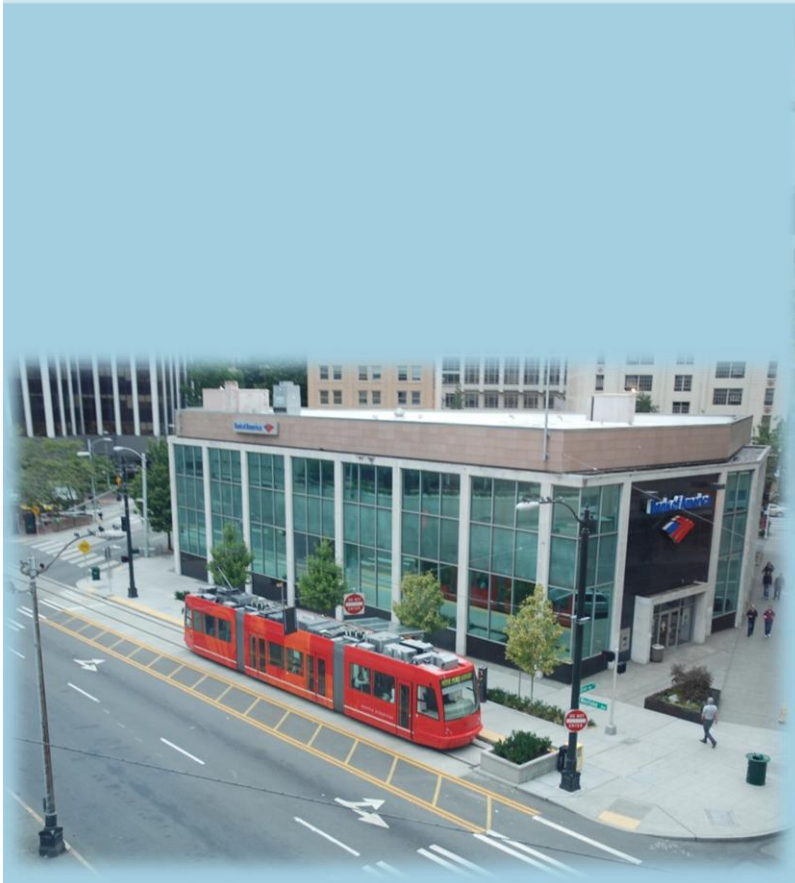
CENTRAL BROWARD EAST-WEST TRANSIT STUDY

Transportation Systems Technical Memorandum



September 2012

JACOBS

CENTRAL BROWARD East West TRANSIT STUDY

Table of Contents

List of Exhibits

Introduction

The Central Broward East-West Transit Study is a premium transit initiative that began in 2002, and is located in the central part of Broward County, FL. The main purpose of the study is to identify premium transit services that would enhance mobility and accessibility options along east-west corridors in the area. The study is being conducted by the Florida Department of Transportation (FDOT), in collaboration with Broward County Transit (BCT), the Broward Metropolitan Planning Organization (MPO), and the South Florida Regional Transportation Authority (SFRTA). The study area boundaries comprise of Oakland Park Boulevard to the north, Griffin Road/Stirling Road to the south, the Weston-Sawgrass area on the west side, and the Intracoastal Waterway to the east.

Following the completion of the Alternatives Analysis (AA) in 2005, several build alternatives were presented to stakeholders and the public. The alternatives considered the following scenarios:

- A No Build Alternative: which considered projects in Broward's financially constrained long range plan (LRTP), consisting of existing and committed projects, and projects identified in the 2035 Cost Feasible Plan.

- Transportation System Management (TSM) Alternative: this alternative included elements of the No Build Alternative, the Wave streetcar, an illustrative (unfunded) project in Broward's 2035 LRTP, modifications to several planned route headways, and additional limited stop bus service.

- Three build alternatives are also proposed:

    1. SR 7/Broward Boulevard Alternative: this alternative proposes premium bus service from the Weston-Sawgrass area, along I-595 and SR 7, to the Fort Lauderdale Tri-Rail station at Broward Boulevard. The project's study area east of Tri-rail is proposed to be served by rail service, such as modern streetcar.

    2. Griffin Road Premium Bus Alternative: this alternative proposes premium bus service from the Weston-Sawgrass area along I-595 to the South Florida Education Center at University Drive. Premium bus service would then continue on Griffin Road to the Fort Lauderdale/Hollywood International Airport Tri-Rail Station. Similar to the previous alternative, the project's study area east of Tri-rail is proposed to be served by rail service, such as modern streetcar.

    3. Griffin Road Modern Streetcar Alternative: this alternative follows the same route as the previous alternative, except that a modern streetcar is proposed on Griffin Road instead of premium bus service.

This document focuses on the existing transportation systems that are located within the Central Broward East-West Transit study area. The document examines the services provided by the existing multimodal system in central Broward, as well as the potential connections to the proposed project alternatives. The transportation systems examined include transit services, including local and express bus, community shuttle service, and Tri-Rail; parking and vehicle access; bicycle and pedestrian networks; truck and rail freight corridors; and adjacent waterways.

1.0 Transit Service, Operations, and Ridership

Broward County has a variety of transit services, both existing and planned, that will coincide with and facilitate the Central Broward East-West Transit Study, regardless of what alignment is selected. Tri-Rail and Broward County Transit's express bus service, local bus service, and community shuttles all provide an integral transit framework for the study area. Once an LPA is selected, more detailed operating plans will be defined through coordination with Broward County Transit (BCT) and the South Florida Regional Transportation Authority (SFRTA).

In terms of existing service, both the Griffin Road and SR 7/Broward Boulevard alignments provide the same number of potential connections to the transit systems in the study area. Both alignments cross twenty-four local bus routes (not including an additional seven proposed new routes by 2035) and fourteen community shuttle routes, including shuttle services provided by local municipalities, the Florida Housing Authority, the South Florida Education Center, and the South Florida Regional Transportation Authority. Additionally, both alignments have the potential to share stop locations with eight express bus service routes and two Tri-Rail stations.

