SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

Strategic Regional Transit Plan

December 2008

Chapter 4:

High Opportunity Corridors (Screen One)

(Chapter 4 originally prepared June 2007)

HIGH OPPORTUNITY CORRIDORS (SCREEN ONE)
TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 PROJECT PURPOSE 1
1.2 STUDY AREA 2

2.0 PRELIMINARY ALTERNATIVES 4

3.0 SCREEN ONE EVALUATION CRITERIA 12

3.1 INCREMENTAL TRIPS PER MILE 13
3.2 INTERJURISDICTIONAL 13
3.3 NUMBER OF REGIONAL ACTIVITY CENTERS (RACS) SERVED 13
3.4 CONNECTS TO EXISTING PREMIUM TRANSIT SERVICE 14
3.5 INTERMODAL CONNECTION 14
3.6 CAPITAL COST PER MILE (WITH RIGHT-OF-WAY) IN MILLIONS 14
3.7 ANNUAL COST PER TRIP 15
3.8 SUBSIDY PER TRIP 15
3.9 TOTAL TRIP FLOWS 16

4.0 SCREEN ONE RANKING 17

5.0 SCREEN ONE ALTERNATIVES 20

6.0 NEXT STEPS 31

6.1 SCREEN TWO ALTERNATIVES TESTING 31

FIGURES

FIGURE 1 – PROJECT LOCATION MAP 3
FIGURE 2 – PRELIMINARY ALTERNATIVES MAP 5
FIGURE 3 – SCREEN ONE ALTERNATIVES MAP 21
FIGURE 4A – ALTERNATIVES ANALYSIS FLOW CHART (SCREEN ONE) FIXED GUIDEWAY PROJECTS 22
FIGURE 4B – ALTERNATIVES ANALYSIS FLOW CHART (SCREEN ONE) RAPID BUS PROJECTS 23
FIGURE 5 – ALTERNATIVE DEVELOPMENT PROCESS 31

TABLES

TABLE 1: SCREEN ONE ANALYSIS – RAW DATA 18
TABLE 2: SCREEN ONE ANALYSIS – RANKING 19

1.0 INTRODUCTION

This working paper documents the process to develop preliminary alternatives to be analyzed during the strategic planning process undertaken by the South Florida Regional Transportation Authority (SFRTA). These alternatives will then be assessed and refined as they move through a tiered screening process designed to produce an effective regional system for Palm Beach, Broward, and Miami-Dade Counties.

Initial regional transit corridors suitable for regional transit service were identified as preliminary alternatives (Section 2.0). Considerations used in developing these alternatives included analysis of major trip flows between superzones (aggregated traffic analysis zones (TAZs)) and regional activity centers (RACs). Availability of right-of-way, connections to other RACs, and connections to existing transit service were also considered in defining mode options and potential alignments for each alternative.

During Screen One, preliminary alternatives were analyzed using performance criteria that define regional projects as well as criteria used as part of the Federal Transit Administration (FTA) New Starts process. Each alternative was analyzed as an addition to the Baseline Network independently from other proposed alternatives.

As a result of the screening process, corridors not scoring well were adjusted as needed to increase their performance, or removed from testing. These modified alternatives resulted in the Screen One Alternatives and will be forwarded to Screen Two.

1.1 PROJECT PURPOSE

Due to intense rapid growth, the South Florida region faces complex and diverse transportation, land use, economic, and development issues. Without change, these issues have resulted in increased road congestion and lack of mobility options stemming from continued growth and an essentially suburban pattern of land use and development. Transit is a critical element of South Florida's transportation future and key to promoting economic development and access to jobs, alleviating the congestion that threatens the region with gridlock, and mitigating the isolation of the transportation disadvantaged.

The SFRTA was created on July 1, 2003, with a vision to provide greater mobility in South Florida, thereby improving the economic viability and quality of life of the community, region, and state. The Authority's mission is to coordinate, develop, and implement a viable regional transportation system that endeavors to meet the desires and needs for the movement of people, goods, and services**.**

Consistent with the SFRTA's legislative mandate to coordinate, develop, and implement a viable regional transportation system for South Florida, the SFRTA began the formal development of a Strategic Regional Transit Plan that focuses on the region's future and develops strategies for the allocation of scarce resources to accomplish the goals and objectives of the agency.

The goal of the Strategic Regional Transit Plan is 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.

