SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

Strategic Regional Transit Plan

December 2008

Project Summary

A Growing Need

South Florida faces complex and diverse transportation, land use, economic, and development issues, which without a strategy will continue into the future. These issues include increasing road congestion and mobility problems stemming from continuing and rapid growth and an essentially suburban pattern of land use and development.

The future in South Florida must include transit. The days of adding more and more pavement to our highway system are rapidly coming to an end, hastened by fluctuating land values, high gas prices, and the realization that future population and employment growth can only be accommodated through compact high density land use served by transit. Transit is a critical element of South Florida's transportation future. Benefits of transit include promoting economic development and access to jobs, alleviating the congestion that threatens our region with gridlock, and mitigating the isolation of the transportation disadvantaged.

After months of technical analysis and coordination with regional transportation partners, the South Florida Regional Transportation Authority (SFRTA) Strategic Regional Transit Plan process has defined three potential transit networks. Each of these transit networks is designed to serve different community values and different desires, but all options give the region an opportunity to improve mobility.

As the SFRTA refines these options and comes to a recommendation of a single vision for transit in our region, we will look to our broad, diverse community to be engaged in helping us shape our future.

The Strategic Regional Transit Plan was developed by the South Florida Regional Transportation Authority (SFRTA) to:

Think creatively to define a bold vision and strategic plan for regional transit's role in the overall regional transportation system to ensure mobility, economic viability, and quality of life in the South Florida region for the next generation.

Working with Our Partners

It is imperative to use the best resources available to ensure a successful plan. To do this, throughout the Strategic Regional Transit Plan study process, the SFRTA actively engaged the region's transit partners (transportation planning agencies, and transit service providers) through its Planning Technical Advisory Committee (PTAC).

To ensure an open line of communication throughout the project, the findings were discussed with the PTAC on a regular basis. The committee's comments resulted in numerous modifications and provided general project direction.

Partner Agencies

Broward County Transit
Broward Metropolitan Planning Organization
Florida Department of Transportation, District 4
Florida Department of Transportation, District 6
Miami-Dade Metropolitan Planning Organization
Miami-Dade Transit
Palm Beach Metropolitan Planning Organization
Palm Tran
South Florida Regional Planning Council
South Florida Regional Transportation Authority
Treasure Coast Regional Planning Council

Transit Options for a Region

Regional Activity Centers – RACs – are considered major destinations that could be potential hubs for transit. Premium transit services perform best when they are able to serve concentrated developments. In this study, RACs were determined using the following criteria:

- *Areas with a high concentration of jobs in the year 2000,*
- *Areas projected to experience significant growth in employment between the years 2000 and 2030, and*
- *Areas that contain Developments of Regional Impact (DRIs).*

This criteria resulted in the identification of 34 RACs in the region: nine in Palm Beach County, seven in Broward County, and 18 in Miami-Dade County.

Trip Flows graphically show the vehicle trips between two distinct regional area superzones comprise of areas with similar residential character, identity, and densities. A superzone with a RAC is generally considered a trip destination, while all other superzones are generally considered trip origins.

The first step in creating the Strategic Regional Transit Plan was to develop the initial alternatives based on current and expected growth in population and employment. Also used to determine the best options for transit were how they link to Regional Activity Centers, the corridor's potential for serving major travel patterns (Trip Flows), as well as the physical availability of potential right-of-way, if needed. Some of the early options included commuter rail in freight rail corridors, light rail options, Metrorail projects and extensions, buses in HOV lanes, or buses with special technology options to help them move faster on state and county roads.

A critical part of the process was determining what options serve a regional need. While many options may be important to a local area, the SFRTA is focused on bringing solutions to the broader region.

Figure 1 shows the process used to advance corridor alternatives through the screening process and ultimately into the three networks tested using four land use scenarios.