1.1 Local Bus Service

Broward County Transit's existing local bus service information is shown in Exhibit 1. The existing north-south bus routes are in the central and eastern parts of the county, while the existing east-west bus routes, within the study area, are located north of I-595.

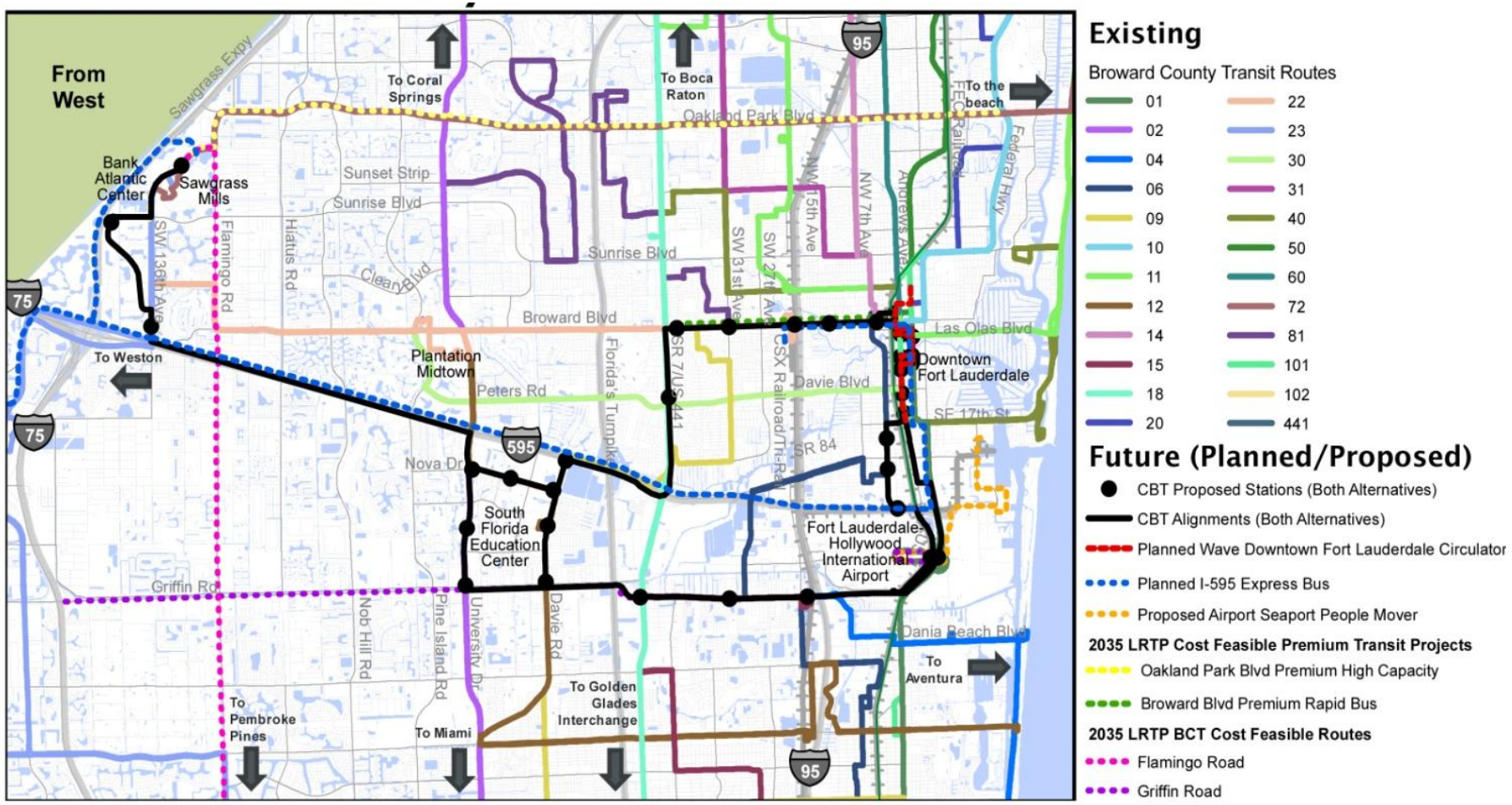
Proposed new local bus routes and improvements to existing routes are illustrated in Exhibit 2. These proposed additions and improvements work towards improving connectivity in the southern and western portions of the study area, with new routes on Flamingo and Griffin Roads, and also increasing operating efficiencies on existing routes.

Exhibit 1: Existing (2010) Local Bus Service and Planned Local Bus Improvements

Route #	Roadway Name	Alignment Orientation	Current Operations		Planned Improvements[1]	
			Peak Headway[2]	Off-Peak Headway[2]	Peak Headway[2]	Off-Peak Headway[2]
1	US 1	North-South	15	20	10	15
US 1 Breeze	US 1	North-South	30	--	10	--
2	University Drive	North-South	20	30	10	15
University Breeze	University Drive	North-South	30	--	5	7.5
9	Johnson Street/ Davie Road/ Broward Boulevard	North-South	45	60	15	20
18	SR 7	North-South	15	20	10	15
441 Breeze	SR 7	North-South	30	--	5	7.5
--	Flamingo Road	North-South	--	--	20	30
--	Nob Hill Road	North-South	--	--	15	20
--	Pine Island Road	North-South	--	--	15	20
22	Broward Boulevard	East-West	15	30	15*	20*
					10	20
--	Broward Boulevard BRT (SR 7 to downtown)	East-West	--	--	5	7.5
30	Peters Road & Davie Boulevard	East-West	20	30	10	15
36	Sunrise Boulevard	East-West	20	30	15*	20*
					10	15
--	Sunrise Rapid Bus	East-West			7.5	15
72	Oakland Park Boulevard	East-West	15	20	10	15
--	Oakland Park Boulevard/ Andrews Ave Rapid Bus	East-West/ North-South	--	--	10	15
--	Oakland Park Breeze	East-West	--	--	10	--
--	Griffin Road	East-West	--	--	20	30

[1]Implementation year is 2035, unless noted with *, then implementation year is 2016.
[2] In Minutes.