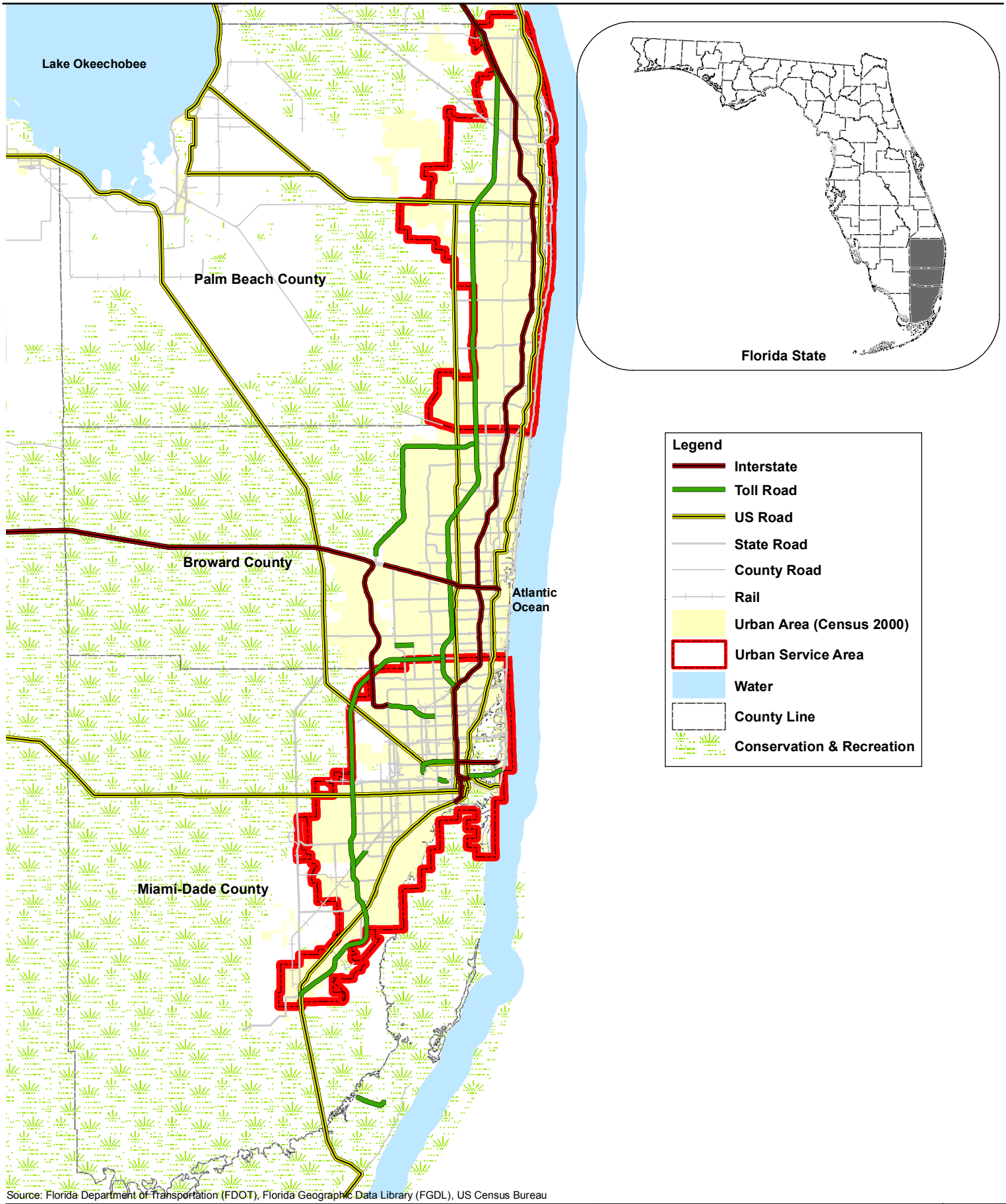
The Objectives of the Strategic Regional Transit Plan are to:

1. Identify key regional transit corridors and infrastructure needs.
2. Define regional transit investment strategies.
3. Positively impact future development patterns in the region.
4. Assess the region's current and future trends.
5. Identify a safe and cost-effective regional transit system.
6. Define SFRTA's role in the development, funding, and operations of regional transit services.

1.2 STUDY AREA

The Strategic Regional Transit Plan study area is made up of the South Florida region, which includes Palm Beach, Broward, and Miami-Dade Counties. Bound by the Everglades National Park and conservation lands to the west and the Atlantic Ocean to the east (**Figure 1**); natural barriers limit this region's physical expansion. The region covers a land area of approximately 5,126 square miles, 2,890 square miles (56 percent) of which is designated as urbanized. Based on the US Census Bureau, the total population of the South Florida region in 2000 was 5,007,564.

In addition to the natural growth boundaries, Miami-Dade County has designated an Urban Growth Boundary and Palm Beach County has designated an Urban Service Area in their Comprehensive Plans. These boundaries serve as administrative constraints to the region's spatial expansion. The area's natural and policy containment of development indicates future population and employment growth will occur within this limited supply of urban land.



Source: Florida Department of Transportation (FDOT), Florida Geographic Data Library (FGDL), US Census Bureau

SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

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N

0 2.5 5 10 Miles

LOCATION MAP

Figure 1

2.0 PRELIMINARY ALTERNATIVES

An analysis of major regional trip flows between superzones (aggregated Traffic Analysis Zones (TAZs)) and regional activity centers (RACs) was used to determine directional attractiveness and generalized preliminary corridors for premium transit service. In addition to major trip flows, availability of right-of-way, connections to other regional activity centers, connections to existing premium transit service, and transit plans underway by other agencies were also considered when developing the initial alternatives.