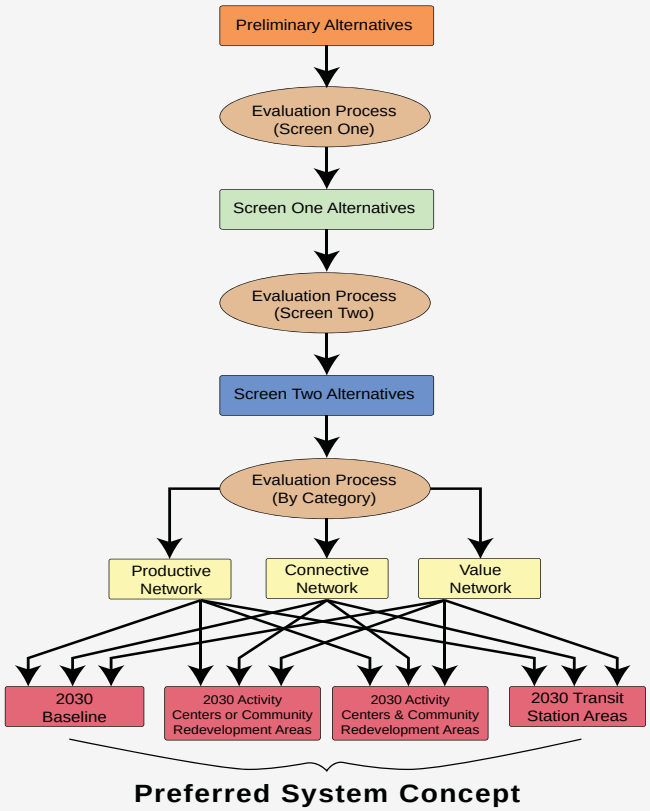


Figure 1

The Process

A two-tiered screening process was developed to evaluate the corridor alternatives. The following categories of criteria were used for assessing each of the early alternatives:

Connective

- **Interjurisdictional** – Does the option cross county lines?
- **Number of RACs Served** – How many Regional Activity Centers does the option connect to?
- **Connection to Existing Premium Transit** – Does the option connect to an existing premium transit system, specifically Tri-Rail or Metrorail?
- **Intermodal Connection** – Does the option provide a connection to other modes of transportation, such as airports or seaports?

Productive

- **Incremental Trips per Mile** – How many additional trips are expected to be served on transit with this option?
- **Total Trip Flows** – What is the overall demand of people going to an activity center? How many personal vehicle trips would this option provide a choice for?

Value

- **Capital Cost per Mile** – What is the per mile cost of constructing each option?
- **Annual Cost per Trip** – What is the approximate annual operating cost (plus an annualized capital cost) per rider?
- **Subsidy per Trip** – After transit fares are counted, how much money will be needed from other local, state, or federal sources for funding?

Choices for a Community: Developing the Networks

During the Strategic Plan process, each alternative competed on its own to perform. In a later step, the best performing alternatives were grouped into three networks created to respond to specific desires of the community. A **Connective Network** would specifically address linking areas of the region that currently or are expected to produce a large number of trips and makes the most of our existing community investments and infrastructure land use vision. A **Productive Network** would address putting together the individual alternatives that produce the most riders to determine if it also creates the most used system overall. A **Value Network** would determine if the network would balance the cost of the system with the benefits of the system, shown in the number of transit riders. **Table 1** shows the list of alternatives that make up each network.

	Alternative	Name	Mode	Connective	Productive	Value
Miami East-West	30D	East-West Metrorail Extension South to Kendall	Metrorail		✓	
	31R	137th Rapid Bus	BRT			✓
	31T	Metrorail Extension plus 137th Avenue Rapid Bus	Combined Metrorail/BRT	✓		
Miami Beach	30F	Miami Beach LRT	LRT	✓	✓	✓
Broward East-West	30G	Broward East-West LRT	LRT	✓	✓	
	32L	Broward E-W LRT Sawgrass to CBD	LRT			
		Broward E-W LRT SR 7 to Dntn Ft. Lauderdale and SFEC to US 1	LRT			✓
Jupiter Tri-Rail Extension	30V	Jupiter Extension (7 Stations)	Commuter Rail		✓	✓
	31U	Tri-Rail Extension to VA Hospital	Commuter Rail	✓		
Miami Tri-Rail Ext	30J	Tri-Rail Split to Miami CBD	Commuter Rail	✓	✓	
	32K	Tri-Rail Extension to Dadeland	Commuter Rail		✓	
FEC	30K	FEC Complete	Commuter Rail	✓		
	30L	FEC Shorter Line	Commuter Rail			✓
	32A	FEC West Palm Beach to Miami	Commuter Rail		✓	
Bus	31A	North-South Premium Bus	BRT	✓		✓
	31S	North-South Rapid Bus with Douglas Road	BRT		✓	
	31D	University Drive Rapid Bus	BRT	✓		✓
	31K	Wellington Rapid Bus	BRT	✓	✓	✓
	31L	Military Trail Rapid Bus	BRT	✓	✓	✓
	31N	Pines Rapid Bus	BRT	✓	✓	✓
	32O	Oakland Park - Cypress Creek Rapid Bus	BRT	✓	✓	✓
	32P	Sample Road Modified Rapid Bus	BRT			✓
Kendall	32G	Kendall Hybrid BRT-DELRT SW 137th Augmented	Combined DELRT/BRT	✓	✓	
	32Q	Kendall Drive BRT Only Modified Service	BRT			✓
		Total Projects		13	13	13

