or<br>(2) Having been on duty 70 hours in any period of 8 consecutive days if the employing motor carrier operates commercial motor vehicles every day of the week. |
| §393.40 Required brake systems. | Buses, trucks and truck-tractors equipped with air brake systems and manufactured on or after March 1, 1975 must, at a minimum, have a service brake system that meets the requirements of FMVSS No. 121 in effect on the date of manufacture. |
| §393.51 Warning signals, air pressure and vacuum gauges. | Every bus, truck and truck tractor must be equipped with a signal that provides a warning to the driver when a failure occurs in the vehicle's service brake system. |
| §393.62 Emergency exits for buses. | Each bus with a GVWR of 10,000 pounds or less must meet the emergency exit requirements of FMVSS No. 217 (S5.2.2.3) in effect on the date of manufacture. Each bus with a GVWR of more than 4,536 kg (10,000 pounds) must have emergency exits which meet the applicable emergency exit requirements of FMVSS No. 217 (S5.2.2 or S5.2.3) in effect on the date of manufacture. |
| §393.75 Tires. | Any tire on the front wheels of a bus, truck, or truck tractor shall have a tread groove pattern depth of at least $^{4}/_{32}$ of an inch when measured at any point on a major tread groove. The measurements shall not be made where tie bars, humps, or fillets are located.<br>● No bus shall be operated with regrooved, recapped or retreaded tires on the front wheels. |
| §393.93 Seats, seat belt assemblies, and seat belt assembly anchorages. | *Buses manufactured on or after July 1, 1971.* Every bus manufactured on or after July 1, 1971, must conform to the requirements of Federal Motor Vehicle Safety Standard No. 208 & 210 relating to installation. |

| Policy Name | Description |
|---|---|
| | All commercial passenger buses (aside from school buses and faith-based vehicles) are required to have lap/shoulder belts for all designated seating positions. |

**Rail Equipment and Safety Incidents**

Any at-grade railroad crossing is considered a potential conflict point for safety, both for the train engineers, the passengers, and other traffic. There are 801 at-grade public highway-rail crossings between Escambia County and Duval County (Table 14). In Escambia and Duval Counties, most of the crossings are not applicable to our east-west rail corridor, but there are 400 crossings at public roads along the Florida Gulf and Atlantic Railroad and the CSX S Line between Baldwin and downtown Jacksonville.

*Table 14. Number of Public Crossings and Incidents since 2010, All Railroads*

| | Number of Crossings | Number of Incidents (Since 2010) |
|---|---|---|
| Escambia | 128 | 23 |
| Santa Rosa | 19 | 0 |
| Okaloosa | 14 | 4 |
| Walton | 28 | 3 |
| Holmes | 20 | 1 |
| Washington | 17 | 2 |
| Bay | 60 | 6 |
| Jackson | 62 | 0 |
| Gadsden | 52 | 0 |
| Leon | 25 | 3 |
| Jefferson | 9 | 0 |
| Madison | 39 | 0 |
| Suwanee | 28 | 0 |
| Columbia | 38 | 5 |
| Baker | 23 | 3 |
| Duval | 239 | 71 |

Public agencies and railroads collaborate to determine which equipment is appropriate for managing safety on rail lines and corridors. There are several treatments available: cross bucks, stops signs, flashing lights, special warning signs, gates, and quad gates. The safety equipment installed at each of these crossings is determined by several

factors. The top three are the frequency of both train and vehicle traffic, the speed of the train, and the surrounding land uses.

For crossing in highly populated areas or with a significant amount of rail traffic, Quiet Zones provide a similar level of safety as quad gates without the noise pollution associated with train horns. North Florida includes four Quiet Zones, all located in Duval County at the US 90/301 intersection. This is the transition point for FGAR and CSX lines as well as a north-south rail line.

The Florida Gulf and Atlantic Railroad runs between downtown Pensacola and Baldwin in Duval County. The segment east of Baldwin into downtown Jacksonville is under the control of CSX. For this analysis, we used the CSX S Line and its 20 crossings between Baldwin and Dennis Street in downtown Jacksonville. This information is shown in Tables 15 and 16.

*Table 15.Equipment Deployed at Crossings along Florida Gulf/Atlantic Railroad & CSX S Line*

| | Public Road Crossings on FGAR | Public Road Crossings on CSX S Line | No Signage/ Signals | Cross Bucks | Stop Signs | Special Warning | Flashing Lights | Gates | Four Quad Gates |
|---|---|---|---|---|---|---|---|---|---|
| Escambia | 8 | | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Santa Rosa | 19 | | 0 | 1 | 0 | 0 | 2 | 16 | 0 |
| Okaloosa | 14 | | 0 | 0 | 0 | 0 | 0 | 14 | 0 |
| Walton | 28 | | 0 | 0 | 0 | 0 | 0 | 28 | 0 |
| Holmes | 23 | | 0 | 2 | 1 | 0 | 0 | 20 | 0 |
| Washington | 17 | | 0 | 2 | 0 | 0 | 0 | 15 | 0 |
| Bay | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jackson | 62 | | 0 | 15 | 3 | 0 | 1 | 43 | 0 |
| Gadsden | 52 | | 0 | 15 | 0 | 1 | 7 | 27 | 0 |
| Leon | 19 | | 0 | 1 | 1 | 0 | 0 | 17 | 0 |
| Jefferson | 9 | | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Madison | 39 | | 0 | 5 | 8 | 0 | 3 | 23 | 0 |
| Suwanee | 28 | | 0 | 2 | 0 | 0 | 0 | 26 | 0 |
| Columbia | 38 | | 0 | 7 | 0 | 0 | 5 | 26 | 0 |
| Baker | 21 | | 0 | 0 | 0 | 0 | 0 | 23 | 0 |
| Duval | 3 | 20 | 1 | 1 | 0 | 0 | 1 | 19 | 1 |

*Table 16. Incidents along the Florida Gulf and Atlantic Railroad & CSX S Line since 2010*

| | Number of Incidents Since 2010 | Serious Injury or Death | Cause |
|---|---|---|---|
| Escambia | 1 | 1 | Driver went around the crossing gates |
| Santa Rosa | 0 | 0 | |
| Okaloosa | 5 | 4 | 1) Tractor trailer got stuck crossing the tracks. 2) Elderly man was startled as gates started to come down while he was driving across the tracks. He froze, and train struck the car. 3&4) Pick-up trucks tried to outrun the train/gates. 5) Driver could not stop in time, hitting the crossing gates and entering the track |
| Walton | 3 | 2 | 1) Driver stopped on tracks, 2) Tractor trailer got stuck on tracks, 3) Driver stopped on tracks |
| Holmes | 1 | 0 | Driver went around crossing gates |
| Washington | 2 | 0 | 1) Driver did not stop at crossing gates, 2) Driver stopped on the tracks |
| Bay | 0 | 0 | |
| Jackson | 0 | 0 | |
| Gadsden | 0 | 0 | |
| Leon | 3 | 1 | 1) Abandoned vehicle on tracks, 2) Motorist ignored crossing gates and hit train, 3) Dump truck got stuck on tracks |
| Jefferson | 0 | 0 | |
| Madison | 0 | 0 | |
| Suwanee | 0 | 0 | |
| Columbia | 3 | 2 | 1) Unknown for self-reported incident with no injuries, 2) Driver stopped on tracks, 3) Driver stopped on tracks |
| Baker | 2 | 0 | 1) Auto went under the crossing gates and hit train. 2) Driver parked too close to tracks as crossing gates came down; left car prior to train hitting the automobile |
| Duval | 3 | 0 | In all three incidents, tractor trailers got stuck on the tracks and the driver abandoned the rig. |

## Intercity Bus Crashes and Safety Statistics

Intercity bus safety statistics are under the purview of the Federal Motor Carrier Safety Administration (FMCSA). The North Florida corridor currently has no through service, connecting Pensacola to Jacksonville. Existing service connects these two cities via Orlando. The lack of service contributes to a lack of crashes involving bus carriers. Since 2010, none of the counties along the I-10 corridor in North Florida have reported crashes involving intercity bus service. This was determined through a review of Signal4 data and a news database search.

Nationwide, intercity buses were involved in 17,145 crashes in 2019. These incidents resulted in 272 fatalities and 17,190 injuries. The FMCSA includes every bus – private motor coach, intercity service such as Red Coach, Megabus or Greyhound as well as public transit in its annual reporting. Driver fatigue is widely considered to be the leading cause for bus crashes. An equipment malfunction, such as a blown tire, can be a contributing factor.

