



Using GIS Analysis for Public Involvement and Environmental Justice

South Florida East Coast Corridor Transit Analysis SFECCCTA

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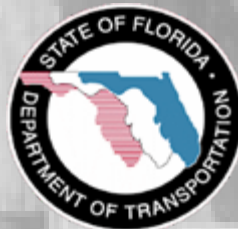
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Presentation Outline

- **Project Introduction & Background**
- **Project Structure and Requirements**
 - **Tiered PEIS/AA Process and NEPA**
- **Using GIS for Tier 1**
 - **Objectives (utilize existing GIS data, limited field verification)**
 - **Methodology (2-part environmental screening)**
 - **Current maps**
- **Public involvement**
 - **Tier 1**
 - **Tier 2**
- **GIS & Public involvement**
 - **Objectives**
 - **Methodology (2-part environmental screening)**
- **Maps & Results**
- **Conclusions**
- **Recommendations**

History of FEC

- Began by Henry Flagler in 1883
- First train to Miami in 1896
- 368-mile system
Jacksonville to Key West
- Economic backbone of Florida
- Passenger and freight until 1968



MAP SHOWING THE FLORIDA EAST COAST RAILWAY

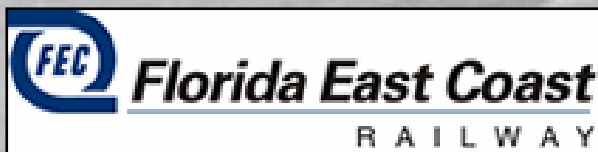
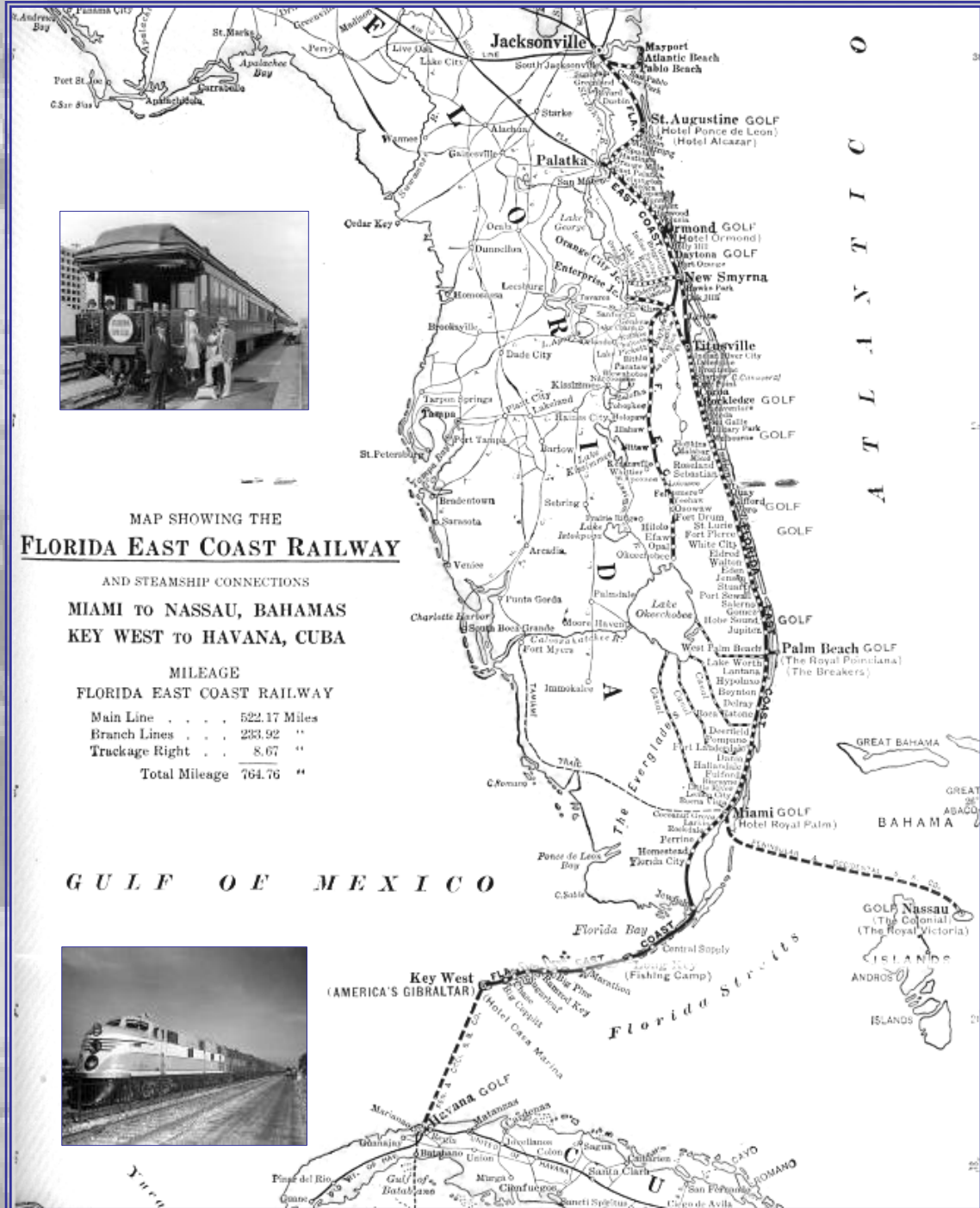
AND STEAMSHIP CONNECTIONS