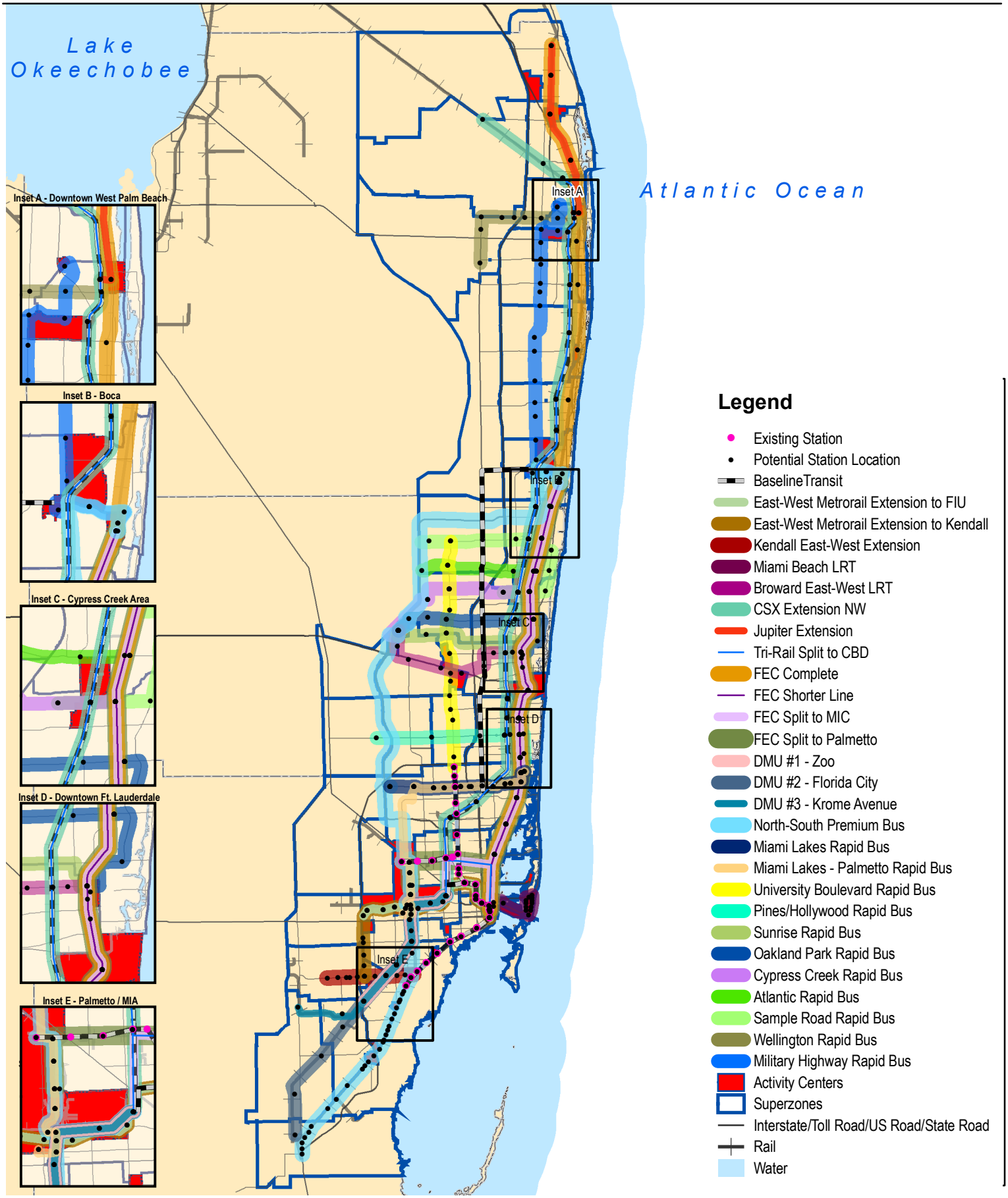
The SFRTA actively pursued communication with partner agencies through a series of briefings conducted in December 2006 and January 2007 where these preliminary alternatives were presented. Adjustments to the alternatives were made as a result of these briefings prior to analysis and comparison against the Baseline.

As the SFRTA Strategic Regional Transit Plan is being developed to provide a broad overview for premium transit in South Florida, alignments were chosen for each corridor in order to meet the destination demand, while also competing well in terms of travel demand model ridership values. Each corridor would require detailed corridor analyses following the completion of this system plan in order to advance it through the next stage of project development. The development of these 27 preliminary alternatives is detailed in the Phase I Summary Report, dated May 2007. **Figure 2** shows the preliminary alternatives.

30A Baseline

The Baseline Network includes existing plus committed projects designated by area MPOs. Several BRT and fixed-guideway transit projects are included in the Baseline:

- Existing Tri-Rail service
- Existing Metromover service
- Metrorail extension along NW 27th Avenue from the Martin Luther King Metrorail station to NW 215th Street. The nine mile extension includes eight stations. Trains operate at 6/15 minute headways during peak hours and 10/15 minute headways during off-peak hours.
- 104th Street Extension is a one-mile Metrorail extension south from the Dadeland South Metrorail station and includes one new terminal station. Trains operate at 6/15 minute headways during peak hours and 10/15 minute headways during off-peak hours.
- A 2.3-mile long Metrorail extension between the existing Metrorail Earlington Heights Station and the Miami Intermodal Center (MIC).
- Miami-Dade Transit (MDT) MAX service:



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N

0 2.5 5 10 Miles

PRELIMINARY CORRIDORS & ALTERNATIVES

Figure 2

- Flagler MAX is a limited stop bus service that runs largely along Flagler Street from 137th Avenue to the Miami CBD. Vehicles operate at 15 and 30 minute headways during peak and off-peak hours, respectively.
- Biscayne MAX is a limited stop bus service on Biscayne Boulevard from Aventura to the Miami CBD. Vehicles operate at 15 minute headways.
- Bird Road MAX is a limited stop bus service from 142nd Street to Dadeland largely along Bird Road and the Palmetto Expressway. Vehicles operate at 20 minute headways during peak hours and 40 minute headways during off-peak hours.
- Ludlam MAX service is a limited stop bus service running along Ludlam Road from Miami Gardens to Okechobee Metrorail Station. Vehicles operate at 20 minute headways.
- Beach MAX is a limited stop bus service that runs largely along Collins Avenue and Interstate 595 (I-595) from Aventura to the Miami central business district (CBD). Vehicles operate at 15 minute headways.
- 7th Avenue MAX is a limited stop bus service on 7th Avenue from Golden Glades to the Miami CBD. Vehicles operate at 15 minute headways.
- Coral Way MAX is a limited stop bus service from 147th Avenue to Douglas Road Metrorail Station largely along Coral Way and Douglas Road. Vehicles operate at 20 minute headways.
- Killian KAT service is a limited stop and express bus service running along Lillian Drive, State Road 874 (SR 874), and SR 878 from Hammocks to Dadeland. Vehicles operate at 7.5 minute headways.
- Sunset KAT is a limited stop and express bus service that runs along Sunset and SR 878 from 152nd Avenue to Dadeland. Vehicles operate at 10 minute headways during peak hours and 60 minute headways during off-peak hours.
- Kendall KAT is a limited stop and express bus service on Kendall, SR 874, and ST 878 from the Turnpike to Dadeland, and then extended via the Palmetto Expressway and SR 836 to the MIC. Vehicles operate at 15 and 30 minute headways during peak and off-peak hours, respectively.
- 95X – Civic Center is an express bus service from Golden Glades to the Civic Center along I-95. Vehicles operate at 20 minute headways during peak hours and 120 minute headways during off-peak hours.
- 95X Norwood-Brickell is a limited stop and express bus service running along I-95 from SR 7 and 199th Street to Brickell Vehicles operate at 20 minute headways during peak hours and 120 minute headways during off-peak hours.
- 95X Carol City-Omni is a limited stop and express bus service that runs largely along I-95 from Red Road and the Palmetto to the Omni. Vehicles operate at 20 minute headways during peak hours and 120 minute headways during off-peak hours.

