Jacksonville Transportation Authority

JTA Skyway Modernization Program

Technical Memorandum I: Systems Plan / Future Needs Assessment

Final Report, April 2017

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Executive Summary

Skyway Modernization Program

The existing Skyway is a 2.5 mile elevated fully automated people mover serving downtown Jacksonville. Originally opened in 1989, the Skyway currently has eight stations serving Downtown Jacksonville and the Southbank area. The system also has an operations and maintenance facility where the vehicles are stored and maintained when not in service. Major destinations include the Convention Center, Bay Street, Hemming Plaza, Rosa Parks transit station and the San Marco area. The Skyway system is operated by the Jacksonville Transportation Authority (JTA).

Relationship to other Technical Memorandums

The Future Needs Assessment – Technical Memorandum No. 1 is meant to lay the foundation for the strategic plan for the future Skyway expansion and modernization. The City of Jacksonville and JTA desire to leverage the existing asset and investment in the Skyway and expand upon it in order to improve livability within Downtown Jacksonville and the surrounding neighborhoods. The other memoranda include an operating plan, technology assessment, capital and financing plan and a summary and evaluation of options and community outreach. A final document will be developed out of these technical memoranda as a Summary Report for use by stakeholders, board members, and the general population at large. The following graphic outlines where we are currently in the process of expanding the Skyway.

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Technology
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      Skyway
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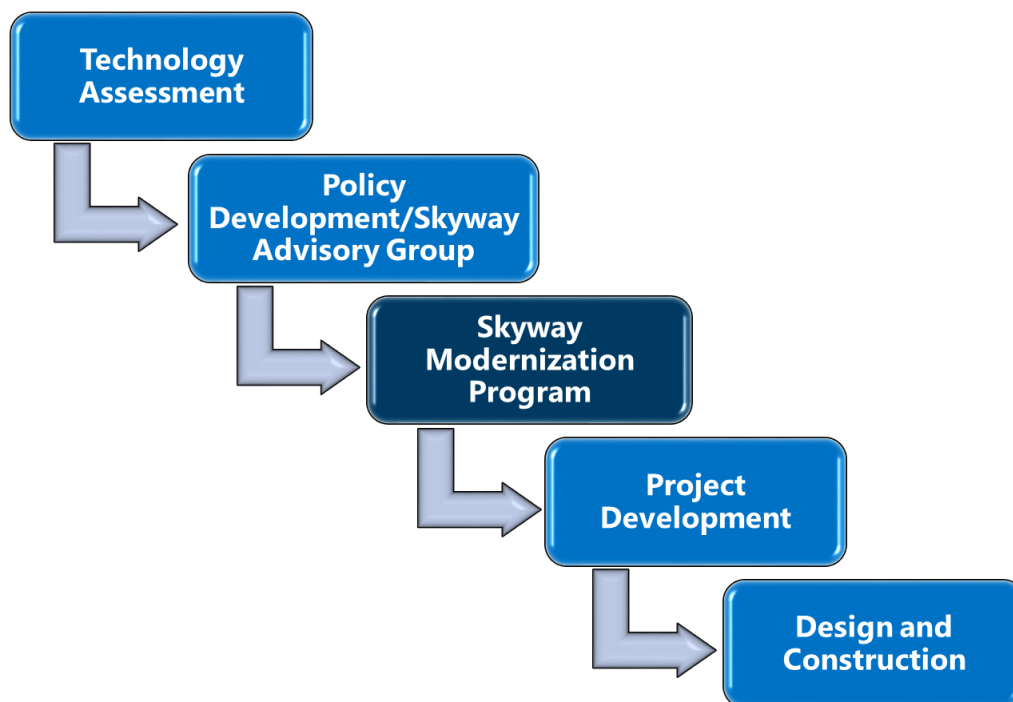
Summary of Key Findings

Based upon the analysis in this report the following key findings are put forward for consideration by JTA, stakeholders, and the community:

» Three expansion areas have been identified:
  o Five Points to Sports and Entertainment Complex (SEC)
  o Rosa Parks to UF Health/VA Medical Complex
  o SEC to San Marco
» Nearly 90,000 people are expected to live within a quarter mile of the existing and proposed Skyway stations by 2040, a 22% increase from 2015
» Over 233,000 workers are expected to be working within the same area in 2040, an increase of nearly 4% from 2015.
» Proposed developments and the potential infill development/redevelopment in the study area will support the increase in population and employment. Several large redevelopment projects are either under way or proposed in the three expansion areas including Brooklyn Station on Riverside Avenue and several nearby multi-family projects, The Shipyards and Metropolitan Park redevelopment sites near the Sports Complex, the District on the Southbank, and the UF Health/VA complex in the Springfield area. Other sites within the downtown core also have potential for adaptive re-use.

This development synergy will support the expanded Skyway system which in turn will foster the transformation of Downtown Jacksonville and surrounding neighborhoods as a strong and vibrant city.

Next Steps

The following is a summary of the next steps needed to begin implementing the findings in this technical memorandum.

» **Five Points to SEC** – This expansion requires additional study as part of project development and can be broken into several phases of implementation. The following tasks are recommended for the Expansion and Modernization of the Skyway.
  o Operational Enhancements – extending Skyway service to adjacent neighborhoods
  o TIGER Grant Application - Brooklyn Extension
  o Transit Concept and Alternatives Review (TCAR) study – Five Points to SEC
  o Bay Street Corridor Development Plan
» **San Marco/The District** – Develop a circulator that expands/extends Skyway service within San Marco serving new developments as well as commuter rail and the medical complex.
  o Develop a direct connection from the SEC to the District on the northeast side of San Marco.

o Extend Skyway from existing San Marco station to the medical complex and commuter rail

o Corridor Preservation – preserve potential skyway corridors for future expansion

» **Springfield** - provide better connectivity to neighborhoods and transit as well as facilitate expansion of the Skyway to Springfield

o Rosa Parks Re-Purpose Plan – improve Rosa Parks station to better serve the needs of the community and integrate with other transit service

o Extend Skyway to serve Springfield neighborhood and the UF Health/VA campus.

o Corridor Preservation – preserve future skyway corridors for expansion

Figure E1: Ultimate Urban Circulator

Introduction

The Future Needs Assessment is the first step in the process of developing the optimal downtown Skyway circulator system that connects existing and emerging downtown developments. The study area includes the evaluation of the East-West corridor from Five Points/Riverside to the Shipyards/Stadium and Southbank to San Marco. The assessment will include identifying travel demand within the study area, developing realistic options for future expansion, and supporting the Downtown Investment Authority (DIA) plans and future development. Also included in this report are identification of potential expansions, potentially phased, and prioritized for the Skyway circulator.

Content

This report is a compilation of findings and recommendations from recent JTA studies of the current and future transportation plans and projects within the downtown core and surrounding activity centers. The report also contains a summary of future conditions which assesses recent and planned developments identified within the study area. This section also includes estimated population and employment growth expected as a result of development activity occurring in the study area.

Building upon the above review of background information, ridership projections and alternative Skyway system operating scenarios were identified for years 2020, 2030, and 2040. Finally, the report contains a summary of key considerations and constraints for each Skyway System expansion alternative identified.

Related Plans and Studies

2015 JTA Route Optimization/Blueprint for Transportation Excellence

In 2014 JTA embarked on an overhaul of its service that had not been significantly modified in 30 years. The resulting effort was called the Route Optimization Initiative (ROI) and was part of the *Blueprint 2020 Transit Master Plan*. The purpose of the ROI was to completely redesign the bus and community shuttle services to make them more appealing to current and potential riders. Key efforts included aligning bus routes with the First Coast Flyer BRT, optimizing transit routes to make them more frequent and direct, restructuring the entire system (new routes, new numbering, and new service), increasing bus hours of operations and making the overall system simpler and easier to use including enhanced access and connectivity to the Skyway.

2015 Skyway Technology Assessment

In 2014, JTA conducted a condition assessment of the existing Skyway operating system (wayside technology, train control), and Skyway infrastructure including the load rating of a typical span. The study also assessed existing technology and the evaluation of alternatives. Concurrently, JTA also performed an independent assessment of the industry by putting out a Request for Industry Feedback (RFIF) on the Skyway system. Industry feedback was desired in order to gauge the feasibility of various options for updating the system – from a simple overhaul of the operating system, a system overhaul plus replacement of the vehicles, or replacement of existing vehicles with new vehicles and allowing for some modification of the existing Skyway infrastructure. Additionally, JTA considered the option of replacing the existing Skyway with streetcar vehicles. Final recommendations of the *Skyway Technology Assessment* report called for additional citizen and stakeholder input. The study team provided a list of recommendations and next steps for JTA to undertake in order to evaluate all options. The current effort being undertaken for the Skyway Modernization Program is a continuation of that effort. Tech Memo #3 provides a more in depth technology assessment and is intended to build upon the findings and explore in greater depth the three alternatives identified in the 2015 Technology Assessment.

2016 Skyway Advisory Group and Skyway Subcommittee

Following the Skyway Technology Assessment, technology research and industry feedback, the JTA Board of Directors established a Skyway Subcommittee and Skyway Advisory Group to assist with the decisions regarding the future of the Skyway.   The Subcommittee and Advisory Group were created to gain essential stakeholder input and develop policy recommendations for the future of the Skyway. Four options were identified for consideration by the Subcommittee and Advisory Group. These included:

- » Overhaul vehicles;
- » Replace vehicles;
- » Decommission and replace Skyway with Streetcar, Trolley, Bus Rapid Transit or Personal Rapid Transit; and,
- » Decommission Skyway, replace with Streetcar, Trolley, Bus Rapid Transit or Personal Rapid Transit and repurpose Skyway infrastructure as an elevated bicycle and pedestrian path.

Based on technical analysis, consensus policy statements and public input; formal recommendations were presented to the JTA Skyway Committee and JTA Board of Directors to consider at the December 2015 Board meeting. The JTA Board of Directors adopted a resolution (Resolution 2015-30) supporting the continued operation of the Automated Skyway Express and development of a Skyway Modernization Program.

Future Conditions

Population and Employment Growth

A summary of population and employment growth through 2040 is summarized in Figures 1-3 on the following pages. As the downtown area continues to recover from the recent recession, and as the demographics change within the region, the area is expected to add additional housing units, more commercial retail and mixed-use developments, as well as a continued healthy employment growth in downtown Jacksonville.

With respect to population growth, some areas are expected to experience more growth than others as redevelopment occurs and residential units are added to downtown (see Figure 1). Areas with highest population growth potential include the Bay Street corridor (Sports Complex, Shipyard, and Old City Hall), Riverside (Brooklyn, Riverside, and five points) and San Marco (Jackson Square, Kings Avenue, and SE Commuter Rail). Significant growth is also expected north of Rosa Parks (Shands and 8th & Main).

Figure 1 is a map showing the 2040 population density around each station. This map highlights how growth is expected to grow throughout existing and potential new stations. Figure 2 shows the population growth around potential new station locations.

Figure 1: Projected 2040 Station Area Population Density
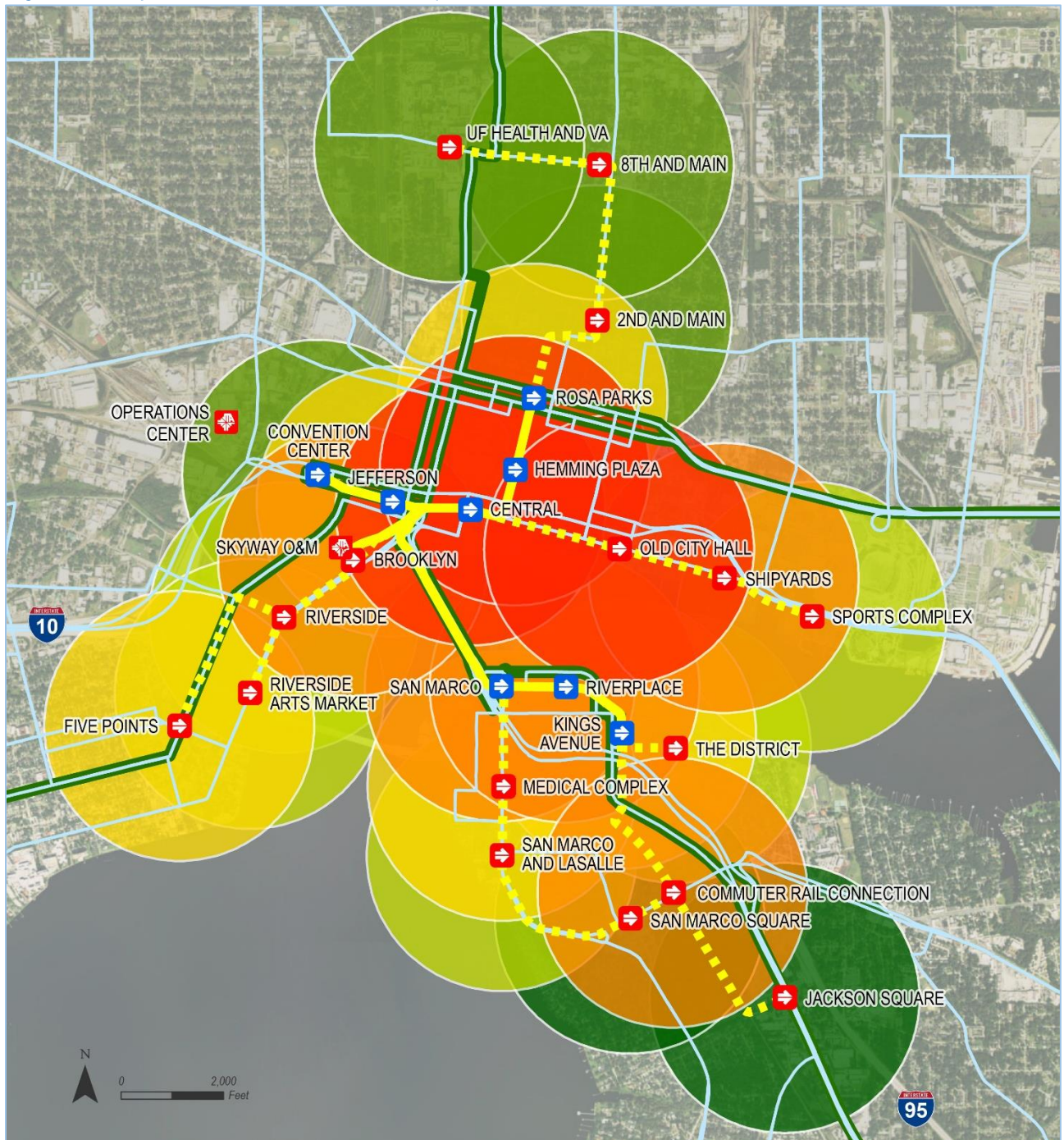
Projected 2040 Station Area Densities
Population + employment per acre for TAZs within 1/2 mile of existing or proposed station

- ○ 0 - 10 people + jobs per acre
- ○ 11 - 21 people + jobs per acre
- ○ 21 - 30 people + jobs per acre
- ○ 31 - 40 people + jobs per acre
- ○ 41 - 50 people + jobs per acre
- ● More than 50 people + jobs per acre

— Existing JTA Skyway Route
⮕ Existing JTA Skyway Stations
•••• Potential Skyway Extensions
⮕ Potential Skyway Stations
— Existing JTA Bus Routes
— BRT Corridors

Source: North Florida TPO adpoted data + recent and proposed developments from DIA and City of Jacksonville