MIAMI TO NASSAU, BAHAMAS
KEY WEST TO HAVANA, CUBA

MILEAGE

FLORIDA EAST COAST RAILWAY

Main Line	522.17 Miles
Branch Lines	233.92 "
Trackage Right	8.67 "
Total Mileage	764.76 "

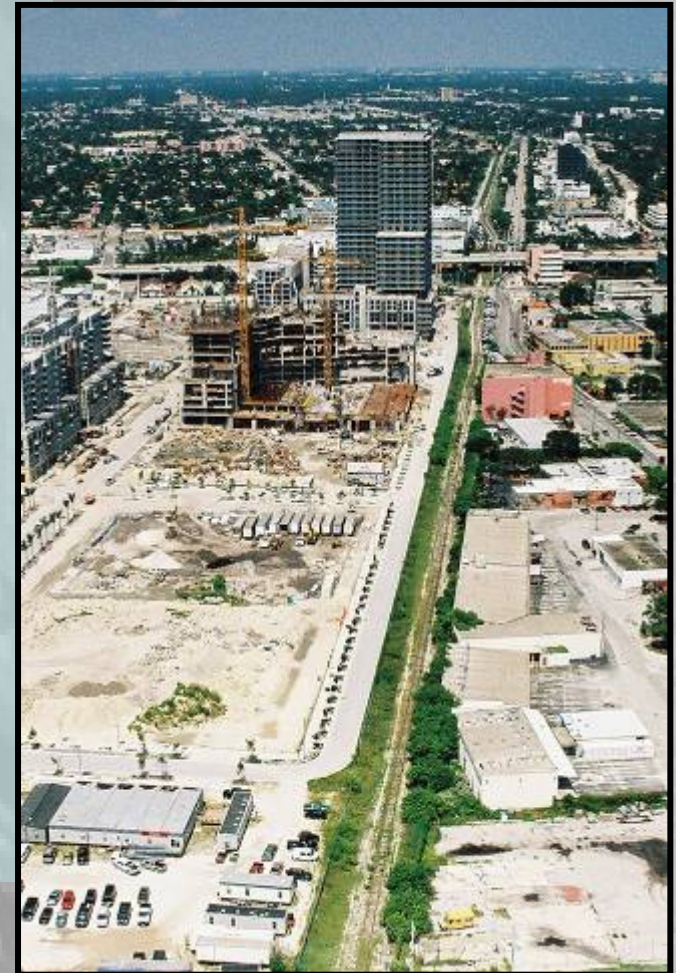


Modern Times and the FEC

- Population growth in SE Florida
- Traffic growth & slower commutes
- Urban expansion & Infill



Interstate 95, Miami-Dade County






















**Urban development along
FEC**

South Florida East Coast Corridor Transit Analysis

What is it?

- Study of FEC to determine potential transit alternatives and address their respective impacts
- Interagency cooperation
- Tiered study
- Project budget and time frame

Service Segment	Alignment	 Regional Bus	 Bus Rapid Transit	 Light Rail Transit	 Rail Rapid Transit	Regional Rail	
						 Tri-Rail	 Other RGR
1 West Palm Beach North	 FEC		1BRT2A	1LRT2A		1RGR1/1A	
	 US1	1RGB2	1BRT1	1LRT1			
	 I-95	1RGB1				1RGR2	
2 North Palm Beach County	 FEC		2BRT2	2LRT2			2RGR1
	 US1		2BRT1	2LRT1			
3 West Palm Beach South	 FEC		3BRT2	3LRT2			3RGR1
	 US1		3BRT1	3LRT1			
4 East Broward County	 FEC		4BRT2	4LRT2			4RGR1
	 US1		4BRT1	4LRT1			
5 Ft Lauderdale – Miami	 FEC		5BRT2	5LRT2	5RRT1		5RGR1
	 US1		5BRT1	5LRT1			
6 Miami Northeast	 FEC		6BRT2	6LRT2	6RRT1		6RGR1
	 US1		6BRT1	6LRT1			
Technology:		RGB	BRT	LRT	RRT	RGR	

Tiered PEIS/AA Process and NEPA

Two tiered NEPA EIS process (“phased decision making”)

1. Tier 1 and Tier 2 EIS’s and Record of Decisions (RODs)
2. Broad perspective: regional/area wide issues as well as indirect and cumulative impacts in Tier 1
3. Narrower perspective: Segment/site specific issues in Tier 2, New Starts/Small Starts Applications to FTA