# Chapter IV. Public Engagement

North Florida is a large geographic area encompassing five metropolitan areas and nearly 3.6 million people from Pensacola on the western edge of the Florida Panhandle at its border with Alabama to Jacksonville on the Atlantic Seaboard. This chapter identifies multi-modal mobility options to connect the region. Existing data analysis enables us to see what transportation options are available now, but community and expert opinion provides additional input into a more comprehensive understanding of what residents and experts desire and what may be possible in the future.

This chapter focuses on public and stakeholder engagement and our efforts to understand the on-the-ground perspective regarding potential transportation options. This report documents the public engagement methods used throughout the study, and shares key findings and strategies resulting from this outreach.

**Public Engagement Methodology**

The COVID-19 pandemic and resulting social distancing mandates required the research team to pivot its planned public engagement strategy. Instead of in-person meetings and outreach, the team relied upon online surveys and a virtual meeting of local and transportation experts to solicit information and feedback specific to mobility options and opportunities for the North Florida region. This allowed the team to collect and evaluate a range of opinions and insights from multiple stakeholders.

*Table 17. Public Engagement Tools*

| Name of Engagement | Target Audience | Date |
|---|---|---|
| MMNF Online Survey | Florida residents and other commuters along the North Florida corridor | July 17, 2020 to September 15, 2020 (*) |
| MMNF Expert Panel Meeting | Experts in transportation planning and management with experience in the Florida region. | August 26, 2020 |
| MMNF Expert Panel Survey | Experts in transportation planning and management with experience in the Florida region. | August 31 – September 18,2020 |

Note: The online survey remains open at the time of publication of this report. The data included in the deliverable runs through September 15, 2020

Due to COVID-19 travel restrictions, the public engagement period was conducted over the latter half of the study period. Initially, this was scheduled for early in the study process. Overall, this mixed method approach allowed the team to engage with more than 400 people.

The combination of broad community outreach and expert engagement confirmed the information discovered through Tasks 1-3. It also led to identify several additional items for consideration and strategies going forward. In sum,

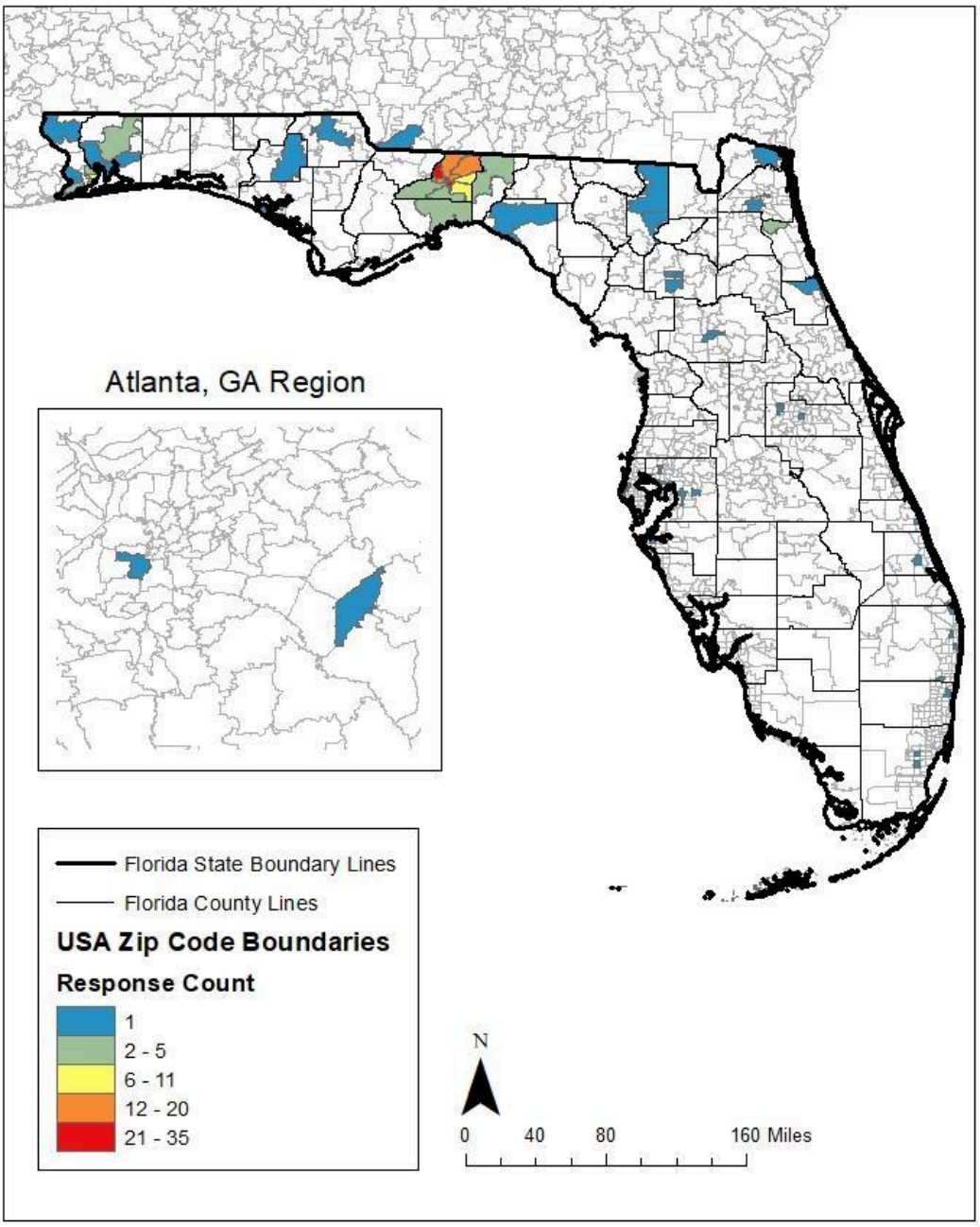
- North Florida lacks the population density for passenger rail service in the short term.
- Premium bus services can be a good way to test the public's appetite for inter-regional transit service.
- Preserving cohesive and interconnected linear rights-of-way along the existing track and along collocated facilities including I-10 and US 90 in alignment with FDOT's Strategic Intermodal System Policy Plan should be considered.
- Using the existing rail line for passenger services requires significant infrastructure upgrades, specifically to support safety compliance and speed regulations.
- Continuing or establishing coordination with all the entities along the Gulf Coast (from Florida to Texas) will be critical to preserve and develop mobility options along the corridor
- Concerted efforts will be needed to maintain and build on the momentum generated through this project outreach

Community Survey

An online survey was distributed to persons living in and travelling through the North Florida region for their opinions, desires, and availability of transportation options. The survey contained two sections. One part addressed respondents' travel options and preferences while the other collected demographic data from respondents, including age, occupation, gender, and ZIP code. Over a two-month period, 370 people completed the survey. Figure 7 shows a map the responses.

A copy of the survey is included in Appendix A.

*Figure 7. Multimodal Mobility in North Florida Survey Responses, by ZIP Code*




Survey responses were wide-ranging and most aligned with the existing knowledge of the North Florida corridor. While the total number of responses was good, the respondents, based on a number of factors, are not necessarily typical area residents. Importantly, the survey sample was weighted heavily toward respondents with high levels of education (80% with bachelor's degrees or higher) and professional planners, retiree's, and academics. Additionally, the survey respondents clustered in the major population areas: Pensacola, Tallahassee and Jacksonville, with less representation from

the smaller communities along the corridor. Thus, the survey is not necessarily representative of travel and mobility preferences for all residents of the North Florida study area. A summary of the demographic characteristics of the survey respondents and notes on bias concerns follows in Table 18.