Figure 2: Population Growth
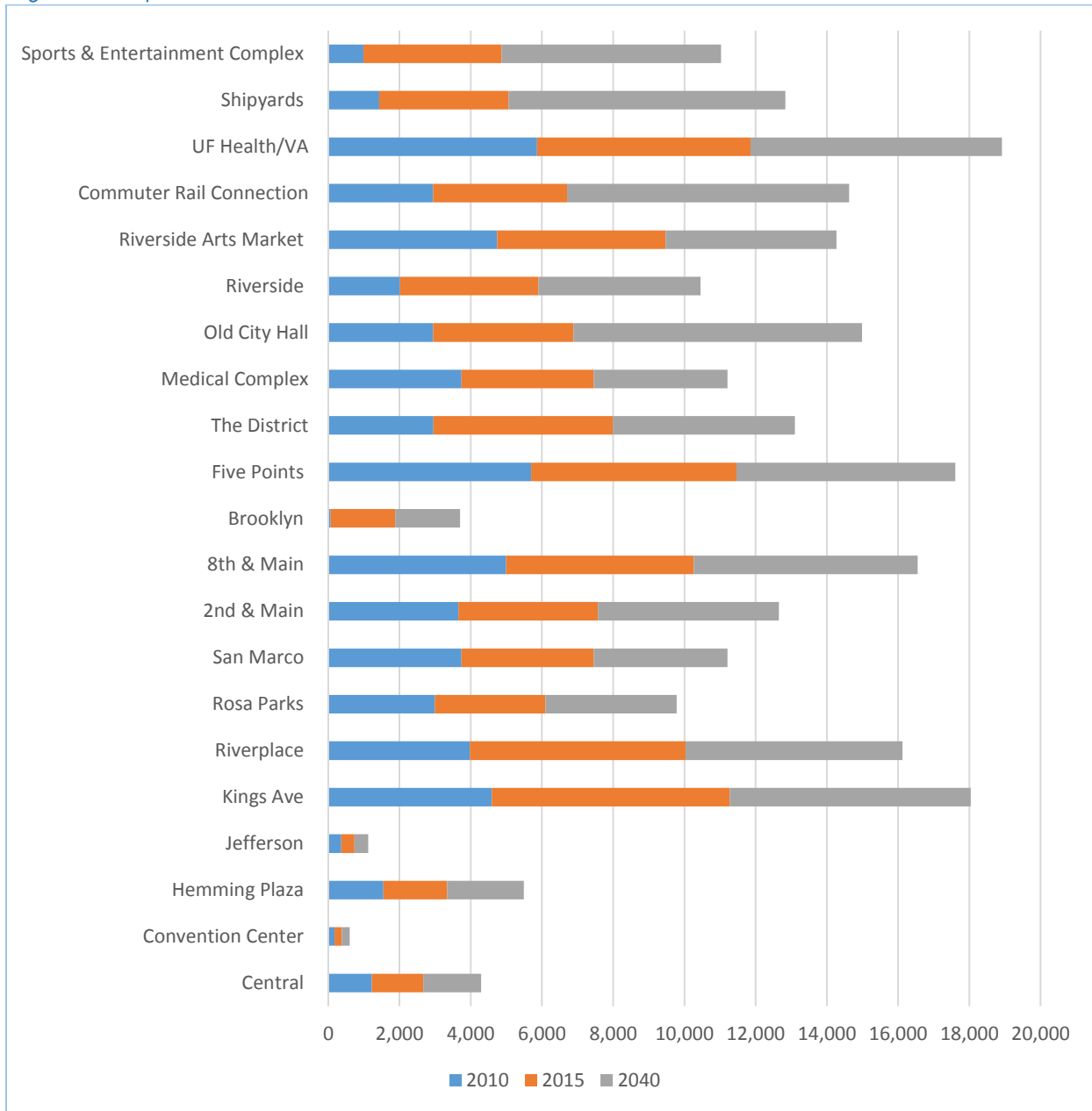
Figure 3 below shows the expected employment growth in the downtown area through 2040. The most concentrated employment growth is expected at San Marco (SE Commuter Rail) and Old City Hall redevelopment. Hemming Plaza and Central are also expected to double employment by 2040.

Figure 3: Employment Growth
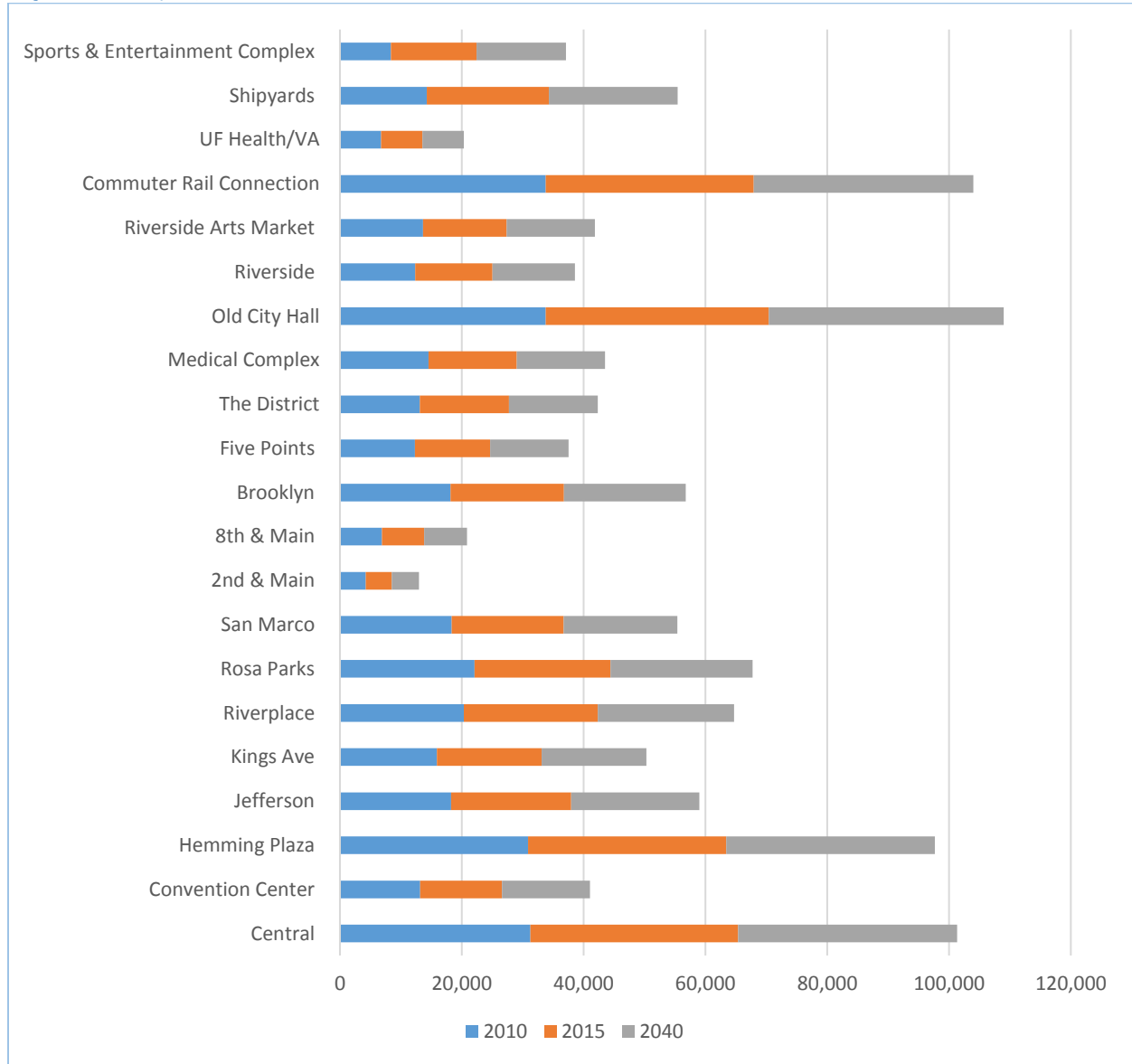
Socio Economic Data

Figure 4 is a map showing the minority population within a quarter-mile of the study area alignments.

Figure 4: Minority Population
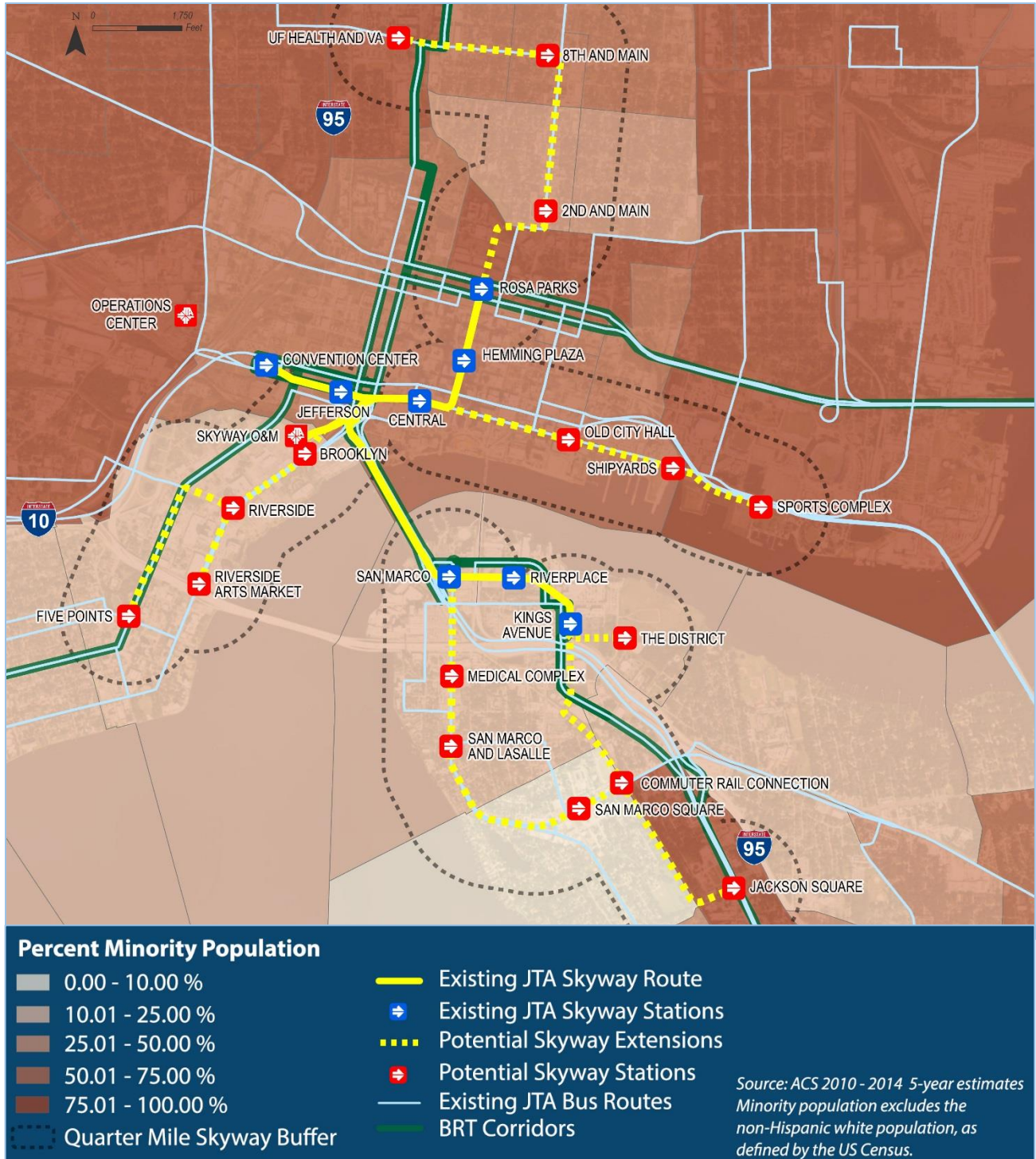
As shown in Figure 4, the highest concentrations of minority population is in the Northbank are from the CBD to Sports Complex Area and north to the UF Health and VA planned hospital campus. The area from the Convention Center to Five Points has a minority population of 10-25%, while the San Marco area has a lower minority population around Riverplace and San Marco with a higher concentration in the area bounded by Kings Avenue and I-95 south of the proposed commuter rail connection.

Figure 5 shows the percent of the population living below the Federal poverty level within the study area. As shown in Figure 5, the greatest concentration of poverty is in the Northbank area from the CBD to the Sports Complex and north of Old City Hall. In the Southbank area, the greatest concentration of poverty is in the Jackson Square area. Other areas within the study area with significant number of households living below the poverty area are in the Brooklyn to Five-Points area.

Planned Transportation Improvements

First Coast Flyer BRT

The First Coast Flyer's system development is in five Project Phases. When complete in 2019, the Flyer will connect to the JTA Regional Transportation Center near downtown. Once complete, the First Coast Flyer will connect customers to 57 miles of destination travel downtown and in the north, southeast, east and southwest areas of Jacksonville (Figure 6). The Flyer system will be developed in five project stages. Flyer service requires minimal use of schedules and features fewer stops, shorter waits, easier transfers and frequent trips. As Northeast Florida expands, the Flyer is expected to be an essential part of a regional transit system.

Phases 1, 2 and 3 (Downtown Enhancements, North Corridor/Green Line and Southeast Corridor/Blue Line) of the project are complete and in operation. The Downtown Enhancements include branded stations, dedicated lanes at Broad, Jefferson, Bay and Forsyth, a queue jump on Forsyth, streetscaping, Transit Signal Priority (TSP), and ticket vending machines. The Green line includes 18 branded stations, 8 CNG buses, a Park-n-Ride lot at Lem Turner/I-295 and TSP. Phase 3 – Southeast Corridor/Blue Line, operates from Rosa Parks to Avenues Walk Park-n-Ride. Phase 3, the Southeast Corridor/Blue line, which began service in December 2016, includes seven branded stations serving Rosa Parks Transit Station, the LaVilla Neighborhood, the Courthouse, the JRTC, Southbank, and Kings Avenue in the study area. Phase 4 – East Corridor/Red Line is in design and will provide service from Downtown, Arlington and east to the Beaches.

Figure 5: Population Living Below Federal Poverty Level

Percent Population with Income Below the Federal Poverty Level

0.00 - 10.00 %	Existing JTA Skyway Route
10.01 - 25.00 %	Existing JTA Skyway Stations
25.01 - 50.00 %	Potential Skyway Extensions
50.01 - 75.00 %	Potential Skyway Stations
75.01 - 100.00 %	Existing JTA Bus Routes
Quarter Mile Skyway Buffer	BRT Corridors