Connective Network

What system makes the most of our land use vision and infrastructure investment?

The alternatives that were included in the preliminary Connective Network focus on:

- Connecting our communities – with emphasis on regional/cross-county trips,
- Providing access to our major destinations or regional activity centers, and
- Making the most of infrastructure investments already made in our community such as airports, seaports, Metrorail, and Tri-Rail.

This network is concerned with strengthening our existing community investments. This network proves to have the highest ridership of the three networks because it connects the most major activity centers throughout the region. Twelve alternatives were included in the Connective Network, shown in **Figure 2**.

Productive Network

What system would be most used?

The preliminary Productive Network alternatives focus on:

- Generating new riders on transit, and
- Satisfying the highest number of trips in the given corridors.

This network is concerned with placing transit options in the most heavily used corridors, giving as many travelers as possible transportation options besides the personal automobile. This network proves to have very high ridership. Of the 21 alternatives tested in Screen Two, 12 alternatives were eligible for the Productive Network, shown in **Figure 3**.

Value Network

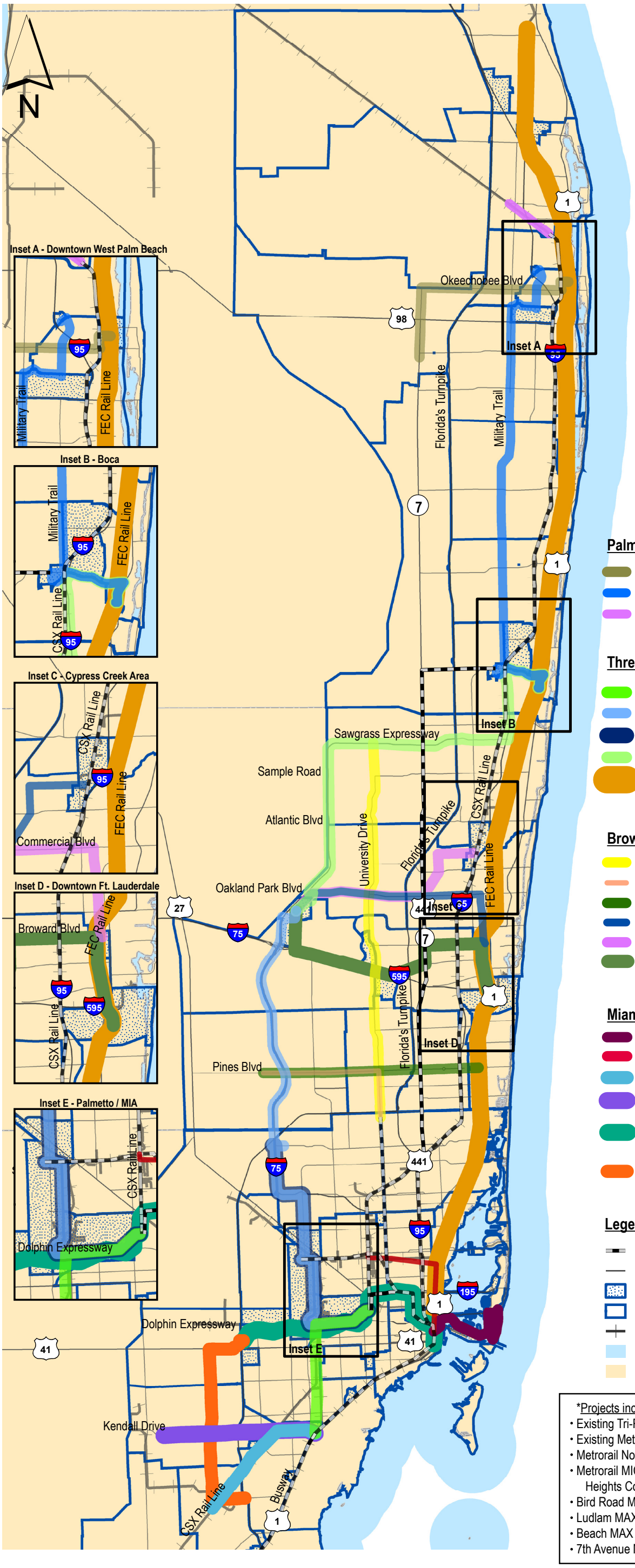
What system balances use with costs?