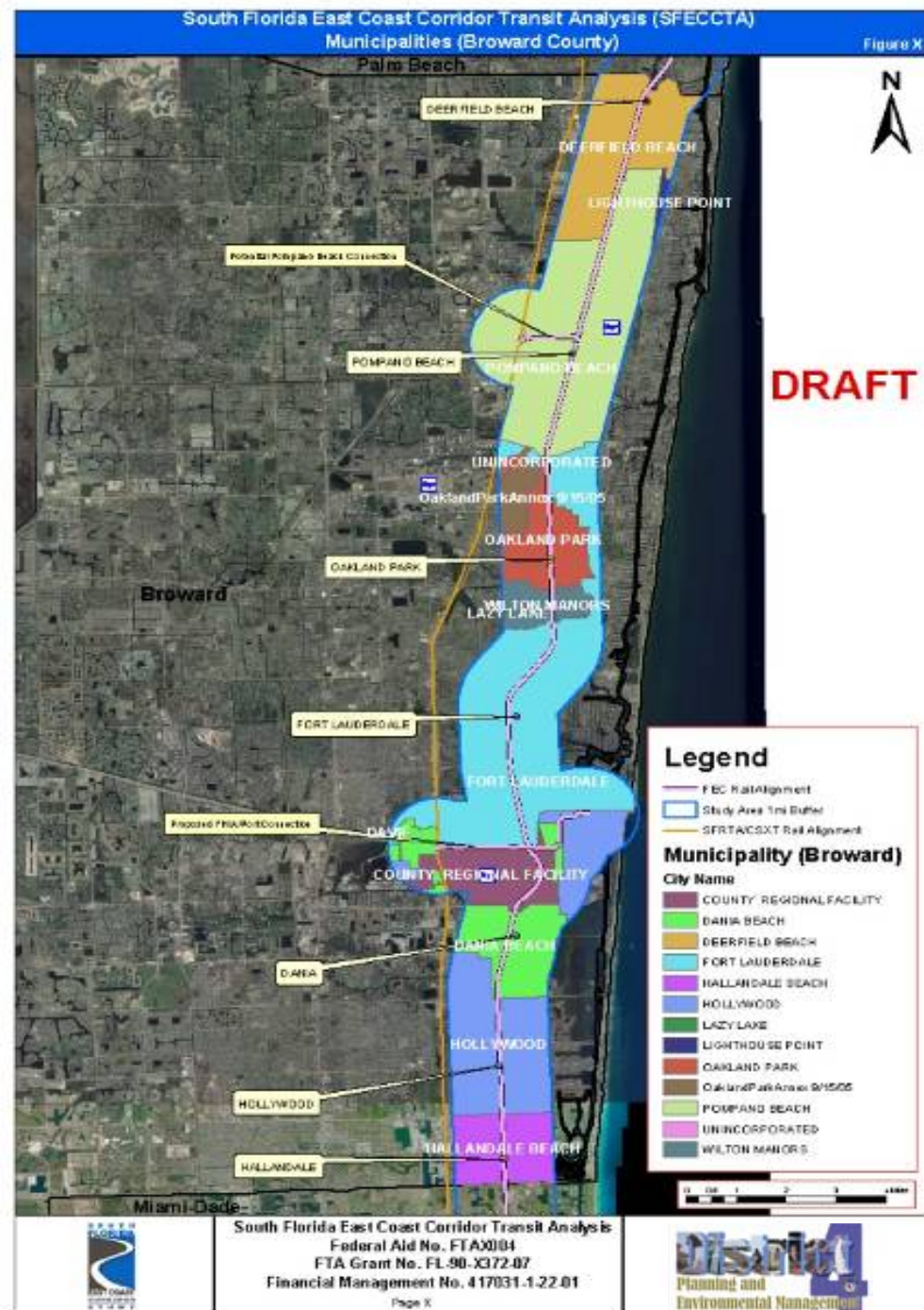
Project Study Area

- 85-mile N-S alignment, 2 miles wide, > 200 sq. miles
- 100-miles Rail with ~ 233 RR crossings
- 3 counties/MPO's (Miami to N. Palm Beach)
- 28 cities on FEC Railway, 47 within SFECCTA Study Area
- > 1 million stakeholders
- Three Major Seaports
- Three International Airports
- Numerous CBDs & Key Commercial Corridors (E-W, N-S)
- Potential Rail links to CSXT/SFRC (Tri-Rail, AMTRAK, Freight)