Source: ACS 2010 - 2014 5-year estimates
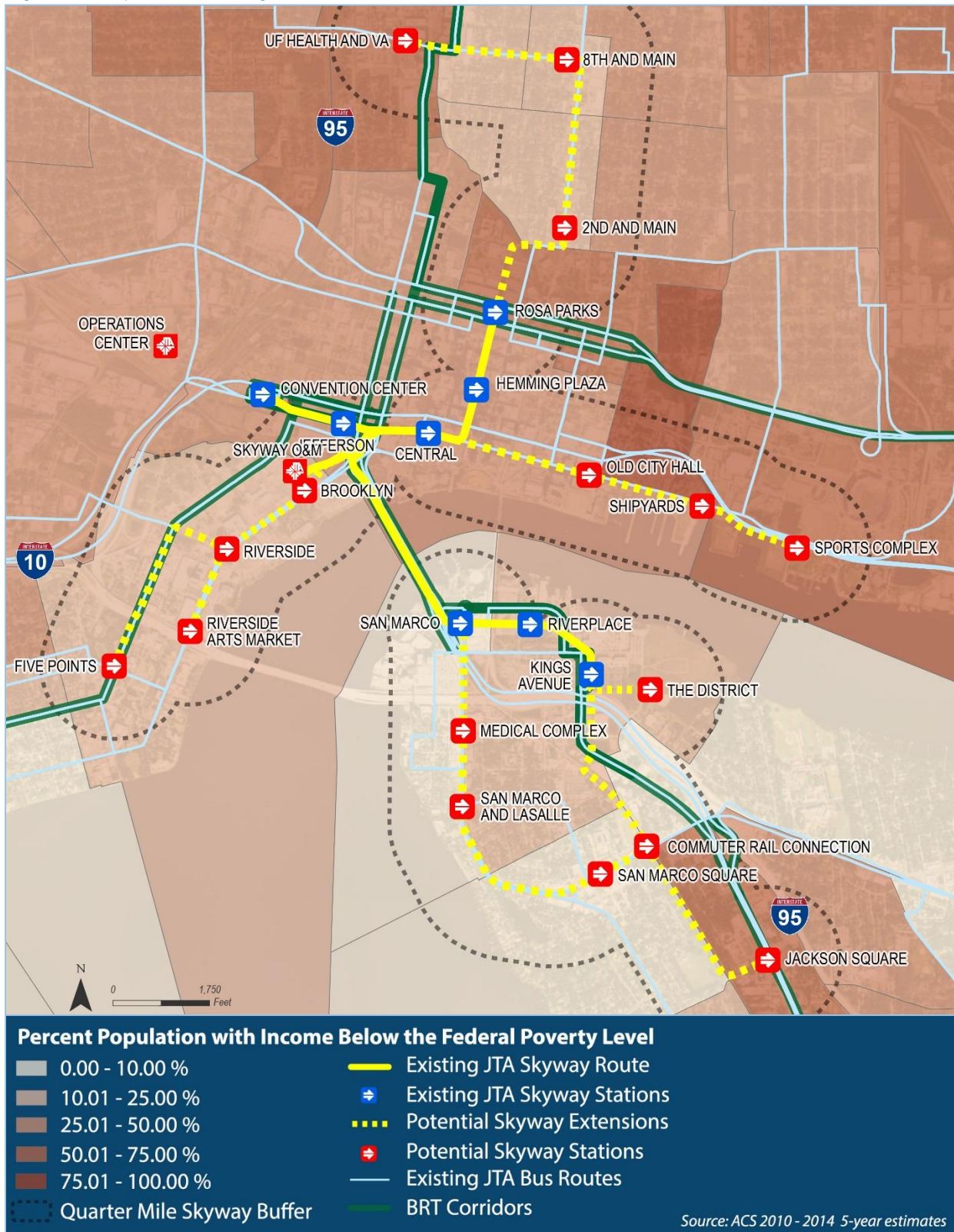
Figure 6: First Coast Flyer
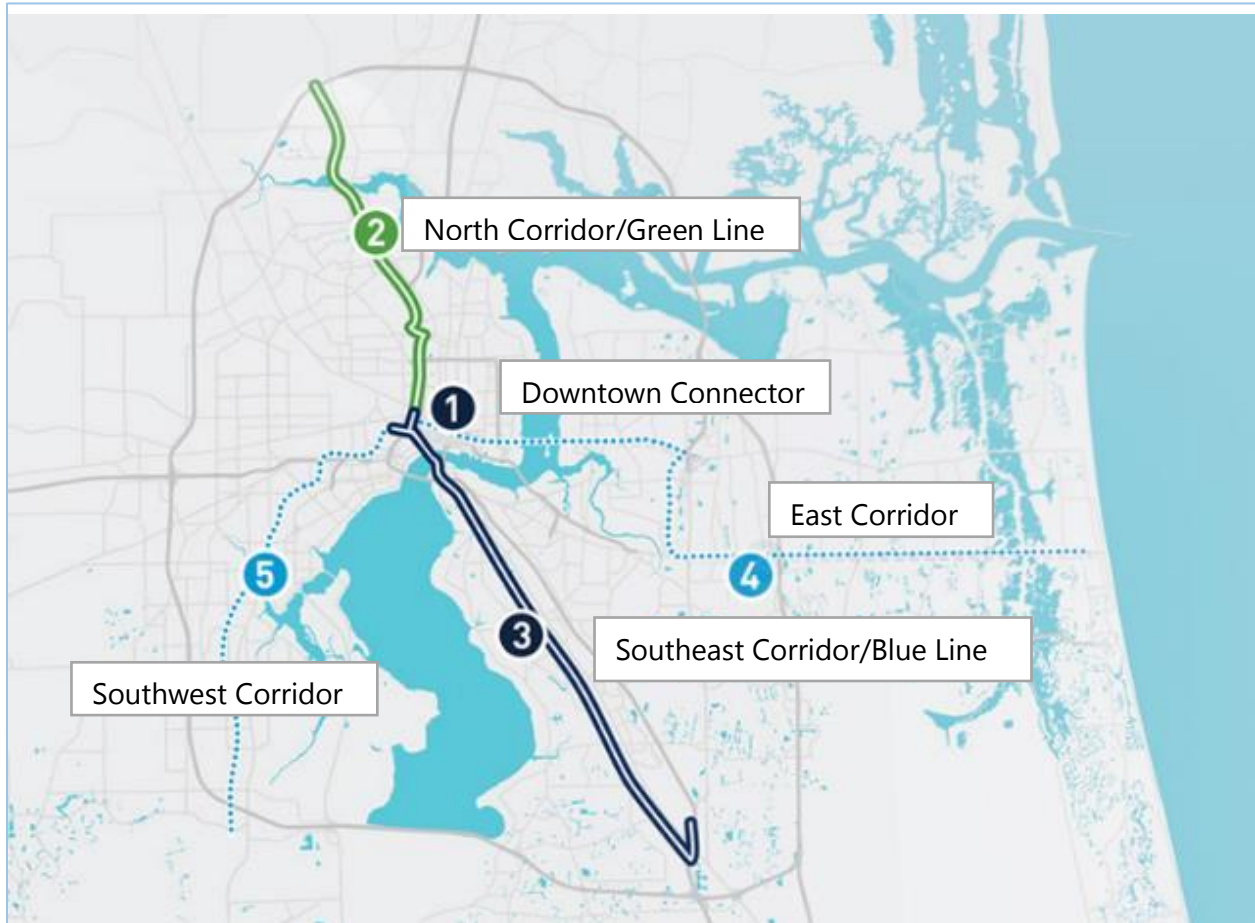
Commuter Rail

JTA completed a *Commuter Rail Feasibility Study* in November of 2009. This study concluded that commuter rail could prove to be a viable transportation option to residents of northeast Florida and that further study should proceed.

During the initial phase of the Commuter Rail Feasibility Study seven potential corridors were identified. The screening of the seven corridors was done in coordination with Norfolk Southern (NS), Florida East Coast (FEC) and CSX railroads. After the initial review, three preferred candidate corridors were identified for additional analysis: a Southeast Corridor from Downtown Jacksonville to St Augustine; a Southwest Corridor from Downtown Jacksonville to Green Cove Springs; and a North Corridor from Downtown Jacksonville to Yulee.

In September 2013, the North Florida Transportation Planning Organization (NFTPO) and the JTA Board of Directors approved the Southeast Corridor as the first corridor for development. It is a high growth corridor with excellent opportunities to attract development and grow ridership.

In 2016, an Alternatives Analysis was completed for the corridor. The Southeast corridor runs along the FEC line, it is 38 miles long with 13 planned stations. Estimated travel time along the corridor is 52 minutes, including stops. It is projected that up to 4,800 riders a day would utilize this line. A commuter rail connection is proposed for the Southbank. To maximize the convenience of the Skyway as a downtown circulator, future skyway stations should be co-located with a future commuter rail station in the San Marco/Jackson Square area.

Jacksonville Regional Transportation Center

The Jacksonville Regional Transportation Center (JRTC) will be a multi-modal hub, located on the west side of downtown near the Convention Center, integrating key local, regional and intercity transit service in one location. Key benefits are intended to improve connectivity between existing local bus, BRT, and Skyway as well as planned future services such as intercity bus, commuter rail service, and passenger rail. The facility will include JTA administrative offices, Skyway improvements, and a new terminal for passengers including restrooms and customer service, as well as an area for supervisors and drivers. Other features will include an inter-city bus terminal serving Greyhound and other inter-city bus carriers, kiss-n-ride, taxi, car share, and bike share. This development is also identified as a catalyst site in the Downtown Redevelopment Plan. The project is anticipated to be completed by the end of 2019.

New Development Proposals

Table 1 is a list of recent or proposed developments within the study area. Figure 7 maps the location of the above recent and planned developments within the study area. Most are clustered in the Northbank Core, but significant developments are planned in Brooklyn/Riverside, the Southbank, particularly the District, and the Sports Complex (Shipyards).

Table 1: Downtown Jacksonville Planned Developments

JTA Skyway Modernization Program – Downtown Developments Map ID

Map ID	Name	Address	Type	Size
1	JRTC	1100 W Forsyth St.	Multimodal Hub	9,522 sq. ft.
2	The District (Phase 1)	801 Broadcast Pl.	Mixed-Use	294,400 sq. ft.
3	Jacksonville Shipyards	600 East Bay St.	Mixed-Use	48 acres
4	Daily's Place (Amphitheater)	1 Everbank Field Dr.	Sports	9.3 acres
5	Broadstone River House	1701 Prudential Dr.	Residential	263 units
6	Union House	700 E Union St.	Residential	260 units
7	Baptist MD Anderson Cancer Center Addition	1200 San Marco Blvd.	Medical	330,000 sq. ft.
8	Ventures Residential Development	820 Prudential Dr.	Mixed-Use	126,555 sq. ft.
9	East San Marco	1506 Atlantic Blvd.	Mixed-Use	46,000 sq. ft.
10	Doro Fixtures Company	102 A Philip Randolph Blvd.	Mixed-Use	44,600 sq. ft.
11	First Coast Mohs Skin Center	600 Park St.	Medical	11,516 sq. ft.
12	Gate Petroleum	444 Park St.	Retail	6,500 sq. ft.
13	Unity Plaza Hotel	341 Oak St.	Hospitality	150 rooms
14	200 Riverside	200 Riverside Ave.	Mixed-Use	17,000 sq. ft.
15	Lofts at Lavilla	995 Water St.	Residential	130 units
16	Houston Street Manor	615 Houston St.	Residential	72 units
17	Cowford Chophouse	101 E Bay St.	Retail	5,876 sq. ft.
18	FSCJ Student Housing	20 W Adams St.	Residential	6 stories
19	Trio Buildings	North Laura St.	Mixed-Use	10 stories
20	The Barnett	112 W Adams St.	Mixed-Use	18 stories
21	233 West Duval	233 W Duval St.	Mixed-Use	240,000 sq. ft.
22	Madison Landing Apartments	572 N Pearl St.	Residential	80 units
23	Main and Six Brewery	1636 N Main St.	Retail	3,000 sq. ft.
24	Walgreens	1801 N Main St.	Retail	1,452 sq. ft.
25	Ninth and Main	1845 N Main St.	Retail	7,700 sq. ft.

Figure 7: Map of Downtown Developments

JTA SKYWAY MODERNIZATION PROGRAM

- ➡ Existing Skyway Route/Stations
- —— JTA Local Bus Routes
- —— First Coast Flyer BRT Corridors
- ➡ Candidate Commuter Rail Corridor with Stops
- —— Downtown Jacksonville Developments*
- (#) Map ID for Developments*

NOTE: * The downtown developments identified on this map along with the information provided in the table on the back was obtained from development information available online and can change as additional information becomes available from other sources.

Downtown

The downtown core includes the Central Business District (CBD), parts of the Riverwalk, and the Landing. The existing Skyway serves this area via the Convention Center, Jefferson, Central, and Hemming Plaza stations. This area, known as the Northbank Core is highlighted by Hogan, Laura, Bay, and Adams Streets having greater development density today with future retail potential.

"The Elbow":

Laura Street and the Jacksonville Landing provide Downtown's major retail anchor. The CRA Plan recommended that the Entertainment Town Zone or "E Town" should be rebranded to "The Elbow", as it is widely referred to and recognized as the Downtown Northbank destination for entertainment and nightlife. The Elbow's boundary consists of E-Town and the Forsyth and Adams Street Corridors. More specifically, Bay Street from Liberty to Ocean; Ocean Street from Bay Street to Forsyth and Adams Streets; Forsyth and Adams Streets from Newnan to Main Street. The Elbow could be promoted as the place for visitors to come and experience an exciting evening of entertainment with businesses such as the Florida Theatre, Mark's Downtown Club/Lounge, Underbelly, and Dive Bar. The Florida Theatre holds 200 entertainment events annually, drawing 250,000 attendees, as well as hundreds of community and non-profit gatherings. The Downtown Jacksonville Community Redevelopment Plan (CRA) Plan for the Elbow recommends enhanced lighting, decorative banners identifying "The Elbow," and public art to add an innovative flair to the zone, signaling a sense of excitement and playfulness. Bars and nightclubs that extend operating hours encouraging nighttime activity may be supported by the Downtown Investment Authority (DIA) in creating regularly occurring (e.g., monthly) street parties where East Bay Street between Liberty Street and Ocean Street is closed to vehicular traffic in favor of festival-style events, perhaps related to sporting events down the street, that attract visitors to Downtown.

Duval County Courthouse:

The Former Duval County Courthouse Site could offer specialty retail along the St. Johns River. The site is well-suited for a new iconic attraction or venue to invigorate Downtown Jacksonville and increase the number of visitors. The CRA Plan identifies this site as a catalyst site for private investment with the end goal being to enhance the daytime, nighttime and weekend appeal of Downtown Jacksonville. Catalyst sites identified in the Plan are intended to spur additional redevelopment in areas currently under-utilized or vacant within the CRA. This particular site is well-suited for large scale, mixed-use development centered on sports, entertainment, and tourism. It demands world class design, developers, and international capital to realize a well-designed, world-class riverfront suitable for receiving major national events and conventions if coupled with adjacent sites. Specific goals of the CRA plan are to ensure that the site is developed in such a way that provides active uses along the riverfront, public access to the waterfront via improved and expanded boardwalks, parks and/or trails, conceals parking from street and river views, and a pedestrian link that connects the Jacksonville Landing to Metropolitan Park and the Sports District.

Southbank

The Southbank area is part of the Southside CRA and is located on the peninsula on the St. Johns River across from the Downtown Core. Key recently completed and future developments within this area include River Place and the Southbank Riverwalk, a Double Tree Jacksonville Riverfront hotel, the Museum of Science and History and the District/Healthy Town. This area also contains the most recent expansion of the Skyway and creates a key connection between the Southbank and downtown Jacksonville. The area consists primarily of hotel and visitor amenities along the waterfront, including the friendship fountain.

San Marco Area

The San Marco Area is also part of the Southbank Area but lies on the west side of the peninsula and is characterized more by major medical and health related uses dominated by the Baptist Medical Center Campus, the Nemours Children's Specialty Clinic, and the Ronald McDonald House. Further south are the San Marco, LaSalle, San Marco Square, and Jackson Square neighborhoods – all areas identified for future Skyway extensions and station development. Significant employment growth is expected in the area which is currently served by the downtown enhancements of the First Coast Flyer BRT and will be served by the future Southeast First Coast Flyer BRT service, and SE Commuter Rail connection.

Sports & Entertainment Complex Area

The Sports and Entertainment Complex (SEC) area extends east along Bay Street and the riverfront terminating at EverBank Field Stadium. Metropolitan Park is located due south of EverBank Field on the south side of Bay Street/Gator Bowl Boulevard. This under-utilized park land as well as the Shipyards catalyst site contain a significant amount of undeveloped land with great potential to provide entertainment, restaurants, and other complementary uses for the sports district. Recent developments include Intuition Ale Works, The Armada, and Palmetto Place.

Shipyards Catalyst Site:

This 46-acre site is located on Bay Street between a convention hotel and the sports complex. The property is currently owned by the DIA and the intent is to leverage the land to develop a public/private partnership with a developer to re-develop the site. The site is a likely location for distinctive themed entertainment-oriented destinations and can support 400,000 square feet or more of retail. The site is also in close proximity to residential neighborhoods to the north.

Brooklyn/Riverside

LaVilla Catalyst Site:

The 2014 Redevelopment Plan identifies a 40-acre parcel in the LaVilla neighborhood as a potential catalyst site for Transit Oriented Development. The property is jointly owned by JTA and the Florida Department of Transportation (FDOT) and is currently being developed as the Jacksonville Regional Transportation Center (JRTC) which will provide office space for JTA as well as connection to local and regional bus services, the First Coast Flyer BRT, and the Skyway.