Alternatives included in the preliminary Value Network may not perform the best in terms of how many riders are estimated, but instead focus on:

- The initial costs required to build the system,
- The annual costs of each trip on the system, and
- The amount of funding that will be required to subsidize the cost of each trip.

This network proves to have high ridership, and presents options that provide good service at a reasonable price. This may be the best way to get things started in certain corridors until demand expands. Of the 21 alternatives tested in Screen Two, 13 alternatives were eligible for the Value Network, shown in **Figure 4**.

CONNECTIVE NETWORK



Palm Beach County Alternatives

- Wellington Rapid Bus (31 K)
- Military Trail Rapid Bus (31 L)
- Tri-Rail Extension to the VA Hospital (31 U)

Three County Alternatives

- North-South Premium Bus - Dadeland South (31 A)
- North-South Premium Bus - Palmetto Line B (31 A)
- North-South Premium Bus - Palmetto Line A (31 A)
- North-South Premium Bus - Sawgrass to Boca (31 A)
- FEC Complete (30 K)

Broward County Alternatives

- University Drive Rapid Bus (31 D)
- Pines Rapid Bus to University - Line A (31 N)
- Pines Rapid Bus to FEC - Line B (31 N)
- Oakland Park Rapid Bus to Dntn Ft. Lauderdale- Line A (32 O)
- Oakland Park Rapid Bus to Cypress Creek - Line B (32 O)
- Broward East-West LRT (30 G)

Miami-Dade County Alternatives

- Miami Beach LRT (30 F)
- Tri-Rail Split to Miami CBD (30 J)
- Kendall Hybrid BRT-DELRT SW 137th Ave - Line A (32 G)
- Kendall Hybrid BRT-DELRT SW 137th Ave - Line B (32 G)
- Metrorail East-West Extension with 137th Avenue Rapid Bus - Line A (31 T)
- Metrorail East-West Extension with 137th Avenue Rapid Bus - Line B (31 T)

Legend

- Baseline Premium Transit *
- Interstate/Toll Road/US Road/State Road
- Activity Centers
- Superzones
- Railroad
- Lake Okeechobee
- County