Exhibit 2: Existing Transit Service and Planned Transit Improvements



1.2 Express Bus Service

There are currently four I-95 Express Bus routes in operation: Broward Boulevard, Sheridan Street, Pines/Hollywood Boulevard, and Miramar Town Center. All of these routes provide service to downtown Miami. The Central Broward East-West Transit Study will provide a connection to the I-95 Express Bus route from the Broward Boulevard Park-n-Ride station adjacent to the Tri-Rail station. This bus service, in operation since early 2010, operates every 15 minutes on weekdays during morning and afternoon peak travel periods, starting at 5:45 a.m. until 8:45 a.m. and at 3:35 p.m. until 6:45 p.m. The Express Bus is a hybrid articulated vehicle with Wi-Fi accessibility and convenient service.

Launched in May of 2012, the I-595 Express Bus Service offers three services: one connecting Sunrise to Fort Lauderdale, one connecting Sunrise to Miami, and a third connecting Weston to Miami. Service to downtown Fort Lauderdale in the morning operates eastbound from the Sunrise Park-n-Ride to Fort Lauderdale, making stops at SE 17th Street and US 1 and Broward Boulevard and Andrews Avenue. The hours of operation for the morning route are from 6:05 p.m. to 9:30 p.m. In the afternoon, the bus takes the westbound route from Fort Lauderdale to the Sunrise Park-n-Ride, with stops at Broward Boulevard and Andrews Avenue, the Fort Lauderdale Tri-Rail Station, and the Sawgrass Mills Mall. The hours of operation for the afternoon route are from 3:30 p.m. to 7:10 p.m. Both of the two services running to Miami stop at the Griffin Road Tri-Rail Station before continuing south. There is an opportunity for two of the three routes to share parking facilities at the BB&T Center (formerly the Bank Atlantic Center) in Sunrise, designated as the western terminus for Central Broward East-West Transit Study. While the I-595 Express service to Fort Lauderdale provides a one-seat ride from Sunrise to downtown with limited stops, the Central Broward Transit system intends to offer off-peak service to intermittent destinations such as Tri-Rail, the Fort Lauderdale-Hollywood International Airport, and the South Florida Education Center.

1.3 Community Shuttle Service

In addition to the BCT fixed-route bus system, community buses operate within different local jurisdictions. Community bus service is designed to increase the number of destinations within city limits that residents can access through public transit. It provides connections to multiple fixed-route, countywide bus service provided by BCT. The community bus service operates as circulators, shuttles, and/or trolleys. The cities of Dania Beach, Fort Lauderdale, and the Town of Davie all provide community bus service that crosses some part of the study corridor. The community bus service in the City of Fort Lauderdale is operated by the Downtown Fort Lauderdale Transportation Management Association (TMA), and is known as Sun Trolley. Other neighboring municipalities also provide community shuttle services that may provide indirect connectivity to the study corridor by linking to local bus service that then connects to one of the alignments.

Additionally, there is a paratransit service in Broward County known as Transportation Options (TOPS). The TOPS paratransit service is available to eligible riders who cannot use the fixed-route bus service for various reasons.

1.4 Tri-Rail Service

Tri-Rail, operated by the SFRTA, provides commuter rail service in the three-county region comprising of Palm Beach, Broward, and Miami-Dade counties. Tri-Rail traverses the corridor along I-95 in the eastern part of the corridor and has two stations (one at Broward Boulevard and the other at Griffin Road) in the study area out of the total seventeen stations on the rail line. Tri-Rail service begins at the

Miami International Airport Station in Miami-Dade County east of NW 42 Avenue and south of SR 112, and terminates in Palm Beach County at the Mangonia Park Station, near 45th Street and a half mile east of I-95. The system includes six stations in Palm Beach County, seven stations in Broward County and four stations in Miami-Dade County. BCT buses connect to Tri-Rail stations in Broward County.

Tri-Rail service is provided seven days a week. Trains arrive every 20 minutes during morning peak hours, every 30 minutes during evening peak hours, and every 60 minutes during midday, off-peak hours. On weekends and holidays there are eight trips, which arrive once every two hours. Furthermore, Tri-Rail operates free shuttle service throughout the tri-county area. The shuttle service includes 19 routes and serves ten stations along the system. Most of these routes operate during peak hours only with headways ranging from 20 to 45 minutes. The proposed alignments would provide connections to both the Broward Boulevard and Griffin Road Tri-Rail Stations, and are not expected to affect Tri-Rail's services.