*Table 18. Characteristics of the Survey Population*

| Characteristic | Survey Respondents | Study Area Average[1] | Note |
|---|---|---|---|
| Gender | Female: 50.3%;<br>Male: 48.7%;<br>Nonbinary: 1% | Female: 48.7%;<br>Male: 51.3%; | Ratio of females to males in sample is slightly lower than population |
| Age | 20-34: 32.8%<br>35-49: 25.9%<br>50-64: 25.6%<br>65+: 14.5% | 20-34: 20.2%<br>35-49: 18.6%<br>50-64: 20.4%<br>65+: 17.7% | Disproportionately higher share of adults age 20 – 49 in sample compared to general population |
| Race | White: 86.7%<br>Black: 2.2% | White: 72.0%<br>Black: 21.7% | Disproportionately higher share of whites in sample compared to population |
| Ethnicity | Hispanic, Latinx, Spanish: 5.9% | Hispanic, Latinx, Spanish: 6.2% | Share of sample with Hispanic ethnicity is slightly lower than population |
| Income | $25K- $50K: 21.6%<br>$100K -150K: 20.9%<br>$50K -75K: 19%<br>$75K-100K: 17.3%<br>more than $150,000: 15.0%<br>less than $25,000: 6.2% | $25K- $50K: 26.0%<br>$100K -150K: 11.2%<br>$50K -75K: 18.3%<br>$75K-100K: 11.9%<br>more than $150,000: 7.2%<br>less than $25,000: 25.5% | Income levels are disproportionately higher than general population |
| Education | Graduate degree or higher: 52.8%<br>Bachelor's degree: 28.8% | Graduate degree or higher: 7.7%<br>Bachelor's degree: 20.6% | Respondents skew higher than the general population |

*Source: American Community Survey, US Census Bureau*

### *Existing Travel Behaviors*

- 52% of respondents indicated they travel outside or across multiple areas in North Florida at least once a month while 26.8% travel once a season outside the region.
- To travel in North Florida or outside the area, individuals use their personal vehicle (46.9%) or fly (26.6%).
- Traveling by bus was considered inconvenient due to stop location/scheduling (22.1%) and a need to connect with other modes of travel (21.6%). Respondents also mentioned safety concerns (17.6%) and limited knowledge of service (13.7%).
- Traveling by train is not considered possible, as 59.1% of respondents said there was no service available to them. Only 2.2% claimed they had safety concerns regarding train travel.
- People leave their city via bus or train to vacation (35.6%), visit family/friends (33%), or for work/business (22.6%).
- The most prominent destinations for bus or train travel in the southeast are Atlanta, Orlando, New Orleans, Miami, Tampa, and Jacksonville.

***Preferred Transportation Options***

- 74.6% of respondents said they would travel by train between Jacksonville and Pensacola if the option were available to them. Only 6.6% said no, while the remaining 18.8% said it would depend on the quality of service.
- When asked about premium intercity bus service, 28.6% said they would travel by bus, 31.8% said no, and 39.58% said it would depend on quality of service.
- An ordered ranking of most preferred intercity transportation options goes as follows (Average Rank): 1. Personal Vehicle (1.79) 2. Train (2.38) 3. Air (3.61) 4. Bus (4.61) 5. Rideshare/Carpool (5.23) 6. Uber/Lyft (5.39) 7. Cab (6.32) 8. Bicycle (6.68)

***Other Findings***

- The most common responses for occupation include planners, academia, students, and retirees.
- The highest concentration of responses by ZIP code are located in the Tallahassee-Leon County area, along with groups in the Pensacola and Jacksonville areas. Other locations include various towns along the I-10 corridor, the east coast of Florida, and around the Tampa-Hillsborough County area.

### *Survey Outreach and Resulting Limitations*

As noted, the COVID-19 pandemic limited any in-person outreach for the entire study, and this task in particular. The research design originally included surveys to travelers along the I-10 corridor and in-person surveys at rest stops. Unfortunately, the pandemic and compliance with government-mandated travel restrictions limited the research team's ability to deploy the survey using these methods. Instead, word-of-mouth and a snowball sampling approach was used to boost survey responses. The survey was distributed through several on-line and digital channels: DURP alumni listserv, DURP social media channels (Facebook and Twitter), and FSU COSS social media. Each person who took the survey was also encouraged to share it with others.

Each member of the Expert Panel also received the survey and was asked to share it through their local and professional networks. It should be noted that while referred to as a survey, this part of the process was more akin to an informal preference poll. Given the method of distribution and skew towards higher education, the survey likely disproportionally represents planners who are more aware of or even favor transit and rail options over the opinions of the average Florida commuter.

## Expert Panel Engagement

The expert panel engagement consisted of an expert panel meeting and a follow-up survey. A cross-section of representatives was identified from state agencies, local governments, Regional Planning Councils (RPCs), Metropolitan Planning Organizations (MPOs), Rural Areas of Opportunity, private sector, and economic development interests to serve on the task force. Two groups were identified: an expert task group and an advisory group. The FDOT team was consulted when finalizing the list. Table 19 lists the organizations represented.

*Table 19. Organizations and Perspectives Represented*

| Organization Type | Representative Organization |
|---|---|
| Transit Agencies | Star Metro (Tallahassee) |
| | Jacksonville Transportation Authority |
| | Escambia County Area Transit (ECAT) |
| MPOs | North Florida Transportation Planning Organization |
| | Capital Region TPA |
| | Bay County TPO |
| | Okaloosa-Walton TPO |

| Organization Type | Representative Organization |
|---|---|
| | Florida-Alabama TPO |
| Rail | Passenger Rail |
| | Freight Rail |
| Florida Department of Transportation (FDOT) | FDOT District 2 |
| | FDOT District 3 |
| Regional Planning Council | Apalachee Regional Planning Council |
| | North Central Regional Planning Council |
| | North East Florida Regional Planning Council |
| | Emerald Coast Regional Council |
| Local Government | City of Jacksonville/Duval County, City of Tallahassee, City of Pensacola, City of Marianna, City of Lake City, City of Chipley, City of Crestview, Leon County, Escambia County, Madison County |
| Other State Departments | FL Department of Economic Opportunity -REDI |

Expert Panel Meeting

The expert task group met on August 26, 2020. During this 90-minute facilitated discussion, the group shared thoughts on the study's analysis, COVID's impact to interregional transportation, as well as the barriers and opportunities for multimodal mobility options in North Florida. Prior to the meeting, information packages were distributed to the expert panel which consisted of the meeting agenda, the summary of research findings to date, and identified areas that would be discussed in the meeting.

The MMNF Expert Panel meeting had two objectives: (i) to obtain feedback on the key findings of the literature review, travel demand and economic impact analyses, and the safety analysis; and (ii) to provide insight into the regional challenges and preferred opportunities to move toward multimodal mobility in North Florida. Twenty-three people attended, including representatives from FDOT. The full meeting minutes and presentation, which were circulated to each participant for review and approval, are included Appendices B and C.

The meeting was formally structured, timed and led by a moderator in order to cover all of the intended material. The meeting included a brief presentation on the project status and key research findings. It then transitioned into three, 20-minute long guided discussions. The first discussion examined the impact of the Covid-19 pandemic on existing multimodal mobility in the region. The second discussion addressed barriers to expanding multi-modal mobility options in the region. The third discussion session looked at strategies for expanding multi-modal mobility options in North Florida. After each section, the moderator summarized the discussions, as follows:

### *The Impact of Covid-19 Pandemic*

There was a common consensus among the experts on the following issues faced during the Covid-19 pandemic:

- The benefits of telecommuting varied across communities and differed according to the nature of employment in those areas.
- Transit agencies across the region were being severely affected, with declines ranging from 20% to 50%.

Travel is expected to rebound in the long term, but the strength of the rebound and the duration of the downturn remains uncertain. Various factors will influence the final outcomes, including employee/employer preferences, students' safety perceptions and the strength and timing of the economic recovery. In addition, improvements in on-time transit performance resulted from lower ridership and less traffic. The quality of public participation was enhanced throughout the region since persons could participate without having to be physically present for meetings.

COVID-19 opens the opportunity for a broader discussion on transportation's value to quality of life. It can be more than just of as "the commute to work" in North Florida. Currently, we do not understand how the workforce mix will change in the short-term and long-term. Question arose in terms on how COVID will change the share of commuters. It was agreed that there was a need to improve our understanding of the order of magnitude of the changes.

### *Barriers to and Strategies for the Expansion of Multimodal Mobility Options*

Prior to the meeting, a list of key topics that could be used to group barriers to expansion were circulated to guide panel discussions. The issues were discussed around the following themes: Infrastructure & Assets, Behavioral & Ridership, Cost & Funding, and Political & Legislative. Table 20 below summarizes the main barriers and strategies identified under these issues.