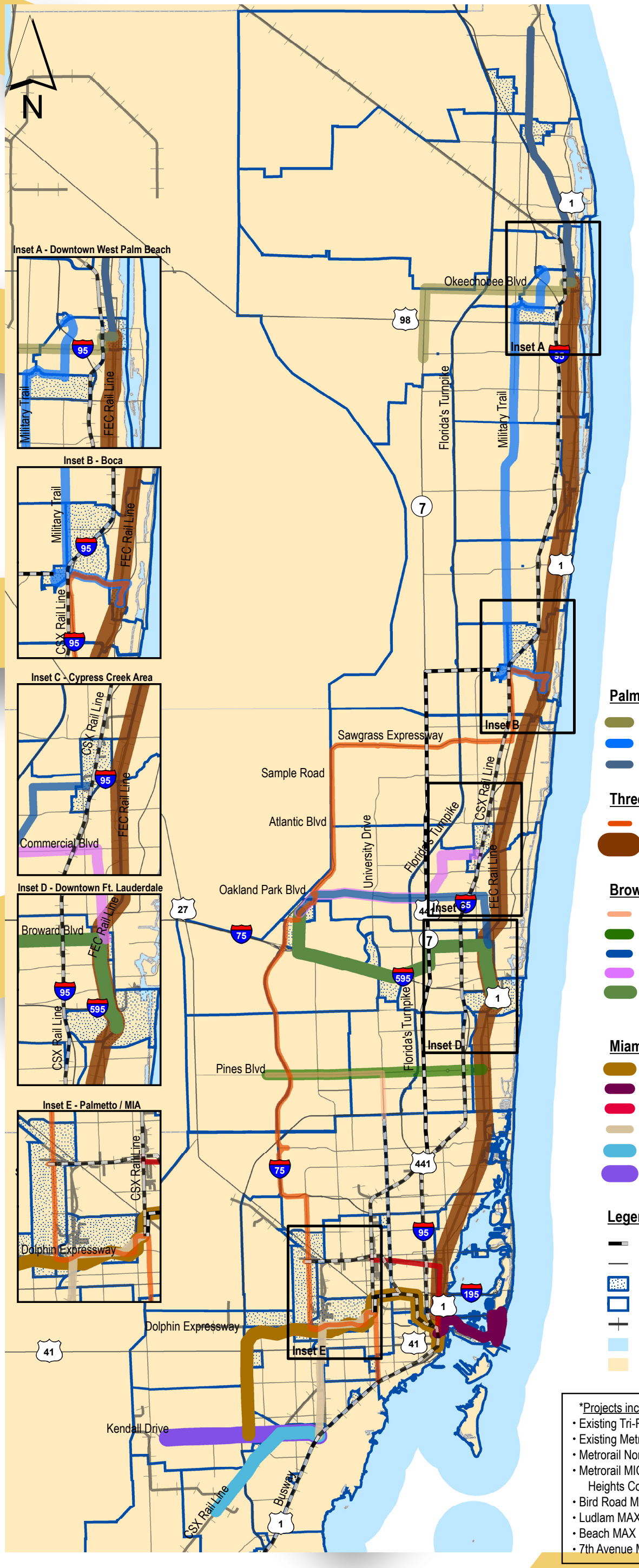
*Projects included in Baseline:

- Existing Tri-Rail service
- Existing Metrorail service
- Metrorail North Corridor
- Metrorail MIC-Earlington Heights Corridor
- Bird Road MAX
- Ludlam MAX
- Beach MAX
- 7th Avenue MAX
- Coral Way MAX
- Killian KAT
- Sunset KAT
- Kendall KAT
- 95X Civic Center
- 95X Norwood-Brickell
- 95X Carol City-Omni
- 95X Norwood-West
- Broward SR 7 Fast Bus

5 Miles

Source: South Florida Regional Transportation Authority Strategic Regional Transit Plan, 2008

PRODUCTIVE NETWORK



Palm Beach County Alternatives

- Wellington Rapid Bus (31 K)
- Military Trail Rapid Bus (31 L)
- Tri-Rail Extension to Jupiter (30 V)

Three County Alternatives

- Douglas Road Rapid Bus (31 S)
- FEC West Palm Beach to Miami (32 A)

Broward County Alternatives

- Pines Rapid Bus to University - Line A (31 N)
- Pines Rapid Bus to FEC - Line B (31 N)
- Oakland Park Rapid Bus to Dntn Ft. Lauderdale- Line A (32 O)
- Oakland Park Rapid Bus to Cypress Creek - Line B (32 O)
- Broward East-West LRT (30 G)

Miami-Dade County Alternatives

- East-West Metrorail Extension to Kendall (30 D)
- Miami Beach LRT (30 F)
- Tri-Rail Split to Miami CBD (30 J)
- Tri-Rail Extension to Dadeland (32 K)
- Kendall Hybrid BRT-DELRT SW 137th Ave - Line A (32 G)
- Kendall Hybrid BRT-DELRT SW 137th Ave - Line B (32 G)

Legend

- Baseline Premium Transit *
- Interstate/Toll Road/US Road/State Road
- Activity Centers
- Superzones
- Railroad
- Lake Okeechobee
- County

*Projects included in Baseline:

- Existing Tri-Rail service
- Existing Metrorail service
- Metrorail North Corridor
- Metrorail MIC-Earlington Heights Corridor
- Bird Road MAX
- Ludlam MAX
- Beach MAX
- 7th Avenue MAX
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5 Miles