DIA Community Redevelopment Plan

The DIA was created to revitalize Jacksonville's urban core by leveraging Community Redevelopment Area (CRA) resources to spur economic development. The DIA's projects are guided by a nine-member board of directors on a volunteer basis. Five members are appointed by the Mayor of Jacksonville and four are appointed by the council president.

In 2014, the DIA adopted their current redevelopment plan for the Downtown Northbank and Southside Redevelopment Areas. The plan is specifically designed to:

» Establish a Community Redevelopment Plan (CRA) that uses mechanisms that provide a mix of housing, parks, walkable streets, attractive retail, enhanced cultural facilities, and accessible parking.
» Offer consistency over time, regardless of leadership changes within the community
» Define the strategic framework, conceptual themes, goals, and objectives for the future downtown CRAs.
» Include a neighborhood impact assessment of traffic and transportation affecting the physical and social quality of the neighborhood.
» Identify specific priority redevelopment capital improvement projects and other redevelopment project elements to be completed as part of plan implementation.
» Provide projected costs of the recommended improvements.
» Promote a "Park Once" strategy to encourage use of mobility options in the downtown core.

The Plan's key strategy concentrates resources on the Northbank Core Retail Enhancement Area and the Southbank Riverwalk as areas that offer the best opportunity for initial growth. These areas form the historical and cultural heart of Jacksonville. Revitalizing this central core area of the

downtown CRA is seen as a way of creating a viable and sustainable urban core that would then provide the impetus for revitalizing the rest of Downtown. This strategy also recognizes that mobility, in particular mass transit and pedestrian walkability, are key elements in supporting redevelopment efforts within the Northbank and Southbank CRA.

The 2014 Redevelopment Plan identified specific projects and recommendation. Specific projects related to mobility are identified in the Plan including a "Park Once" strategy to reduce number of unnecessary auto trips in the downtown core and several catalyst sites that would support Transit Oriented Development (TOD) including the LaVilla Neighborhood, Shipyards, and Hemming Plaza. These projects are described in more detail in the future development section of the Technical Memo.

Model Development

Ridership forecasts for the Skyway Modernization Program initial project phases are being prepared using an advanced copy of v2.01 of Federal Transit Administration's (FTA) Simplified Trips-On-Project Software (STOPS). Key elements of STOPS include:

1. Estimates of total origin-to-destination travel derived from Census Journey-to-Work data.

2. Representations of transit levels-of-service derived directly from published timetable information.

3. Self-calibration to match current ridership count data for individual geographic subareas within the region.

For the Skyway Project, the model was calibrated against the 2015 service schedule and ridership count data for the existing Skyway system. Forecasts of Skyway ridership are prepared for the current year (2015), 2020, 2030 and a long-range horizon year of 2040.

Desired Origins and Destinations

Origin and destination data was also pulled from the most recent travel survey completed in 2011. The areas with the most trips between stations was plotted on the map shown in Figure 8. The full breakdown of travel between origins and destinations is shown in Table 2.

Figure 8: Travel Desire Map
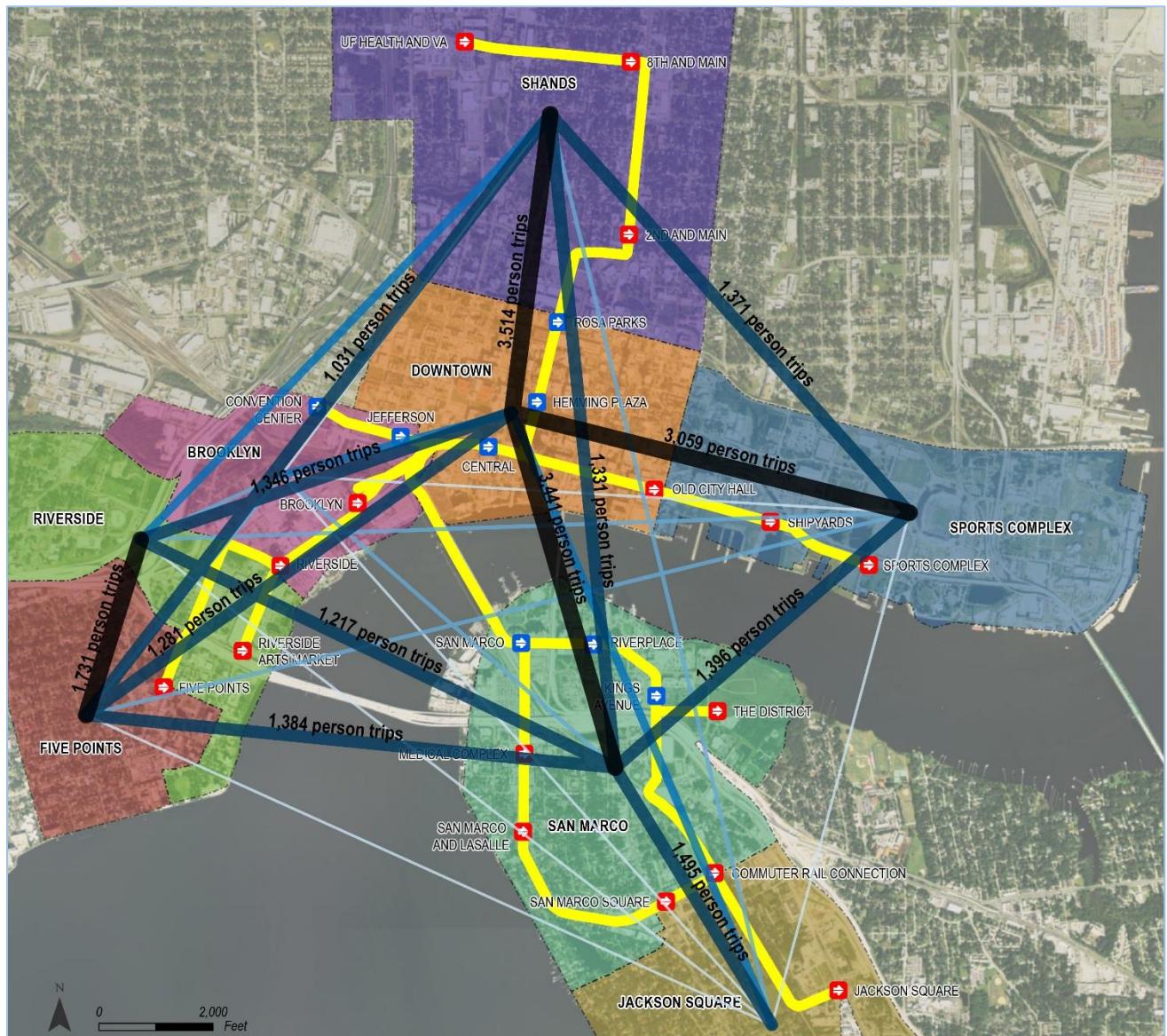
Projected 2040 Two-Way District-to-District Person Trips

Less than 250 person-trips	Existing JTA Skyway Route
251 - 500 person-trips	Existing JTA Skyway Stations
501 - 1,000 person-trips	Potential Skyway Extensions
1,001 - 1,500 person-trips	Potential Skyway Stations
More than 1,500 person-trips	

Source: OD trips based on LRTP adopted socioeconomic data

Table 2: 2040 Projected Origin and Destination Data

| Year 2040 | Destinations | | | | | | | | | | | | |
Origins	Riverside	Brooklyn	FivePoints	Sports Complex	Downtown	UF/VA	Springfield	San Marco	Jackson Square	North	West	East	Total
Riverside	883	92	71	5	4,701	496	105	199	392	4,454	10,805	8,963	31,164
Brooklyn	92	3,887	56	4,512	637	219	102	479	378	3,067	3,743	3,599	20,768
Fivepoints	71	56	2,297	2,014	1,271	330	440	148	148	1,489	2,820	2,930	14,011
Sports Complex	5	4,512	2,014	0	23	3,520	19	506	880	13,122	9,477	9,236	43,311
Downtown	4,701	637	1,247	23	777	5,163	2,438	1,240	897	66,070	32,029	41,084	156,305
Shands	496	219	330	3,520	5,163	4,702	557	1,886	585	10,427	8,882	14,587	51,350
Springfield	105	102	421	19	2,438	557	1,488	312	278	5,455	5,434	6,188	22,794
San Marco	199	479	148	880	1,240	1,886	312	4,820	624	8,987	8,387	19,886	47,845
Jackson Square	392	378	148	880	897	585	278	624	5,236	6,891	4,802	14,419	35,526
North	8,845	3,067	1,489	13,122	66,070	10,427	5,455	8,987	6,891	171,334	43,975	75,705	415,364
West	10,805	3,743	2,820	9,477	32,029	8,882	5,434	16,639	4,802	193,065	332,467	119,739	739,901
East	8,963	3,599	2,930	9,236	41,084	14,587	6,188	19,886	14,419	75,705	119,739	775,711	1,092,044
Total	35,555	20,768	13,968	43,685	156,329	51,350	22,813	55,724	35,526	560,063	582,558	1,092,044	2,670,380

System Expansion

The renewed focus on downtown development and elevating Jacksonville as a great place to live, work and play, parallels JTA's multi-year campaign to transform transportation in Jacksonville. As detailed in the previous sections, numerous initiatives are underway to revitalize downtown and adjacent neighborhoods. As an expanded downtown circulator, the Skyway has the potential to serve a key role in connecting communities.

The Skyway accomplishes two things well; as a last mile transit connecter and as a park once solution in downtown Jacksonville. The Skyway currently serves downtown residences and businesses with its Northbank and Southbank stations, but also provides an important last mile link for area residents traveling a longer commute and making connections from a personal car, or as a customer on other JTA services like local or regional bus or community shuttle. However, because the Skyway was never fully built out, it has never fully realized its potential to be a downtown circulator connecting the Northbank and Southbank areas as well as connecting the surrounding neighborhoods and activities near downtown – Brooklyn, Riverside, and 5-Points, Springfield, and the SEC.

Based on previous studies and guidance from the Skyway Advisory Group stakeholders; and supported through this Skyway Modernization Program analyses, it is evident that the Skyway circulator system requires expansion to adequately meet transportation needs of the community, specifically, key areas within close proximity to the existing Skyway. As documented and seen at various places along the existing infrastructure, the Skyway was never fully built out to reach key areas of downtown. As a result of the analyses and discussions with agency partners, stakeholders and the public, three potential expansion areas were identified and are shown on the map in Figure 9. They are Five Points to Sports Complex, Rosa Parks to UF Health/Springfield, and Sports Complex to San Marco.

Figure 9: Potential Skyway Extensions Evaluated
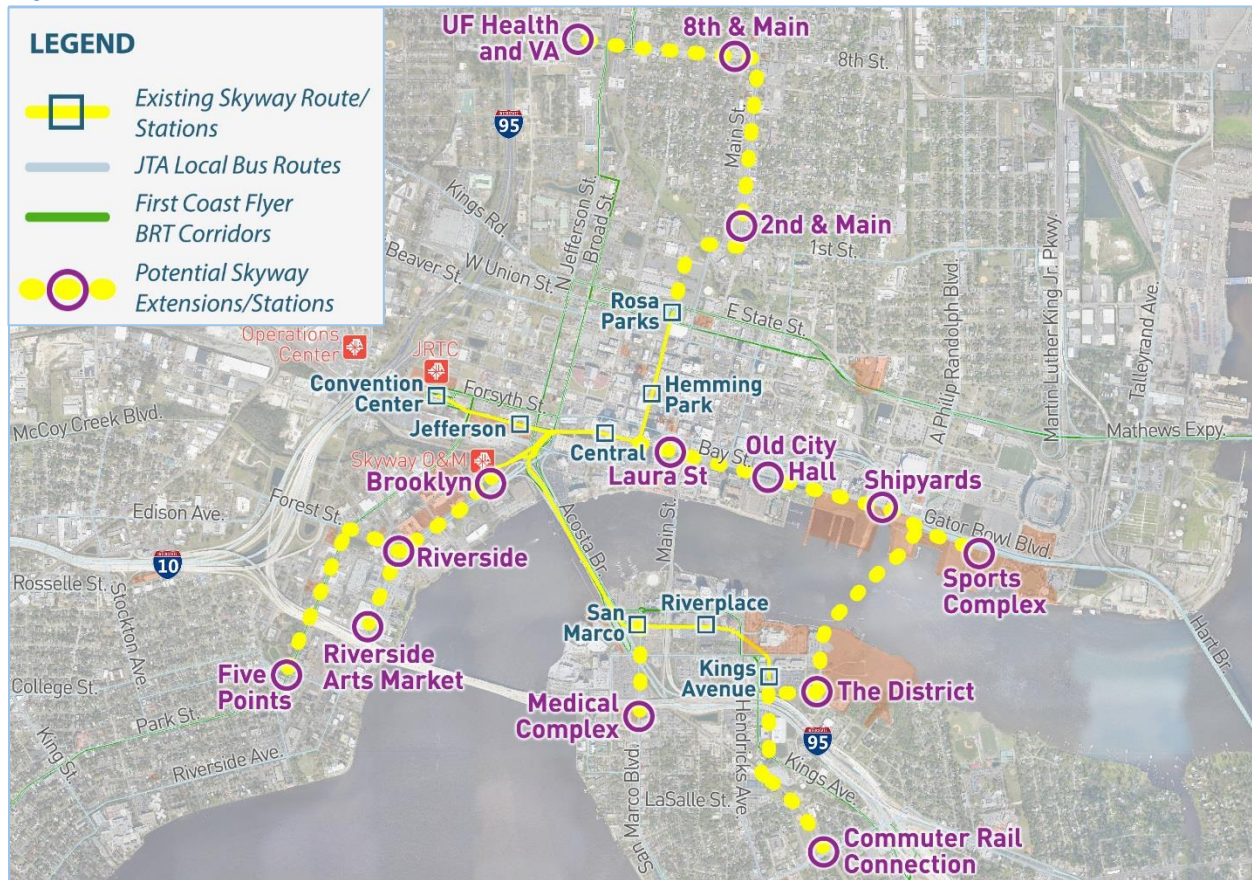
Five Points to the Sports & Entertainment Complex

Based on initial review of population and employment data, development potential, and existing infrastructure, this corridor appears to have the greatest potential to be developed in the near term. The entire corridor from Five Points to the SEC is considered one corridor for the purposes of Federal Transit Administration (FTA) project development and planning. However, this corridor would be best implemented as a phased project with two distinct segments – Five Points to Central Station and Central Station to the Sports Complex.

A Five Points to Central Station service would serve the rapidly developing Riverside, Five Points, LaVilla, and Brooklyn neighborhoods to the Central Station and downtown Jacksonville. This developing area has recently seen several mixed use and multi-family residential developments spring up in very recent years. The area includes residential neighborhoods close to downtown. Expanding the Skyway will provide frequent, convenient, and flexible transportation alternatives to residents that want to live, work, and play downtown.

A connection from the existing Central Station to the SEC via Bay Street is also an opportunity for JTA to support the City's desire to redevelop the Bay Street Corridor between the eastern edge of the downtown core and the SEC. This corridor is relatively straight forward with no major roadway or bridge crossings to deal with as well as sufficient right of way for either an elevated or at grade guideway. Proposed stations include Laura Street, Old City Hall, Shipyards and the SEC. This corridor creates a frequent connection between several sports and entertainment venues and potential mixed use developments and redevelopment east of the downtown core along the currently under-utilized Northbank waterfront. Figure 10 highlights the neighborhoods and surrounding development that should be analyzed as a next steps.