*Table 20. Summary of Barriers and Strategies Discussed at the Expert Panel Meeting*

| | Barriers | Strategies |
|---|---|---|
| Infrastructure & Assets | - Passenger rail requires large passenger volumes to be economically feasible.<br><br>-It is unclear how the passenger rights to the existing rail is distributed after the sale of the CSX line. | -Implementing non-rail options, such as a high-end intercity bus, until demand justifies rail.<br><br>-Determine who has the passenger rights to the existing freight railroad.<br><br>-Explore the possibility of purchasing the existing CSX/ Rail USA right of way which would allow the state to control development along this corridor.<br><br>-Examine the benefits of building a new rail line parallel to the I-10 corridor, since the State already owns the existing right-of-way. |
| Behavioral & Ridership | - Dispersed travel times along the corridor may not provide adequate activity levels during traditional peak periods<br><br>- The auto-centric culture is another factor which may hinder persons' willingness to use passenger rail. | - Passenger rail viability can be improved if it can compete with other travel modes in terms of travel speed and comfort.<br><br>- The utility of passenger rail for leisure travel should also be considered |
| Cost & Funding | -It is expected that the cost per user for passenger rail will be prohibitive based purely on market prices.<br><br>- Source of funding is another significant concern, considering the high financing cost that will be required to implement passenger rail.<br><br>-Rail options are extremely expensive. Rail USA has identified $30-$40 billion in equipment upgrades to keep the existing line in compliance with safety regulations and performance targets. | -The benefits of a rail project must be weighed against other costs.<br><br>-Consider the possibility of sourcing grant funding to sustain this project.<br><br>- Evaluating the role of state agencies and various funding options at the state and federal level for implementing a rail option.<br><br>- Evaluate the value proposition of proposed project for all stakeholders.<br><br>-Explore the possibility of inviting private concessionaires to participate in such a project |

| | Barriers | Strategies |
|---|---|---|
| Political & Legislative | -Political support is very much intertwined with funding of the project, given the low traffic volumes and high cost of implementation.<br><br>- The state was not initially willing to join the Southern Rail Commission and Transportation for America to support the Gulf Coast Passenger Rail initiative. | -Develop formal FDOT-led interagency public working group to provide ongoing research into and support of multimodal mobility options in North Florida<br><br>- Integrate more consideration of passenger rail into FDOT's next update of state Rail System Plan<br><br>- Revisit the possibility of joining the Southern Rail Commission to support the expansion of rail networks across North Florida |

Expert Panel Survey

The Expert Panel shared several insights in a limited amount of time. To delve a bit deeper into what they shared, we followed up with a survey specifically designed for the Expert Panel. The full survey can be found in Appendix D. Each question expanded on the barriers or potential strategies for inter-regional transit in North Florida.

***Survey Methodology***

Shortly after the Expert Panel meeting, each participant or representative from an invited agency received an email with the survey link and meeting minutes. The e-mail was sent on August 31st and followed-up with a reminder email on September 8th. Further, respondents were also contacted by telephone between September 15 – 18. Out of 13 members from the expert panel meeting, eight responded to the questionnaire. This input was augmented by an additional respondent who did not attend the Expert Panel meeting.

The survey asked each respondent to rank the significance of these identified potential barriers and strategies from high to low (3 = high and 1 = low). Each respondent could also share other barriers and strategies that were not discussed at the MMNF Expert Panel Meeting.

***Survey Results***

Barriers to Expanding Multimodal Mobility Options (in order of highest significance):

- Funding and the various resources available (2.88 of 3)
- Cost of passenger rail (2.78)

- Poor quality of service of rail (2.67)
- Lack of Political Support (2.63)
- Low travel speeds (2.33)
- Level of comfort (2)

Additional factors that were identified as barriers to expansion:

- Lack of regional momentum for rail project
- Location of stations
- Lack of private sector involvement
- Consideration that existing rail tracks are not the only option for new rail corridors

Strategies for Expanding Multimodal Mobility Options (in order of highest significance):

- Continuation of Dialogue (3 for relevance, 2.89 for feasibility)
- Participation from private concessionaires (2.56 for relevance, 2.22 feasibility)
- Understanding the Value Proposition (2.56 for relevance)
- Connecting a North Florida Passenger Rail to the Sun Coast Connector (2.22 for relevance)

The expert panel survey respondents indicated adding premium intercity bus service was highly feasible, but this option ranked low in relevance. That could be interpreted to mean that although BRT might be easy to implement in terms of physical assets and infrastructure, its relevance as a prioritized solution for addressing the region's future multi-modal mobility needs was perceived as limited.

Additional strategies listed as high in relevance:

- Compete by offering improved comfort, cost and convenience over existing modes
- Offer local public transit connectivity to BRT or rail modes
- Ensure that data collection is at least five years before Covid-19 period

***Summary Findings***

The outreach process for this project was multi-layered, consisting of public and expert engagement. The community survey launched in the initial phase provided an understanding of the public's appetite for broadening travel options along the North Florida corridor. Subsequently, these views were shared with expert panelists during the second phase of the project.

Technical experts were provided with two mediums to share their opinions: An Expert Panel meeting and a survey. During the Expert Panel meeting, the feasibility of multimodal mobility options in North Florida was discussed and barriers and strategies for expansion were identified. Those attending the meeting along with other experts were then asked to rank these barriers and strategies based on relevance and feasibility. Among the barriers identified, cost and funding were ranked as the main concern among the experts, followed by the difficulty of passenger rail service to compete with existing modes in terms of quality. Technical experts acknowledged that overcoming these barriers requires a comprehensive approach, as follows:

Infrastructure & Assets

- Implementing non-rail options, such as a high-end intercity bus, until demand justifies rail
- Determine who has the passenger rights to the existing freight railroad
- Explore the possibility of purchasing the existing CSX/ Rail USA right of way which would allow the state to control development along this corridor
- Examine the benefits of building a new rail line parallel to the I-10 corridor, since the State already owns the existing right-of-way
- Preserving linear right-of-way along the existing track and along collocated facilities including I-10 and US 90

Behavior & Ridership

- Passenger rail viability can be improved if it can compete with other travel modes in terms of travel speed and comfort
- The utility of passenger rail for leisure travel should also be considered

Cost & Funding

- The benefits of a rail project must be weighed against other costs
- Consider the possibility of sourcing grant funding to sustain this project
- Evaluating the role of state agencies and various funding options at the state and federal level for implementing a rail option
- Evaluate the value proposition of proposed project for all stakeholders

- Explore the possibility of inviting private concessionaires to participate in such a project

Political & Legislative

- Develop formal FDOT-led interagency public working group to provide ongoing research into and support of multimodal mobility options in North Florida
- Integrate more consideration of passenger rail into FDOT's next update of state Rail System Plan
- Revisit the possibility of joining the Southern Rail Commission to support the expansion of rail networks across North Florida

## Conclusion & Next Steps

Rail is an important element in any modern-day transportation network. Population growth and the need to ameliorate the ever-increasing impacts of climate change means rail will be an ever increasingly important component to ensuring future mobility. While current population levels and travel demand do not support rail restoration in North Florida *prima facie*, it is imperative to continue to assess state and regional conditions and engender the long-range visioning necessary to anticipate needs, advocate for and develop multi-model transit options.

Expert opinion was key to understanding the nuances of the landscape and how current demographic, economic, infrastructure and political factors translated into barriers to mobility expansion. Insights provided by the community of practice offered long term perspectives for North Florida transportation *vis-à-vis* the wider network, as well as incremental steps to support the development of the sector. When ranking the relevance of various strategies, all experts unanimously agreed that continuous dialogue among transportation agencies was an important step to keep the necessary professional and political focus on initiatives to expand regional multi-mobility options.

The following strategies were developed based on the findings of the study and expert input. Their intent is to provide a path forward for continued analysis of existing and emerging conditions and to chart the next steps necessary to ensure that the consideration of multimodal mobility options in North Florida remains a priority with FDOT and its partners.

1. *Coordination*: Fully engage with experts and practitioners in the field of transportation by establishing mechanisms for ongoing coordination, such as participation in the Southern Rail Commission and/or creating a State-level inter-agency working group to provide ongoing research and advocacy of multimodal mobility options in North Florida.
2. *Ridership Analysis*: Conduct a comprehensive baseline assessment of potential passenger rail ridership and establish an ongoing data collection process of demographic and socioeconomic data within the region to evaluate travel behavior and potential ridership.
3. *Fiscal Impact and Feasibility Analysis:* Conduct regional cost analyses to more fully understand and monitor the evolving benefits and costs of various mobility options including inter-regional bus rapid transit (BRT) and passenger rail.
4. *Multi-Modal Options*: Evaluate the feasibility and timeline for implementing interim, non-rail mobility solutions, such as high-end intercity bus service until travel demand more fully justifies investments in passenger rail infrastructure.
5. *Resource Assignment*: Develop polices to identify and preserve existing and planned linear rights-of-way to accommodate the expansion of multi-mobility infrastructure, in alignment with FDOT's Strategic Intermodal System Plan

6. *Funding*: Explore the feasibility of public private partnerships (P3s) and other creative planning, financing and operating arrangements, such as private concession-based services, to implement mobility options.
7. *Research*: Continue a broad-based research agenda in coordination with the State University System that includes a focus on multi-mobility in the North Florida region.

