



SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY MIAMI-DADE COUNTY RAIL OPPORTUNITIES

Improving Mobility in Miami-Dade County

April 2015





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May 5, 2015

The Honorable Carlos A. Gimenez
Mayor of Miami-Dade County
Office of the Mayor
111 NW 1st Street
Miami, FL 33128

Commissioner Esteban L. Bovo, Jr., Chair
Transit and Mobility Services Committee
111 NW 1st Street
Miami, FL 33128

Subject: Miami-Dade County Rail Opportunities

Dear Mayor Gimenez and Commissioner Bovo:

On behalf of the South Florida Regional Transportation Authority (SFRTA), I am pleased to present the enclosed "Miami-Dade County Rail Opportunities" plan for your consideration.

Miami-Dade County is a rapidly growing and vibrant County. Your economy drives the growth of South Florida. SFRTA shares your belief that the population and economic growth of Miami-Dade County will continue in the next 30 years.

Because of this current and future growth, Miami-Dade County needs targeted, strategic transportation investments to help reach your full economic potential.

The Rail Opportunities profiled in this document provide a menu of future rail investments that can be tailored to the County's specific mobility needs. The suggestions in the plan include your choice of commuter rail, diesel multiple unit, and light rail options. Additional information can be developed for selected projects.

SFRTA hopes these suggestions will be helpful, and looks forward to working with you to make the best choices a reality.

Sincerely,


Jack L. Stephens
Executive Director

Enclosure: SFRTA Miami-Dade County Rail Opportunities

cc: SFRTA Board of Directors
Gus Pego, Secretary, FDOT District 6
Jesus Guerra, Interim Executive Director, Miami-Dade MPO
Ysela Llort, Director, Miami Dade Transit

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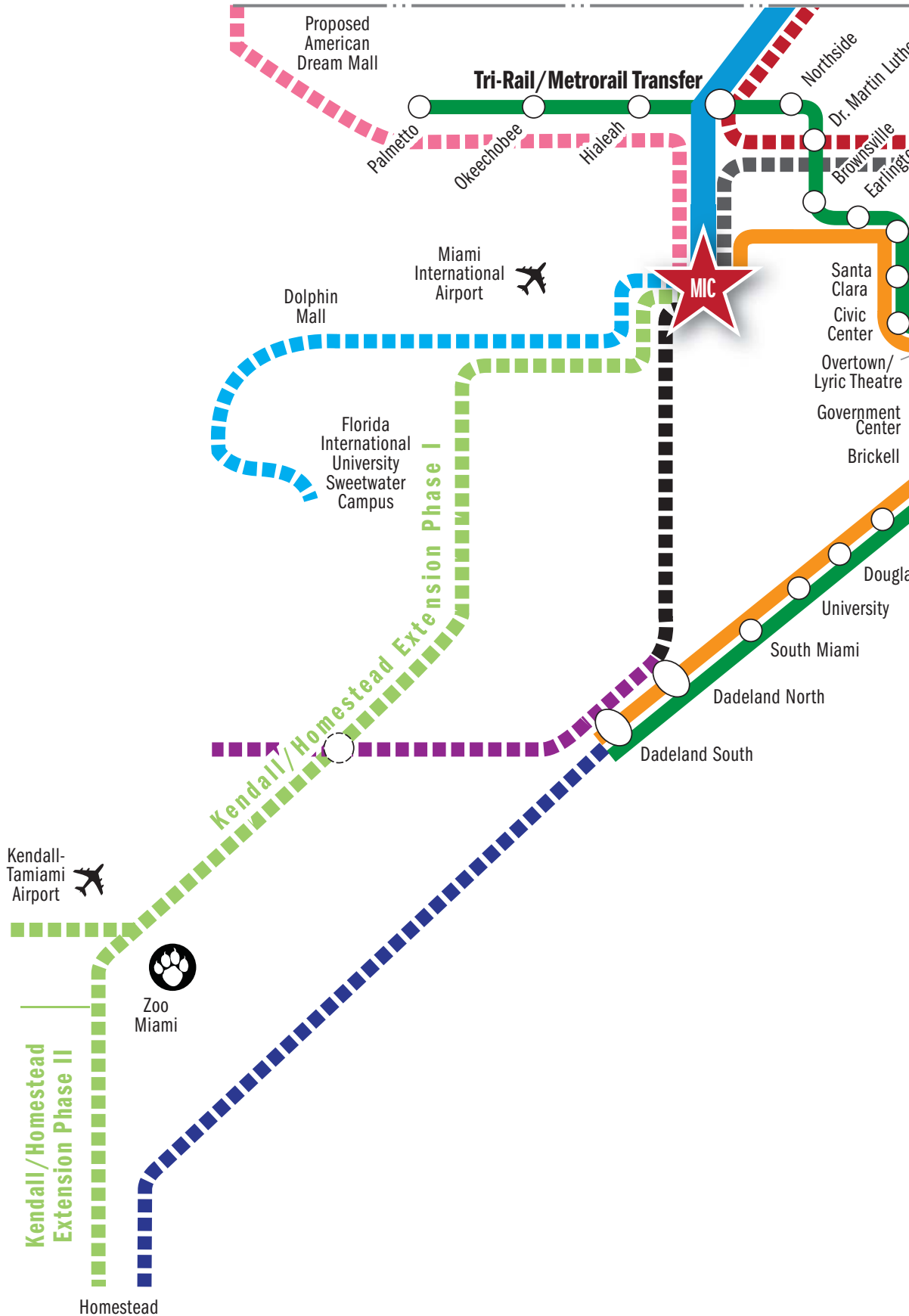
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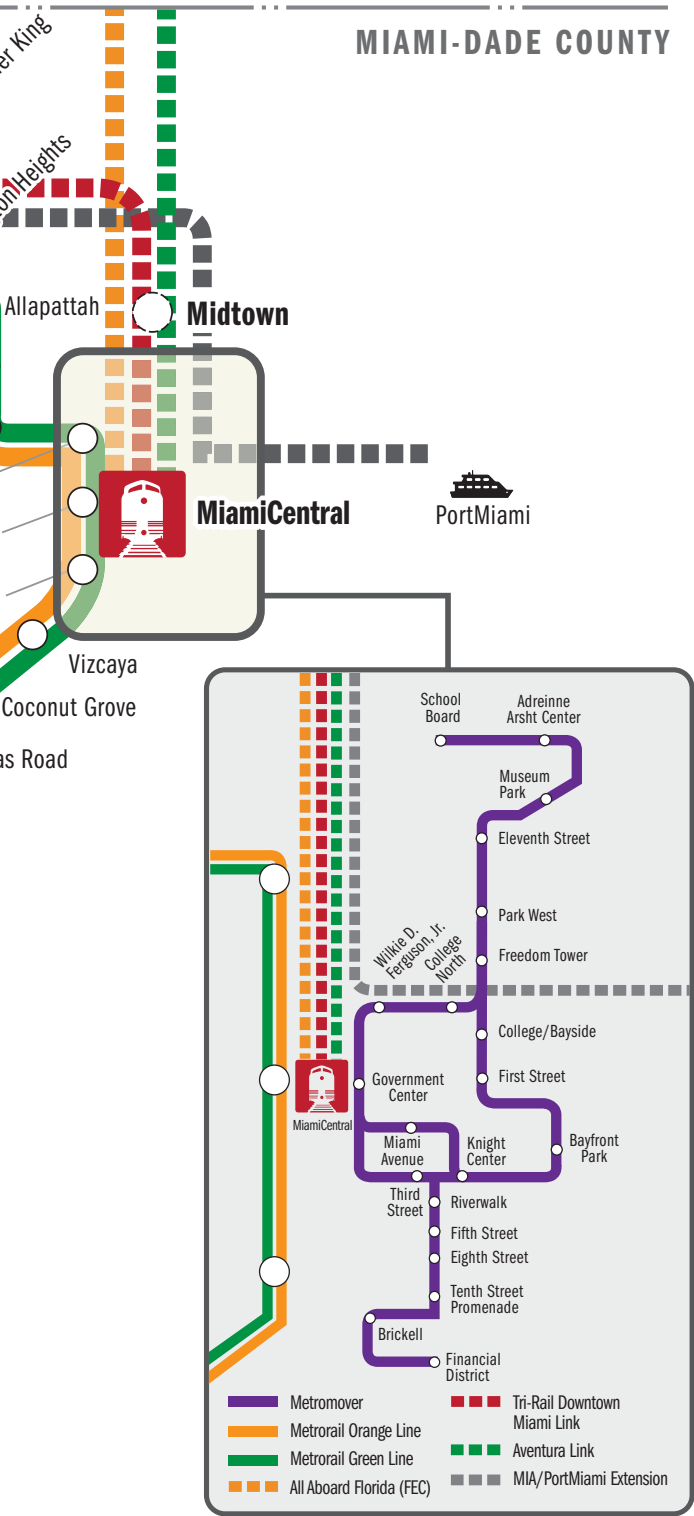