Figure 10: Five Points to Sports & Entertainment Complex Expansion
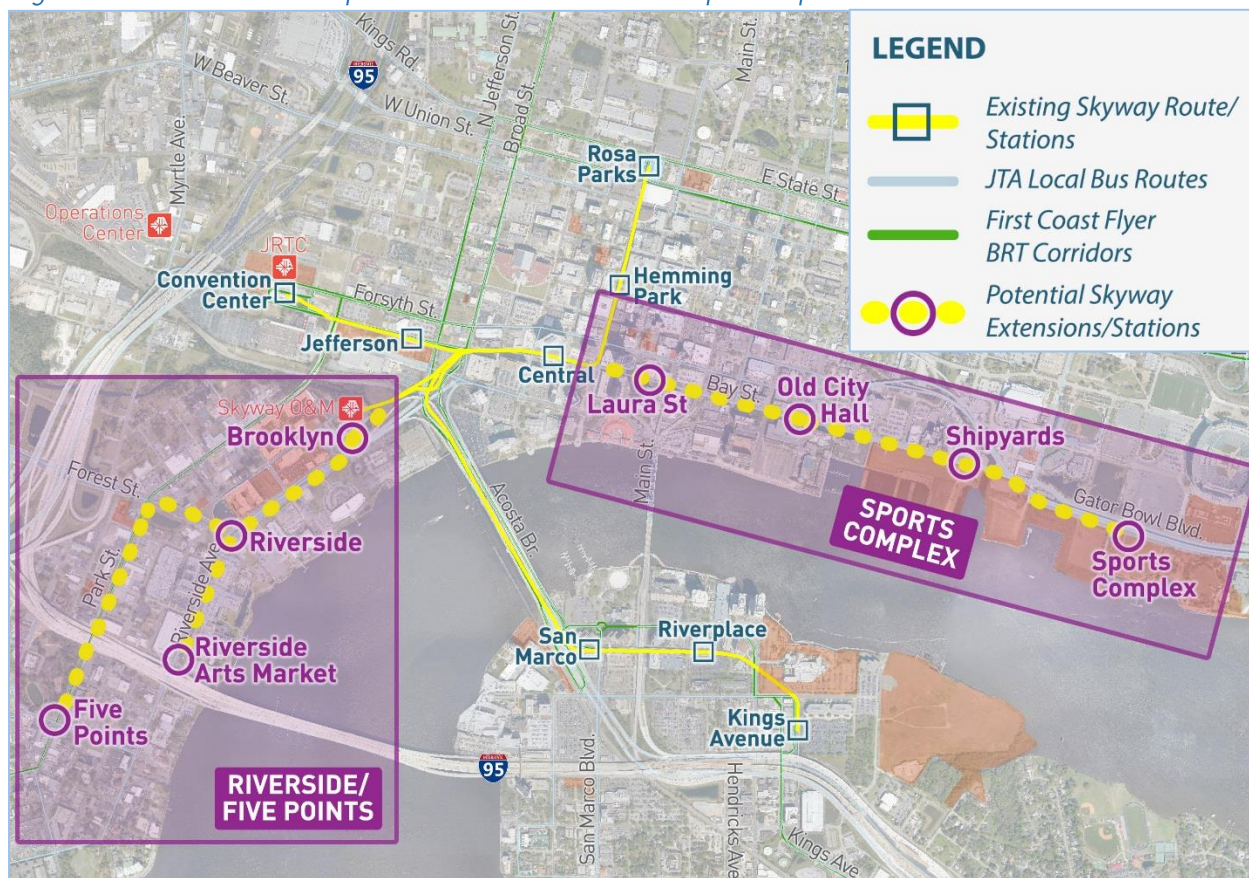
The Brooklyn Expansion shown in Figure 11 would connect the existing O&M Skyway facility with Brooklyn station. This is a relatively short extension and can be moved into project development almost immediately. By packaging this project properly, JTA should be able to apply for several competitive grant projects such as TIGER and or other competitive FTA grant programs allowing for JTA to begin its first expansion as early as 2020. Figure 11 illustrates the proximity between the proposed Brooklyn Station and the existing O&M facility. Subsequent phases would require more in depth study and analysis to determine alignment, vehicle technology, and elevated or at grade crossings of major roadways.

Figure 11: Brooklyn Station Expansion

Rosa Parks to UF Health/Springfield

A second proposed expansion would run from Rosa Parks Station north to UF Health/the Veterans Administration Hospital Complex and Springfield neighborhood. Corridor preservation would be key to this area, particularly on Main Street, which is a key corridor in this diverse rapidly redeveloping Springfield neighborhood north of the downtown core. JTA will need to coordinate with the City of Jacksonville's efforts to redevelop this and other transportation corridors in the downtown area.

Sports & Entertainment Complex to San Marco

This connection proposes crossing the St. Johns River providing a direct connection between the SEC and the Southbank near the planned development called The District. This connection would essentially create a loop connecting the San Marco area and related destinations such as the District, a future commuter rail station, and the medical complex. The additional crossing would facilitate faster and more convenient trips between the two areas, particularly trips from the District to the SEC and provide that crucial Skyway function as a transit circulator provide connections between the downtown core and adjacent areas.

Operational Enhancements

Expanding the operations of the Skyway service will be critical to any successful expansion effort. Such enhancements are needed for later evening service and added weekend service. Particularly in the near term, prior to implementing the bold expansions proposed to meet the future needs of the downtown core, it will be important to position the Skyway as a service to downtown neighborhoods and people that live, work, and play in downtown Jacksonville, particularly outside of regular business hours. Increasing the mobility options of downtown residents, workers, and visitors will increase ridership and help meet the unmet needs within the downtown core and surrounding neighborhoods.

Outreach

Essential to the System Plan development was the feedback from the community. The JTA encouraged community and stakeholder input throughout the planning studies focused on the future of the Skyway. Multiple opportunities for public engagement were provided throughout the ongoing examination of the Skyway to gather input on use of the Skyway, hours of operation and where it needs to go to be a viable transportation option now and in the future. Project information has been posted on the JTA's website and shared through social media.

In the fall of 2015, a public opinion survey was launched and two public forums were held to provide input to the Skyway Advisory Group and Skyway Subcommittee. The initial survey was vital to gauge the stakeholder support to continue with planning for a new and expanded Skyway as directed by the JTA Board in December 2015. These public outreach activities continued as part of the Skyway Modernization Program during the fall/winter of 2016. An updated public opinion survey was launched again in October 2016. More than 1250 people responded to the survey. The survey is valued as an important tool to reach both downtown residents and employees, as well as area residents, to obtain comments on the potential extensions, safety and operating features. The survey queried where people want to go and when they want to travel on the Skyway.

In addition to the survey, since June 2016, more than 20 presentations have been conducted for area business groups, professional societies and government agencies to update the community and obtain feedback on JTA's ideas for modernizing and expanding the existing Skyway.

Public Forums

Two public forums were held in the fall of 2015 and two additional forums were held (November 2016 and January 2017) to afford the public the opportunity to view plans, take the survey, speak with JTA and project team staff, and hear a presentation outlining the proposed concepts developed through the Skyway Modernization Program. Interactive feedback opportunities were successful in obtaining and documenting public interest and opinions on the expansion concepts.

Stakeholder Engagement

Important to the process was the inclusion and participation of agency partners and business stakeholders. Coordination with these groups provided valuable insight regarding other projects or initiatives which may compliment or could potentially be impacted by the proposed Skyway system expansion. Multiple workshops and one-on-one meetings were held with representatives of local, regional and state government agencies and downtown development entities.

Summary of Next Steps in Developing the System Plan

The intent of the study effort is to create an Ultimate Urban Circulator (U^2C) that builds on investments already made as part of the Skyway system, connects employment, residential, retail, and entertainment, provides high frequency service with enough capacity to handle peak event loads, operates either in an elevated or street level dedicated corridor and provides on demand and point to point capacity for residents, workers, and visitors.

Based on the employment, population, and ridership projections, the expansion areas identified above would be supportive of continued investment in the Skyway system. Based on public input, there is sufficient latent demand in the near term to justify increasing the span of service as well as adding service on weekends and holidays. By doing so, the Skyway provides a more consistent mobility solution supporting the increased population living in the downtown core. Expanded weekday evenings and weekend service also recognizes the downtown core as a 24/7, 7 day a week City.

Recent developments in the Brooklyn and Riverside areas have put pressure on parking and the roadway network. Expansion to this area can help reduce the need for additional parking and relieve congestion on the surrounding roadway network, particularly Riverside Drive. This area is likely the easiest to expand in the near term due to the proximity of the existing Skyway O&M facility and adjacent vacant parcel. The need for longer term expansions are also justified given the origin and destination data shown in Figure 9.

While the future vehicle and technology has not been chosen, to facilitate these desired expansions, the following approach is recommended:

» Leverage State of Good Repair dollars to invest in the modernization of the existing Skyway System
» Continued community outreach to maintain public support and engagement
» Develop a preferred vehicle technology
» Project Development Plan
  o Immediately pursue the Brooklyn to Central Extension.
  o Initiate a TCAR study for the Five Points to Sports Complex to tee up the corridor for entry into FTA's Capital Improvement Grant (CIG) program.
  o Complete the Bay Street Corridor Development Plan.
  o Provide for corridor preservation on short and long term expansion plans of the Skyway.
  o Develop a re-purpose plan for the Rosa Parks station.
  o Implement operational enhancement to support the increased population in the downtown area – this would include extending service hours in the evening and providing weekend service.

APPENDIX 1: STOPS Implementation for the Jacksonville Area

Model Overview

Key input information for the Skyway implementation of STOPS includes:

» Northeast Florida Regional Planning Model (NERPMAB1) forecasts of population and employment by Traffic Analysis Zone (TAZ) for 2010 and 2040 (and interpolated to 2015).

» 2006-2010 American Community Survey data providing home and work locations for all persons using all modes of transportation.

» Highway travel times and costs obtained from the Year 2010 NERPMAB1 regional forecasting model.

» Transit schedule data provided by JTA in General Transit Feed Specification (GTFS) format.

» Year 2006-2010 transit mode shares from the Census Journey-to-Work.

» Automated Passenger Count ridership data for 2015 providing transit boardings by station, stop, and route for the Jacksonville area.

STOPS uses this information to:

1) Estimate the calibration year, opening year, and horizon year all-mode person travel by factoring the 2006-2010 CTPP using zone-level estimates of population and employment.

2) Estimate zone-to-zone travel times by reading each transit schedule and finding the best origin-to-destination path for each of the following conditions:

   a. Access mode: walk access, kiss-ride access, and park-ride access

   b. Path type: fixed guideway (e.g., Light Rail Transit [LRT] or Bus Rapid Transit [BRT]) only, bus-only, and fixed guideway and bus together on the same trip

   c. Time of day: AM peak and midday

   d. Scenario: calibration year, no-build, and build

   e. Year: 2015, 2020, 2030 and 2040

3) Estimate Year 2015 mode shares and transit ridership by station and route and then adjust the model parameters to match both CTPP mode shares and current year counts.

4) Estimate scenario ridership for 2015, 2020, 2030 and 2040 using the model calibrated in the previous steps and transit travel times for each scenario and each year.

Model Assumptions

This section describes the key assumptions that were used to configure STOPS to forecast ridership for the Skyway project.

Geographic Scope of Analysis

STOPS is designed to make use of pre-exiting data sources on transportation supply and demand for nearly all aspects of the ridership forecasting process. The FTA STOPS website includes copies of the Year 2000 CTPP data which is used by STOPS. For this study, an advanced copy of STOPS v2.01 and the 2006-2010 ACS data was obtained from FTA for use in this project.

The modeling scope for this project was set to match the six county area of the NERPMAB1. The six counties include Baker, Clay, Duval, Nassau, Putnam and Saint Johns Counties and are shown in Figure A1. The NERPMAB1 model covers a larger area than the service area of JTA, which is primarily Duval County and the Orange Park area in northern Clay County.

Figure A1: NERPMAB1 Area
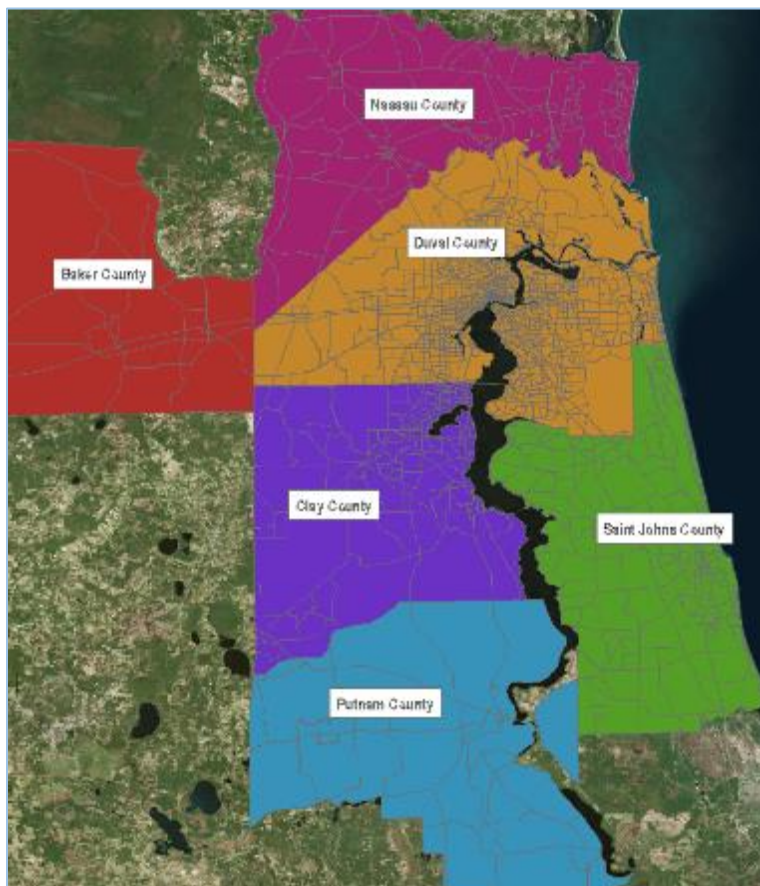
The modeling area was subdivided into 30 districts to support the calibration and reporting of transit service. In particular, the downtown area was subdivided in many smaller districts, as shown on Figur to accommodate the calibration of the Skyway mode. These districts are designed to represent different transit markets in the region and the downtown area in particular and account for differences among areas such as:

» Density

» Socioeconomic characteristics

» Walk-ability and other non-service impacts on transit demand

» Geographic barriers (highways, waterways, or other features) that separate neighborhoods from one another

The 30 districts used in this analysis are listed in Table A1. The table is subdivided in Study Area districts and Region districts. The Study Area districts are all in the downtown area. Figure A2 outlines the districts in the downtown area. There are 13 districts in the downtown area. Figure A3 shows the remaining districts in the model area. There are 17 additional districts in the Region.