## References

Accessibility Observatory at the University of Minnesota. (2019). *2018 Auto Accessibility Report: Florida.* https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/fto/accessibility/2018auto.pdf

Accessibility Observatory at the University of Minnesota. (2019). *2018 Transit Accessibility Report: Florida*. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/fto/accessibility/2018transit.pdf

American Public Transportation Association. (n.d.). *My Economic Impact Tool How to Use It*. Retrieved August 10, 2020, from https://www.apta.com/wp-content/uploads/Resources/resources/APTA-My-Economic-Impact-Tool-How-to-Use-It.pdf

Amtrak. (2015). *Report for the Southern Rail Commission on Potential Gulf Coast Service Restoration Options* (pp. 1-43)

Congressional Research Service, & Goldman, B. (2019). *Improving Intercity Passenger Rail Service in the United States* (pp. 1-29)

Florida Department of Transportation. (n.d.). *FDOT Making Tracks: A Primer for Implementing Transit Fixed Guideway Projects* (pp. 1-9)

Florida Department of Transportation. (2016). *FDOT Transit Concept and Alternatives Review (TCAR) Guidance* (pp. 1-66)

Florida Department of Transportation. (2016). *FDOT Strategic Intermodal System Policy Plan*.

Florida Department of Transportation, & Freight and Multimodal Operations Office. (2018). *Florida Rail System Plan- 2018 Update* (pp. 1-140).

Goldman, B. (2019). *Improving Intercity Passenger Rail Service in the United States* (CRS Report No. R45783). Congressional Research Service.

HDR Inc. (2016). *HDR Report on Operations Modeling Analysis for Implementing Passenger Rail Service on CSX Lines in the Gulf Coast Corridor*

HNTB Corporation. (2018). *Gulf Coast Passenger Service Implementation Study and Cost Estimate Prepared for Florida Department of Transportation* (pp. 1-47)

The Gulf Coast Working Group. (2017). *Gulf Coast Working Group Report to Congress Prepared for: Committee on Commerce, Science and Transportation of the Senate and Committee*

*on Transportation and Infrastructure of the House of Representatives* (Final Report ed., pp. 1-38)

Rockport Analytics. (2019). Picking up the Pace: Florida's Tourism Performance Jumps into a Higher Gear. Retrieved from https://www.visitflorida.org/media/30679/florida-visitor-economic-impact-study.pdf

Southern Rail Commission. (2019). *Reviving Passenger Rail Along America's Gulf Coast* (pp. 1-12, Issue brief). Louisiana.

U.S. Census Bureau (2019). *Commuting Patterns, 2017 American Community Survey 5- year estimates.* https://data.census.gov/cedsci/

U.S. Census Bureau (2020). *County Business Patterns, 2014-2018 American Community Survey 5- year estimates.* https://data.census.gov/cedsci/

Zhang, Y. (2018). *Restoration of Gulf Coast Passenger Rail Service Economic Impact on Mississippi, Alabama, and Louisiana* (pp. 1-73)

# Appendix A: User Preference Survey Questionnaire

**Introduction**

Florida State University is conducting research for the Florida Department of Transportation. The topic of the study is multi-mobility in North Florida. Multi-mobility covers getting around by your personal car or truck, but it also encompasses other types of vehicles, like a bus, train, or even by bicycle, as well as simply walking. To better

understand the options and desires of people living in or travelling through North Florida, we have designed this brief survey. Completing the survey should only take a few minutes of your time but will help us better plan for our future transportation needs.

**Participation**

Your participation in this survey is voluntary. You may refuse to take part in the research or exit the survey at any time. You are free to decline to answer any question. Your answers will remain anonymous and will be kept confidential. By participating in this survey and submitting it, you are consenting to participate in this study and for your responses to be used in our analysis.

If you have in any further questions about this research project, the survey, or how the survey will be used as part of this study, please do not hesitate to contact FSU's Planner-in-Residence Dennis Smith at djsmith3@fsu.edu.

**Questionnaire**

1. How frequently do you travel to a destination outside of your city in Florida or in a surrounding state?

- Never
- Seldom (around once a season)
- Somewhat Frequently (around once month)
- Often (around once a week)
- Frequently (more than once a week)

2. If you have traveled to destinations outside of your city in Florida or in a surrounding state in the past year, what modes of transportation have you taken? Check all that apply.

- Personal vehicle ____
- Bicycle ____
- Uber/Lyft ____
- Cab ____
- Rideshare/carpool ____
- Bus ____

- Train ____
- Air ____

3. What barriers exist for you to use a bus (Like Greyhound or Red Bus) for intercity trips (trips between cities)? Check all that apply.

- There is no service available
- I am unaware of the routes or schedule
- The bus stop/schedule is inconvenient
- The bus fare is too expensive
- I have safety concerns
- Parking at the bus station is limited or too expensive
- Connections to other travel modes is inconvenient
- There are no barriers for me to use a bus

4. What barriers exist for you to use a train for intercity trips (trips between cities)? Check all that apply

- There is no service available
- I am unaware of the routes or schedule
- The bus stop/schedule is inconvenient
- The bus fare is too expensive
- I have safety concerns
- Parking at the bus station is limited or too expensive
- Connections to other travel modes is inconvenient
- There are no barriers for me to use a bus

5. If you could take a train to travel to cities between Jacksonville and Pensacola, would you consider traveling that way?

- Yes
- No
- It depends on the quality of the train service

6. If you could take bus rapid transit to travel to cities between Jacksonville and Pensacola, would you consider traveling that way?

- Yes

- No
- It depends on the quality of the bus service

7. If you were to travel outside of your city limits to another city, please rank the following transportation options for which mode you would most want to use (1 being your most preferred mode).

- Personal vehicle ____
- Bicycle ____
- Uber/Lyft ____
- Cab ____
- Rideshare/carpool ____
- Bus ____
- Train ____
- Air ____

8. If you were to travel outside of your city limits to another city by bus or train, what reasons would you most likely have for the trip? Check all that apply.

- For work/business trip
- To visit family/friends
- For medical/professional services
- For entertainment/vacation
- Other

9. If you could travel outside of your city limits to another city easily by bus or train in the southeast region, where would you be most likely to go? List your top choice

My choice would be _____

To help us better understand these responses, we would like to ask you a few demographic questions.

10. Gender
    a. Female
    b. Male
    c. Other

11. What is your age?
    a. Less than 20 years old
    b. 20-34 years old
    c. 35-49 years old
    d. 50-64 years old
    e. 65+ years old

12. What is your race or ethnicity? (select all that apply)
    a. White
    b. Hispanic, Latino, or Spanish
    c. Black or African American
    d. Native American or Alaska Native
    e. Asian or Pacific Islander
    f. Other (please specify) _____

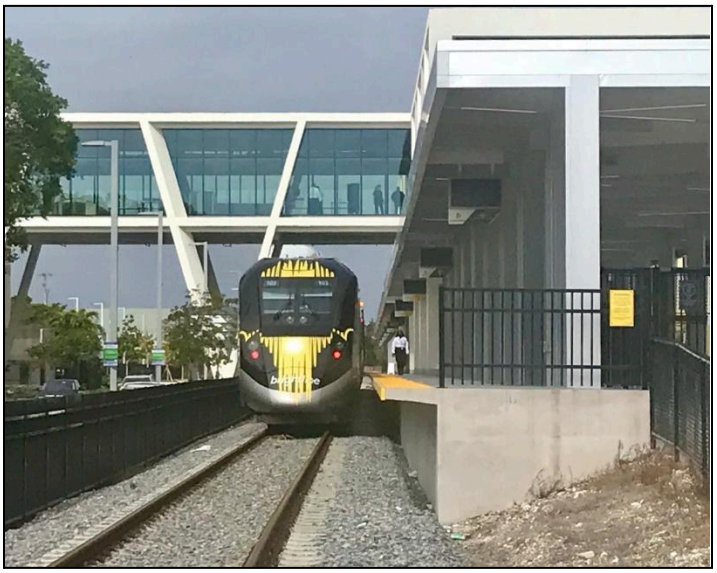
13. What is your annual household income?
    a. Less than $25,000
    b. $25,000 - $50,000
    c. $50,000 - $75,000
    d. $75,000 - $100,000
    e. $100,000 - $150,000
    f. More than $150,000

14. What is the highest degree or level of school you have completed?
    a. Less than a high school diploma
    b. High school diploma or GED
    c. Some College, but no degree
    d. Associate Degree (ex. AA, AS)
    e. Bachelor's Degree (ex. BA, BBA, and BS)
    f. Graduate degree or higher

**15.** What is your ZIP code? _____

## High Speed Rail

*Figure 8. High Speed Rail*



High speed trains travel at speeds greater than 124 mph. They operate several times a day, sometimes as frequently as every hour or half-hour. In the United States, Amtrak's Acela service (Washington DC to Boston, MA) and Brightline between Miami and soon-to-be Orlando are two examples of high-speed train service. High speed trains make limited stops, often just four to five along a route.