Miami-Dade Rail Opportunities







SOUTH FLORIDA
REGIONAL
TRANSPORTATION
AUTHORITY















BROWARD COUNTY
MIAMI-DADE COUNTY



Existing Rail Transit Facilities

-  Tri-Rail
-  Metrorail Orange Line
-  Metrorail Green Line
-  Metromover
-  Miami Intermodal Center
-  Existing Transit Station

Proposed Rail Transit Facilities

-  MiamiCentral
-  Future Transit Station
-  Tri-Rail Downtown Miami Link
-  All Aboard Florida (FEC)
-  Dolphin/East-West Extension (CSX)
-  Kendall/Homestead Extension
-  Aventura Link
-  US 1 Extension (FDOT)
-  Ludlam Corridor (FEC)
-  MIA/PortMiami Extension
-  Kendall Link
-  Okeechobee Link



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RTA
RAILROAD TRANSPORTATION AUTHORITY

INTRODUCTION

Goal of the Miami-Dade Rail Opportunities Plan

The goal of the Miami-Dade Rail Opportunities plan is to provide a menu of mobility options that can help Miami-Dade County achieve its future growth. Leaders can choose which commuter rail, diesel multiple unit (DMU), or light rail mobility options will work best for Miami-Dade County. SFRTA looks forward to working with Miami-Dade County leaders to make these ideas a reality.

SFRTA History

The South Florida Regional Transportation Authority (SFRTA) was created on July 1, 2003, when legislation passed by the Florida Senate and the Florida House of Representatives and signed by Governor Jeb Bush transformed the Tri-County Commuter Rail Authority (Tri-Rail) into SFRTA. Tri-rail began operations in 1989.

SFRTA Mission

The SFRTA, with cooperation from our transportation partners, works diligently to plan, develop, fund and operate a seamless, safe and efficient regional transportation system. A regional transportation system in South Florida will ensure mobility, advance sustainable growth and improve the quality of life for our current and future residents.

SFRTA Governance

The SFRTA is led by a Governing Board, consisting of ten members: one County Commissioner from each county (three appointments); one citizen appointee from each county commission (three appointments); a Florida Department of Transportation (FDOT)-District Secretary (one appointment); and one governor's appointee from each of the three counties (three appointments).



SFRTA Operations

The SFRTA operates Tri-Rail in Palm Beach, Broward, and Miami-Dade counties, serving 18 stations from Mangonia Park to the Miami International Airport. SFRTA is proud of the quality of its work, and has successfully completed its 2015, 2012, and 2009 Federal Transit Administration Triennial Reviews with zero findings.

SFRTA Dispatch and Maintenance

In order to minimize passenger delays and more efficiently maintain the corridor, SFRTA recently achieved a long standing goal, and assumed responsibility for dispatch and maintenance for the South Florida Rail Corridor.



PROPOSED TECHNOLOGIES

COMMUTER RAIL



Vehicle Cost: \$5-\$9 million

Capital Cost/mile: \$8-\$15 million

Service Life: 30 Years

Power Source: Diesel/Biodiesel

Capacity: 100-150 seats per train car

Service Distance: 20-80 miles

Service Type: Regional, Intra-urban

Right-of-Way: Rail corridor (exclusive or existing)

Proposed Corridors:

- ◇ Tri-Rail Downtown Miami Link
- ◇ Tri-Rail Aventura Link
- ◇ Tri-Rail Fort Lauderdale Airport Link
- ◇ Dolphin/East-West Extension
- ◇ Okeechobee Link
- ◇ Miami Intermodal Airport/PortMiami Extension
- ◇ Kendall/Homestead Extension

DIESEL MULTIPLE UNIT (DMU)



Vehicle Cost: \$4-\$8 million

Capital Cost/mile: \$8-\$15 million

Service Life: 30 Years

Power Source: Diesel

Capacity: 60-185 seats per train car

Service Distance: 20-80 miles or less

Service Type: Regional, Intra-urban

Right-of-Way: Rail corridor (exclusive or existing)

Proposed Corridors:

- ◇ Dolphin/East-West Extension
- ◇ Kendall/Homestead Extension

LIGHT RAIL



Vehicle Cost: \$2+ million

Capital Cost/mile: \$25-\$30 million

Service Life: 30 Years

Power Source: Electric (overhead)

Capacity: 30-90 seats

Service Distance: 5-20 miles

Service Type: Regional, Urban

Right-of-Way: separate right-of-way (typically on center or side of streets) or mixed traffic.

Proposed Corridors:

- ◇ Ludlam Corridor
- ◇ US-1 Extension
- ◇ Kendall Link

Sources: SFRTA and Jacobs/Carter Burgess Transit Guide

SUMMARY OF PROJECTS



MODE	PROJECT	REGION	TIME-FRAME	CAPITAL COST	OPERATING COST	PAGE
	Tri-Rail Downtown Miami Link	Countywide	Short-term	\$68.9 M	TBD	1
	Miami River – Miami Intermodal Center Capacity Improvement Project	Central	Short-term	\$26.9 to \$50.3 M Depending on Alternative	N/A	3
	Midtown Miami Station	Northeastern	Short-term	\$15 M	\$150,000 annually	5
	Tri-Rail Aventura Link	Northeastern	Mid-term	\$119 M	\$8 M annually	6
	Dolphin/East-West Extension	Western	Mid-term	\$150 to \$190 M	\$5 M annually	7
	Okeechobee Link	Western	Long-term	\$325 M	TBD	8
	Kendall/Homestead Extension	Southwestern	Mid-term	\$300 M	\$15 M annually	9
	Kendall Link	Southwestern	Mid-term	\$275 M	TBD	10
	US-1 Extension	Southwestern	Mid-term	\$500 M	TBD	11
	Ludlam Corridor	Central	Mid-term	\$300 M	TBD	13
	Miami International Airport/PortMiami Extension	Central	Mid-term	\$25 M	TBD	14

Notes:

- ◇ Short-term: less than three years
- ◇ Mid-term: three to six years
- ◇ Long-term: more than six years

Source: SFRTA



Tri-Rail Downtown Miami Link is an exciting opportunity to extend current Tri-Rail service to downtown Miami as early as December 2016. New service is possible by leveraging All Aboard Florida’s (AAF’s) private rail and station investment to create “MiamiCentral.”

Public Private Partnership

To leverage this private investment in Downtown Miami, the public is being asked to participate in the incremental construction costs for the MiamiCentral Station and new rail infrastructure to support the Tri-Rail Downtown Miami Link.

Fast-Track Implementation

“MiamiCentral” will serve as downtown Miami’s multimodal hub, providing connections to AAF, Tri-Rail, the existing Miami-Dade County bus system, Metrorail, and Metromover. Commuter service could begin as early as December 2016, or when MiamiCentral opens and AAF becomes operational, with a day one ridership estimate of 2,000 per day.