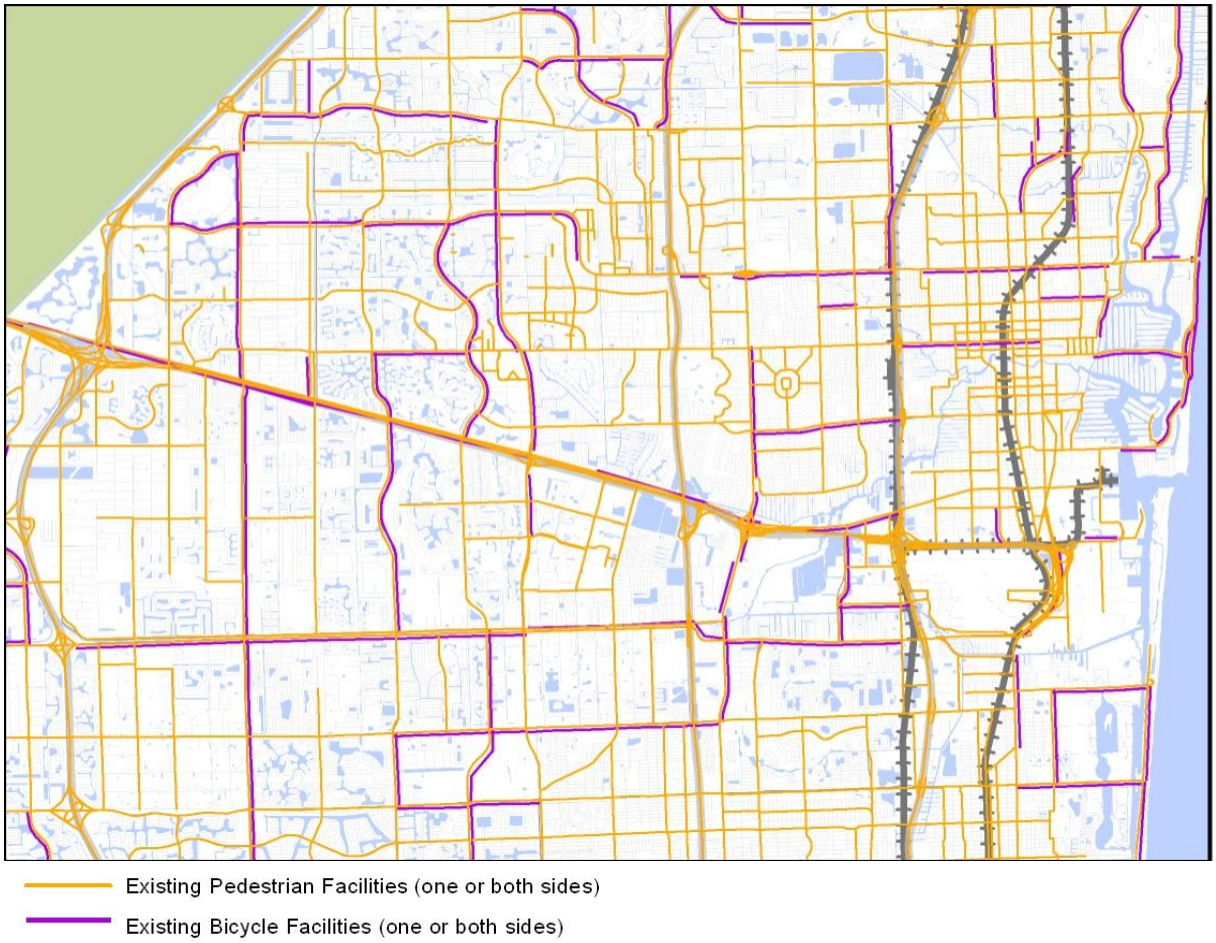
3.0 Effects on Bicycle and Pedestrian Facilities

Existing bicycle and pedestrian facilities are shown in Exhibit 3. Generally, most of the streets that make up both alignments have continuous sidewalks at least on one side. Similarly, most of the streets have some type of bicycle facility, either a marked bikeway, wide curb lane or paved shoulders. Southeast 30th Street and US 1 are lacking sidewalks.

Marked bikeways exist along SR 7 from Riverland Road to Broward Boulevard and University Drive north of I-595 and Hiatus Road north of I-595. A Multipurpose path exists along I-595 on the north side from Sawgrass Expressway to University Drive and from College Avenue to SR 7. In addition, Broward County identified the following arterials that have either a wide curb lane or paved shoulders: NW 136th Avenue from Sunrise Boulevard to Flamingo Road, Broward Boulevard from I-95 to US 1, and US 1 in the FLL area. A B-station, where bicycles are available for bike-sharing under the County's partnership with B-cycle is located at 490 SW 2nd Street, adjacent to the Broward Center for the Performing Arts.

Future bicycle and pedestrian improvements are planned within the proposed transit corridor. These plans include the Broward County Greenways Plan, Broward Boulevard Livable Mobility Plan, and the South Andrews Avenue Master Plan and Development Guide.

Exhibit 3: Existing Pedestrian and Bicycle Facilities



3.1 Broward County Greenways Plan

The Greenways Master Plan indicates a future greenway along Griffin Road that would overlap with proposed transit service on Griffin Road between University Drive and the Turnpike for alignments operating on the Griffin Road Alignment. Plans also indicate that the future Dixie Highway and New River Greenways will run parallel to portions of the transit corridor, but do not directly overlap. Coordination with the City of Fort Lauderdale indicates that the design option utilizing 4th Avenue and Perimeter Road overlaps with their proposed routing of the Dixie Highway greenway. Exhibit 4, a typical section, shows there is sufficient right-of-way available to accommodate the plans for a greenway in this area, in addition to the proposed modern streetcar. Exhibit 5 shows the existing and future planned/funded greenways throughout Broward County.