## Regional Rail

*Figure 9. Region Rail*

Regional rail service connects adjoining regions, allowing people to travel between regions such as San Francisco, CA and Los Angeles, CA. The service often operates along the same route as a high-speed train. Regional rail service is slower than a high-speed train, but can operate faster than 100 mph, depending on the location and distance between stations. Regional rail can

(picture used with permission from the Massachusetts Office of Travel and Tourism)

support more stops than high speed trains.  A regional rail train ticket is often cheaper than a high-speed train ticket. Amtrak's Northeast Regional Service is an example of regional rail service.

### Commuter Rail

*Figure 10. Commuter Rail*


Commuter rail is a service designed to travel between cities in a metropolitan region. Its range is limited to a single region (such as Northeast Florida). The core rider is someone traveling to/from their white-collar job. Commuter trains often travel up to speeds of 79 mph. SunRail in Central Florida and Tri-Rail in South Florida are the two commuter rail lines in Florida.

### Intercity Bus Service

*Figure 11. Intercity Bus Service*

Intercity Bus Service connects cities, via buses travelling on highways. These buses stop in downtowns along a particular route. Intercity bus service operates at speeds dictated by a highway's expected travel time. Private companies often operate intercity bus service. Red Coach, Megabus, and Flixbus are examples of intercity bus service.


(picture courtesy of Sandman Design, used with permission under Creative Commons license)

## Bus Rapid Transit

*Figure 12. Bus Rapid Transit*


(picture used with permission from Regional Transportation District, Denver)

Bus Rapid Transit is fast, frequent bus service that can mimic rail-type transit. Bus Rapid Transit routes often have routes or lines between two miles and more than 40 miles. The buses have their own lanes or use express lanes to travel at speeds faster than local bus service. Stations are similar to train stations, with all-door boarding and payment collection systems not on the bus. Public transit agencies most commonly operate bus rapid transit. Flatiron  Flyer between downtown Denver and Boulder, CO is an example of intercity bus rapid transit.

# Appendix B: Minutes of the Expert Panel Meeting

**Multi-modal Mobility North Florida**
**Expert Panel Meeting**
**Virtual Meeting**
**August 26,2020**
**2:30-4:00pm ET**

**Attendees:**
Andrea Rosser, Star Metro Tallahassee
Bob O'Malley, Railroad Consultants, formerly with CSX and Brightline
Tonya Ellis, Escambia County Area Transit
T. Michael Hines, Independent Consultant
Sean Lewis, Department of Economic Opportunity – Rural Economic Development Initiative
James Knight, FDOT District 2
David Young, City of Lake City- Growth Management
Jeff Sheffield, North Florida Transportation Planning Organization
Greg Slay, Capital Region Transportation Planning Agency
Kwentin Eastberg, Apalachee Regional Planning Council
Marybeth Washnock, Emerald Coast Regional Council (planning organizations for 3 MPOs)
Greg Burke, Capital Region Transportation Planning Agency
Suzanne Lex, Capital Region Transportation Planning Agency
Gerard O'Rourke, FDOT, Administrator for Freight, Logistics, and Passenger Operations
Starsky Harrell, FDOT- District 3
Holly Cohen, FDOT, Administrator for Freight and Rail Planning
Gabrielle Matthews, FDOT- Transit Office
Rickey Fitzgerald, FDOT – Manager for Freight and Multimodal Operations Manager
Elizabeth Whitton, Project Team, FSU Department of Urban and Regional Planning
Dennis Smith, Principal Investigator and Planner in Residence, FSU Department of Urban and Regional Planning
Stephen Bezold, Project Team, FSU Department of Urban and Regional Planning
Karina Amalbert, Project Team, FSU Department of Urban and Regional Planning
Paula Perez, Project Team, FSU Department of Urban and Regional Planning

Meeting Convened at 2:30pm Eastern Daylight Time

1. **Introduction**

Dennis Smith, the Principal Investigator, welcomed everyone to this virtual meeting and introduced the Expert Panel to the Multi-Mobility in North Florida research study. Mr. Gerard O'Rourke, representing FDOT, provided introductory remarks and shared the department's interest and thoughts. Each person on the project team, from FDOT, and the Expert Panel introduced themselves.

2. **Status Update and Key Findings**

Mr. Dennis Smith and Ms. Elizabeth Whitton provided a status update on the study's deliverables and key findings. Overall, the study has five tasks, each with 1-2 deliverables: Literature Review, Travel Demand and Economic Impact Analysis, Safety Analysis, and Outreach to Experts as well as Local Communities, and a Final Report:

Literature Review:

- In recent years, many organizations and agencies released analysis regarding multi-mobility options in North Florida and along the Gulf Coast. The study team reviewed these studies. They revealed the possible routes. Two were identified to yield the optimal outcomes in terms of cost and ridership:
    - Alternative A: extending a portion of the active City of New Orleans rail route from New Orleans to Orlando, in addition to a single daily state-supported train from New Orleans to Mobile
    - Alternative A1: Alternative A, without the daily state-supported train

Travel Demand and Economic Impact:

- We used the Florida Statewide Transportation Model to forecast east-west travel demand in North Florida.
- We examined available quantitative and qualitative data to determine a high-level economic impact for implementing passenger rail in North Florida.
- Finding: Current ridership levels are too low for passenger rail to be financially feasible in the North Florida Corridor, but significant socio-economic benefits can be attained with the implementation of a rail option
    - The lack of transportation options has significant socio-economic implications, including but not limited to:

- Constraints to labor mobility
- Reduced consumer options
- Underdevelopment of key industries (tourism)
- Insular growth of non-urbanized areas along the corridor

Safety Analysis:

- Intercity Bus:
  - Since 2010, there were no recorded bus crashes resulting in injury or death along the Pensacola-Jacksonville east-west corridor.
  - No specific state or federal regulations governing intercity bus service.
  - Currently, there is limited service via Greyhound, and requires a transfer in Orlando.
- Passenger Rail:
  - Existing rail line is for freight
  - 20 incidents since 2010; 10 with serious injury or death
  - Lacks Positive Train Control
- Positive Train Control system will need to be factored into any project where passenger rail was an option.
- Current costs are unknown

Online Survey:

- To date, 355 responses
- Results indicate that respondents had the highest preference for private vehicles for inter-city travel along the North Florida corridor, followed by passenger rail and then air transport. Additionally, 74% of the respondents indicated that they would consider travel between Pensacola and Jacksonville by train, and an additional 20% would choose this option based on the quality of the service.

**Discussion Topic #1: Impact of Covid-19 on Interregional Multimodal Transportation**

- There was a common consensus on the following issues faced during the Covid-19 epidemic:
  - Several employers have found that efficiencies are gained through telecommuting. However, the benefits accrued varies across communities and the nature of employment in those areas. For instance, telecommuting

worked in urban settings with a high concentration of office workers but was not appropriate for many rural areas with different job types.
    - Transit agencies across the region were being severely affected, with declines ranging from 20% to 50%. These reductions were attributable to people working remotely, increases in unemployment and the closure of schools since March.

- Travel is expected to rebound in the long term, but the strength of the rebound and the duration of the downturn remains uncertain. Various factors will influence the final outcomes.
    - Employee/employer preferences: many employees generally faced burnout from online meetings and a lack of personal interaction. Hence, there will be some interest in returning to an office setting, but possibly with increased flexibility to work from home.
    - Students' safety perceptions: in the short term, the reopening of school may not have a significant impact since persons are more comfortable using private vehicles to minimize personal risk.
    - Economic recovery: the length of time for economic activity to return to previous levels is another factor that will impact employment and the demand for public transit.

- Improvements in on-time performance resulted from lower ridership and less traffic.

- The quality of public participation was enhanced throughout the region since persons could participate without having to be physically present for meetings.

- The importance of bandwidth was emphasized, as service in urban areas were much better than for rural communities. Hence, those from rural areas still needed to go into the office.

- COVID-19 opens the opportunity for a broader discussion on transportation's value to quality of life. It can be more than just of as "the commute to work" in North Florida.

- Currently, we do not understand what the workforce mix will be in the short-term and long-term.

- Will the mix change enough from pre-COVID to make an impact?
- Need to improve our understanding of the order of magnitude of the changes

**Discussion Topic #2: Barriers to the expansion of interregional multi-mobility options in North Florida**

Today, the personal vehicle is the dominant mode for traveling east and west in North Florida. This discussion topic examined the existing and potential barriers to expanding mobility options.