Once in a Lifetime Opportunity



www.allaboardflorida.com

KEY FACTS

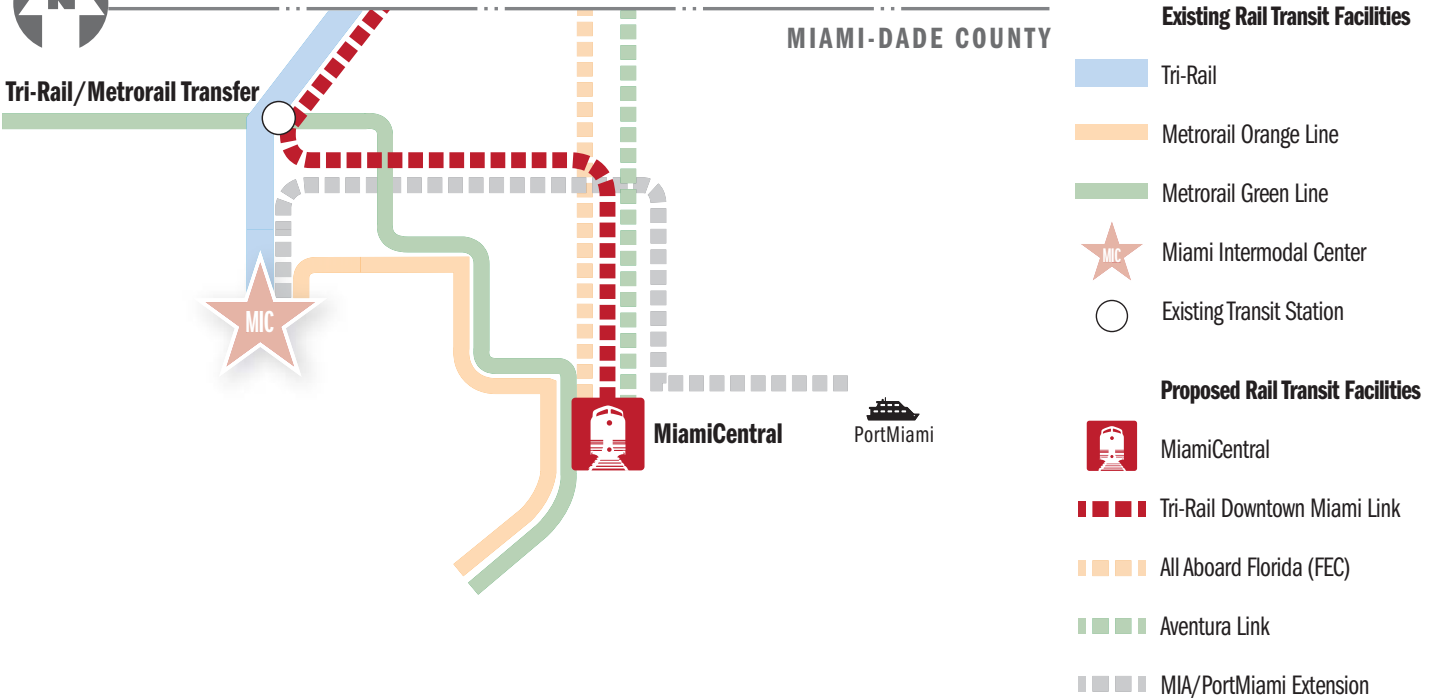
FEC RAILWAY Ownership	1 Number of Potential New Stations	18 One-way Travel Time (minutes)
8 Corridor Length (miles)	19 Number of Grade Crossings	\$68.9 M Estimated Cost
8 Average Station Spacing (miles)	40/120 Headways (minutes)	AS EARLY AS DECEMBER 2016 Opening Date

Sources: SFRTA



BROWARD COUNTY
MIAMI-DADE COUNTY

Tri-Rail/Metrorail Transfer



Existing Rail Transit Facilities

- Tri-Rail
- Metrorail Orange Line
- Metrorail Green Line
- Miami Intermodal Center
- Existing Transit Station

Proposed Rail Transit Facilities

- MiamiCentral
- Tri-Rail Downtown Miami Link
- All Aboard Florida (FEC)
- Aventura Link
- MIA/PortMiami Extension



MIAMI RIVER-MIAMI INTERMODAL CENTER CAPACITY IMPROVEMENT PROJECT

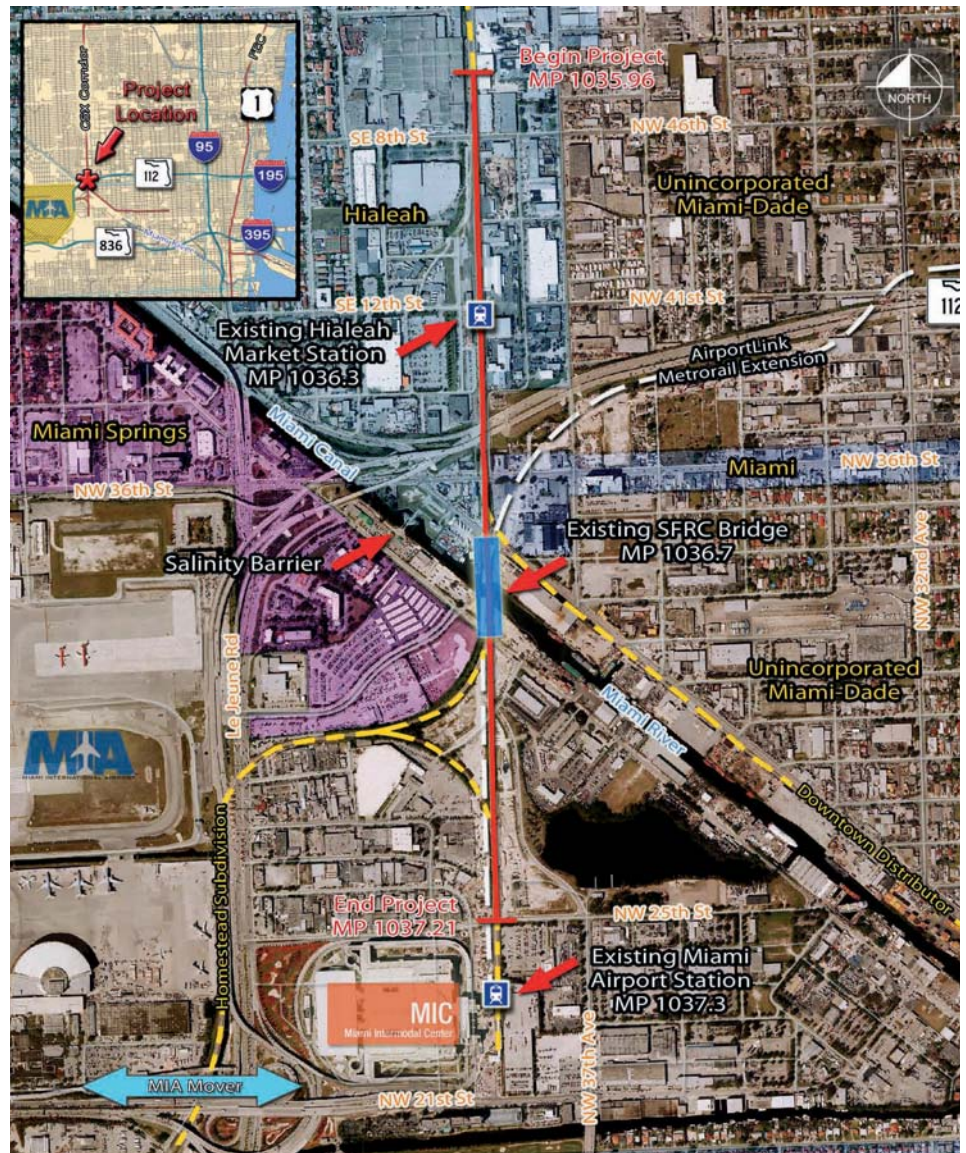


Currently, Tri-Rail traverses the Miami River on a single track bridge resulting in a critical capacity constraint. The Miami River – Miami Intermodal Center Capacity Improvement (MR-MICCI) project will add rail capacity across the Miami River and the last 1.25 miles of the South Florida Rail Corridor (SFRC) to greatly improve access and connectivity to the Miami Intermodal Center (MIC).

With extensive coordination among partner agencies, the MR-MICCI will evaluate the addition of a second main line railroad track, a new bridge across the Miami River, and signal upgrades, which will improve SFRC capacity for Tri-Rail, freight trains, and the extension of Amtrak intercity rail service to the MIC and improved connections between rail and air travel. Furthermore, the Hialeah Market Tri-Rail station will be enhanced with a new center platform and new continuous canopies for existing passenger shelters.

Included in the Miami-Dade MPO’s 2040 Long-Range Transportation Plan and the MR-MICCI will:

- ◇ Improve Tri-Rail travel time and schedule adherence.
- ◇ Improve connectivity to MIA and associated employment centers.
- ◇ Improve passenger access to the MIC and its numerous transit connections.
- ◇ Relieve potential bottlenecks for Tri-Rail, Amtrak, and freight services.



KEY FACTS

STATE OF FLORIDA
Ownership

PROJECT DEVELOPMENT AND ENVIRONMENTAL PHASE
Current Project Status

\$26.9-\$50.3M (DEPENDING ON ALTERNATIVE)
Estimated Capital Cost (Right of way costs included)

2019
Opening Date

Sources: SFRTA, MR-MICCI website [www.mrmicci.com/index.html]