NEPA Issues – Tier 1

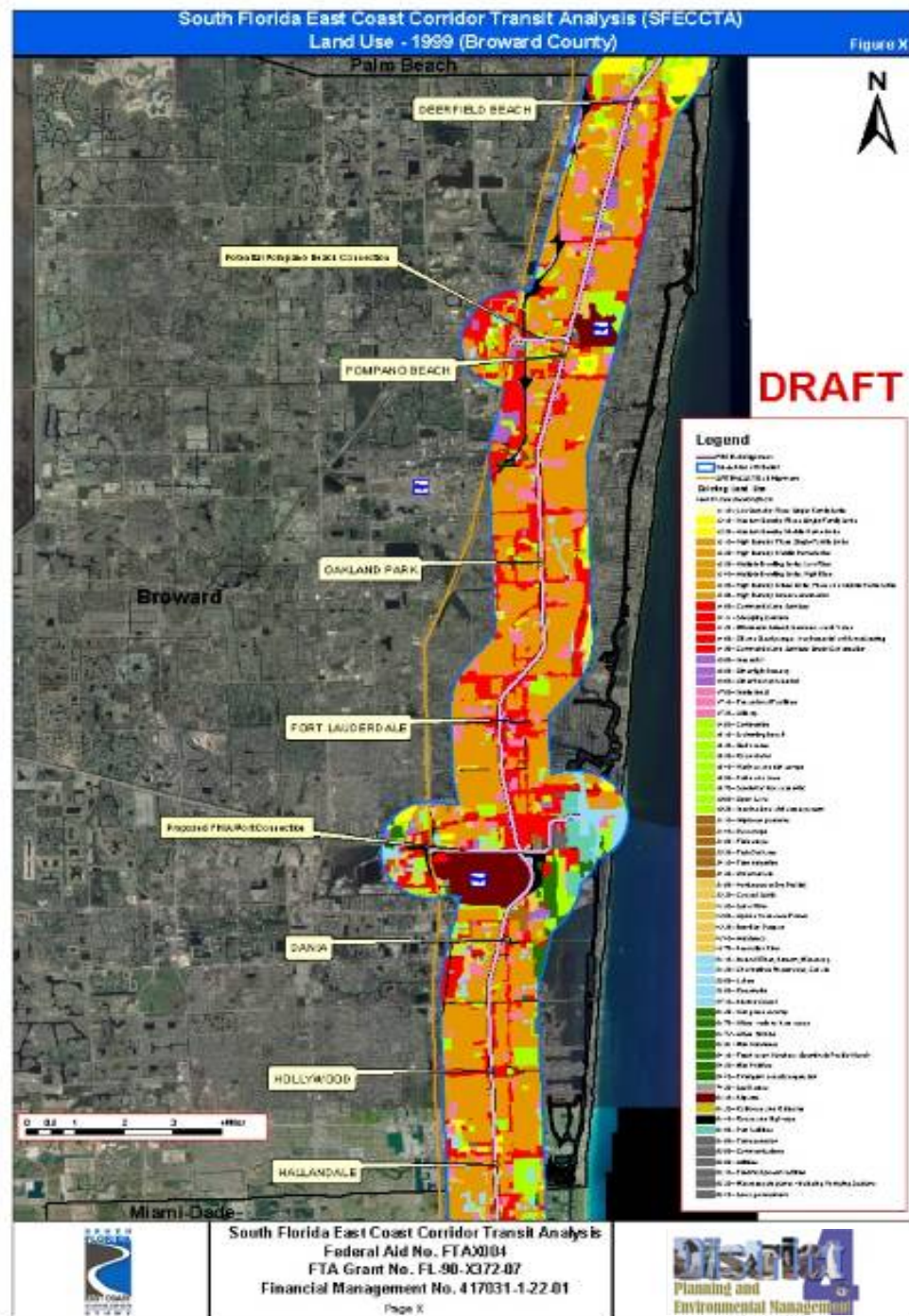
- Multiple Municipal jurisdictions
- Identify Key Stakeholders of this study
- Solicit their participation and identify their issues



NEPA Issues – Tier 1

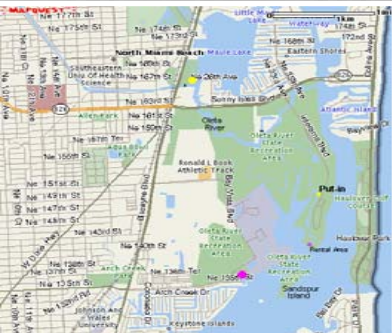
Land Uses

- Highly developed corridor
- Mixed uses
- Useful criterion to identify potential transit station locations for consideration



Key NEPA Issues – Tier 1

- **Potential Environmental (Natural/Physical) Impacts**
 - Airborne Noise and Ground-borne Noise & Vibration
 - Air Quality Benefits
 - Contamination Sites
 - Navigation, Manatee Restriction Zones
 - Wetlands, Essential Fish Habitat
 - Water Quality and Quantity
- **Potential Cultural Impacts - Sections 4(f)/6(f)/106**
 - Historic and Archaeological Sites
 - Recreation Areas (Numerous Parks, Greenways/Trails)



Key NEPA Issues – Tier 1

- **Potential Community Impacts (including Environmental Justice)**
 - Aesthetics
 - Economic
 - Land Use
 - Mobility
 - Relocation
 - Social
- **Potential Indirect and Cumulative Effects (stakeholders)**
 - Ridership scavenging from Tri-Rail (FTA)
 - Freight scheduling (FEC, CSX Railways)
 - Induced Development of urban conservation areas (Natural Resource Agencies)
 - Train horn (“whistle”) noise increases over existing (Municipalities)
 - Safety and traffic impacts at numerous at-grade RR Crossings
 - Potential indirect R/W impacts, primarily for station locations (Induced Displacement)