- **Travel Patterns & Consumer Preferences**
  - Population density is too low to support passenger rail which requires large passenger volumes to be economically feasible.
  - Changing travel patterns requires not considering just peak travel times, but also the increasing dispersion of traveling times.
    - Thus, passenger volumes during peak periods may not be realizable, and it could be difficult to justify the level of investment required to implement mobility options.
  - The auto-centric culture is another factor which may hinder persons' willingness to use passenger rail. Increasing passenger rail's viability will depend on its ability to compete with the personal vehicle in terms of travel speed and comfort.
  - The utility of passenger rail for leisure travel should also be considered, based on experiences with Amtrak's Gulf Coast Tour.

- **Cost and Funding**
  - We need to determine who has the passenger rights to the existing freight railroad. It is likely that CSX retained those rights during the sale of the line to Rail USA.
  - It is expected that the cost per user for passenger rail will be prohibitive based purely on market prices.

- Source of funding is another significant concern, considering the high financing cost that will be required to implement passenger rail.
- These benefits of the project must be weighed against other costs and must consider that grant funding may be needed to sustain this project.
- Rail USA has identified $30-$40 billion in equipment upgrades to keep the existing line in compliance with safety regulations and on-time performance targets

- **Political Will**
  - Political support is very much intertwined with funding of the project, given the low traffic volumes and high cost of implementation.
  - The state was not initially willing to join the Southern Rail Commission and Transportation for America to support the Gulf Coast Passenger Rail initiative. However, the purchase of the CSX/Rail USA lines would give the State of Florida the right of way and allow the state to control development along this corridor.

**Discussion Topic #3: Strategies for enhancing interregional multi-mobility options in North Florida**

**The last discussion topic examined the strategies for enhancing interregional multi-mobility options. Specifically, the group discussion leaned for readiness for various options and the tangible and intangible actions necessary to implement these options.**

- **Non-rail Options**
  - Before implementing passenger rail, a high-end intercity bus option should be made available. In addition, a concerted effort should be made to develop low-cost options to show that demand will increase further down the road.
  - A non-rail option can be the first few steps towards changing individual travel behaviors

- **Route Options**
  - The possibility of two other route options were discussed:
    - Linking the prospective North Florida Passenger Rail with the Suncoast Connector Toll Road. This option would provide

redundancy in the transportation network and would facilitate emergency evacuations during major storms experienced in South Florida.
    - Linking the Pensacola-Jacksonville route to Houston would provide greater options for intercity travel for persons outside of Florida

- **Infrastructure Options**
    - The following options were mentioned for infrastructure expansions:
        - The State of Florida's purchase of existing CSX/Rail USA tracks to gain access to right-of-way
        - Constructing the prospective passenger rail along the I-10 corridor since the state already has right-of-way access
            - We need to think in terms of linear right of way, not just existing rail lines
            - New rail is required anyway, whether or not it is in the existing rail corridor or another linear ROW (I-10)

- **Role of State Agency & Funding Options**
    - Differing opinions were shared on the role of state agencies in leading this process. Some panellists felt that the project should be led by the state agency. Others felt the main role of the state was to protect the right-of-way, while other aspects of the project should be private sector driven. This included the possibility of funding the rail project through private concessionaires.
    - One of the next step strategies can be: improving our understanding of the value proposition to private partners

- **Communications**

    Panel members generally agreed that discussions should be ongoing to continue the momentum and interest in expanding multi-mobility options for North Florida. In addition, workforce boards and Visit Florida should be invited to participate in similar discussions that address mobility options, since they can provide insights in travel demand dynamics and can garner funding and legislative backing.

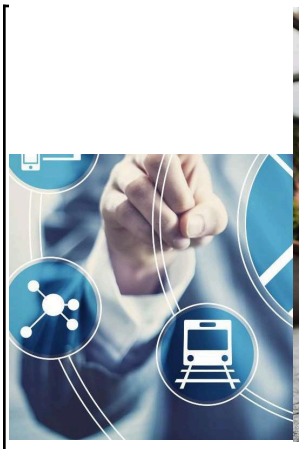
- **Other issues**
    - The role of traffic management centers must be further explored, in order to adequately deal with evolving challenges.
    - Partnerships and leadership must also play a key role in managing future projects of such a magnitude.
    - Further investigations need to be done to: (i) analyse the relationship between the preference of intercity transportation mode and income levels; and (ii) explore the possible negative consequences for rural towns if passenger rail was implemented along the 1-10.

3. **Closing and Next Steps**

   Mr. Smith closed the meeting and thanked each member for participating. Participants should expect to receive the summary of the meeting notes and a follow-up survey instrument. This survey will require expert panellists to rank and expand on the various options discussed at this meeting.

Meeting Ended at 4:03pm

# Appendix C: Expert Panel Meeting Presentation




## EXPERT PANEL MEETING

MULTIMODAL MOBILITY IN NORTH FLORIDA

PROJECT AUGUST 26, 2020

DENNIS J. SMITH, AICP – PRINCIPAL INVESTIGATOR

1

## AGENDA

| | Agenda Item | Time Allotment |
|---|---|---|
| 1 | Welcome & Project Overview | 5 min |
| 2 | Introductions | 10 min |
| 3 | Study Updates & Preliminary Findings | 10 min |
| 4 | Discussion Topic #1: The Impact of Covid-19 on inter-regional multi-modal options in North Florida | 20 min |
| 5 | Discussion Topic #2: Barriers to the expansion of interregional multi-mobility options in North Florida | 20 min |
| 6 | Discussion Topic #3: Strategies for enhancing interregional multi- mobility options in North Florida | 20 min |

## PRELIMINARY FINDINGS: LITERATURE REVIEW

**Deliverables**

Review of reports on Gulf Coast passenger rail restoration.

**Key Findings**

- The implementation of passenger rail has the potential to yield considerable benefits

- -Two alternatives were identified:

- Alternative A: Rail route from New Orleans to Orlando plus a single daily route from New Orleans to Mobile

  Alternative A1:Alternative A without the daily state-supported train

Fig. 1: Proposed Gulf Coast Passenger Rail Alternatives Map


Source: HDR Modelling Operations Analysis for Implementing Passenger Rails Service on CSX Lines in the Gulf Coast Corridor (2016)

3

## PRELIMINARY FINDINGS: TRAVEL DEMAND & ECONOMIC IMPACT

**Deliverables**

- Use of Florida State-wide Transportation Model to forecast travel demand for the Pensacola-Jacksonville corridor
- Determine the economic impact of implementing passenger rail as an alternate transportation option along this corridor

**Key Findings**

- Current ridership volumes are too low to be financially feasible
- Failure to provide alternate transportation options carries socio-economic implications, including:
  - constraints to labor mobility,
  - reduced consumer options,
  - underdevelopment of key industries (tourism),
  - insular growth of non-urbanized areas along the corridor

## PRELIMINARY FINDINGS: SAFETY ANALYSIS

**Deliverables**

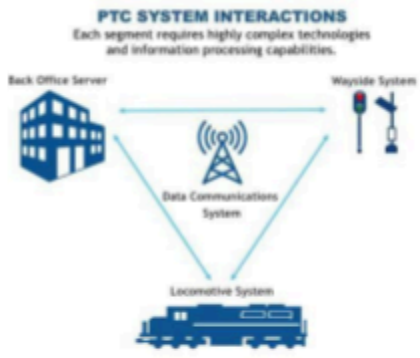
- Analysis of relevant safety policies and conditions along the East- West corridor

**Key Findings**

- Intercity Bus: Limited Regulation & Limited Service
  - No through service
  - No specific state or federal statute governing intercity bus service
  - No crashes resulting in injuries or death
- Florida Gulf and Atlantic Railroad: Class III freight
  - The existing railroad equipment is designed to support freight services, not people.
  - Lack of Positive Train Control
  - 20 incidents since 2010; 10 with Serious Injury or Death

5

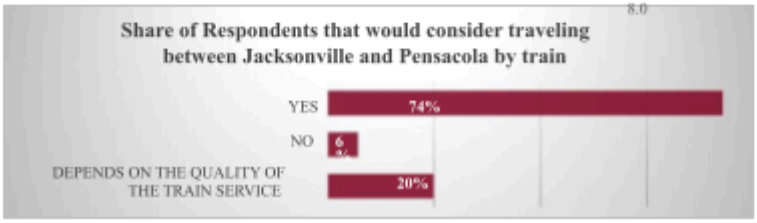
## PRELIMINARY FINDINGS: SAFETY ANALYSIS- POSITIVE TRAIN CONTROL




- **Every Class 1 railroad and entity that provides regularly scheduled intercity and commuter rail service must have a FRA-certified PTC system by December 31, 2020**
- **Hardware and software-based communications to prevent train-to-train collisions, derailments, and other leading causes of rail incidents**
- **Cost: $14-$22 billion nationwide; Unknown costs for FGAR Corridor**