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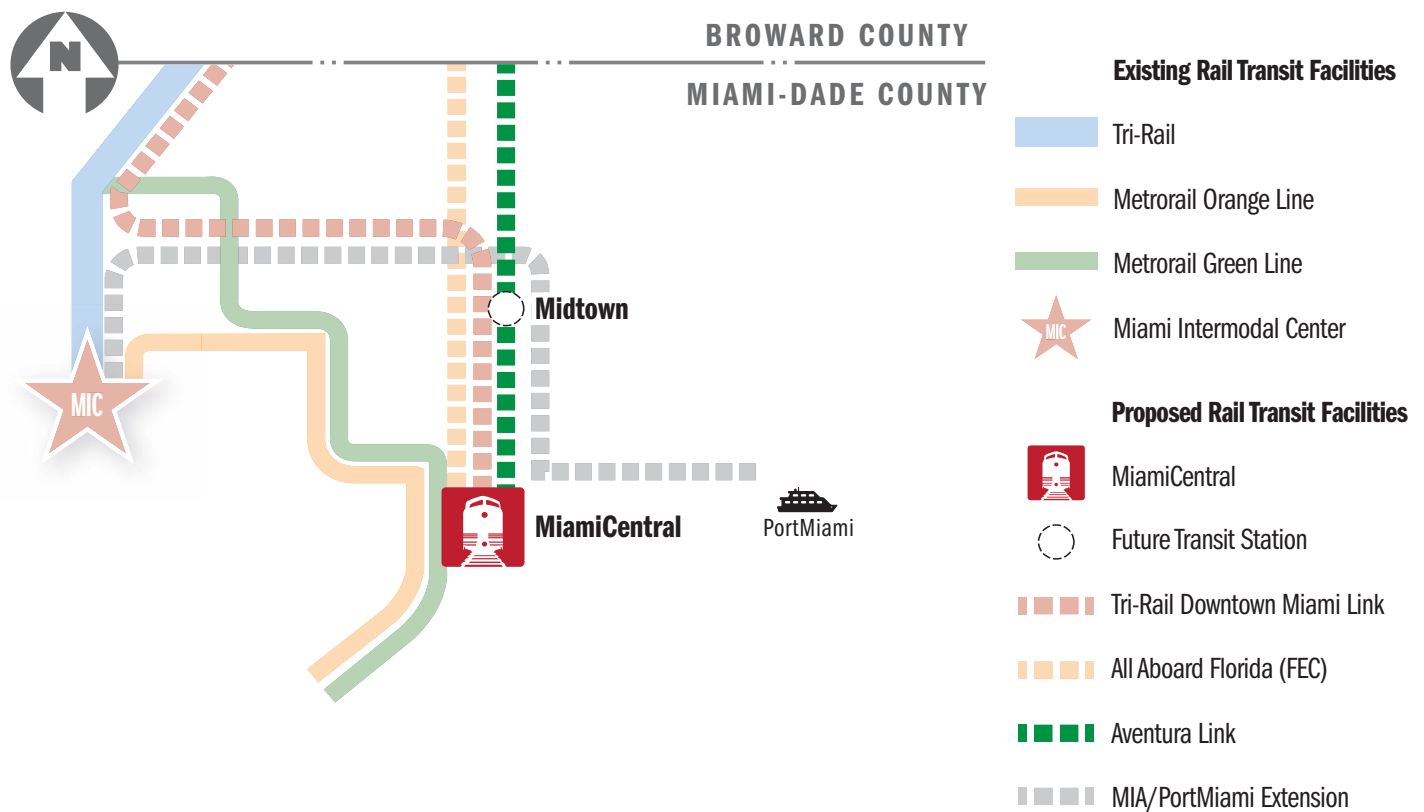


The Midtown, Design District, and Wynwood areas of the City of Miami have experienced tremendous growth and transformational change in recent years. These dynamic communities are now places to live, work, and play.

The proposed Downtown Miami Link route on the Florida East Coast (FEC) railway corridor runs along these communities. The community has always envisioned the area between NE 36th and NE 29th Streets as

an attractive location for a new commuter rail station. When the Tri-Rail Downtown Miami Link service begins, a new Tri-Rail station could fit seamlessly into the community, with little or no public land acquisition.

Tri-Rail travel time between the new station and Downtown Miami will only be 7 minutes. Direct fast service to points north in Broward and Palm Beach counties will also become possible in the future.



KEY FACTS

FEC RAILWAY Ownership	PRE-PROJECT DEVELOPMENT Current Project Status	TBD Opening Date
7 Travel Time to Downtown Miami (minutes)	\$15 M Estimated Cost	

Sources: SFRTA, FDOT TRCL



Northeastern Miami-Dade County currently experiences significant roadway congestion and has limited rapid transit options. Fortunately, the historic Florida East Coast (FEC) Railway corridor runs through the heart of northeastern Miami-Dade, allowing the opportunity for a new and transformational transit option known as the Tri-Rail Aventura Link.

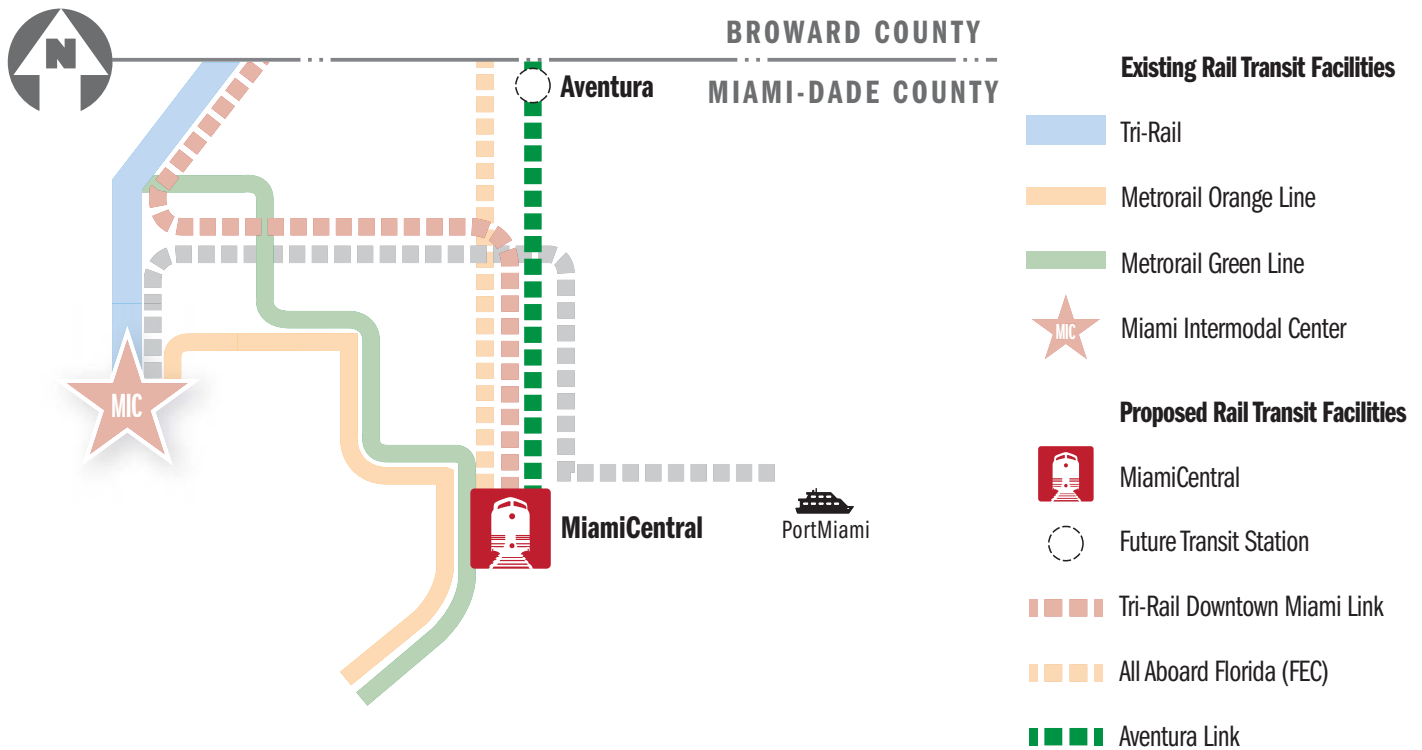
The Tri-Rail Aventura Link can provide a convenient and cost-

effective new commuter rail service in northeastern Miami-Dade by leveraging investments in All Aboard Florida and Tri-Rail Downtown Miami Link service. The project has the additional benefit of serving one of the original People's Transportation Plan (PTP) corridors.

Travel time between Aventura and Downtown Miami would be less than 30 minutes, which is far faster than peak-hour travel times on the highway network and existing transit services.