Population Growth Trend Forecasts

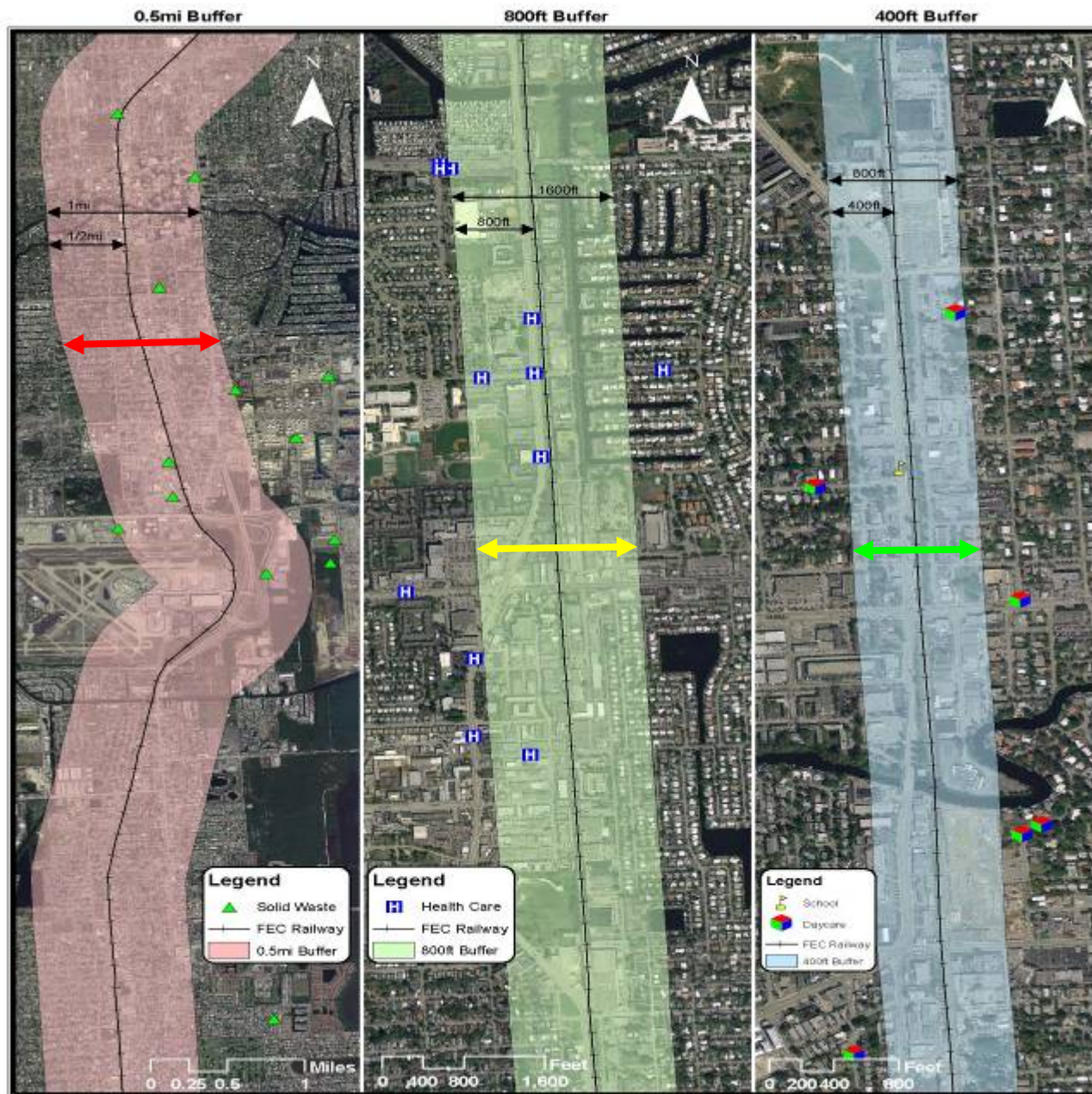
Projected Demographic Trends - SFECCTA and the South Florida Tri-County Area

Area of Consideration	Population		Growth (%)	Area (acres)
		2000	2030	
Within 1 Mile Buffer of FEC Railway	Population	830,300	1,233,900	49%
	Households	349,200	515,400	48%
	Employment	648,800	883,000	36%
Outside 1 Mile Buffer of FEC Railway (Remainder of Miami-Dade, Broward, Palm Beach Counties)	Population	4,051,900	5,802,400	43%
	Households	1,553,400	2,208,600	42%
	Employment	1,642,900	2,294,000	40%
Sources: U.S. Census 2000, Florida's Southeast Regional Planning Model (SERPM 5)				

GIS Level Alternative Analyses (Tier 1 Screening Distances)

- **Airborne Noise/Ground-borne Noise & Vibration** – 1,600 ft. wide selection area (800 ft. Buffer from centerlines)
- **Land Use & Census Data** – 1.0 mi. wide selection area (0.5 mi. Buffer from centerlines)
- **Other Physical and Social, as well as, Natural Resources**
 1. 800 ft. wide selection area (400 ft. Buffer from centerlines)
 2. 1 mi. wide selection area for NPL/Superfund Sites (0.5 mi Buffer from centerlines)

Tier 1 Screening Distances



- 400 ft buffer
- 800 ft buffer
- 0.5 mi buffer

Public Involvement & Environmental Justice

- The intent of **public involvement** is to fully inform and involve all interested **public officials, citizens, and special interest groups** in the development of transportation projects.
- **Environmental Justice** is the fair treatment and meaningful involvement of all **people regardless of race, color, national origin, or income** with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation.