Table A1: District Numbers and Names

District Number	District Name	
1	CBD West	
2	CBD Central South	
3	CBD Central North	
4	CBD East	
5	Sports Complex	
6	San Marco	Study Area
7	Southbank District	
8	Brooklyn	
9	Riverside	
10	Five Points	
11	Shands	
12	Southbank Central	
13	Jackson Square	
14	US 1	
15	Belfort	
16	Beaches	
17	Mandarin	
18	Far South	
19	Southwest	
20	NAS	
21	Orange Park	
22	Edgewood	Region
23	Lem Turner Moncrief	
24	Northside	
25	Springfield	
26	Westconnett	
27	Arlington	
28	Empire Point	
29	Wonderwood	
30	San Jose	

Figure A2: STOPS Districts Study Area
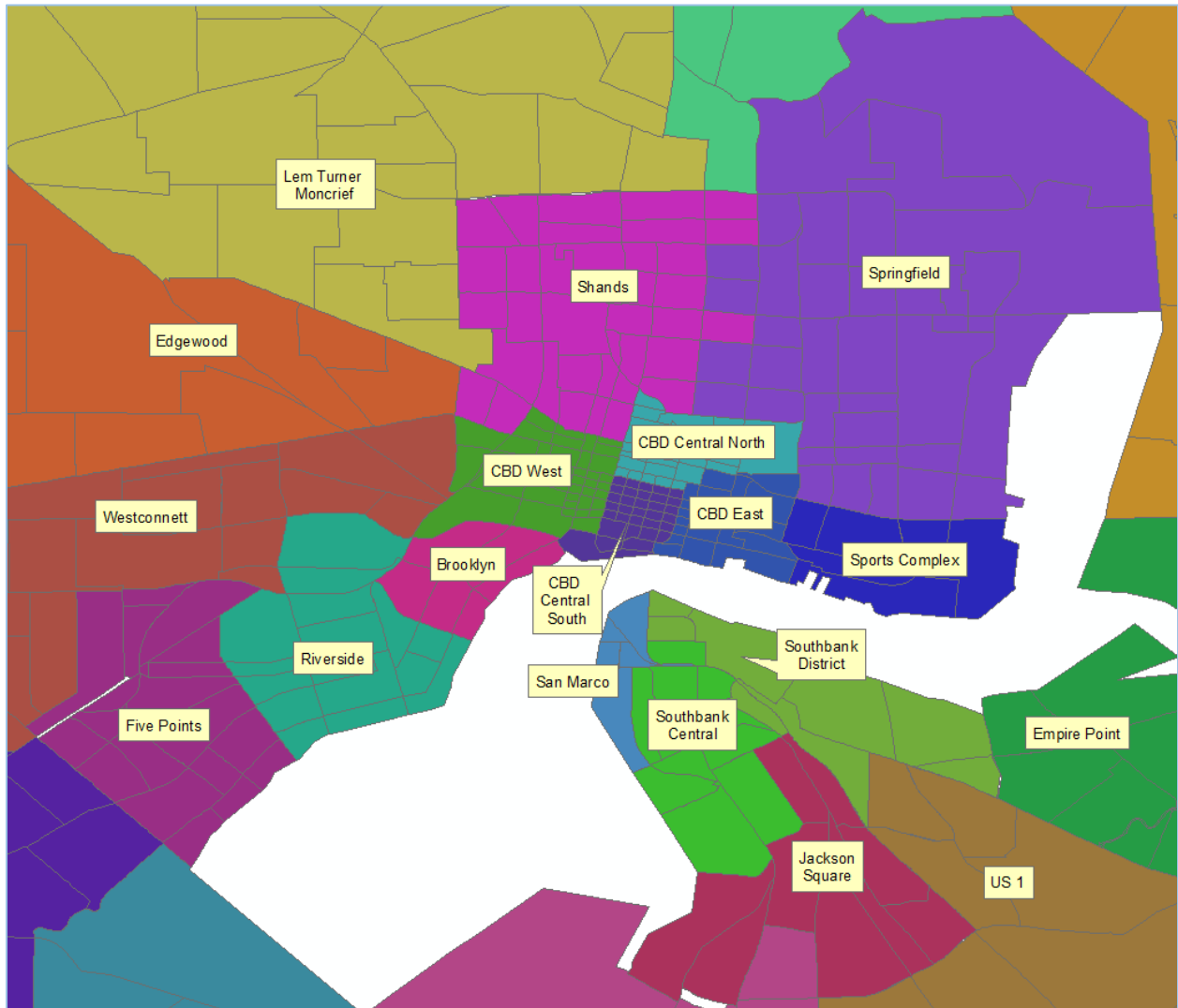
Figure A3: STOPS Districts Region
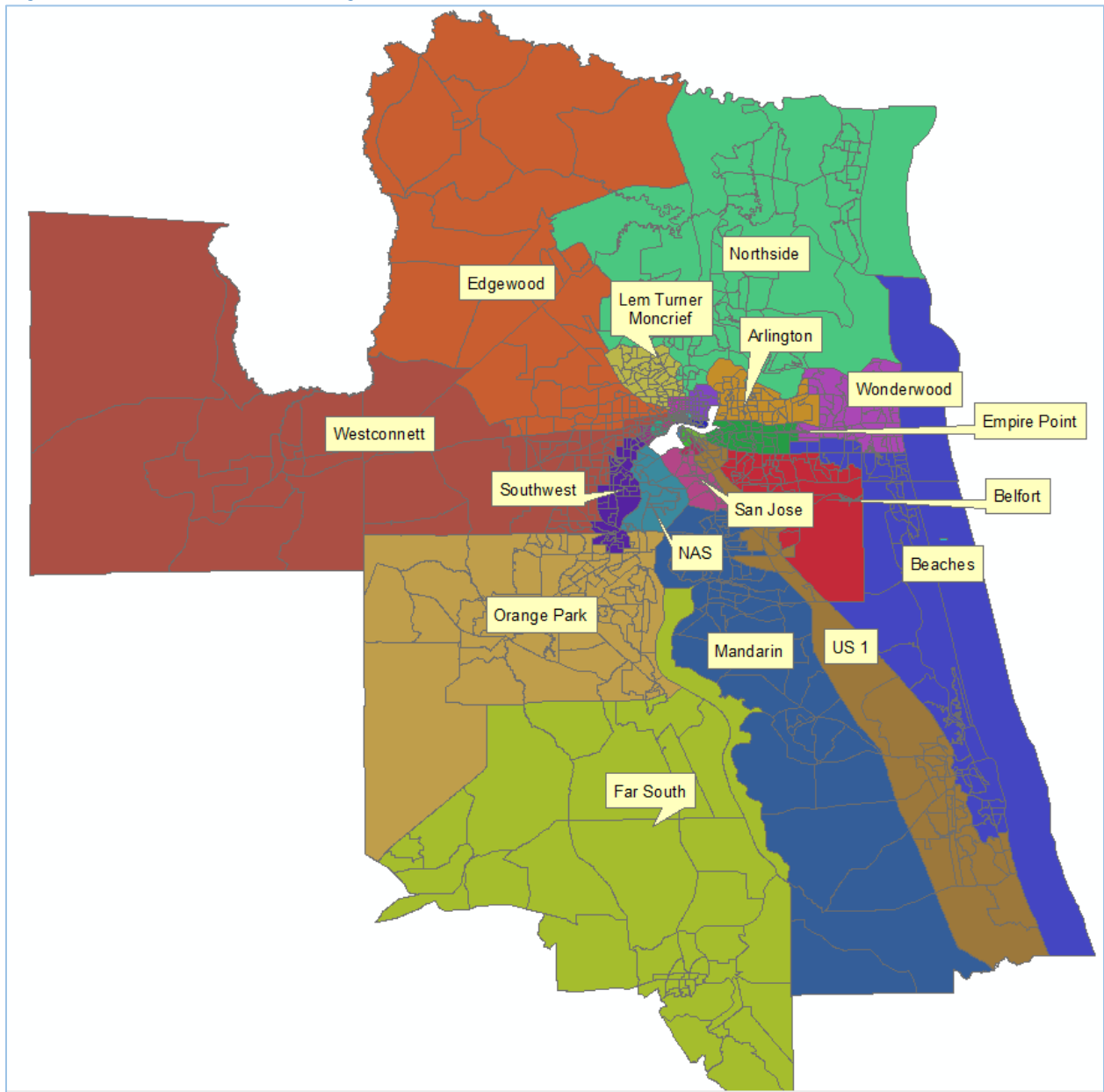
Population and Employment Assumptions

Estimates of population and employment for the modeling region were obtained from the North Florida Transportation Planning Organization (NFTPO) for 2010 and 2040 for each traffic analysis zone (TAZ) in the modeling area. This area includes the six counties as shown in Figure A1, which contains 2494 TAZs. Table A2 shows the population and employment projections as developed by the NFTPO for the different counties within the NERPMAB model area.

Table A2: NFTPO Year 2010 and 2040 Population Estimates by County

County	Total 2010 Population	Total 2040 Population	Population Growth Rate 2010 - 2040	Total 2010 Workers	Total 2040 Workers	Workers Growth Rate 2010 - 2040
Nassau	80,585	123,840	54%	24,126	39,586	64%
Duval	855,225	1,079,477	26%	519,142	636,596	23%
St Johns	197,976	387,771	96%	61,714	155,227	152%
Clay	190,663	316,520	66%	54,454	88,958	63%
Baker	24,834	38,975	57%	7,396	13,860	87%
Putnam	77,859	83,783	8%	25,148	28,051	12%
Total	1,427,142	2,030,366	42%	691,980	962,278	39%

Of particular focus is Duval County, in which a 26% growth rate for the population and a 23% growth rate for the employment has been projected. The first step in updating the data for this particular study was the development of the year 2015 population and employment data based on the 2010 and 2040 NFTPO data. This was accomplished through interpolation of the NFTPO data sets to the year 2015, which represents the validation and current years in the STOPS model.

The second step was adding the development activity data between the years 2010 and 2015 as received from the City of Jacksonville and the Downtown Investment Authority (DIA). In most cases, the additional development which occurred in the time period between 2010 and 2015 was added to the interpolated 2015 data set. The exception being those cases where the previous NFTPO data development process had already included the data in the specific TAZ where the development took place.

In addition to past activities, data on future development was collected as well. These were added to the data in the year in which it was assumed the development would take place. Figure A4, shows the location where the different developments are expected to take place. Several assumptions had to be made to convert the development data into the population and employment numbers needed as input into the STOPS model. The development data is typically presented as the number of dwelling units on the residential side and in square feet on the commercial side.

In order to estimate the population, the average household size of 2.1 per persons per dwelling unit was applied. The average household size for Duval County for the four-year period between 2011 and 2015 is 2.58 [1] However, according to the 2010 census, which was used to develop the NFTPO data, the person per household varied in Duval County from 2.08 to 2.57 depending on the geographical location within the County. The type of development planned for the

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[1] http://www.census.gov/quickfacts/table/PST045215/12031

downtown area are apartments and condominiums which typically attract smaller family units. Therefore, the rate of 2.1 persons per housing unit was assumed to be reasonable.

The employment types which were added were service, commercial and industrial. For "mixed used" development it was assumed that 40% would be retail/commercial and 60% office/service. The employee calculations were primarily based on the square feet information associated with the development. For retail/commercial two employees per 1,000 square feet was used, while for office/service five employees per 1,000 square feet was used. For the employment associated with projected hotel development, the employment was based on the number of rooms (0.9 employees per room). The assumed relationships were based on information listed in the ITE Trip Generation manual as well as the ratios used in the development of the NFTPO data forecasts. However, the numbers of employee per square feet can vary wildly, depending on the type and size of the development. It is therefore recommended to refine these calculations as more detailed information becomes available. Table A3, lists the final population and employment estimates by district.

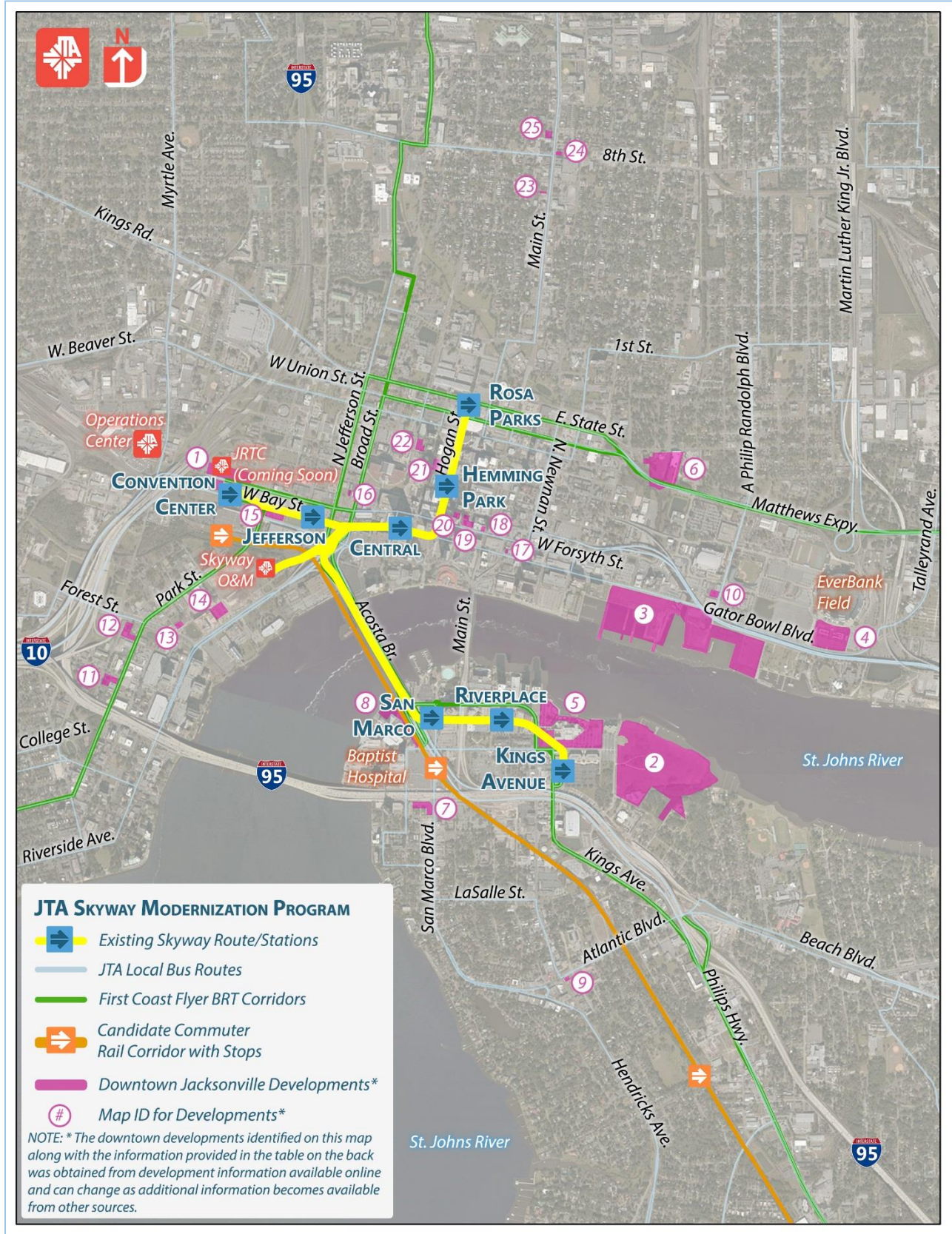*Figure A4: Downtown Projected Development*

Table A3: Population and Employment Data Estimates

District Number	District Name	Population					Employment				
		2010	2015	2020	2030	2040	2010	2015	2020	2030	2040
Study Area											
1	CBD West	172	720	809	989	1,169	3,870	3,967	4,019	4,122	4,225
2	CBD Central South	262	464	464	464	464	15,226	17,423	17,563	17,842	18,121
3	CBD Central North	1,069	1,126	1,183	1,297	1,411	6,516	6,637	6,731	6,919	7,107
4	CBD East	830	2,666	3,453	5,026	6,599	10,189	10,402	10,528	10,780	11,033
5	Sports Complex	32	1,424	1,424	1,424	1,424	3,457	8,064	8,113	8,212	8,311
6	San Marco	823	824	825	827	829	4,903	4,957	4,983	5,036	5,088
7	Southbank District	2,146	2,731	4,843	4,868	4,894	7,648	8,012	9,213	9,319	9,425
8	Brooklyn	64	1,951	2,419	2,419	2,420	9,288	9,729	9,903	10,175	10,448
9	Riverside	5,186	5,326	5,460	5,727	5,994	10,491	10,914	10,922	10,939	10,956
10	Five Points	7,085	7,210	7,261	7,363	7,466	1,763	1,774	1,781	1,796	1,811
11	Shands	6,799	7,259	7,509	8,009	8,509	12,610	13,375	13,443	13,578	13,713
12	Southbank Central	2,406	2,428	2,431	2,437	2,443	2,260	4,302	4,315	4,342	4,369
13	Jackson Square	3,844	5,510	5,579	5,718	5,857	2,069	2,805	2,826	2,867	2,908
Study Area SubTotal		**30,718**	**39,637**	**43,660**	**46,568**	**49,478**	**90,290**	**102,361**	**104,340**	**105,926**	**107,514**
Region											
14	US 1	86,792	100,524	112,095	135,237	158,379	76,113	85,869	93,313	108,202	123,091
15	Belfort	82,514	94,972	99,694	109,138	118,582	92,408	104,526	110,572	122,664	134,755
16	Beaches	112,606	123,451	132,616	150,946	169,276	42,652	48,535	53,750	64,180	74,610
17	Mandarin	146,822	166,689	183,051	215,776	248,500	34,428	43,785	51,159	65,908	80,657
18	Far South	96,681	100,803	104,924	113,168	121,411	30,605	31,802	33,000	35,394	37,789
19	Southwest	60,417	62,489	63,846	66,558	69,271	26,651	28,420	28,713	29,299	29,885
20	NAS	17,603	18,097	18,543	19,435	20,326	26,994	27,491	27,908	28,742	29,575
21	Orange Park	158,702	176,541	194,380	230,058	265,736	39,121	44,453	49,785	60,450	71,114
22	Edgewood	58,756	65,797	71,812	83,844	95,876	36,698	40,471	43,416	49,307	55,198
23	Lem Turner Moncrief	56,941	59,844	62,531	67,904	73,277	13,003	13,213	13,282	13,419	13,556
24	Northside	133,985	149,912	161,181	183,719	206,258	53,571	61,276	66,439	76,767	87,094
25	Springfield	9,240	9,898	10,466	11,602	12,737	7,721	7,865	7,968	8,173	8,378
26	Westconnett	146,273	158,195	166,349	182,658	198,967	42,394	46,566	49,080	54,107	59,135
27	Arlington	67,362	69,705	70,891	73,263	75,635	20,309	22,676	22,817	23,097	23,378
28	Empire Point	41,532	43,325	44,431	46,643	48,856	19,178	19,651	19,759	19,975	20,192
29	Wonderwood	96,300	101,270	103,567	108,161	112,754	30,734	31,785	32,158	32,905	33,651
30	San Jose	23,898	24,372	24,593	25,037	25,480	9,112	9,401	9,415	9,442	9,469
Region SubTotal		**1,396,424**	**1,525,884**	**1,624,972**	**1,823,147**	**2,021,322**	**601,692**	**667,785**	**712,533**	**802,031**	**891,528**
Grand Total		**1,427,142**	**1,565,521**	**1,668,631**	**1,869,715**	**2,070,801**	**691,982**	**770,146**	**816,873**	**907,957**	**999,042**