Communities Served

- ◇ Communities Served
- ◇ Midtown/Design District/Wynwood
- ◇ City of Miami Upper Eastside
- ◇ North Miami
- ◇ North Miami Beach
- ◇ Aventura



KEY FACTS		
FEC RAILWAY Ownership	5 Number of Potential New Stations	29 One-way Travel Time (minutes)
13 Corridor Length (miles)	26 Number of Grade Crossings	\$119 M Estimated Cost
2.6 Average Station Spacing (miles)	20/30/60 Headways (minutes)	TBD Opening Date

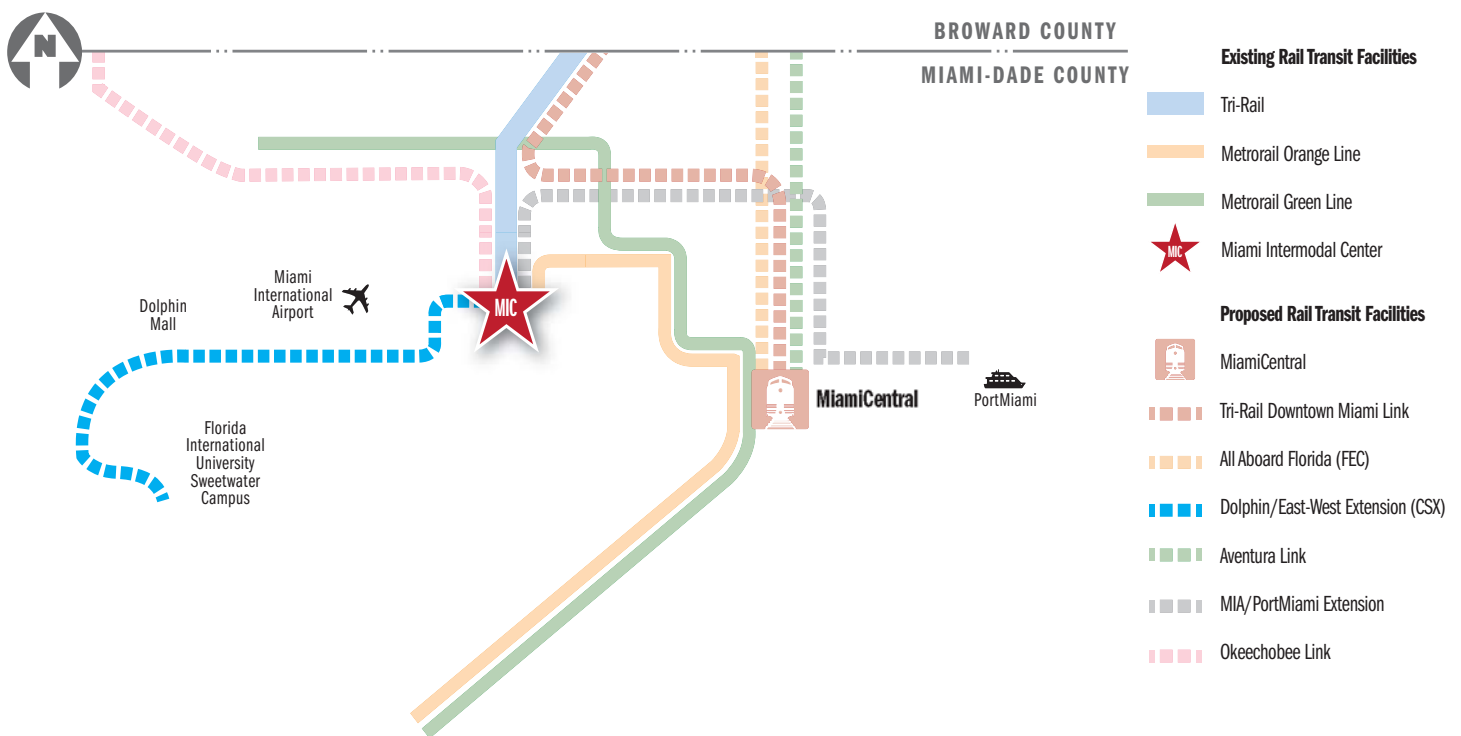
Sources: SFRTA, FDOT TRCL



The Dolphin Expressway (SR 836) is the heaviest traveled east-west highway in South Florida, connecting major employment centers, shopping destinations, educational facilities, and large western residential areas.

Frequent congestion and travel delays are experienced on SR 836. Fortunately, an existing rail corridor runs immediately parallel to the Dolphin Expressway and connects with the new Miami Intermodal Center (MIC), allowing for the development of a much needed transit alternative.

Dolphin/East-West Extension would utilize commuter rail or diesel multiple unit (DMU) vehicles to provide a new mobility option between western Miami-Dade County and the Miami Intermodal Center. Travelers could then connect to the new Orange Line Metrorail service to reach Downtown Miami and the Civic Center/Health District.



KEY FACTS		
STATE OF FLORIDA AND CSX Ownership	6 Number of Potential New Stations	15 One-way Travel Time (minutes)
9 (TO TURNPIKE) 11 (TO FIU) Corridor Length (miles)	12 Number of Grade Crossings	\$150 to \$190 M Estimated Cost
2 Average Station Spacing (miles)	20/30/60 Headways (minutes)	TBD Opening Date

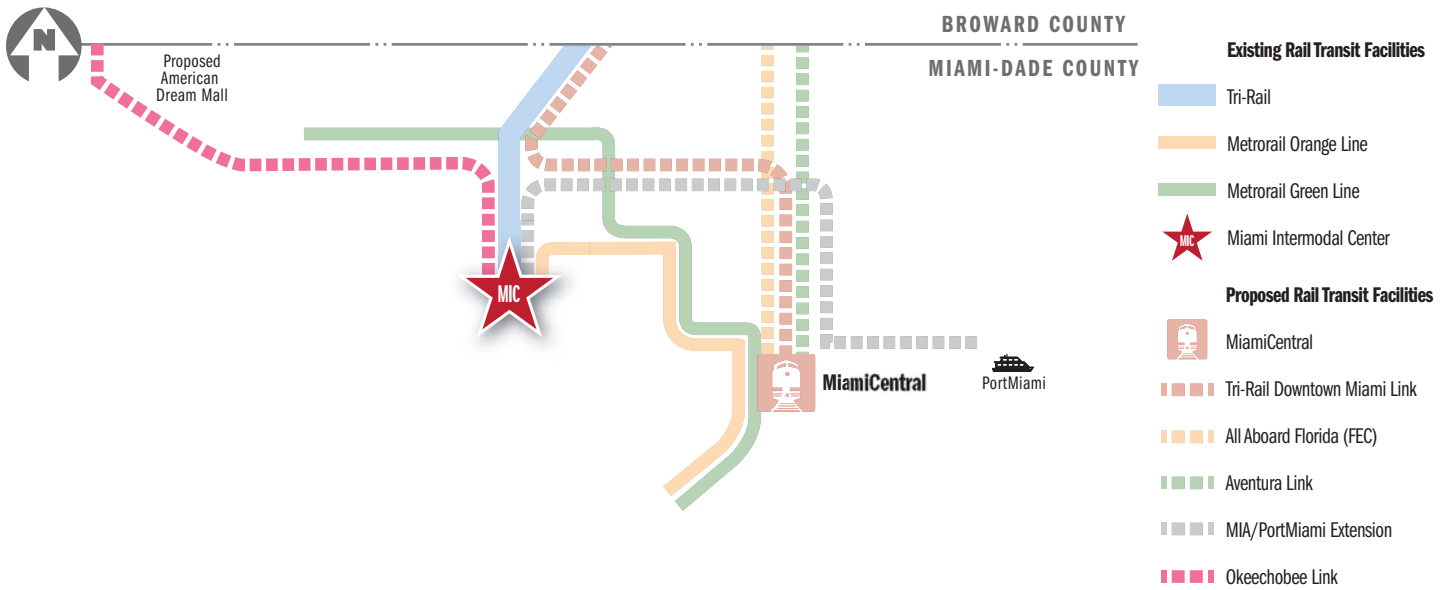
Source: SFRTA

Developer Triple Five has announced plans to construct a new entertainment destination to Northwest Miami-Dade County: American Dream Miami. This megamall will be the largest mall in the United States and will include hundreds of stores, a theme park, indoor ski slope, and a sea lion habitat. It is estimated that the megamall will cost \$4 billion to complete and create 25,000 construction jobs, and as many permanent jobs.

The proposed American Dream mall is planned to be built in Miami Lakes, at the intersection of the Florida

Turnpike and I-75. Planned IRIS connection improvements create an opportunity for a new Tri-Rail service to the American Dream mall to serve its 25,000 new employees.

The Okeechobee Link would connect the mall to the Miami Intermodal Center at Miami International Airport, serving the travel and tourism market.