6

## PRELIMINARY FINDINGS: ONLINE SURVEY RESULTS

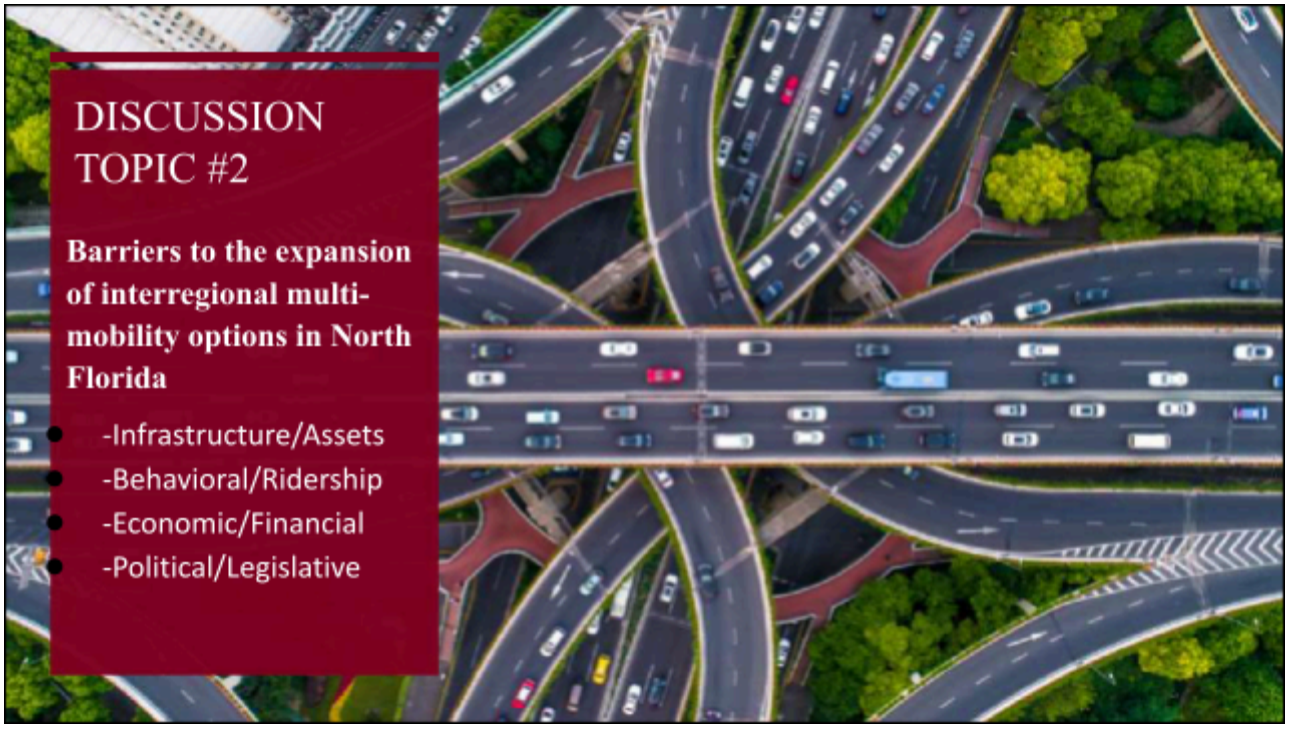

- 353 Recorded Responses
- Predominantly white (86%), graduate degree or higher (56%), travel outside their city once a month (54%), travel by personal vehicle (47%)
- Primary reasons for travel:
  - visiting friends/family (34%)
  - entertainment/vacation (36%)
- Male (51%), Female (49%),

  20-34 years old (34%),
  35-49 years old (26%),
  50-64 years old (25%)

- Occupations included primarily professionals, academics, and retirees

7


8


DISCUSSION TOPIC #2
Barriers to the expansion of interregional multi-mobility options in North Florida
-Infrastructure/Assets
-Behavioral/Ridership
-Economic/Financial
-Political/Legislative

9


DISCUSSION TOPIC #3
Strategies for enhancing interregional multi-mobility options in North Florida
-Infrastructure/Assets
-Behavioral/Ridership
-Economic/Financial
-Political/Legislative

10

# Appendix D: Expert Panel Survey Questionnaire

On August 26th, a group of expert panellists met to discuss the future of multi-mobility options for North Florida. While a list of barriers and strategies have been identified from this meeting, we would like your input in order to comprehensively rank these items.

**Barriers to Expansion**

1. Listed below are barriers to expansion of interregional multi-mobility options in North Florida. Please rank their level of significance and list additional barriers in the space provided.

| | Low Significance | Medium Significance | High Significance |
|---|---|---|---|
| Low population density | ○ | ○ | ○ |
| Dispersed travel patterns | ○ | ○ | ○ |
| Auto-centric culture | ○ | ○ | ○ |
| Prohibitive cost for consumers | ○ | ○ | ○ |
| High cost of implementation | ○ | ○ | ○ |
| Source of funding | ○ | ○ | ○ |
| Project cost would not justify the benefits | ○ | ○ | ○ |
| Low travel speeds relative to alternative modes | ○ | ○ | ○ |
| Low comfort level comparted to alternative modes | ○ | ○ | ○ |

| | | | |
|---|---|---|---|
| Poor quality of service | ○ | ○ | ○ |
| Lack of political support | ○ | ○ | ○ |

2.

| | Low Significance | Medium Significance | High Significance |
|---|---|---|---|
| Factor 1 | | | |
| | ○ | ○ | ○ |
| Factor 2 | | | |
| | ○ | ○ | ○ |
| Factor 3 | | | |
| | ○ | ○ | ○ |

Please list additional factors.

**Strategies for Enhancing Multi-mobility Options**

3. Below is a list of strategies identified to enhance multi-mobility options in North Florida. Please rank in terms of **relevance** and **feasibility. Relevance** refers to the importance of the strategy for expanding multi-mobility options in North Florida. **Feasibility** refers to the ease of implementing the strategy.

| | Low Relevance | Medium Relevance | High Relevance | Low Feasibility | Medium Feasibility | High Feasibility |
|---|---|---|---|---|---|---|
| Purchase of CSX/ Rail USA tracks by State of Florida | ○ | ○ | ○ | ○ | ○ | ○ |
| Rail Construction along 1-10 | ○ | ○ | ○ | ○ | ○ | ○ |
| Provide inter-city high end bus services along the North Florida corridor to establish demand | ○ | ○ | ○ | ○ | ○ | ○ |
| Provide non-rail transit options along the North Florida corridor to establish demand | ○ | ○ | ○ | ○ | ○ | ○ |
| Link the prospective North Florida passenger rail to the Houston-Dallas rail | ○ | ○ | ○ | ○ | ○ | ○ |
| Prospective rail project should be funded by the State | ○ | ○ | ○ | ○ | ○ | ○ |

| | Low Relevance | Medium Relevance | High Relevance | Low Feasibility | Medium Feasibility | High Feasibility |
|---|---|---|---|---|---|---|
| Private concessionaires should be invited to participate in the prospective project | ○ | ○ | ○ | ○ | ○ | ○ |
| Understand the value proposition of the prospective project to partners | ○ | ○ | ○ | ○ | ○ | ○ |
| Continue dialogue on multimodal mobility options for North Florida | ○ | ○ | ○ | ○ | ○ | ○ |

**1.** Please list additional strategies that would enhance interregional multi-mobility options in North Florida.

| | Low Relevance | Medium Relevance | High Relevance | Low Feasibility | Medium Feasibility | High Feasibility |
|---|---|---|---|---|---|---|
| Strategy 1 _____ | ○ | ○ | ○ | ○ | ○ | ○ |
| Strategy 2 _____ | ○ | ○ | ○ | ○ | ○ | ○ |
| Strategy 3 _____ | ○ | ○ | ○ | ○ | ○ | ○ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Strategy 4 | | ○ | ○ | ○ | ○ | ○ | ○ |
| Strategy 5 | | ○ | ○ | ○ | ○ | ○ | ○ |

2. Tell us about you:

To better understand your responses, please tell us a little about yourself.

Name _____

Title _____

Employer _____

Office Zip Code _____

Phone _____

Email _____