Environmental Justice - Data

	Study Area* (Miami-Dade)	Miami-Dade County
Percent Minority	78.6%	79.3%
Persons Below Poverty Level	30%	18%
Household Income (<15K)	32%	21%
White	42%	70%
African-American	48%	20%
Hispanic-Origin	27%	57%

* Polygon buffer around FEC Railway using EPA Environmental Justice Geographic Assessment Tool

Public Involvement in Tier 1

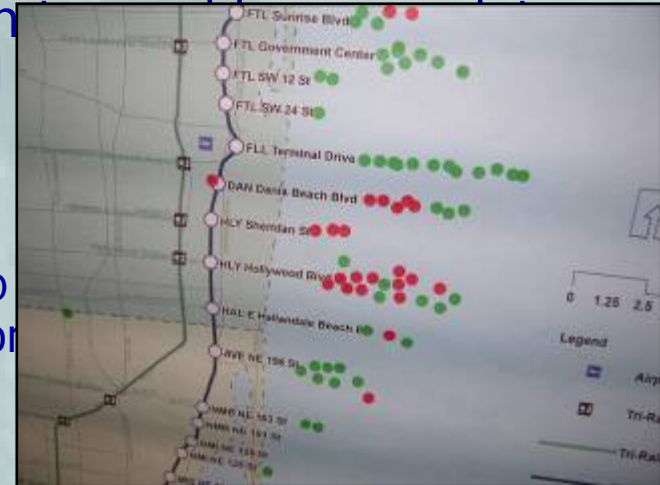
- Public Involvement Plan
- Project Mailing List (~300K)
- Scheduled Public Meetings (10 events)
 - June 2006, August 2006, October 2006
 - Unscheduled Public Meetings (50 events)
- **Public Hearing Dates – November 8th , 9th , and 15th , 2006**
- Special Public Involvement
 - Project Website – www.SFECCStudy.com
 - Newsletters (2)
 - Fact Sheets (2)
 - PSA's (2)
 - Business Group Meetings (24)
 - Transit Surveys (Good response from hard to reach transit users)

GIS and Public Involvement

Purpose and Objectives

- Examine and analyze spatial datasets of all stakeholders.
- Incorporate a Public Involvement Plan and notification of activities to all affected

- Flexibility in displaying information.
 - Enhance public meetings, small group workshops by conveying complex information of information.