- 95X Norwood–West is a limited stop and express bus service on I-95 and 36th Street from SR 7 & 199th Street to Doral. Vehicles operate at 20 and 120 minute headways during peak and off-peak hours, respectively.
- Broward SR 7 Fast Bus Extended is a limited stop and express bus service from Boca Raton to the Miami CBD largely along SR 7 and I-95. Vehicles operate at 10 minute headways during peak hours and 120 minute headways during off-peak hours.

30C East-West Metrorail Extension West to Florida International University (FIU)

This project would extend Metrorail service from the MIC to Florida International University (FIU) along SR 836/Dolphin Expressway corridor. This 10.1 mile alternative has seven stations. Trains would operate at six minute headways during peak hours and 10 minute headways during off-peak hours. The guideway would be grade separated (elevated). Capital costs for this alternative are estimated to be $1.21 billion.

30D East-West Metrorail Extension South to Kendall

This project would extend Metrorail service from the MIC to Kendall via FIU along SR 836/Dolphin Expressway and the Homestead Extension of the Florida Turnpike (HEFT) corridor. This 14.4 mile alternative includes 12 stations. Trains would operate at five minute headways during peak hours and 10 minute headways during off-peak hours. The vertical profile for this alternative would be largely grade separated (elevated). Capital costs for this alternative are estimated to be $1.98 billion.

30E Kendall East-West Extension

This project is a 7.8 mile Metrorail extension that would operate along SW 104th Street from Kendall in the west to the proposed terminal station for the one-mile extension to the east. The alternative has 10 stations. Trains would operate at five minute headways during peak hours and 10 minute headways during off-peak hours. The transit guideway would be completely elevated or aerial. Capital costs for this alternative are estimated to be $1.07 billion.

30F Miami Beach Light Rail Transit (LRT)

This project is an 8.6 mile long at-grade LRT alignment with 16 stations that would connect Miami Beach and Downtown Miami. Trains would operate at five and 10 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $469 million.

30G Broward East-West LRT

This project would be a predominately elevated LRT alignment connecting Sawgrass Mills Mall in the west to Ft. Lauderdale-Hollywood (FLL) Airport in the east. The 20.8 mile alignment has 15 stations. The alignment follows NW 136th Avenue, I-595, SR 7, Broward Boulevard, Andrews Avenue, SW 17th Street and US Highway 1 (US 1). Trains would operate at 7.5 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $1.27 billion.

30H CSX Extension Northwest

This project is a 9.3 mile northwest extension of the existing Tri-Rail commuter rail service along the CSX rail tracks in the SR 710 corridor that would begin at Mangonia Station (existing Tri-Rail station). The alternative includes two new stations. Trains would operate at 20 minute and 30 minute headways during peak and off-peak hours, respectively. The entire alignment would be at-grade. Capital costs for this alternative are estimated to be $368 million.

30I Jupiter Extension

This project would be a 17.9 mile extension of the existing Tri-Rail commuter rail service from Downtown West Palm Beach to Indiantown Road in Jupiter. The at-grade alignment would have four stations with trains operating at 20 minute and 30 minute headways during peak and off-peak hours, respectively. The alignment is on Florida East Coast Railroad (FEC) rail right-of-way. Capital costs for this alternative are estimated to be $713 million.

30J Tri-Rail Split to CBD

This project is a 9.55 mile spur extending from the existing Tri-Rail alignment in the vicinity of W 21st Street, going east and then south to terminate in Downtown Miami. This at-grade commuter rail alternative would add one new station. Trains operate at 30- and 40-minute headways during peak and off-peak hours. The entire alignment is on existing rail tracks. Capital costs for this alternative are estimated to be $377 million.

30K FEC Complete

This project is an at-grade commuter rail alignment operating in existing FEC rail right-of-way from Indiantown Road in Jupiter, Palm Beach County, to Downtown Miami. There are 25 stations along the 83.3 mile corridor. Trains operate at 20 and 30 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $3.26 billion.

30L FEC Shorter Line

This project is an at-grade commuter rail alignment operating in the existing FEC rail right-of-way extending from Mizner Park in Boca Raton (in the vicinity of Glades Road) to Downtown Miami. There would be 16 stations along the 40.6 mile alignment. Trains would operate at 20 and 30 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $1.63 billion.

30M FEC Split to MIC

This project is an at-grade commuter rail alignment that would operate in the existing FEC rail right-of-way extending from Mizner Park in Boca Raton (in the vicinity of Glades Road) to Downtown Miami. The alignment splits just south of NE 79th Street, follows the freight rail corridor to the east and south to terminate at the MIC. Combined for both spurs, there would be 17 stations along the 48.3 mile alignment. Trains would operate at 20 and 40 minute headways during peak and off-peak hours, respectively, on both branches. Capital costs for this alternative are estimated to be $2.28 billion.

30N FEC Split to Palmetto

This project would be an at-grade commuter rail alignment operating in the existing FEC rail right-of-way extending from Mizner Park in Boca Raton (in the vicinity of Glades Road) to Downtown Miami. The alignment would split just south of NE 79th Street, follow the freight rail corridor to the east to SR 826/Palmetto Expressway and proceed south to terminate at Miami International Airport (MIA). Combined for both spurs, there are 18 stations along the 50.2 mile alignment. Trains would operate at 20 and 40 minute headways during peak and off-peak hours, respectively, on both branches. Capital costs for this alternative are estimated to be $2.35 billion.