KEY FACTS		
FCC RAILWAY Ownership	3 Number of Potential New Stations	TBD One-way Travel Time (minutes)
9.5 Corridor Length (miles)	TBD Number of Grade Crossings	\$325 M Estimated Cost
TBD Average Station Spacing (miles)	TBD Headways (minutes)	TBD Opening Date

Source: SFRTA



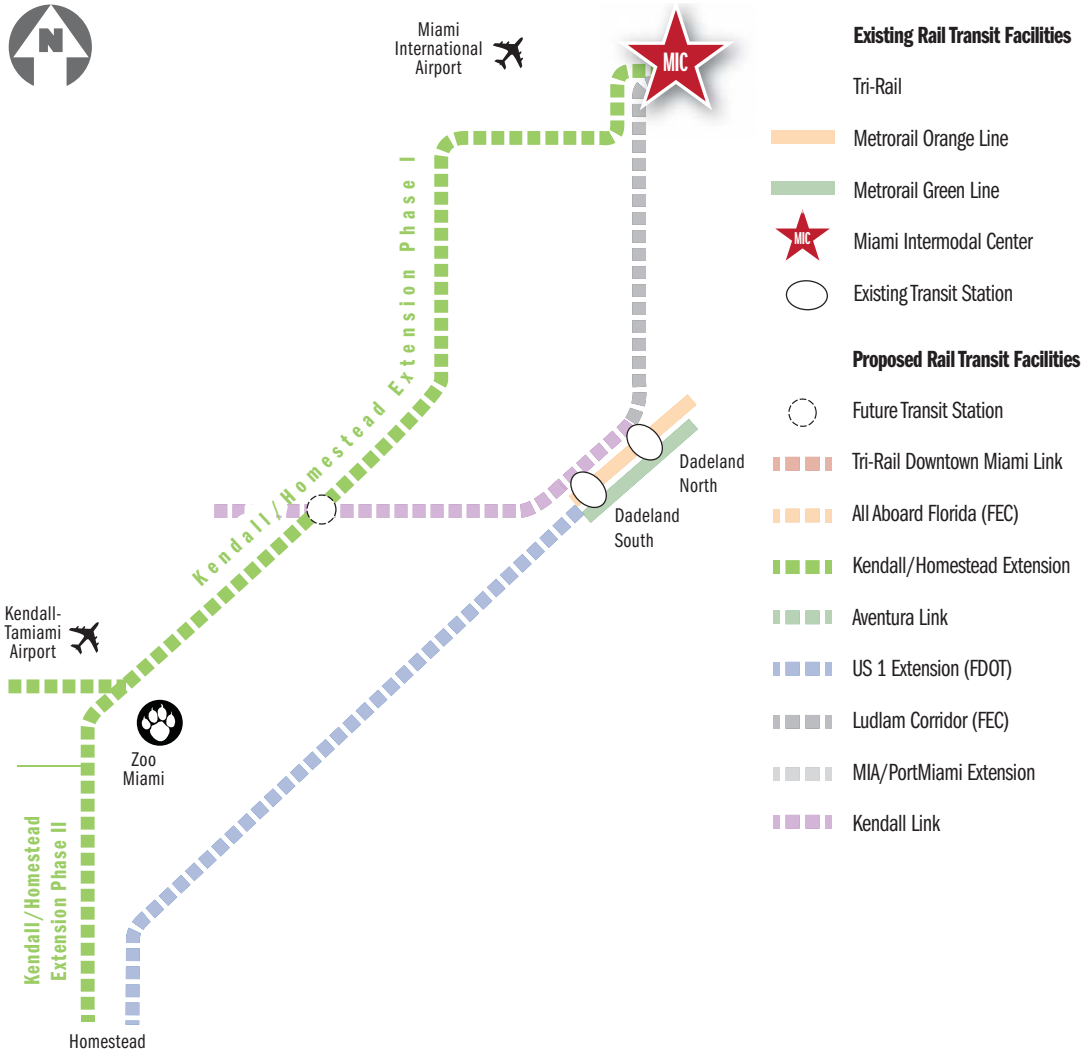
Kendall experienced massive growth in recent decades. Severe roadway congestion plagues the area, with most residents enduring long commutes to the region's major employment centers. This situation causes

financial hardship for commuters and negatively impacts the Kendall area's quality of life.

The Kendall/Homestead Extension provides a needed new travel option by connecting Kendall to the Miami Intermodal Center (MIC) and other

premium transit services.

New Kendall Corridor service would utilize existing rail rights of way (some of which are already in state ownership) for cost-effective diesel multiple unit (DMU) or commuter rail service.



KEY FACTS

STATE OF FLORIDA AND CSX Ownership	2.25 Average Station Spacing (miles)	30 One-way Travel Time (minutes)
16 (TO ZOO MIAMI) 29 (TO HOMESTEAD) Corridor Length (miles)	34 Number of Grade Crossings	300 M Estimated Cost
8 Number of Potential New Stations	20/30/60 Headways (minutes)	TBD Opening Date

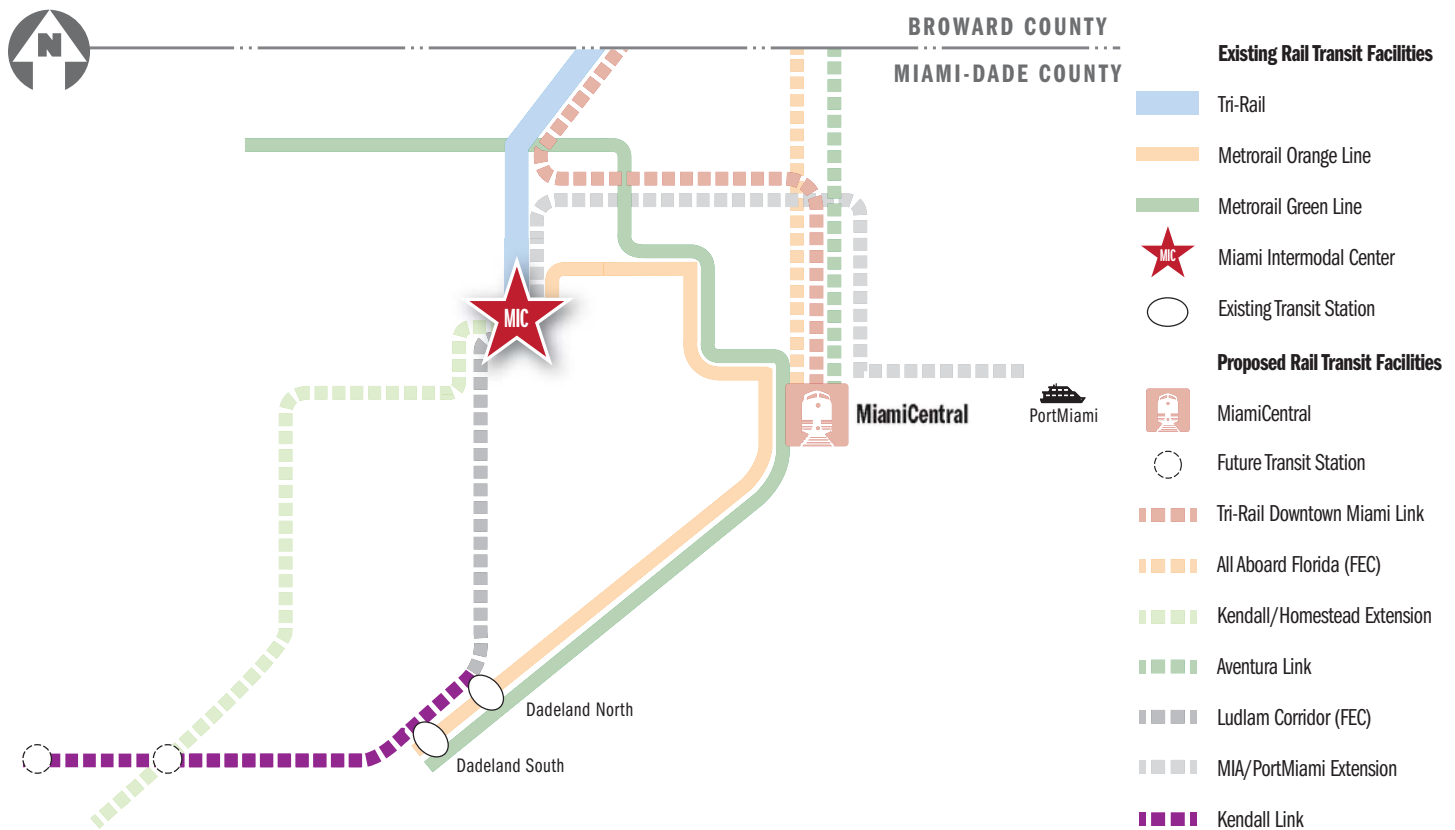
Source: SFRTA



New premium transit services are needed to provide relief from Kendall's severe traffic congestion. The Kendall Link, a new light rail or DMU service along the Kendall Drive, can be an effective solution to the area's mobility challenges.

The Kendall Link would extend west along the Kendall Drive corridor from Dadeland, connecting to existing Metrorail service and serving the Dadeland area, Baptist Hospital and numerous residential communities.

Cost-effective, phased implementation could occur by extending first to the Don Shula Expressway (SR 874) and CSX corridor, then later past Florida's Turnpike. Connections are also envisioned with transit service on the Kendall/Homestead Extension and Ludlam Corridor.