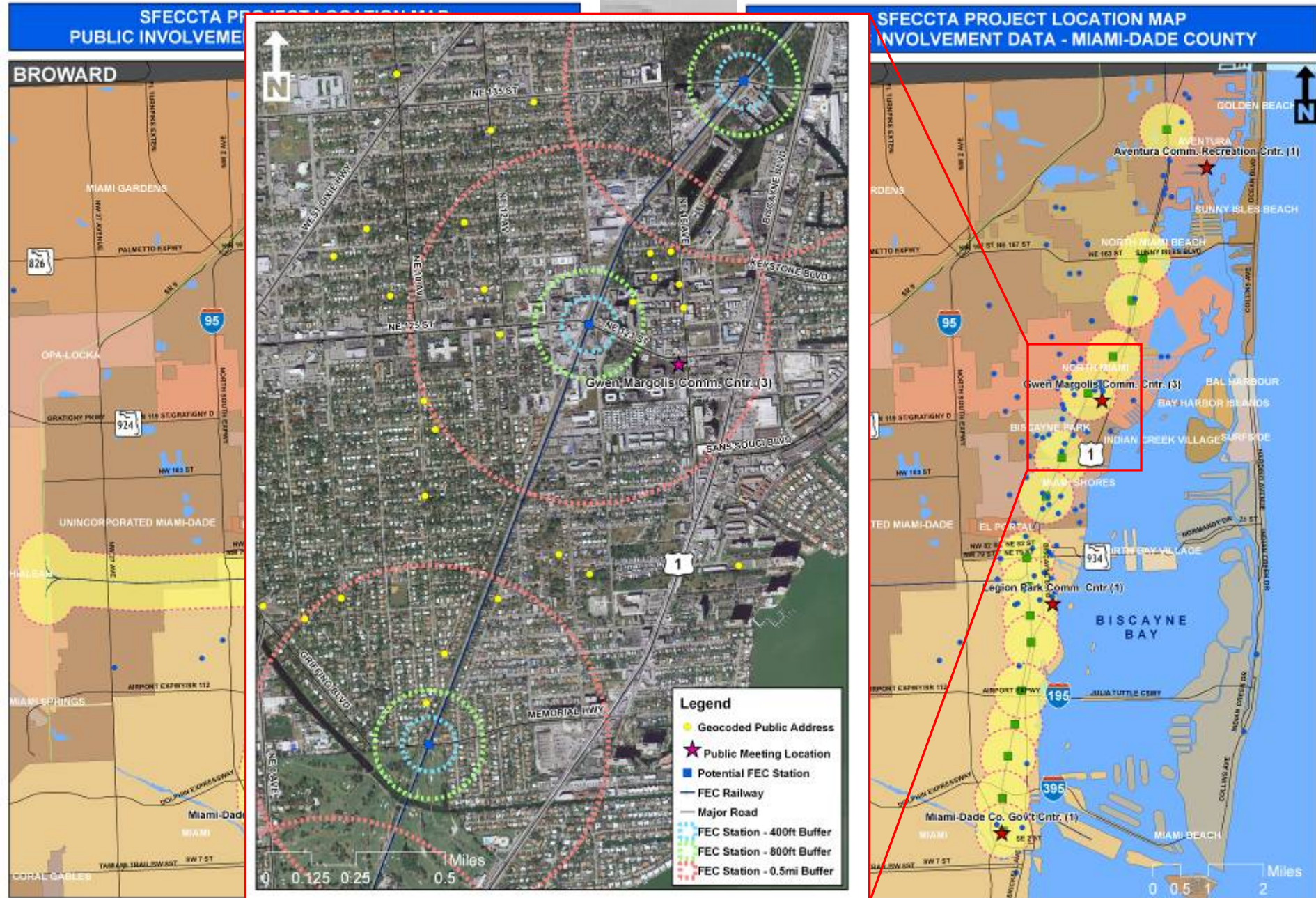


- GIS can be used in participatory/collaborative mapping.
- GIS can be used to survey residents about their local environments.
- A GIS tool can also be part of a website to gather information about project stakeholders.

GIS and Public Involvement in Tier 2 Methodology

- Step 1: Geocode Tier 1 Public Attendees' Addresses
- Step 2: Analyze data using GIS Buffers
- Step 3: Display data geographically and statistically
- Step 4: Adapt public involvement program based on results to identify and involve under-represented stakeholders (e.g., youth, low-income, minority)