Exhibit 4: Typical Cross Section of Greenways Plan for 4th Avenue

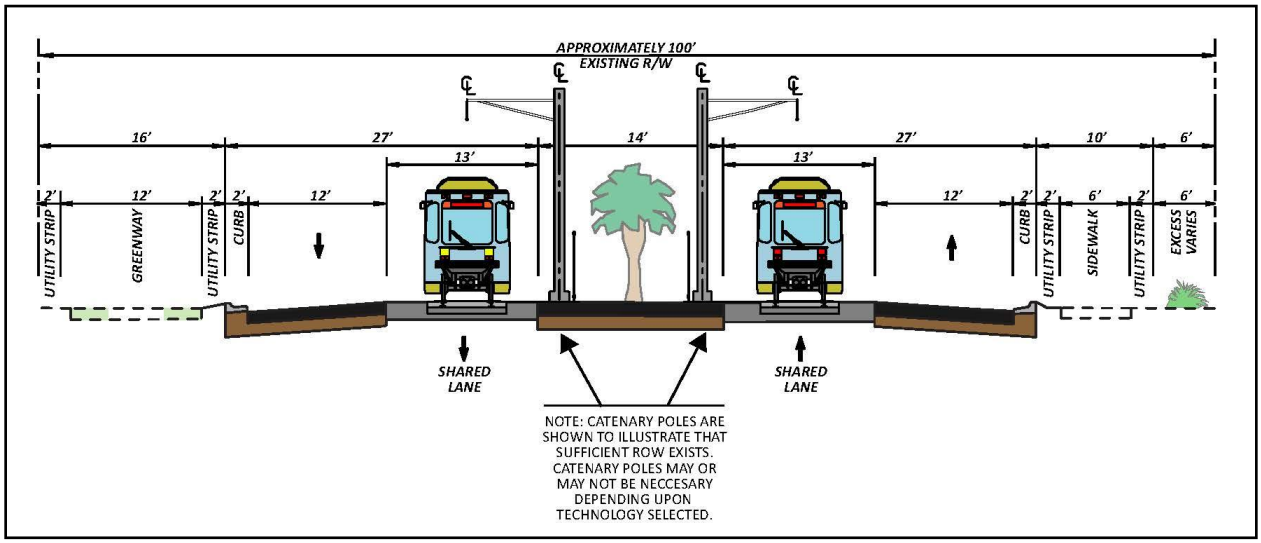
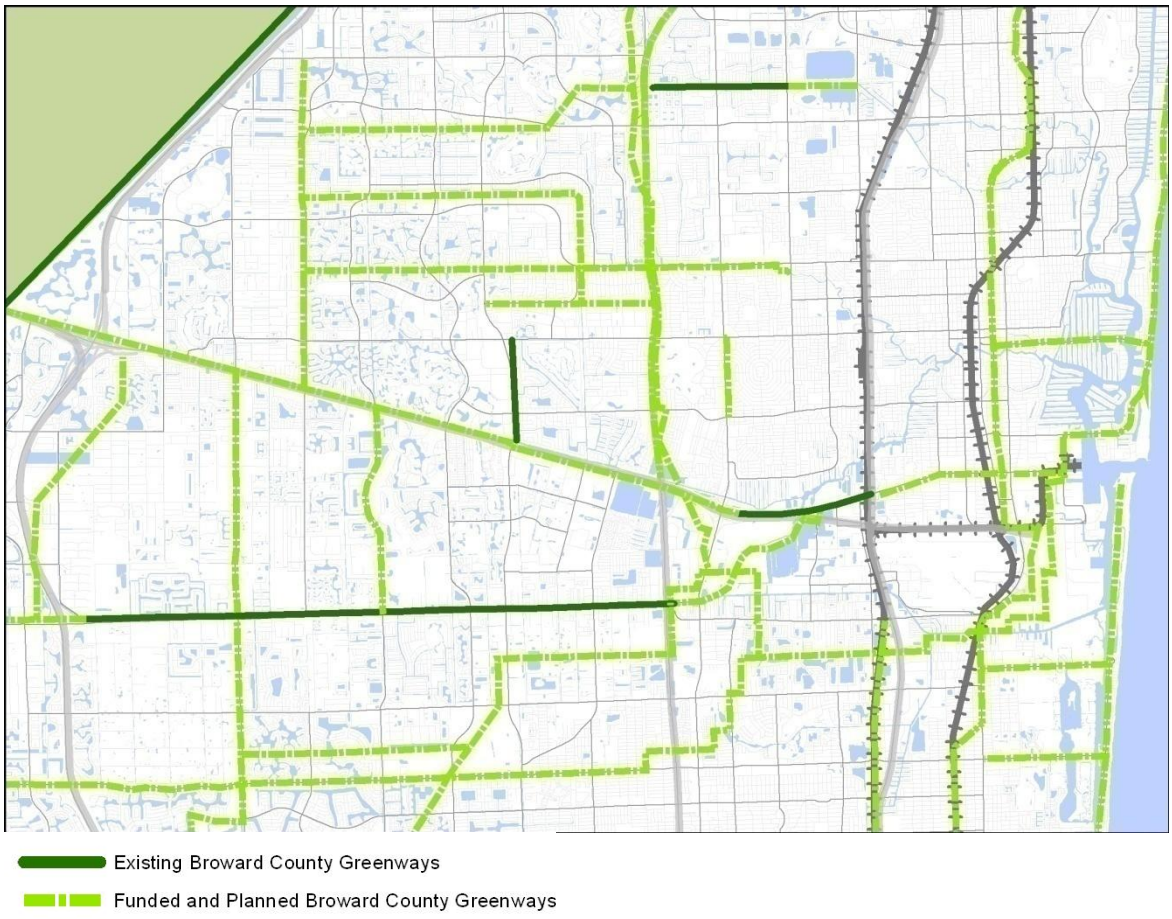


Exhibit 5: Existing and Planned Broward County Greenways



3.2 Broward Boulevard Livable Mobility Plan

The goal of the Broward Boulevard Livable Mobility Plan was to create an integrated, safe, convenient and environmentally compatible system of transit-related improvements along Broward Boulevard between two existing Broward County Transit terminals, the Broward Central Terminal (downtown Fort Lauderdale) and the West Regional Terminal (City of Plantation). Pedestrian and bus shelter enhancements at Broward County Transit's two terminals and the addition of pedestrian and transit-user landscaping elements along the corridor are components of the funded plan.