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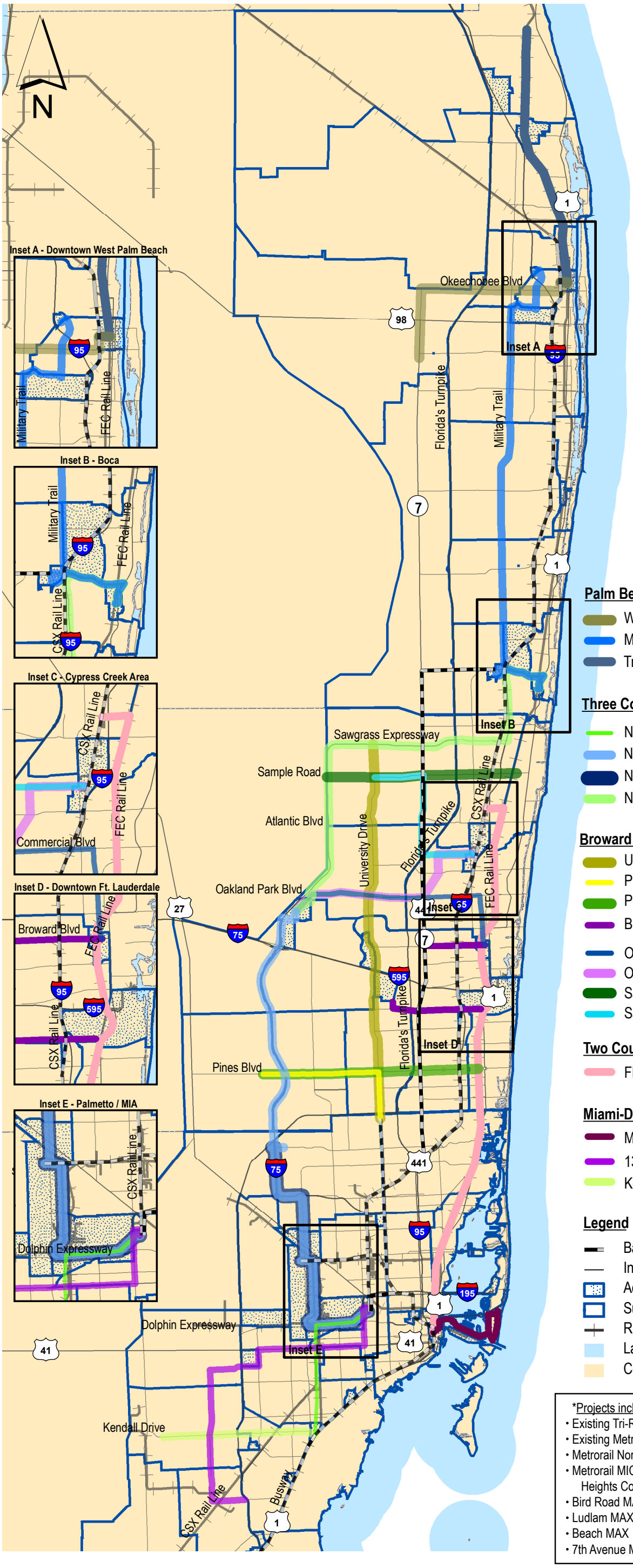
VALUE NETWORK



Palm Beach County Alternatives

- Wellington Rapid Bus (31 K)
- Military Trail Rapid Bus (31 L)
- Tri-Rail Extension to Jupiter (30 V)

Three County Alternatives

- North-South Premium Bus - Dadeland South (31 A)
- North-South Premium Bus - Palmetto Line B (31 A)
- North-South Premium Bus - Palmetto Line A (31 A)
- North-South Premium Bus - Sawgrass to Boca (31 A)

Broward County Alternatives

- University Drive Rapid Bus (31 D)
- Pines Rapid Bus to University - Line A (31 N)
- Pines Rapid Bus to FEC - Line B (31 N)
- Broward East-West LRT - SR 7 to Dntn Ft. Lauderdale and SFEC to US 1 (New Alt)
- Oakland Park Rapid Bus to Dntn Ft. Lauderdale- Line A (32 O)
- Oakland Park Rapid Bus to Cypress Creek - Line B (32 O)
- Sample Road Modified Rapid Bus - Line A (32 P)
- Sample Road Modified Rapid Bus - Line B (32 P)