30O Diesel Multiple Unit (DMU) #1 – Zoo

This project would be an at-grade commuter rail alternative with a 14.4 mile long alignment that uses DMU rail technology. It would include seven stations along the existing CSX alignment. The MIC and SW 128th Street in the vicinity of the SR 874/Don Shula Expressway in Kendall are the termini for this alternative. The alignment proceeds west on SR 836 corridor from the MIC, south to SR 826 corridor, and southwest along SR 874/Don Shula Expressway corridor. Trains would operate at 20 and 40 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $581 million.

30P DMU #2 – Florida City

This project would be an at-grade, 30.2 mile, commuter rail alternative, using DMU rail technology. It would include 11 stations along the existing CSX alignment, extending from the MIC to Florida City. Trains would operate at 20 and 30 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $1.17 billion.

30Q DMU #3 – Krome Avenue

This project would be an at-grade, commuter rail, 14.6 mile alignment alternative using DMU rail technology. It would include nine stations along the existing CSX alignment, extending from the MIC to Krome Avenue. Trains would operate at 20 and 30 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $599 million.

31A North-South Premium Bus

This project is the longest of the rapid bus alternatives. It is a 95.5 mile at-grade/surface, bus rapid transit (BRT) service, operating largely in freeway right-of-way (SR 874/Don Shula Expressway, SR 826, I-75, Sawgrass Expressway, and I-95) from Florida City to Downtown Boca Raton via the MIC. There are 18 stations along the alignment (excluding the existing Miami-Dade Busway stations). Buses would operate at 15 and 20 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $1.99 million; this does not include the construction of new roadways.

31B Miami Lakes Rapid Bus

This project is a 13.6 mile at-grade/surface BRT service operating on Miami Gardens Drive (NW 183rd Street) from Miami Lakes to Aventura Mall. There are 14 stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $302 million.

31C Miami Lakes – Palmetto Rapid Bus

This project is a 26.1 mile at-grade/surface BRT service operating in SR 826/Palmetto Expressway corridor and Miami Gardens Drive (NW 183rd Street) using NW 67th Avenue from Mall of Americas to Aventura Mall. There are 20 stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $571 million.

31D University Boulevard Rapid Bus

This project is a 21.8 mile long at-grade/surface BRT service operating on SR 817/University Drive from Florida's Turnpike to Sample Road in Broward County. There are 14 stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $475 million.

31E Pines/Hollywood Rapid Bus

This project is a 17.5 mile at-grade BRT service operating on Pines/Hollywood Boulevard and south on US 1 from just west of I-75 in Broward County to Aventura Mall in Miami-Dade County. There are nine stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $378 million.

31F Sunrise Rapid Bus

This project is a 13.8 mile at-grade BRT service operating on Sunrise Boulevard from Sawgrass Mills Mall to Downtown Ft. Lauderdale. There are five stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $299 million.

31G Oakland Park Rapid Bus

This project is an 18.3 mile at-grade BRT service connecting Sawgrass Mills Mall to Broward County Transit (BCT) Central Terminal via Downtown Ft. Lauderdale. Buses would use Oakland Park Boulevard, US 1, Sunrise Boulevard, and Andrews Avenue to provide transit service. There are nine stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $397 million.

31H Cypress Creek Rapid Bus

This project is a 17.4 mile surface BRT service operating at-grade and on freeway from Sawgrass Mills Mall to existing the Cypress Creek Tri-Rail station. Buses would use Sawgrass Expressway, Commercial Boulevard, Nob Hill Road, and McNab Road/Cypress Creek Road to provide transit service. There are six stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $378 million.

31I Atlantic Boulevard Rapid Bus

This project is a 15.8 mile at-grade BRT service operating largely on Atlantic Boulevard from Sawgrass Expressway to Cypress Creek area in the vicinity of the existing Cypress Creek Tri-Rail station. There are eight stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $345 million.

31J Sample Road Rapid Bus

This project is a 20.6 mile at-grade BRT service operating largely on Sample Road, US 1 and Cypress Creek Road from Sawgrass Expressway to Cypress Creek area in the vicinity of the existing Cypress Creek Tri-Rail station. There are 11 stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $446 million.

31K Wellington Rapid Bus

This project is a 13.8 mile at-grade BRT service operating largely on Okeechobee Boulevard from Wellington in vicinity of US 441 and Forest Hill Boulevard to Downtown West Palm Beach. There are 11 stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $303 million.

31L Military Trail Rapid Bus

This project is a 32.2 mile at-grade BRT service operating largely on Military Trail from Downtown Boca Raton to just north of Downtown West Palm Beach. There are 21 stations along the alignment. Buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. Capital costs for this alternative are estimated to be $701 million.

3.0 SCREEN ONE EVALUATION CRITERIA

The 27 preliminary alternatives were analyzed independently of one another, using performance criteria that define regional projects as well as criteria used as part of the Federal Transit Administration (FTA) New Starts process. Nine performance criteria were used to evaluate the alternatives:

- Incremental trips per mile
- Total trip Flows
- Interjurisdictional
- Number of regional activity centers (RACs)
- Connects to Premium Transit
- Intermodal Connection
- Capital cost per mile
- Annual cost per trip
- Subsidy per trip

After reviewing the ridership results of the travel demand model, each alignment was graded according to the parameters set for each criteria to determine its score, whether the criteria was qualitative or quantitative.

A tiered scoring system helped identify the highest opportunity corridors and concepts for further study. A three tiered system was employed, where Tier 3 would be the higher/better score. Standards were based on the best performing alternative in each performance criteria, thus creating a comparative analysis unique to South Florida projects. Alignments falling below the 25th percentile of the highest performing alternatives (1st quartile) were given a score of 1. Projects falling between the 26th and 74th percentile were given a score of 2. Projects above the 75th percentile (4th quartile) were given the highest score of 3. The middle percentile was given a large range to allow those projects the opportunity to be adjusted and retested. Only projects in Tier 1 (score 1) would be considered to perform poorly.