3.3 South Andrews Avenue Master Plan and Development Guide

The South Andrews Avenue Master Plan was created to guide future development along both sides of a mile-long stretch of Andrews Avenue that extends from the Tarpon River to SR 84. It is aimed at developing a mixed-use urban neighborhood with a pedestrian-friendly environment at the street level in between downtown Fort Lauderdale and the Fort Lauderdale-Hollywood International Airport. The Master Plan calls for more pedestrian amenities and public open-space along both sides of Andrews Avenue.

4.0 Effects on Parking and Vehicular Access

4.1 Parking

Facilities with substantially large parking capacity that are immediately adjacent to the proposed alignments of the Central Broward East-West corridor include the Sawgrass Mills Mall, BB&T Center, Ikea, downtown Fort Lauderdale, and the Fort Lauderdale-Hollywood International Airport. Parking at each of these facilities is shown in Exhibit 6. In addition, downtown Fort Lauderdale has a variety of parking options in publicly or privately owned surface parking lots or parking garages. There are approximately 14,000 parking spaces available to the public in parking garages, and 553 parking spaces in parking lots managed by the City[1]. Privately owned parking surface lots information was not available.

Exhibit 6: Parking at Major Activity Centers

Location	Public Parking	Adjacent Alignments
Sawgrass Mills Mall	14,600	All
BB&T Center	7,600	All
Ikea	1,100	All
Fort Lauderdale-Hollywood International Airport (not including remote parking)	12,000	All
Downtown Fort Lauderdale public parking	14,553	All

Source: Jacobs Carter Burgess, 2008.

Parking available in the South Florida Education Center (SFEC) was not included since the majority requires parking permits or other passes to access. The proposed alignments are not expected to impact the provision of parking at any of these activity centers, except for the BB&T Center. With the western terminus being considered for the BB&T Center, there have been discussions with the property owners about utilizing a portion of their parking for the station. The I-595 Express Bus is utilizing a portion of this site for their park-and-ride needs. As this study moves into the environmental analysis, the study team will work closely with all of the stakeholders to determine if additional park-and-ride spaces are needed in this location.

On-street parking is allowed only on one segment of the proposed alignments, on Andrews Avenue from SE 17th Street to SE 30th Street. Since the modern streetcar would be operating in mixed traffic on this segment of Andrews Avenue, there are no anticipated impacts to the on-street parking.

5.0 Effects on Freight Service, Rail Service, and Waterways

5.1 Freight

The evaluation of impacts on freight infrastructure included the collection of data on volumes and operations from various sources produced by the Broward MPO and, where available, data obtained directly from private freight operators.

[1] FDOT D4, Downtown Fort Lauderdale Parking Study, April 2003.

Broward County has designated four key freight/industrial zones within the County. The proposed Central Broward East-West Transit Study corridor passes through two of these zones: the I-595/Airport Zone (Mega Transport Zone) and the Sawgrass/I-75 zone.

5.1.1 I-595/Airport Zone (Mega Transport Zone)

The I-595/Airport Zone contains the Port Everglades, Fort Lauderdale – Hollywood International Airport (FLL) and the Florida East Coast Railway (FEC) Intermodal Center2. The I-595/Airport zone is served by two rail lines and a substantial amount of truck traffic.

5.1.2 Sawgrass/Interstate 75 Zone

The Sawgrass/I-75 Zone is made up of a linear cluster of industries stretching approximately from Griffin Road north to Wiles Road. This western part of Broward County is not served by rail, and these businesses all rely on truck transportation.

5.2 Rail

The study corridor is bisected by two north-south freight corridors: the Florida East Coast (FEC) Railway and CSX, which operates on the same tracks as Tri-Rail.

5.2.1 Florida East Coast Railway

The FEC corridor runs in the eastern side of the county and intersects the Central Broward Transit corridor in downtown Fort Lauderdale near the Central Broward Terminal. It then parallels the proposed Central Broward East-West Transit alignment from downtown Fort Lauderdale south to the Fort Lauderdale-Hollywood International Airport. Proposed Central Broward East-West Transit routings using Griffin Road are associated with an additional at-grade crossing of the FEC, either on Griffin Road near US1, immediately south of the Airport, or north of the Airport and FEC Intermodal Facility at SW 17th Street.

The FEC corridor provides direct service to the Fort Lauderdale-Hollywood International Airport and Port Everglades. The line does not have passenger service on it at this time. A study is underway by FDOT to evaluate potential future passenger service using the FEC right-of-way. The FEC has also proposed its own passenger service, *All Aboard Florida*, that would provide passenger rail service from Miami to Fort Lauderdale, West Palm Beach, and Orlando.

The FEC line is used to transport more than 20 million gross ton-miles[3] per track mile per year. Most traffic on the FEC passes through Fort Lauderdale, to and from FEC's Miami facilities; however, several trains a day terminate and originate in Fort Lauderdale. Road trains, which transport freight cars between cities, and local trains, which deliver product to customers and pick up empty cars, are both operated within the study area. Information for a typical weekday in December 2005[4] indicates that the

---

[2] Located between the FEC railroad (to the east) and Andrews Avenue (to the west), between SW 24th Street and SW 33rd Street.

[3] Gross ton-miles include the weight of locomotive and other rolling stock.

[4] Information on FEC freight operations is drawn from a "high traffic" period in the history of South Florida. However, the recent economic downturn has had a significant impact on FEC's operations, resulting in fewer trains operated. Consequently, it is reasonable to assume that the December 2005 freight schedule is representative of how FEC will increase its existing operations responding to traffic growth as the economy improves.