GIS and Public Involvement - Maps

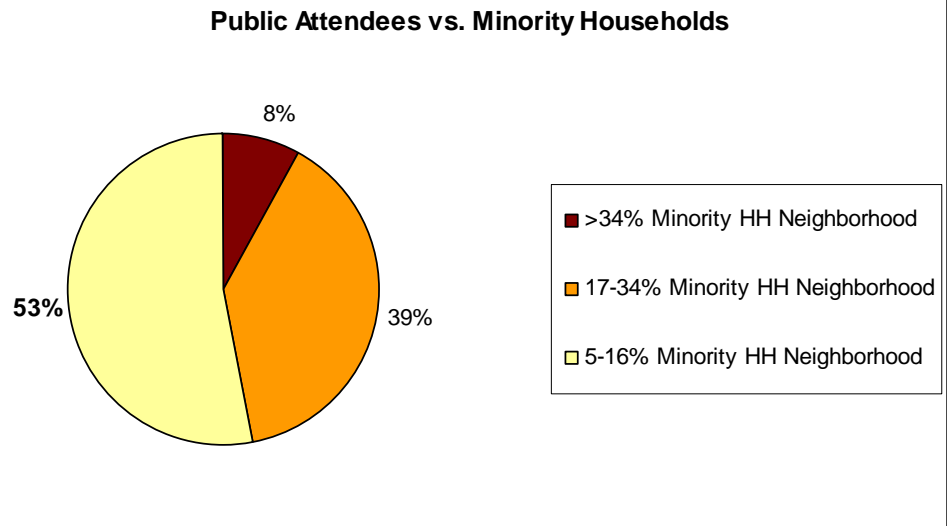


Public Involvement Analysis - Tier 1

SFECCTA Public Involvement GIS Analysis

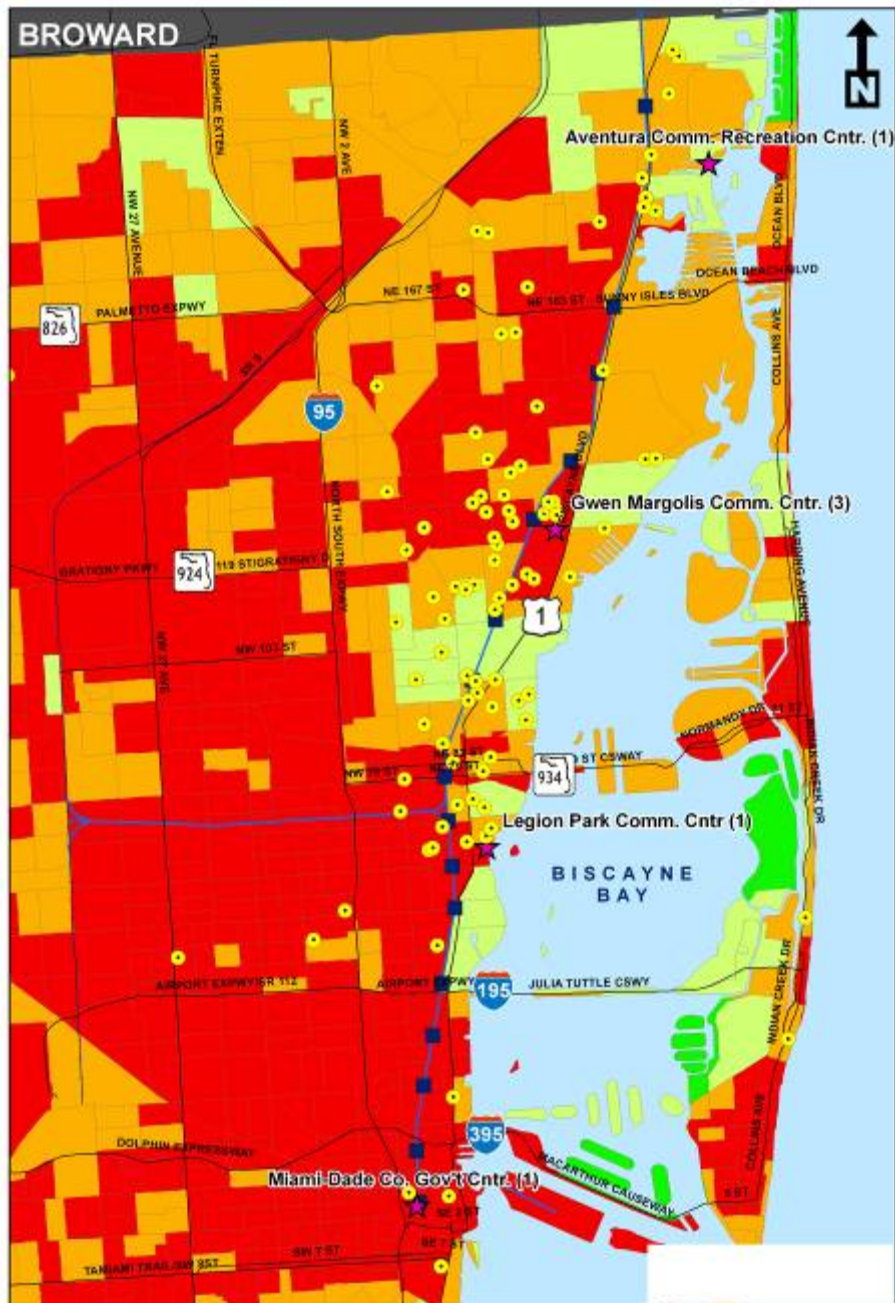
	Public Attendees						
		FEC Railway			FEC Stations		
Buffer Distance	Entire County	400ft	800ft	1/2 mile	400ft	800ft	1/2 mile
Miami-Dade	111	15%	24%	58%	3%	6%	40%
Broward	47	0%	11%	64%	0%	4%	30%
Palm Beach	52	4%	19%	58%	0%	6%	27%
Total	210	9%	20%	59%	1%	6%	34%

GIS and Public Involvement



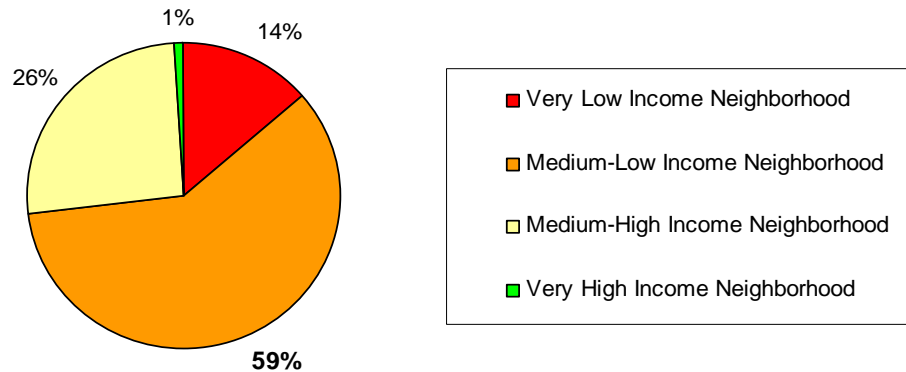
! Geocoded Public Address
 ^ Public Meeting Location
) Potential FEC Station
 + FEC Railway
 + CSXT
 — Major Highway
 Census (TAZ)
 % Minority HH
 <5%
 5% - 16%
 17% - 34%
 >34%

SFECCTA CENSUS ANALYSIS MEDIAN HOUSEHOLD INCOME - MIAMI-DADE COUNTY



GIS and Public Involvement Household Income

Public Attendees vs. Household Income



Legend

- ! Geocoded Public Address
- ▲ Public Meeting Location
- ⌋ Potential FEC Station
- + FEC Railway
- + CSXT
- Major Highway

Census Block Group (US Census, 2000)

Median Family Income

- 0 - 33750
- 33751 - 64875
- 64876 - 121547
- 121548 - 200001

Conclusions

- Ongoing study
- Participatory/Adaptive Management
- Sense of “Ownership” through Public Participation



Acknowledgements

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STUDY AREA AND SCHEDULE NEWS DOCUMENTS CALENDAR ALTERNATIVE TECHNOLOGIES INFO ONLINE SURVEY FAQ CONTACT

SOUTH FLORIDA EAST COAST CORRIDOR STUDY

**SOUTH FLORIDA EAST COAST CORRIDOR STUDY**

PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) District 4 is leading a regional partnership that is conducting the South Florida East Coast Corridor (SFECC) Transit Analysis Study. The scope of this Transit Analysis Study (TAS) is to develop and analyze alternatives that potentially integrate passenger and freight transport along the SFECC, which is centered along the existing FEC Railway. The study will consider various alignments and transit technologies. Right-of-way on streets and areas parallel to the SFECC, as well as stretches of waterways, will be evaluated for the alternative transit routes. The different technologies that will be considered include bus, waterway transit, light-rail, commuter-rail, and heavy-rail.

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