In some cases, performance criteria were not determined using a quantitative method. In those cases, only two scores were given – yes (tier three, score 3), or no (tier one, score 1). Following are the performance criteria and respective tiered scoring.

3.1 INCREMENTAL TRIPS PER MILE

While overall ridership is important, it is the number of new riders that determine the true success of new service within a system. This criterion measures how many new riders are gained. Because longer alternatives will often times have more riders, additional riders per mile allows alternatives to be compared on an equivalent basis.

Statistics

Descriptive Statistic	Score
Average	143,711
Standard Deviation	126,369
Maximum Value	456,126
Minimum Value	21,487
Sum	3,880,196
Median	89,924
1st Quartile	59,109
4th Quartile	177,579
Range	434,639

Tier 1 ≤ 59,109 new riders

Tier 2 59,110 - 177,578 new riders

Tier 3 ≥ 177,579 new riders

3.2 INTERJURISDICTIONAL

This performance criterion measures whether an alternative provides a "one-seat" ride, or a ride without transfer, across county lines. This is a major benefit to riders making out of county trips, as they are not required to take more than one mode or transit system to reach their destination, saving time and effort. While crossing county lines is a key regional criterion, the alternatives that are extensions of the current premium transit (fixed guideway) systems provide a benefit to cross-county travelers that may not be captured by examining the segment as a stand alone service. Therefore, extensions to systems that cross county lines and would provide a "one-seat" ride were considered interjursidictional.

Statistics

This criterion is determined with a yes or no answer. The alignments were scored with either a one (for no) or a three (for yes).

3.3 NUMBER OF REGIONAL ACTIVITY CENTERS (RACS) SERVED

RACs were determined using demographic data from the Southeast Regional Planning Model (SERPM 5) for the Year 2030 and are considered major destinations that could be potential hubs for transit. Premium transit services perform best when they are able to serve concentrated developments. This performance criterion takes into account the total number of RACs served by the alternative that serve as hubs to anchor transportation services to major destinations.

Statistics

Descriptive Statistic	Score
Average	4
Standard Deviation	3
Maximum Value	10
Minimum Value	1
Sum	109
Median	3
1st Quartile	2
4th Quartile	6
Range	9

Tier 1 ≤ 2 activity centers served

Tier 2 6 - 5 activity centers served

Tier 3 ≥ 6 activity centers served

3.4 Connects to Existing Premium Transit Service

This performance criterion measures whether an alternative provides connections to other existing premium transit (fixed guideway) systems. If so, it has potential to support and sustain existing investments and builds on the overall transit network, rather than creating numerous disjointed services.

Statistics

This criterion is determined with a yes or no answer. The alignments were scored with either a one (for no) or a three (for yes).

3.5 Intermodal Connection

This performance criterion measures whether an alternative provides connections to other modes of transportation including airports and seaports. If so, it has potential to meet the goals of the state Strategic Intermodal System by giving support to economic drivers and centers.

Statistics

This criterion is determined with a yes or no answer. The alignments were scored with either a one (for no) or a three (for yes).

3.6 Capital Cost per Mile (With Right-of-way) in Millions

This performance criterion takes into account the capital costs associated with each alternative, and is determined by taking the total projected capital costs and dividing by the number of miles of each alternative. Because longer alternatives will have inherently larger costs, cost per mile allows alternatives to be compared on an even basis. It also allows fixed costs to be distributed across the whole alignment. The cost is inversely proportional to the attractiveness of the alternative.

Statistics

Descriptive Statistic	Score
Average	$46.9
Standard Deviation	$38.6
Maximum Value	$148.8
Minimum Value	$21.7
Sum	$1,265.9
Median	$40.7
1st Quartile	$22.7
4th Quartile	$45.7
Range	$127.1

Tier 1 ≤ $22.7 million per mile

Tier 2 $22.8 million - $45.6 million per mile

Tier 3 ≥ $45.7 million per mile

3.7 Annual Cost per Trip

This performance criterion considers the annualized capital and annual operating cost of the alternative and divides it by the expected annual ridership. Because higher capacity alternatives or longer alternatives often carry larger price tags, their costs can be offset by the benefits of their service. This balances cost reductions achieved by limiting stations with the effectiveness of the system. The per trip cost is inversely proportional to the attractiveness of the alternative.

Statistics

Descriptive Statistic	Score
Average	$26.30
Standard Deviation	$17.80
Maximum Value	$106.10
Minimum Value	$6.90
Sum	$709.60
Median	$22.80
1st Quartile	$19.80
4th Quartile	$27.70
Range	$99.20

Tier 1 ≤ $19.80 per trip

Tier 2 $19.81 - $27.60 per trip

Tier 3 ≥ $27.70 per trip

3.8 Subsidy per Trip

This performance criterion measures the subsidy for each trip, whether through local, state, or federal funding. This criterion takes into account farebox recovery as a ridership factor and will be affected by the cost per trip, but also by what riders are willing to pay for that trip. The per trip subsidy is inversely proportional to the attractiveness of the alternative.

Statistics

Descriptive Statistic	Score
Average	$4.20
Standard Deviation	$6.90
Maximum Value	$37.50
Minimum Value	$0.10
Sum	$112.10
Median	$2.60
1st Quartile	$1.80
4th Quartile	$4.00
Range	$37.40

Tier 1 ≤ $1.80 per trip

Tier 2 $1.81 - $3.99 per trip

Tier 3 ≥ $4.00 per trip

3.9 Total Trip Flows

As part of this project, trip flow demand was examined between superzones. This performance criterion considers the number of total trips in the corridor. Corridors that support high total trip flow demand speak to the overall congestion in the system created by demand for new connections to key destinations.