Two County Alternatives

- FEC Shorter Line (30 L)

Miami-Dade County Alternatives

- Miami Beach LRT (30 F)
- 137th Avenue Rapid Bus (31 R)
- Kendall Drive BRT Only - Modified (32 Q)

Legend

- Baseline Premium Transit*
- Interstate/Toll Road/US Road/State Road
- Activity Centers
- Superzones
- Railroad
- Lake Okeechobee
- County

*Projects included in Baseline:

- Existing Tri-Rail service
- Existing Metrorail service
- Metrorail North Corridor
- Metrorail MIC-Earlington Heights Corridor
- Bird Road MAX
- Ludlam MAX
- Beach MAX
- 7th Avenue MAX
- Coral Way MAX
- Killian KAT
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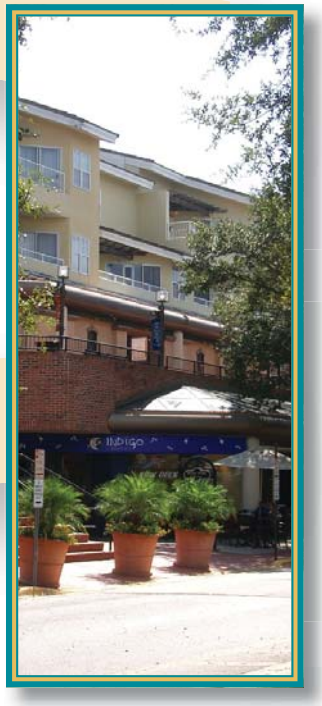
Source: South Florida Regional Transportation Authority Strategic Regional Transit Plan, 2008



Land Use - Transportation Connection

Forecasted growth in the South Florida region through the year 2030 shows a fairly even distribution of employment and residential development, or "business as usual", a relatively suburban pattern of development. Without increasing density in some key areas this may mean spreading out even more and consuming more and more land. To illustrate how clustering future growth into key areas can affect our ability to provide transportation solutions through transit, each network was tested with three different land use scenarios for the year 2030 that differ from how the region's current development policies suggest.

Clustering Future Growth

In addition to the base projected growth – or "business as usual", three alternate land use scenarios were created. This was done by shifting some of the projected employment growth and new residential development into smaller clusters that the community designates as the most desirable places for increases in employment and residences – such as our Regional Activity Centers, our designated Community Redevelopment Areas (CRA's), and potential station areas. One scenario examined separating residential growth from employment growth, while the other two examined different ways to mix residential and employment areas into live, work, play centers.

Benefits of Changing How We Grow

In each of the land use scenarios, a portion of residential growth and a portion of employment growth were redistributed. Regardless of the magnitude of the distribution to the designated areas, the results were always the same: concentrating employment growth and residential growth into clusters served by transit, rather than an even distribution throughout the region, produced a dramatic increase in demand for transit service on the proposed networks – thus lessening the stress on our roadways. This translated into more trips by transit, higher revenue through fares, and reduced operating costs – all of which greatly reduced the overall cost of the projects.

Plan Costs and Options for Funding

The capital costs, operating costs, and maintenance costs of building a new transit network will be significant, and the region's existing funding sources for transportation are already fully committed to other projects that are desperately needed. Looking to the future of how we improve our commitment to mobility and quality of life options, the community will need to closely examine new local funding strategies to support regional transit options that can leverage state and federal matching funds that the South Florida area has missed out on in the past. We, as one regional community, will then have to stand together to strongly advocate for these strategies at the local, state, and federal levels.

Local Share of the Funding

With a local source of funding to implement the Strategic Regional Transit Plan, we can leverage state and federal pots of money. But how much will we need? Some projects are important to our region and could be contenders for funding at the federal and state level. Other projects are important to our region, but may not be ready for federal and state competitions.

Looking at each potential network and the likely capital and operating costs, we can make some assumptions that certain projects will only take 25% of a local match with 75% coming from the state and federal governments, while other projects might have to be 100% locally funded. With that in mind, the SFRTA estimates that for our three potential networks, we would have to fund about one-third of the capital cost and less than half of the operating costs needed to create and operate the proposed networks.