When comparing Table A2, which lists the original NFTPO estimate, with Table A3, the total projections for the 2040 for population shows an increase of 40,435 people for this study, this represents a 2% increase. This number reflects the total number of the people added to the socioeconomic data set to represent all the development that has been permitted between 2010 and 2015 in Duval County as well as the development that is expected to take place in the downtown area. The increase in employment between the two data sets, the NFTPO adopted data set and the data set used for the skyway study, is 36,764 which is an increase of 4%. Table A4 and Table A5, show the growth patterns between the different years. As stated before, no specific data related to the completion of the development was available, therefore assumptions were made as to which year the development was to be added. Again, when more specific information becomes available these assumptions need to be refined.

As reflected in these two tables, the residential population growth in the *study area* is projected to be 18,760 between 2010 and 2040. These projections are based on data that was obtained from the DIA and the City of Jacksonville. This represents a 61% increase in population. The employment, based on the same data sources, is expected to increase by 17,224 which is a 19% increase during that same time period. Table A4, shows the growth rate in numbers and percentages between the different time periods for population, while Table A5 shows the same information regarding the employment.

Table A4: Population Growth Patterns Between 2010 and 2040

District Number	District Name	Population Growth							
		2010 - 2015		2015 - 2020		2020 - 2030		2030 - 2040	
Study Area		Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	CBD West	548	318%	90	12%	180	22%	180	18%
2	CBD Central South	202	77%	0	0%	0	0%	0	0%
3	CBD Central North	57	5%	57	5%	114	10%	114	9%
4	CBD East	1,836	221%	787	29%	1,573	46%	1,573	31%
5	Sports Complex	1,392	4351%	0	0%	0	0%	0	0%
6	San Marco	1	0%	1	0%	2	0%	2	0%
7	Southbank District	585	27%	2,112	77%	25	1%	26	1%
8	Brooklyn	1,887	2948%	469	24%	0	0%	1	0%
9	Riverside	140	3%	134	3%	267	5%	267	5%
10	Five Points	125	2%	51	1%	102	1%	102	1%
11	Shands	460	7%	250	3%	500	7%	500	6%
12	Southbank Central	22	1%	3	0%	6	0%	6	0%
13	Jackson Square	1,666	43%	69	1%	139	2%	139	2%
Study Area SubTotal		**8,919**	**29%**	**4,022**	**10%**	**2,909**	**7%**	**2,910**	**6%**
Region									
14	US 1	13,732	16%	11,571	12%	23,142	21%	23,142	17%
15	Belfort	12,458	15%	4,722	5%	9,444	9%	9,444	9%
16	Beaches	10,845	10%	9,165	7%	18,330	14%	18,330	12%
17	Mandarin	19,867	14%	16,362	10%	32,724	18%	32,724	15%
18	Far South	4,122	4%	4,122	4%	8,243	8%	8,243	7%
19	Southwest	2,072	3%	1,356	2%	2,713	4%	2,713	4%
20	NAS	494	3%	446	2%	892	5%	892	5%
21	Orange Park	17,839	11%	17,839	10%	35,678	18%	35,678	16%
22	Edgewood	7,041	12%	6,016	9%	12,032	17%	12,032	14%
23	Lem Turner Moncrief	2,903	5%	2,687	4%	5,373	9%	5,373	8%
24	Northside	15,927	12%	11,269	8%	22,538	14%	22,538	12%
25	Springfield	658	7%	568	6%	1,136	11%	1,136	10%
26	Westconnett	11,922	8%	8,155	5%	16,309	10%	16,309	9%
27	Arlington	2,343	3%	1,186	2%	2,372	3%	2,372	3%
28	Empire Point	1,793	4%	1,106	3%	2,212	5%	2,212	5%
29	Wonderwood	4,970	5%	2,297	2%	4,594	4%	4,594	4%
30	San Jose	474	2%	222	1%	443	2%	443	2%
Region SubTotal		**129,460**	**9%**	**99,088**	**6%**	**198,175**	**12%**	**198,175**	**11%**
Grand Total		**138,379**	**10%**	**103,110**	**7%**	**201,084**	**12%**	**201,085**	**11%**

Table A5: Employment Growth Patterns Between 2010 and 2040

District Number	District Name	Employment							
		2010 - 2015		2015 - 2020		2020 - 2030		2030 - 2040	
Study Area		Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	CBD West	97	3%	52	1%	103	3%	103	2%
2	CBD Central South	2,197	14%	139	1%	279	2%	279	2%
3	CBD Central North	121	2%	94	1%	188	3%	188	3%
4	CBD East	213	2%	126	1%	252	2%	252	2%
5	Sports Complex	4,607	133%	50	1%	99	1%	99	1%
6	San Marco	54	1%	26	1%	52	1%	52	1%
7	Southbank District	364	5%	1,201	15%	106	1%	106	1%
8	Brooklyn	441	5%	173	2%	273	3%	273	3%
9	Riverside	423	4%	8	0%	17	0%	17	0%
10	Five Points	11	1%	7	0%	15	1%	15	1%
11	Shands	765	6%	68	1%	135	1%	135	1%
12	Southbank Central	2,042	90%	14	0%	27	1%	27	1%
13	Jackson Square	736	36%	21	1%	41	1%	41	1%
Study Area SubTotal		**12,071**	**13%**	**1,979**	**2%**	**1,587**	**2%**	**1,588**	**1%**
Region									
14	US 1	9,756	13%	7,444	9%	14,889	16%	14,889	14%
15	Belfort	12,118	13%	6,046	6%	12,092	11%	12,092	10%
16	Beaches	5,883	14%	5,215	11%	10,430	19%	10,430	16%
17	Mandarin	9,357	27%	7,375	17%	14,749	29%	14,749	22%
18	Far South	1,197	4%	1,197	4%	2,395	7%	2,395	7%
19	Southwest	1,769	7%	293	1%	586	2%	586	2%
20	NAS	497	2%	417	2%	834	3%	834	3%
21	Orange Park	5,332	14%	5,332	12%	10,664	21%	10,664	18%
22	Edgewood	3,773	10%	2,945	7%	5,891	14%	5,891	12%
23	Lem Turner Moncrief	210	2%	69	1%	137	1%	137	1%
24	Northside	7,705	14%	5,164	8%	10,327	16%	10,327	13%
25	Springfield	144	2%	102	1%	205	3%	205	3%
26	Westconnett	4,172	10%	2,514	5%	5,028	10%	5,028	9%
27	Arlington	2,367	12%	140	1%	281	1%	281	1%
28	Empire Point	473	2%	108	1%	216	1%	216	1%
29	Wonderwood	1,051	3%	373	1%	747	2%	747	2%
30	San Jose	289	3%	14	0%	27	0%	27	0%
Region SubTotal		**66,093**	**11%**	**44,749**	**7%**	**89,497**	**13%**	**89,497**	**11%**
Grand Total		**78,164**	**11%**	**46,728**	**6%**	**91,084**	**11%**	**91,085**	**10%**

Operating Speed Assumptions

TAZ-to-TAZ estimates of travel time and distance were obtained from the Year 2010 NERPMAB1 model and were used as zone-to-zone highway travel times. The STOPS implementation for Jacksonville uses 2010 distances and travel times to represent the 2015 calibration year as well as the forecast years.

The travel time for the Skyway was coded and based on actual station to station travel time. Table A6 outlines the 2015 No Build operational plan of the Skyway. The operational plans are discussed in the next section.

Table A6: Operational Plan Year 2015 No Build

	Runningway Segments	Effective Headways			Section Miles	Cummulative Miles	Number of Stations	Average Speed	Travel Time (00:00)	Travel Time	Running Time + Dwell Time	Running Time + Dwell Time (00:00)	Average Station Access/Egress (minutes)	
	A- Route	Peak	Base	Wknd										
1	FCCJ - Hemming	4	6	0	0.28	0.28	1	12.1	1:23	1.38	1.88	1:53	1.12	
2	Hemming - Central	4	6	0	0.26	0.54	1	10.3	1:31	1.52	2.02	2:01	1.12	
3	Central - Jefferson	4	6	0	0.31	0.85	1	13.0	1:26	1.43	1.93	1:56	1.12	
4	Jefferson - Convention	4	6	0	0.30	1.15	1	11.7	1:32	1.53	2.03	2:02	1.12	
5	Layover													
6	Convention - Jefferson	4	6	0	0.30	0.30	1	12.1	1:29	1.48	1.98	1:59	1.12	
7	Jefferson - Central	4	6	0	0.31	0.61	1	13.0	1:26	1.43	1.93	1:56	1.12	
8	Central - Hemming	4	6	0	0.26	0.87	1	10.0	1:34	1.57	2.07	2:04	1.12	
9	Hemming - FCCJ	4	6	0	0.28	1.15	1	11.3	1:29	1.48	1.98	1:59	1.12	
10	Layover													
	Total A - Route				2.30	2.30	8	11.7	0:11:50	11.83	15.83	0:15:50	1.12	49.8
	D - Route													
1	FCCJ - Hemming	4	6	0	0.28	0.28	1	12.1	1:23	1.38	1.88	1:53	1.12	
2	Hemming - Central	4	6	0	0.26	0.54	1	10.3	1:31	1.52	2.02	2:01	1.12	
3	Central - San Marco	4	6	0	1.00	1.54	1	16.7	3:36	3.60	4.10	4:06	1.12	
4	San Marco - Riverplace	4	6	0	0.25	1.79	1	15.5	0:58	0.97	1.47	1:28	1.12	
5	Riverplace - Kings Ave	4	6	0	0.31	2.10	1	14.7	1:16	1.27	1.77	1:46	1.12	
6	Layover													
7	Kings Ave - Riverplace	4	6	0	0.31	0.31	1	18.9	0:59	0.98	1.48	1:29	1.12	
8	Riverplace - San Marco	4	6	0	0.25	0.56	1	18.0	0:50	0.83	1.33	1:20	1.12	
9	San Marco - Central	4	6	0	1.00	1.56	1	18.3	3:17	3.28	3.78	3:47	1.12	
10	Central - Hemming	4	6	0	0.26	1.82	1	11.1	1:24	1.40	1.90	1:54	1.12	
11	Hemmng - FCCJ	4	6	0	0.28	2.10	1	11.3	1:29	1.48	1.98	1:59	1.12	
12	Layover													
	Total D - Route				4.20	4.20	10	15.1	0:16:43	16.72	21.72	0:21:43	1.12	43.2
	H - Route													
1	Convention - Jefferson	4	6	0	0.30	0.30	1	12.1	1:29	1.48	1.98	1:59	1.12	
2	Jefferson - Central	4	6	0	0.31	0.61	1	13.0	1:26	1.43	1.93	1:56	1.12	
3	Central - San Marco	4	6	0	1.00	1.61	1	16.7	3:36	3.60	4.10	4:06	1.12	
4	San Marco - Riverplace	4	6	0	0.25	1.86	1	15.5	0:58	0.97	1.47	1:28	1.12	
5	Riverplace - Kings Ave	4	6	0	0.31	2.17	1	14.7	1:16	1.27	1.77	1:46	1.12	
6	Layover													
7	Kings Ave - Riverplace	4	6	0	0.31	0.31	1	18.9	0:59	0.98	1.48	1:29	1.12	
8	Riverplace - San Marco	4	6	0	0.25	0.56	1	18.0	0:50	0.83	1.33	1:20	1.12	
9	San Marco - Central	4	6	0	1.00	1.56	1	18.3	3:17	3.28	3.78	3:47	1.12	
10	Central - Jefferson	4	6	0	0.31	1.87	1	13.0	1:26	1.43	1.93	1:56	1.12	
11	Jefferson - Convention	4	6	0	0.30	2.17	1	11.7	1:32	1.53	2.03	2:02	1.12	
12	Layover													
	Total H - Route				4.34	4.34	10	15.5	0:16:49	16.82	21.82	0:21:49	1.12	49.2

Year 2015 Transit System Represented in STOPS

In 2014, JTA started optimizing their transit system. The optimization is part of "Blueprint 2020" which is JTA's 20-year strategic plan. The route optimization initiative entailed the redesign of the bus and community shuttle services. Several components are included in this initiative. These are:

» Align the routes with the upcoming First Coast Flyer (BRT) system

» Optimize the transit routes to make service more frequent and direct

» Restructure the current system as a whole unit

» Make the overall system simple and easier to use

In the year 2015 system, JTA operated 35 fixed routes. Six of these routes were express routes. Also in operation were nine community shuttles, two trolley routes and the Skyway. The frequent routes ran every 15 to 20 minutes, while the local routes ran every 30 to 60 minutes.

The average weekday bus ridership for 2015 is based on APC data collected during the time period from December, 2014 through April, 2015. During this time period the average weekday bus ridership based on the APC data was 48,789. Following discussions with JTA staff, this number was adjusted to the number that was reported to the FTA and listed in the National Transit Database (NTD) to 42,638. Due to different underlying assumptions in the calculations, it is not uncommon for these average weekday ridership numbers to be different. However, for the purpose of this analysis it was decided that the NTD numbers were a more appropriate data source to use. Therefore, the total average daily boardings was adjusted to the NTD ridership number, while the same proportional relationship for each route to the total average daily boardings was maintained.

The average weekday Skyway ridership number during the same time period used in this study was 4,945. In the 2015 STOPS model, there is no ridership fee associated with the Skyway. The fare elimination went into effect on January 30, 2012.

Calibration to Year 2015 Ridership Data

As shown in Table A7, the year 2015 average weekday transit boarding based on APC and NTD data, shows a total ridership number of 42,638, while the STOPS estimates 43,099 average weekday ridership. This is a difference of one percent or -461 riders.

Also listed in Table A7 are the Skyway riders. Based on the adjusted data collected at the turnstiles, the ridership was 4,945 and the STOPS estimate was 4,366. The difference being - 579 riders or 12 percent. These results look very reasonable.

Table A8 takes a closer look at the Skyway boardings. The only data available for the Skyway was collected at the turnstiles. As such, no information is available on the access mode (walk, kiss and ride, park and ride, and/or transfer) nor on the destination of the trip. Additional pertinent information associated with the Skyway ridership are the locations of the park and ride lots and the interactions between the Skyway and the other transit services. The stations with a park and ride lot are the Convention Center, Kings Ave, River Place and San Marco. The station were most transfers to the other transit services takes place, is the Rosa Parks station.