KEY FACTS		
STATE OF FLORIDA Ownership	5-8 Number of Potential New Stations	8 (TO DON SHULA & CSX), 15 (TO TURNPIKES) One-way Travel Time (minutes)
3 (TO DON SHULA & CSX), 5.5 (TO TURNPIKES) Corridor Length (miles)	N/A Number of Grade Crossings	\$150 M (TO DON SHULA & CSX), \$175 M (TO TURNPIKES) Estimated Cost
0.5 Average Station Spacing (miles)	TBD Headways (minutes)	TBD Opening Date

Sources: SFRTA, Miami-Dade MPO



SOUTHWESTERN PROJECTS US-1 EXTENSION

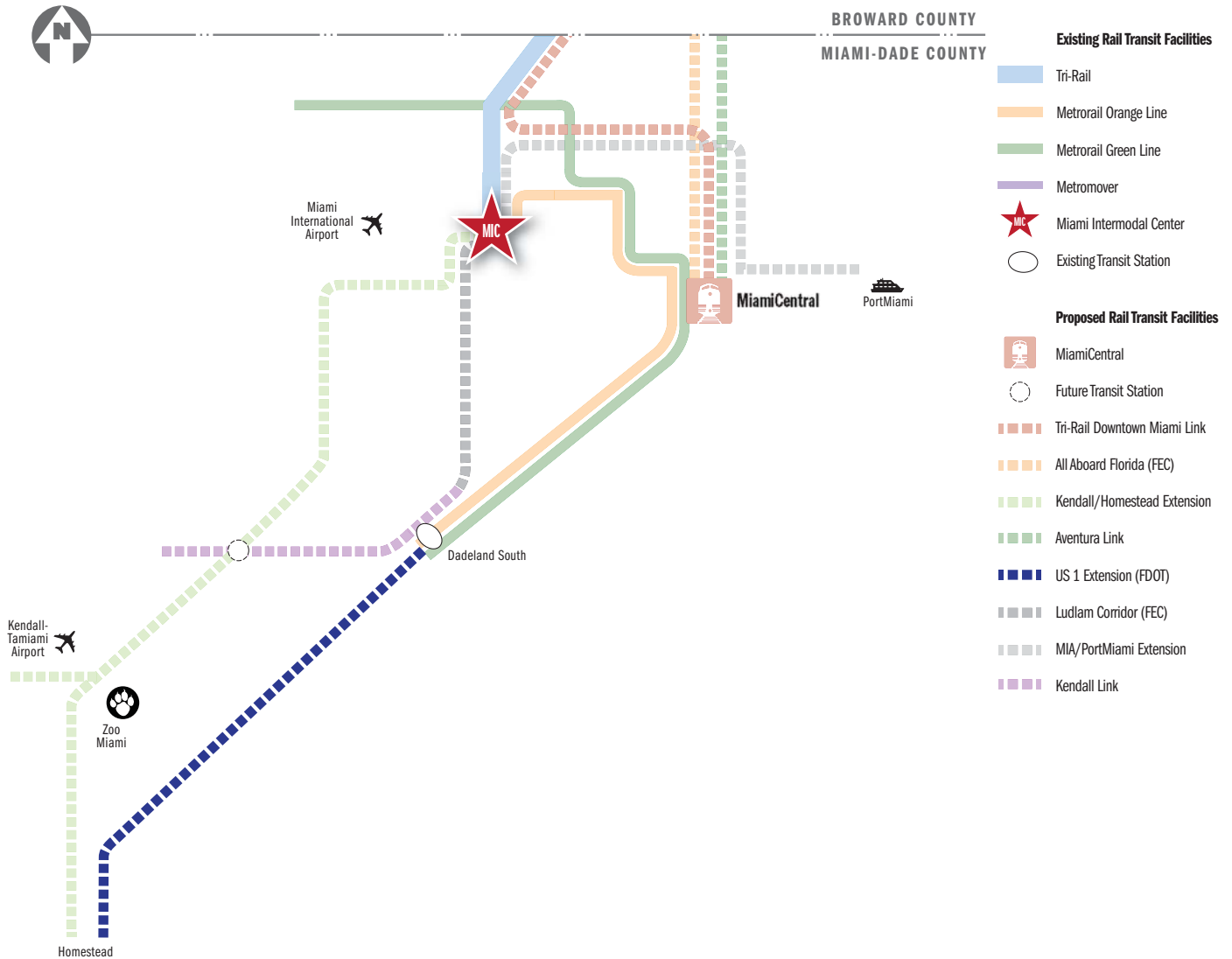


The South Dade Busway, which was built on the former FEC Railway right-of-way, was designed to allow for potential future rail expansion. The population of southern Miami-Dade County continues to grow, along with public

desire for new premium transit options that are not part of highway expansion projects.

The US-1 Extension would bring new rail service from Dadeland area to Homestead and Kendall. The

expansion of rail service could be done as light rail or DMU service connecting to other initiatives such as the Kendall/Homestead Extension and Ludlum Corridors.



KEY FACTS		
FDOT Ownership	TBD Number of Potential New Stations	TBD One-way Travel Time (minutes)
20 Corridor Length (miles)	TBD Number of Grade Crossings	\$500 M Estimated Cost
TBD Average Station Spacing (miles)	TBD Headways (minutes)	TBD Opening Date

Source: SFRTA

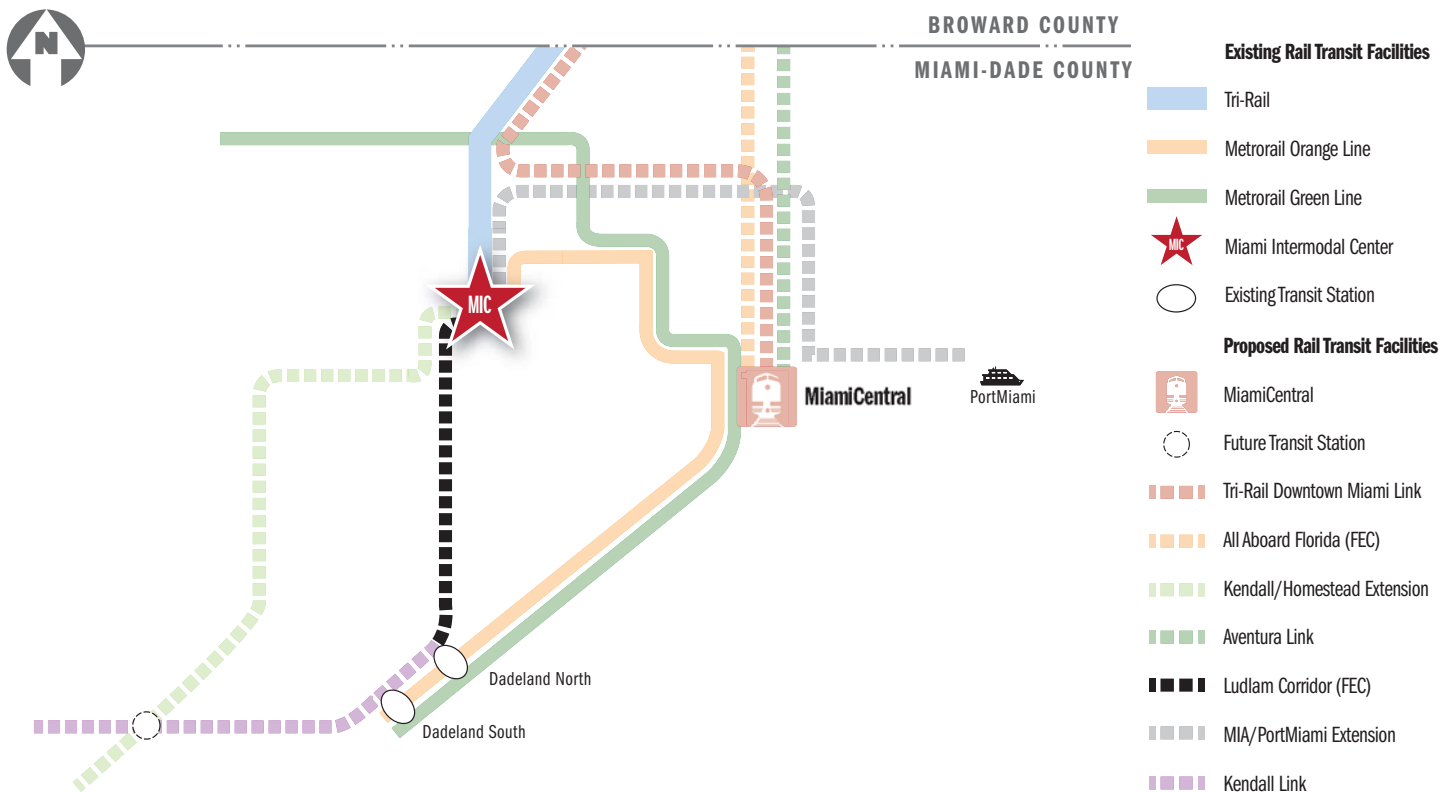




The Ludlam Corridor is an inactive railroad corridor owned by the Florida East Coast (FEC) railway that links two of the region’s busiest activity centers – Miami International Airport (MIA) and Dadeland.