While more detailed analysis would need to be conducted to determine which projects would begin to incur operating costs first, the SFRTA estimates that approximately $300-360 million at today's dollar value would be needed per year at the height of the development and operation of the system, shown in **Table 2**.

Table 2
Estimated Capital and Operating Cost Range

Capital	Operations
• Total Cost: $8.9-$10 Billion	• Annual Cost: $132-$140 Million
• Likely funding shares:	• Likely funding shares:
- Federal: 33%	- Fares: 30%
- State/Other: 33%	- State: 20%
- Local: 34%	- Federal: 7%
• Local Cost: $3.0-$3.7 Billion	- Local: 43%
Bonded at 5% for 20 years:	Local Cost:
$243-$300 Million/Year	**$57-$60 Million/Year**

These full costs would not be incurred immediately - funding requirements will grow as the individual projects are implemented.

Potential Funding Sources and Funding Combinations

Since the SFRTA does not currently have an independent, sustainable funding source, several reasonable options are being considered for discussion. Five potential funding sources were researched that could be used to support the average annual funding requirement to build and operate the proposed transit networks over the next twenty years. The five sources presented are a per-gallon fuel tax, a daily rental car tax, a one-time automobile title fee, an annual automobile registration fee, and a regional sales tax. **Table 3** shows what each source generates at different rates.

The necessary tax and fee levels required from a single source can be extremely high. Therefore, it can be useful to consider "packages" or combinations of sources that could be used to generate the necessary funding without relying too heavily on any single source.

Table 3 presents the potential funding strategies that could be used and the amount of revenue each could generate. **Tables 4** and **5** present two sets of funding menus that could be used to support the annual funding requirement for the transit networks.

Table 3

Potential Funding Strategies and Annual Revenue Estimate

Fuel Tax	
1¢/gal	$25M
12¢/gal	$300M
15¢/gal	$375M

Rental Car Fee	
$2/day	$42M
$14/day	$300M
$17/day	$360M

Title Fee	
$40	$50M
$240	$300M
$288	$360M

Sales Tax	
0.25%	$235M
0.50%	$470M

Registration Fee	
$15/year	$50M
$90/year	$300M
$108/year	$360M

Table 4

Network Funding Options to Generate $300 million (Option A)

Option A-1: Sales Tax Only	
0.50% Sales Tax	$470M
TOTAL	$470M

Option A-2: Sales Tax and Tolls	
0.25% Sales Tax	$235M
Managed Lanes	$100M
TOTAL	$335M

Option A-3: Title and Registration Fees	
$45/year Registration Fee	$150M
$120 Title Fee	$150M
TOTAL	$300M

Option A-4: Rental Car Fee and Tolls	
$10/day Rental Car Fee	$200M
Managed Lanes	$100M
TOTAL	$300M

Option A-5: Fuel Tax, Fees, and Tolls	
5¢/gallon Fuel Tax	$125M
Managed Lanes	$100M
$15/year Registration Fee	$50M
$20 Title Fee	$25M
TOTAL	$300M

Table 5
Network Funding Options to Generate $360 million (Option B)

Option B-1: Sales Tax Only	
0.50% Sales Tax	$470M
TOTAL	$470M

Option B-2: Sales Tax and Tolls	
0.25% Sales Tax	$235M
Managed Lanes	$100M
$20 Title Fee	$25M
TOTAL	$360M

Option B-3: Title and Registration Fees	
$54/year Registration Fee	$180M
$144 Title Fee	$180M
TOTAL	$360M

Option B-4: Rental Car Fee and Tolls	
$12.50/day Rental Car Fee	$260M
Managed Lanes	$100M
TOTAL	$360M

Option B-5: Fuel Tax, Fees, and Tolls	
6¢/gallon Fuel Tax	$150M
Managed Lanes	$100M
$23/year Registration Fee	$75M
$28 Title Fee	$35M
TOTAL	$360M

Decisions for Our Future: Your Turn

As the SFRTA moves forward, we will be asking for opinions from the local agencies and organizations, the business community, and the public. Together, we will have to answer these questions and make these decisions:

- Do we want to have transportation options or do we want to continue to be dependent of what we already have in place?
- Pick a network – with or without modifications.
- Pick a funding source.
- Show how fast we can change our future with the choices we make.