FEC operates an average of 23 road freight trains in the study area. On a typical weekday, the road trains include a variety of intermodal, general purpose freight and rock trains that are usually between 5,000 and 8,000 feet in length. The FEC operates road trains in the study area during all portions of the day, but density of operations is generally greatest after 4:00 p.m. each afternoon until 9:00 a.m. the following morning. The reduced density of road operations in the midday period appears to provide the FEC with an opportunity to serve local customers and perform maintenance of way work with reduced interference by long distance freight trains. One or two local trains serve customers on the mainline in the vicinity of Fort Lauderdale on a typical weekday. Local trains tend to operate on the mainline during the midday period between 9:00 a.m. and 4:00p.m. Exhibit 7 reports typical mainline freight traffic densities by time of day in the vicinity of Fort Lauderdale. Additionally, the FEC operates 12 daily thru trains, running from Miami to Jacksonville. This number is projected to increase to an average of 28 daily thru trains by 2016.

Exhibit 7: FEC Fort Lauderdale Freight Traffic Densities by Time of Day*

Time Period	Average Road Trains per Hour	Average Local Trains on Main
Midnight to 6 a.m.	1.8	0
6 a.m. to 9 a.m.	1.3	0.7
9 a.m. to 4 p.m.	0.5	1.0
4 p.m. to 7 p.m.	1.0	0.3
7 p.m. to Midnight	1.0	0

* Data retrieved December 14-15, 2005.

All build alignments would cross the FEC at-grade along Broward Boulevard in the vicinity of the Central Broward Terminal. A second crossing of the FEC mainline further to the south is also required for all alignments. This at-grade crossing would occur along Griffin Road near the intersection with US-1, except for the option that operates along Perimeter Road and SW 4th Avenue, which would cross the FEC at-grade on SW 17th Street near Andrews Avenue. Based on peak headways of 10 minutes in each direction and off-peak headways of 15 minutes in each direction, the proposed transit service would cross the FEC at each location 12 times per hour during peak hours and 8 times per hour during the midday.

5.2.2 CSX

CSX freight trains in the study area are operated on the state-owned South Florida Rail Corridor (SFRC) that generally runs parallel to I-95. The SFRC is a 72 mile section of the historic Seaboard Air Line railroad. The SFRC was owned by CSX before being purchased by the State of Florida. CSX Corporation maintains exclusive trackage rights on the corridor and dispatches the passenger and freight trains within the corridor. Depending on the alignment selected, the Central Broward East-West Transit corridor crosses the SFRC either in the vicinity of Broward Boulevard and I-95 interchange overpass, or at-grade on Griffin Rd east of I-95. Tri-Rail and Amtrak passenger rail services are operated concurrently with freight trains on the SFRC[5].

[5] Tri-Rail operates 50 trains per weekday with approximately 20 minute headway service during peak periods and approximately one hour headways during off-peak while Amtrak operates four trains per weekday (Silver Star and Silver Meteor routes between Miami and New York) on the SFRC.

CSX operates three to six road trains per weekday amounting to between 10 and 20 million gross ton-miles per track mile per year. The available data, from August 2006, indicates that on a typical weekday, CSX operated two to three northbound and two to three southbound road trains. CSX road trains in the study area are operated at night or in the early morning in the window between the last Tri-Rail train in the evening and first Tri-Rail train the next morning. Approximately two-thirds of the CSX road cars operated in the study area are aggregate trains carrying 80 loads of rock. The remaining one-third of road trains is manifest freight consisting of 30 to 90 box cars.

Two local trains are based out of CSX's Fort Lauderdale yard, which is located south of the Fort Lauderdale Tri-Rail Station, and are operated at night as required. Local trains generally make round-trips to and from the yard where they are based, although, in a few cases CSX's local trains were observed to lay-up in a different location from which the train initiated or were combined with other trains (both local and road trains). Because the corridor is partially dedicated to Tri-Rail passenger service, future CSX freight growth is somewhat restricted by Tri-Rail operating time frames. Any future freight growth along the corridor would, then, be restricted to a level that does not negatively impact the passenger rail schedule during the peak commuter operating periods.

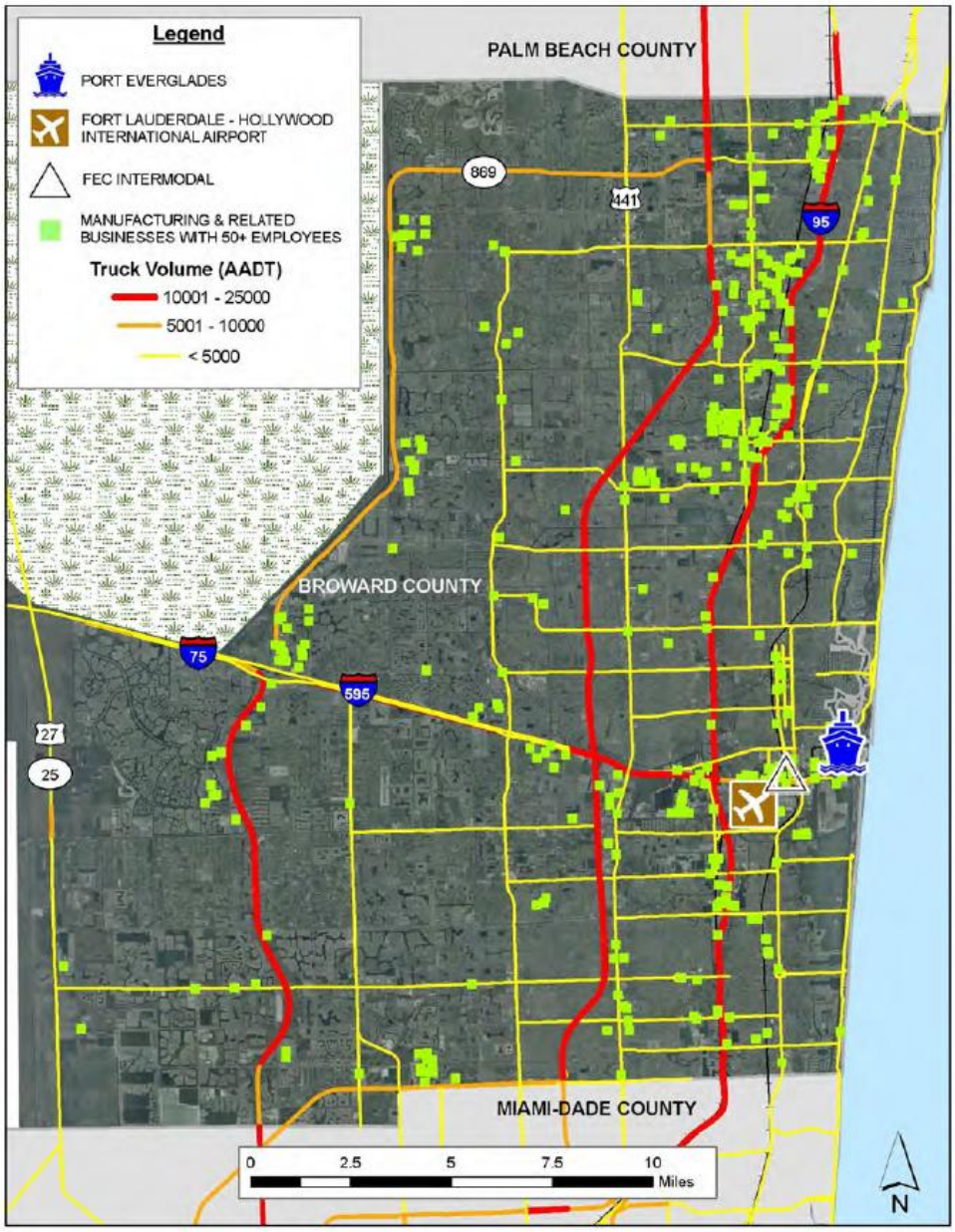
All build alignments would cross the SFRC at-grade along Griffin Road in the vicinity of the Fort Lauderdale Airport Tri-Rail Station. The at-grade crossing would occur 12 times per hour during peak hours and 8 times per hour during the midday. Because the proposed transit services would be generally operating in mixed traffic and controlled by the traffic signal network, impacts to the rail freight network are expected to be minimal.