The corridor also connects to the South Florida Rail Corridor and the new Miami Intermodal Center (MIC). This could allow for a potentially quick, easy, and attractive extension of light rail service.

Light rail or DMU service could share the corridor with the new bicycle & pedestrian trail desired by the community. Analysis by the Miami-Dade MPO has demonstrated that both a trail and transit can effectively fit in the corridor, which is generally 100 feet in width.

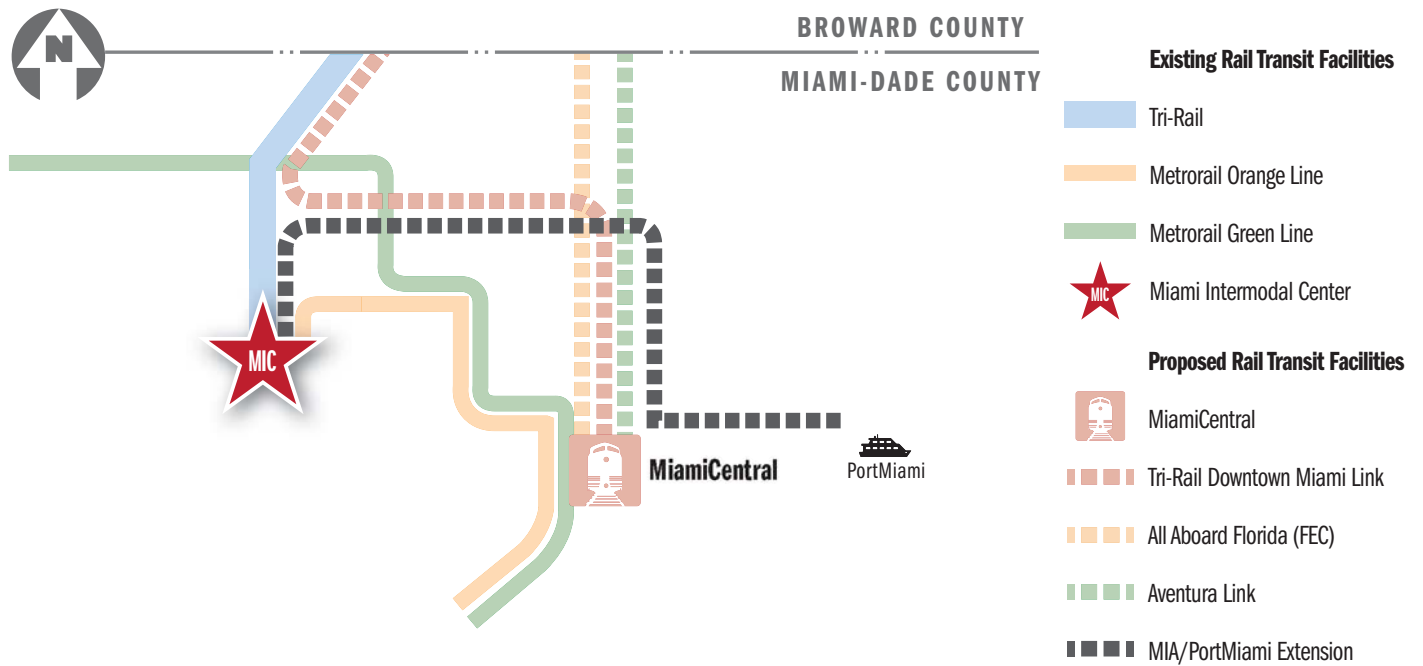


KEY FACTS		
STATE OF FLORIDA AND FEC Ownership	1.5 Average Station Spacing (miles)	20 One-way Travel Time (minutes)
10 Corridor Length (miles)	22 Number of Grade Crossings	\$300 M Estimated Cost
7 Number of Potential New Stations	20/30/60 Headways (minutes)	TBD Opening Date

Source: SFRTA, Miami-Dade MPO



This concept would provide strategic Tri-Rail service during high travel demand periods (usually weekends) between the new Miami Intermodal Center (MIC) at Miami International Airport (MIA) and PortMiami. Using the new MIC Central Station, South Florida Rail Corridor (SFRC), and Florida East Coast Railway (FEC) tracks, the service would provide a new congestion free route to cruise ship departure and arrivals at PortMiami. This off-peak service would result in minimal new infrastructure being required.



KEY FACTS		
STATE OF FLORIDA AND FEC Ownership	6 Average Station Spacing (miles)	25 One-way Travel Time (minutes)
12 Corridor Length (miles)	37 Number of Grade Crossings	\$25 M Estimated Cost
1 OR 2 Number of Potential New Stations	N/A, SPECIAL SERVICE Headways (minutes)	TBD Opening Date

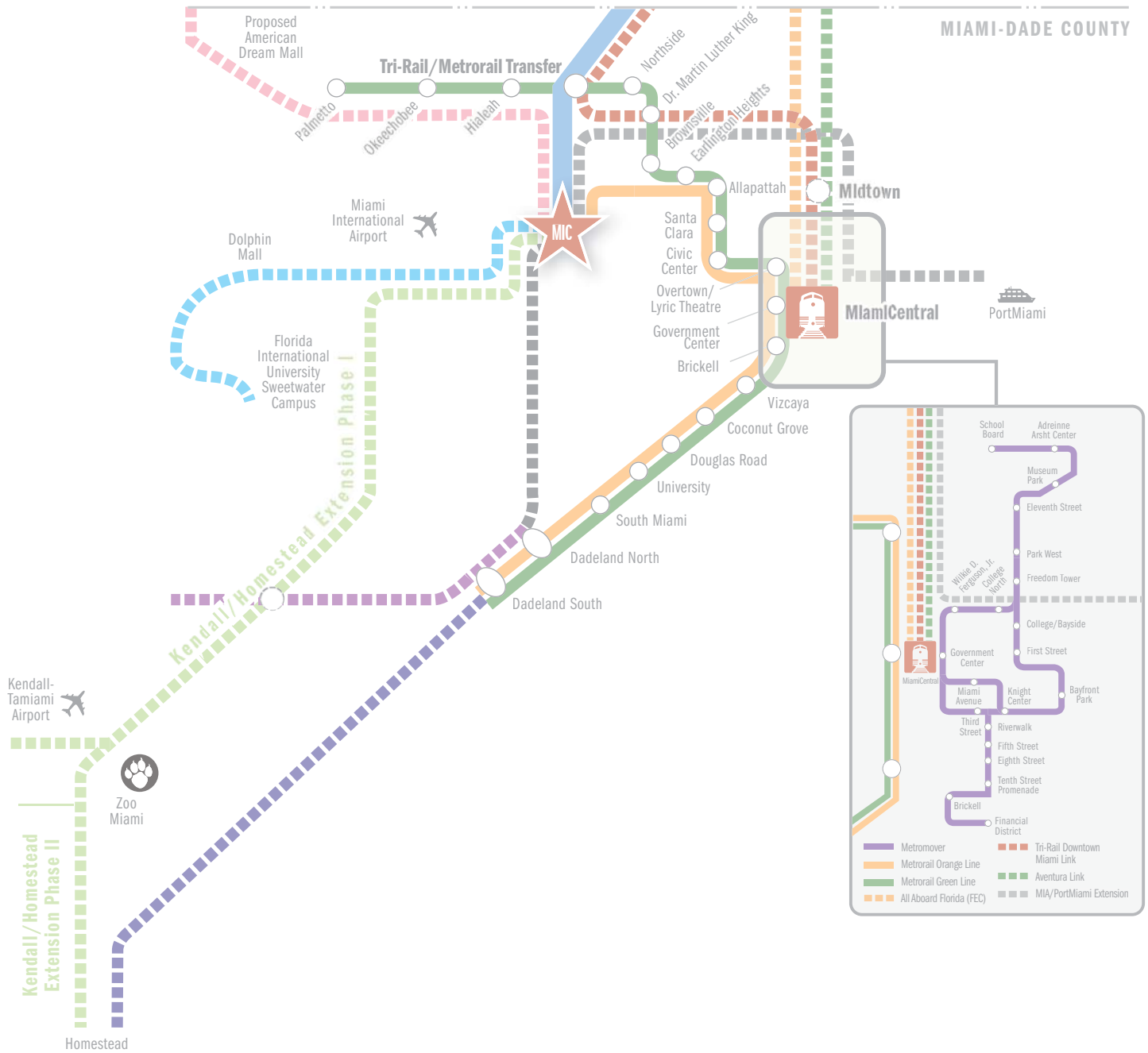
Source: SFRTA





PRODUCED BY THE SFRTA
DEPARTMENT OF PLANNING AND CAPITAL DEVELOPMENT

BROWARD COUNTY
MIAMI-DADE COUNTY



April 2015