Statistics

Descriptive Statistic	Score
Average	n/a
Standard Deviation	n/a
Maximum Value	n/a
Minimum Value	n/a
Sum	n/a
Median	n/a
1st Quartile	10,000
4th Quartile	20,000
Range	n/a

Tier 1 < 10,000 trips

Tier 2 10,000 - 20,000 trips

Tier 3 > 20,000 trips

4.0 SCREEN ONE RANKING

Table 1 shows each corridor's characteristics in numerical or yes/no values for the each of the performance criteria. In addition to the performance criteria, the table shows each corridor's ranking in terms of ridership and cost effectiveness.

Table 2, Tier Ranking, shows each of the preliminary alignments and the score they received on each of the performance criteria. Each alternative's individual scores were added to provide a Screen One Total, used to determine whether or not the alternative would advance to the Screen Two testing process.

Table 1: Screen One Analysis – Raw Data

Performance Criteria	Alternative 30A	Alternative 30B	Alternative 30C	Alternative 30D	Alternative 30E	Alternative 30F	Alternative 30G	Alternative 30H	Alternative 30I	Alternative 30J	Alternative 30K	Alternative 30L	Alternative 30M	Alternative 30N	Alternative 30O
	Baseline	104th Street Extension	East-West Metrorail Extension West to FIU	East-West Metrorail Extension South to Kendall	Kendall East-West Extension	Miami Beach LRT	Broward East-West LRT	CSX Extension NW	Jupiter Extension	Tri-Rail Split to CBD	FEC Complete	FEC Shorter Line	FEC Split to MIC	FEC Split to Palmetto	DMU #1 - Zoo
	Premium Transit	Metrorail	Metrorail	Metrorail	Metrorail	LRT	LRT	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	DMU
Total Alignment Length (in miles)	-na-	-na-	8.8	14.4	7.8	8.6	20.8	9.3	17.9	9.6	83.3	40.6	48.3	50.2	14.4
Incremental Trips (Annual)	-na-	-na-	3,735,900	4,644,000	1,689,300	3,922,684	7,924,478	199,826	1,672,444	2,871,400	8,315,047	6,619,456	8,320,907	8,610,684	1,112,814
Incremental Trips / Mile (Annual)	-na-	-na-	424,534	322,500	216,577	456,126	380,985	21,487	93,433	299,104	99,820	163,041	172,276	171,528	77,279
Interjurisdictional (Crosses county lines?)	-na-	-na-	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Number of Regional Activity Centers (RACs) Served	-na-	-na-	7	8	1	3	6	6	6	2	8	6	7	8	3
Connects to Existing Premium Transit Service	-na-	-na-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intermodal Connection (Airport/Port)	-na-	-na-	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Capital Cost per Mile (w/ Right-of-Way) (in millions)	-na-	-na-	$148.8	$148.8	$148.6	$56.7	$63.7	$41.2	$41.4	$40.8	$40.7	$41.8	$49.0	$48.8	$41.9
Annual Cost per Trip	-na-	-na-	$26.08	$23.98	$34.24	$13.52	$15.19	$106.07	$27.90	$21.10	$31.63	$19.94	$22.18	$22.02	$27.19
Subsidy per Trip	-na-	-na-	$2.22	$3.12	$3.73	$1.88	$1.07	$37.52	$6.84	$6.54	$4.24	$2.47	$3.50	$3.37	$4.80
Total Trip Flows	-na-	-na-	GT 30,000	GT 30,000	20,000 - 30,000	GT 30,000	20,000 - 30,000	10,000 - 20,000	20,000 - 30,000	GT 30,000	GT 30,000	GT 30,000	GT 30,000	GT 30,000	10,000 - 20,000
Total Capital Cost (w/ Right-of-Way) (in millions)	-na-	-na-	$1,309.1	$2,142.0	$1,158.9	$487.9	$1,323.9	$383.0	$741.1	$391.8	$3,389.8	$1,699.0	$2,368.8	$2,447.8	$603.9

Performance Criteria	Alternative 30P	Alternative 30Q	Alternative 31A	Alternative 31B	Alternative 31C	Alternative 31D	Alternative 31E	Alternative 31F	Alternative 31G	Alternative 31H	Alternative 31I	Alternative 31J	Alternative 31K	Alternative 31L
	DMU #2 - Florida City	DMU #3 - Krome Avenue	North-South Premium Bus	Miami Lakes Rapid Bus	Miami Lakes - Palmetto Rapid Bus	University Drive Rapid Bus	Pines/Hollywood Rapid Bus	Sunrise Rapid Bus	Oakland Park Rapid Bus	Cypress Creek Rapid Bus	Atlantic Boulevard Rapid Bus	Sample Road Rapid Bus	Wellington Rapid Bus	Military Trail Rapid Bus
	DMU	DMU	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT
Total Alignment Length (in miles)	30.4	14.6	95.5	13.6	26.1	21.8	17.5	13.8	18.3	17.4	15.8	20.6	13.9	32.2
Incremental Trips (Annual)	1,846,193	1,292,423	4,589,440	806,400	906,880	1,763,840	755,520	660,160	524,480	1,025,280	1,420,800	1,248,640	2,542,080	3,130,880
Incremental Trips / Mile (Annual)	60,730	88,522	48,057	59,294	34,746	80,910	43,173	47,838	28,660	58,924	89,924	60,614	182,883	97,232
Interjurisdictional (Crosses county lines?)	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No
Number of Regional Activity Centers (RACs) Served	3	3	10	1	3	2	1	2	2	2	1	1	1	6
Connects to Existing Premium Transit Service	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intermodal Connection (Airport/Port)	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
Capital Cost per Mile (w/ Right-of-Way) (in millions)	$40.2	$42.6	$21.7	$23.2	$22.8	$22.7	$22.5	$22.5	$22.6	$22.6	$22.7	$22.5	$22.7	$22.6
Annual Cost per Trip	$30.66	$24.27	$21.40	$22.81	$36.99	$15.23	$27.50	$24.66	$41.83	$20.29	$13.61	$19.74	$6.90	$12.70
Subsidy per Trip	$3.53	$4.19	$0.48	$2.56	$4.47	$1.10	$2.34	$2.41	$3.83	$2.31	$1.22	$1.80	$0.15	$0.40
Total Trip Flows	10,000 - 20,000	10,000 - 20,000	GT 30,000	10,000 - 20,000	10,000 - 20,000	10,000 - 20,000	LT 10,000	10,000 - 20,000	GT 30,000	10,000 - 20,000	LT 10,000	LT 10,000	10,000 - 20,000	GT 30,000
Total Capital Cost (w/ Right-of-Way) (in millions)	$1,220.62	$622.63	$2,072.63	$314.95	$594.58	$494.39	$393.19	$310.85	$412.90	$392.69	$358.52	$463.52	$315.57	$728.91