5.2.3 Trucks

There is one major trucking facility in the Central Broward East-West Transit corridor located at the FEC intermodal facility. This facility, owned and operated by the FEC Railway, uses Andrews Avenue as its main truck access to the roadway system. The density of service on Andrews Avenue adjacent to the trucking facility would be 12 vehicles per hour during the peak and eight vehicles per hour during the off-peak.

Exhibit 8 shows the annual average daily traffic (AADT) for trucks in Broward in 2006, with the highest truck volumes occurring on the interstate highways, including the portion of I-595 between the Turnpike and I-95. While the SR 7/Broward Boulevard Alternative would operate over this portion of I-595 for approximately two miles, the Griffin Road Alternatives would not use I-595 in the portion with the higher truck traffic volumes. A survey of truck drivers conducted at Port Everglades and the FEC Intermodal Ramp in Fort Lauderdale as part of the Broward County Urban Freight/Intermodal Mobility Study found the criticism of roadway congestion to be relatively mild. Only about one third of drivers complained about congestion and another ten percent about other road issues. At the same time, approximately one-quarter of drivers stated that they thought that the highways were fine and/or that they had no issues with highway access in Broward County. Other issues raised during the survey included narrow lanes on Andrews Avenue and construction on local roads.

Exhibit 8: Truck Volumes and Manufacturing Activity



5.3 Waterways

At this time, the only waterborne transportation in the study area is the Water Taxi that operates within the New River (from East 3rd Avenue) and the Intracoastal Waterway from Oakland Park Boulevard to SE 17th Street. There is also a transfer service (at Stop 7) to Hollywood along the Intracoastal Waterway. This service generally operates from 10:45 a.m. to 11:30 p.m. and is heavily used by tourists. None of the proposed alignments would negatively affect this service. Through the connection to the proposed Wave project, the Central Broward East-West Transit Study would provide walking distance access to two Water Taxi stops: Stop 10, at the Downtowner Saloon (located at 10 South New River Drive East), and Stop 11, at Las Olas Riverfront (located at 305 South Andrews Avenue).

Summary

This document described the existing transportation systems in central Broward, and the potential connections that the proposed Central Broward East-West Transit study would offer to these existing facilities. Transit, roadway, freight and waterways were examined in the analysis. There are several existing local bus routes that traverse the project limits, as well as proposed routes in the southern and western portions of the study area. The proposed transit facilities will also provide connections to three of the Express bus routes on I-95 and I-595, and will augment existing service by providing off-peak running times. Additionally, the proposed project provides connections to several community shuttle services that are offered by the local jurisdictions.

The proposed transit facilities will also provide connectivity to the two Tri Rail stations within the study area; further increasing connectivity and providing off-peak service. There are several existing bicycle and pedestrian facilities located within the study area. Proposed facilities and plans include the Broward County Greenways Plan, the Broward Boulevard Livable Mobility Plan, and the South Andrews Avenue Master Plan and Development Guide. Based on the analysis presented in this report, the proposed transit facilities will not adversely impact the existing and proposed bicycle and pedestrian amenities.

While there are no impacts of the proposed facilities on on-street parking, further coordination and analysis will be conducted during the environmental impact assessment phase to determine any significant impacts on public parking. In terms of freight impacts, two out of the four freight/industrial zones traverse the study area: I-595/Airport Zone (Mega Transport Zone) and the Sawgrass/I-75 zone. Two north-south freight railway corridors bisect the study area: the Florida East Coast (FEC) Railway and CSX; requiring several at-grade crossings with the proposed transit facilities. It is not anticipated that the proposed East-West Central Broward County Transit projects would negatively impact the FEC intermodal trucking facility, or the truck route on Andrews Avenue. Finally, the proposed transit facilities will not negatively impact adjacent waterways, but will provide connections to two Water Taxi stops.