It is important to note, that the current ridership markets of the Skyway system can be divided into three groups. These are the transit riders that transfer to the Skyway, the park and riders that transfer to the Skyway and the riders that use it as a downtown circulation system during the lunch hour. As such, refinements were made to STOPS to capture these three markets.

Table A7: Year 2015 Calibration

Route Name	Year 2015 APC	Year 2015 STOPS Average Weekday Estimate Existing	Existing minus APC	Percent Difference APC vs. Existing
H-Skyway Convention Kings		303	303	
D-Skyway Rosa Parks Kings		890	890	
A-Skyway Rosa Parks Convention Cntr		3,173	3,173	
Total Skyway	**4,945**	**4,366**	**-579**	**-12%**
9-Arlington/Beach	3,186	4,786	1,600	50%
8-Beach/Town Center	2,277	1,915	-362	-16%
7-Philips	2,318	2,074	-244	-11%
5-Park/Blanding	2,729	2,481	-248	-9%
51-Edgewood	1,549	1,599	50	3%
50-University	1,526	1,144	-382	-25%
4-Kings	1,494	2,714	1,220	82%
3-Moncrief	2,676	1,841	-835	-31%
34-Blanding/Edgewood	113	123	10	9%
33-Spring Park/Philips	146	67	-79	-54%
32-McDuff	142	72	-70	-49%
31-Talleyrand	91	78	-13	-15%
30-Cecil/Cassat	146	252	106	72%
308-Arlington Community Shuttle	44	24	-20	-45%
307-Northside Community Shuttle	55	28	-27	-49%
306-Heckscher Community Shuttle	18	0	-18	-100%
305-Highlands Community Shutle	51	2	-49	-96%
304-Mandarin Community Shuttle	38	12	-26	-69%
303-Beaches Community Shuttle	53	42	-11	-20%
302-Southeast Community Shuttle	64	35	-29	-45%
301-Oakleaf Community Shuttle	92	60	-32	-35%
300-Dunn/Pritchard Community	73	0	-73	-100%
2-Lem Turner	2,082	2,962	880	42%
25-San Jose	499	281	-218	-44%
24-Mayport	265	152	-113	-43%
23-Townsend/Southside/Avenue	734	519	-215	-29%
22-Avenue B	619	559	-60	-10%
205-Beaches Express	31	70	39	124%
204-Dinsmore Shuttle	83	1	-82	-99%
203-NAS	23	14	-9	-39%
202-Mayport Express	85	75	-10	-12%
201-Clay Regional Express	79	62	-17	-21%
200-Mandarin Express	73	209	136	185%
1-North Main	2,816	3,123	307	11%
19-Arlington	2,026	1,356	-670	-33%
18-Atlantic/Monument	1,148	1,159	11	1%
17-St. Augustine/ San Jose	993	1,385	392	40%
16-Riverside/Wilson	762	587	-175	-23%
15-Post/Normandy	1,396	830	-566	-41%
14-Edison	828	749	-79	-10%
13-Commonwealth/Lane	1,506	2,005	499	33%
12-Myrtle/Lem Turner	898	229	-669	-74%
11-A Philip Randolph	654	686	32	5%
10-Atlantic	1,213	2,371	1,158	95%
Total Local Bus (No BRT/Skyway)	**37,693**	**38,733**	**1,040**	**3%**
Grand Total	**42,638**	**43,099**	**461**	**1%**

Table A8: Year 2015 Skyway Station Boarding Estimates

Station Name	Year 2015 Average Weekday STOPS Estimate - Existing					Turnstile Data Year 2015	STOPS Estimate minus Turnstile	Percent Difference Turnstile vs. Existing
	WLK	KNR	PNR	XFR	ALL			
Central	1,218	8	0	71	1,297	888	409	46%
Convention Center	65	59	103	5	232	466	-234	-50%
Hemming Plaza	471	2	0	4	476	1,098	-622	-57%
Jefferson	23	0	0	62	85	87	-2	-2%
Kings Ave	142	22	25	97	286	337	-51	-15%
RiverPlace	80	1	2	28	111	161	-50	-31%
Rosa Parks	1,428	15	0	323	1,766	1,672	94	6%
San Marco	42	23	47	1	113	239	-126	-53%
Total	3,469	130	177	591	4,366	4,948	-582	-12%

These refinements were made through the use of time penalties. In the STOPS model, costs associated with the park and ride lots were added in time (minutes). The cost to park in the lot is between $21.00 and $24.00 a month which was set to a "cost" of 2 minutes. In order to "inform" STOPS that the Skyway is free, and to differentiate that cost between this particular mode and all other modes (Local Bus and BRT) a cost of 2.8 minutes was added to all other modes. No other adjustments were made to the model.

As can be seen in Table A8, the station boardings with the closer validation are Jefferson (2%), and Rosa Parks (6%) stations. As stated before, based on the available data, the overall patterns and the estimates of the total number of average daily ridership look very reasonable.

Year 2015 No-Build Scenario

JTA has been planning the implementation of the First Coast Flyer (BRT) system, which is a premium service that will be implemented along the area's busiest corridors in the north, southeast, east, and southwest districts of Duval County. The BRT routes will connect downtown at the Transit Center and the system as whole will make fewer stops and will have green light priority at key stoplights. In addition, the buses will be uniquely branded and users will have real time passenger information at stops. Figure A5 shows the ultimate system containing the four BRT routes as planned by JTA.

In order to analyze the effect of the BRT system on the transit ridership, JTA developed year 2016 GTFS files which contained all the changes associated with the North and SE BRT and the local routes in those corridors. These GTFS files identify the stops and time schedule associated with these two BRT routes as well as the local bus system. BRT stations with Park-and-Ride lots were also identified in the Station file and added to the GTFS PNR.txt file. No updated files for the East BRT were available and this BRT line was coded manually based on service level information that was received by JTA. The network with the added BRT lines represents the Year 2020 No Build scenario in the analysis. The way the reasonability of the estimates is assessed, is

by applying the year 2015 socioeconomic data to the updated networks. The results of this run are listed in Table A9.

Figure A5: First Coast Flyer (BRT) System
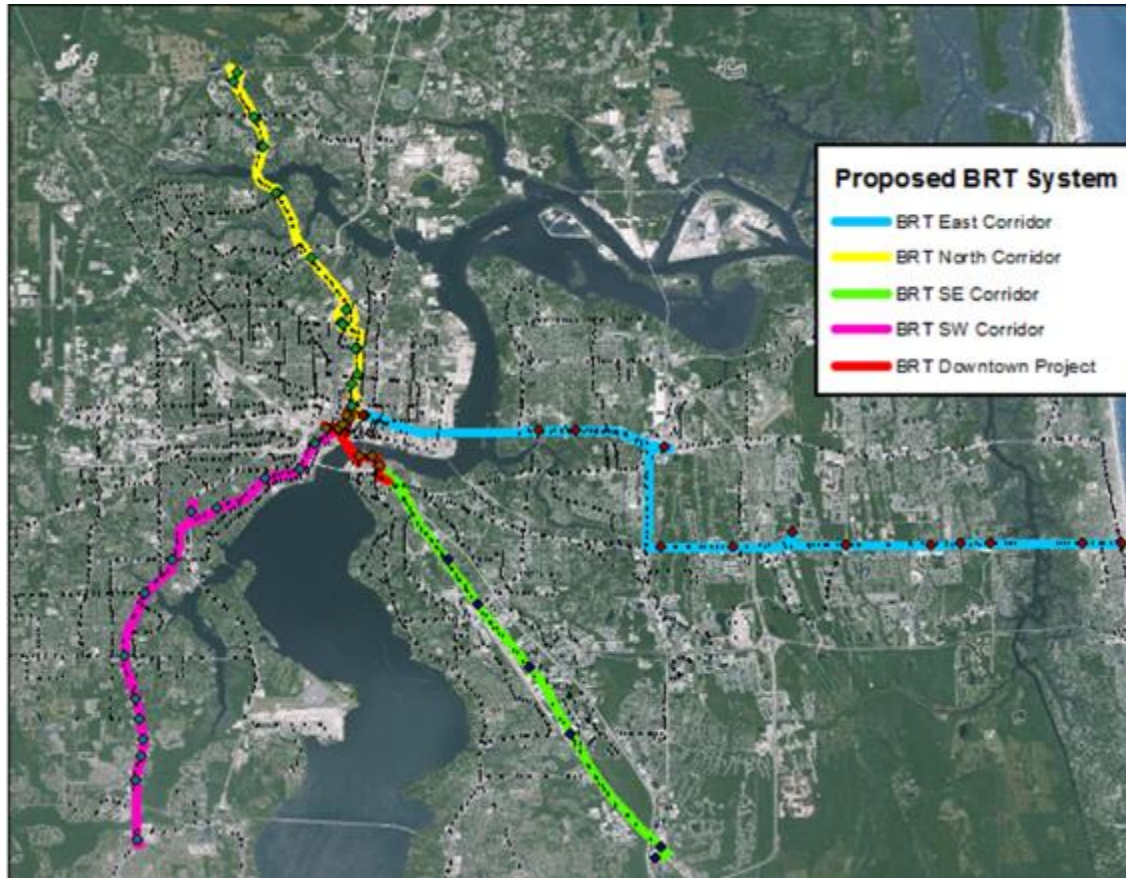
As shown in Table A9, stop at the Rosa Parks station, while the Southwest and East Flyer will stop at the Convention Center station. Both these stations experience an increase in ridership. The STOPS model estimate for the average weekday ridership for the North BRT route was 2,429 while the APC count in 2016 was 2,082. The North BRT route was the only route in operation and therefore the only route for which ridership data was available. The difference between the STOPS estimate and the ridership data is 347 average weekday riders or 16 percent. These estimates are very reasonable, therefore the initial setting the "visibility factor" was not changed. Setting the route type to 0 with a visibility factor of 0, has a similar effect as coding BRT services with route type to 3, which is the type for a local bus.

The BRT routes in Jacksonville will be operating in mixed traffic, will be branded and signal optimization will be in effect in the BRT corridors. However, as can be seen in stop at the Rosa Parks station, while the Southwest and East Flyer will stop at the Convention Center station. Both these stations experience an increase in ridership.

Table A9 route type 0 and a visibility factor of 0 simulate the ridership numbers very well. Using the same input assumptions, total skyway ridership increases by 624 average daily riders or 14%. This increase can be contributed to the addition of the BRT system. This conclusion can be drawn by looking at the station boardings in Table A10. The North and Southeast Flyers both stop at the Rosa Parks station, while the Southwest and East Flyer will stop at the Convention Center station. Both these stations experience an increase in ridership.

Table A9: Year 2015 No Build STOPS Average Weekday Ridership

Route Name	Year 2015 APC	Year 2015 STOPS Average Weekday Estimate Existing	Existing minus APC	Percent Difference APC vs. Existing	STOPS Estimate 2015 No Build
H-Skyway Convention Kings		303	303		321
D-Skyway Rosa Parks Kings		890	890		816
A-Skyway Rosa Parks Convention Cntr		3,173	3,173		3,853
Total Skyway	**4,945**	**4,366**	**-579**	**-12%**	**4,990**
102-North First Coast Flyer	2,082				2,429
107-Southeast First Coast Flyer					1,305
5-Southwest First Coast Flyer					1,624
9-East First Coast Flyer					3,238
Total Flyers (BRT)					**8,596**
9-Arlington/Beach	3,186	4,786	1,600	50%	0
8-Beach/Town Center	2,277	1,915	-362	-16%	1,947
81-Dinsmore Shuttle					1
80-NAS					10
7-Philips	2,318	2,074	-244	-11%	0
5-Park/Blanding	2,729	2,481	-248	-9%	591
53-Commonwealth Cassat					1,190
51-Edgewood	1,549	1,599	50	3%	978
50-University	1,526	1,144	-382	-25%	1,382
4-Kings	1,494	2,714	1,220	82%	1,739
3-Moncrief	2,676	1,841	-835	-31%	2,185
35-Old St Augustine Rd/Bayme					120
34-Blanding/Edgewood	113	123	10	9%	0
33-Spring Park/Philips	146	67	-79	-54%	144
32-McDuff	142	72	-70	-49%	97
31-Talleyrand	91	78	-13	-15%	66
30-Cecil/Cassat	146	252	106	72%	276
308-Arlington Community Shuttle	44	24	-20	-45%	23
307-Northside Community Shuttle	55	28	-27	-49%	103
306-Heckscher Community Shuttle	18	0	-18	-100%	0
305-Highlands Community Shutle	51	2	-49	-96%	197
304-Mandarin Community Shuttle	38	12	-26	-69%	0
303-Beaches Community Shuttle	53	42	-11	-20%	84
302-Southeast Community Shuttle	64	35	-29	-45%	24
301-Oakleaf Community Shuttle	92	60	-32	-35%	37
300-Dunn/Pritchard Community	73	0	-73	-100%	0
2-Lem Turner	2,082	2,962	880	42%	0
27-Philips Hwy/Baymeadows/Av		0			479
25-San Jose	499	281	-218	-44%	464
24-Mayport	265	152	-113	-43%	141
23-Townsend/Southside/Avenue	734	519	-215	-29%	660
22-Avenue B	619	559	-60	-10%	681
21-Boulevard					160
205-Beaches Express	31	70	39	124%	67
204-Dinsmore Shuttle	83	1	-82	-99%	0
203-NAS	23	14	-9	-39%	0
202-Mayport Express	85	75	-10	-12%	71
201-Clay Regional Express	79	62	-17	-21%	61
200-Mandarin Express	73	209	136	185%	107
1-North Main	2,816	3,123	307	11%	3,347
19-Arlington	2,026	1,356	-670	-33%	1,238
18-Atlantic/Monument	1,148	1,159	11	1%	1,150
17-St. Augustine/ San Jose	993	1,385	392	40%	1,185
16-Riverside/Wilson	762	587	-175	-23%	711
15-Post/Normandy	1,396	830	-566	-41%	947
14-Edison	828	749	-79	-10%	791
13-Commonwealth/Lane	1,506	2,005	499	33%	1,530
12-Myrtle/Lem Turner	898	229	-669	-74%	628
11-A Philip Randolph	654	686	32	5%	584
10-Atlantic	1,213	2,371	1,158	95%	4,102
Total Local Bus (No BRT/Skyway)	**37,693**	**38,733**	**1,040**	**3%**	**30,298**
Grand Total	**42,638**	**43,099**	**461**	**1%**	**43,884**

Table A10: Year 2015 No Build STOPS Estimates Average Daily Boardings

| Station Name | Average Daily Ridership STOPS Estimates | | | | | | | | | | | | | | |
| | Year 2015 Existing | | | | | Year 2015 No Build | | | | | Difference Year 2015 No Build minus Existing | | | | |
	WLK	KNR	PNR	XFR	ALL	WLK	KNR	PNR	XFR	ALL	WLK	KNR	PNR	XFR	ALL
Central	1,218	8	0	71	1,297	1,224	10	0	33	1,266	6	2	0	-38	-31
Convention Center	65	59	103	5	232	86	41	108	376	611	21	-18	5	371	379
Hemming Plaza	471	2	0	4	476	485	2	0	2	489	14	0	0	-2	13
Jefferson	23	0	0	62	85	29	0	0	37	66	6	0	0	-25	-19
Kings Ave	142	22	25	97	286	178	17	21	25	242	36	-5	-4	-72	-44
River Place	80	1	2	28	111	101	0	2	42	145	21	-1	0	14	34
Rosa Parks	1,428	15	0	323	1,766	1,440	16	0	597	2,052	12	1	0	274	286
San Marco	42	23	47	1	113	41	16	50	12	119	-1	-7	3	11	6
Total	**3,469**	**130**	**177**	**591**	**4,366**	**3,584**	**102**	**181**	**1,124**	**4,990**	**115**	**-28**	**4**	**533**	**624**