Table 2: Screen One Analysis – Ranking

Performance Criteria	Alternative 30A	Alternative 30B	Alternative 30C	Alternative 30D	Alternative 30E	Alternative 30F	Alternative 30G	Alternative 30H	Alternative 30I	Alternative 30J	Alternative 30K	Alternative 30L	Alternative 30M	Alternative 30N	Alternative 30O
	Baseline	104th Street Extension	East-West Metrorail Extension West to FIU	East-West Metrorail Extension South to Kendall	Kendall East-West Extension	Miami Beach LRT	Broward East-West LRT	CSX Extension NW	Jupiter Extension	Tri-Rail Split to CBD	FEC Complete	FEC Shorter Line	FEC Split to MIC	FEC Split to Palmetto	DMU #1 - Zoo
	Premium Transit	Metrorail	Metrorail	Metrorail	Metrorail	LRT	LRT	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	Commuter Rail	DMU
Incremental Trips / Mile (Annual)	-na-	-na-	3	3	3	3	3	1	2	3	2	2	2	2	2
Interjurisdictional (Crosses county lines?)	-na-	-na-	1	1	1	1	1	3	3	3	3	3	3	3	1
Number of Regional Activity Centers (RACs) Served	-na-	-na-	3	3	1	2	3	3	3	1	3	3	3	3	2
Connects to Existing Premium Transit Service	-na-	-na-	3	3	3	3	3	3	3	3	3	3	3	3	3
Intermodal Connection (Airport/Port)	-na-	-na-	3	3	1	3	3	3	3	3	3	3	3	3	3
Capital Cost per Mile (w/ Right-of-Way) (in millions)	-na-	-na-	1	1	1	1	1	2	2	2	2	2	1	1	2
Annual Cost per Trip	-na-	-na-	2	2	1	3	3	1	1	2	1	2	2	2	2
Subsidy per Trip	-na-	-na-	2	2	2	2	3	1	1	1	1	2	2	2	1
Total Trip Flows	-na-	-na-	3	3	3	3	3	2	2	3	3	3	3	3	2
TOTAL SCORE	-na-	-na-	21	21	16	21	23	19	20	21	21	23	22	22	18

Performance Criteria	Alternative 30P	Alternative 30Q	Alternative 31A	Alternative 31B	Alternative 31C	Alternative 31D	Alternative 31E	Alternative 31F	Alternative 31G	Alternative 31H	Alternative 31I	Alternative 31J	Alternative 31K	Alternative 31L
	DMU #2 - Florida City	DMU #3 - Krome Avenue	North-South Premium Bus	Miami Lakes Rapid Bus	Miami Lakes - Palmetto Rapid Bus	University Drive Rapid Bus	Pines/Hollywood Rapid Bus	Sunrise Rapid Bus	Oakland Park Rapid Bus	Cypress Creek Rapid Bus	Atlantic Boulevard Rapid Bus	Sample Road Rapid Bus	Wellington Rapid Bus	Military Trail Rapid Bus
	DMU	DMU	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT	BRT
Incremental Trips / Mile (Annual)	2	2	1	2	1	2	1	1	1	1	2	2	3	2
Interjurisdictional (Crosses county lines?)	1	1	3	1	1	1	3	1	1	1	1	1	1	1
Number of Regional Activity Centers (RACs) Served	2	2	3	1	2	1	1	1	1	1	1	1	1	3
Connects to Existing Premium Transit Service	3	3	3	3	3	1	3	3	3	3	3	3	3	3
Intermodal Connection (Airport/Port)	3	3	1	1	1	1	1	1	1	1	1	1	1	3
Capital Cost per Mile (w/ Right-of-Way) (in millions)	2	2	3	2	2	2	3	3	3	3	2	3	2	3
Annual Cost per Trip	1	2	2	2	1	3	2	2	1	2	3	3	3	3
Subsidy per Trip	2	1	3	2	1	3	2	2	2	2	3	3	3	3
Total Trip Flows	2	2	3	2	2	2	1	2	3	2	1	1	2	3
TOTAL SCORE	18	18	22	16	14	16	17	16	16	16	17	18	19	24

5.0 SCREEN ONE ALTERNATIVES

Following the initial Screen One analysis (**Table 2**), corridors performing in the middle or low tier were examined for potential adjustments that might enhance its performance. Adjustments included alignment changes and the addition or removal of stations. In cases where the corridors' performance was exceedingly low for regional competition, the corridors were considered for removal or consolidation with neighboring corridors.

The preliminary alternatives, as adjusted, resulted in the Screen One Alternatives. This section describes the Screen One Alternatives and notes adjustments made, if any. The Screen One Alternatives will continue to Screen Two.

As noted in the following text, each preliminary alternative is accompanied by its composite score, and a notation as to whether it was advanced to Screen Two without alteration, advanced to Screen Two with adjustments, or removed from testing. Final composite scores for each tier are:

Tier 1 (Low) – Alternatives scoring fewer than 17 points

Tier 2 (Medium) – Alternatives scoring between 17 and 21 points

Tier 3 (High) – Alternatives scoring more than 21 points

Figure 3 illustrates the Screen One Alternatives. **Figure 4** shows each alternative and its progress through the screening process to date.

30C East-West Metrorail Extension West to FIU (Score=21, Advanced)

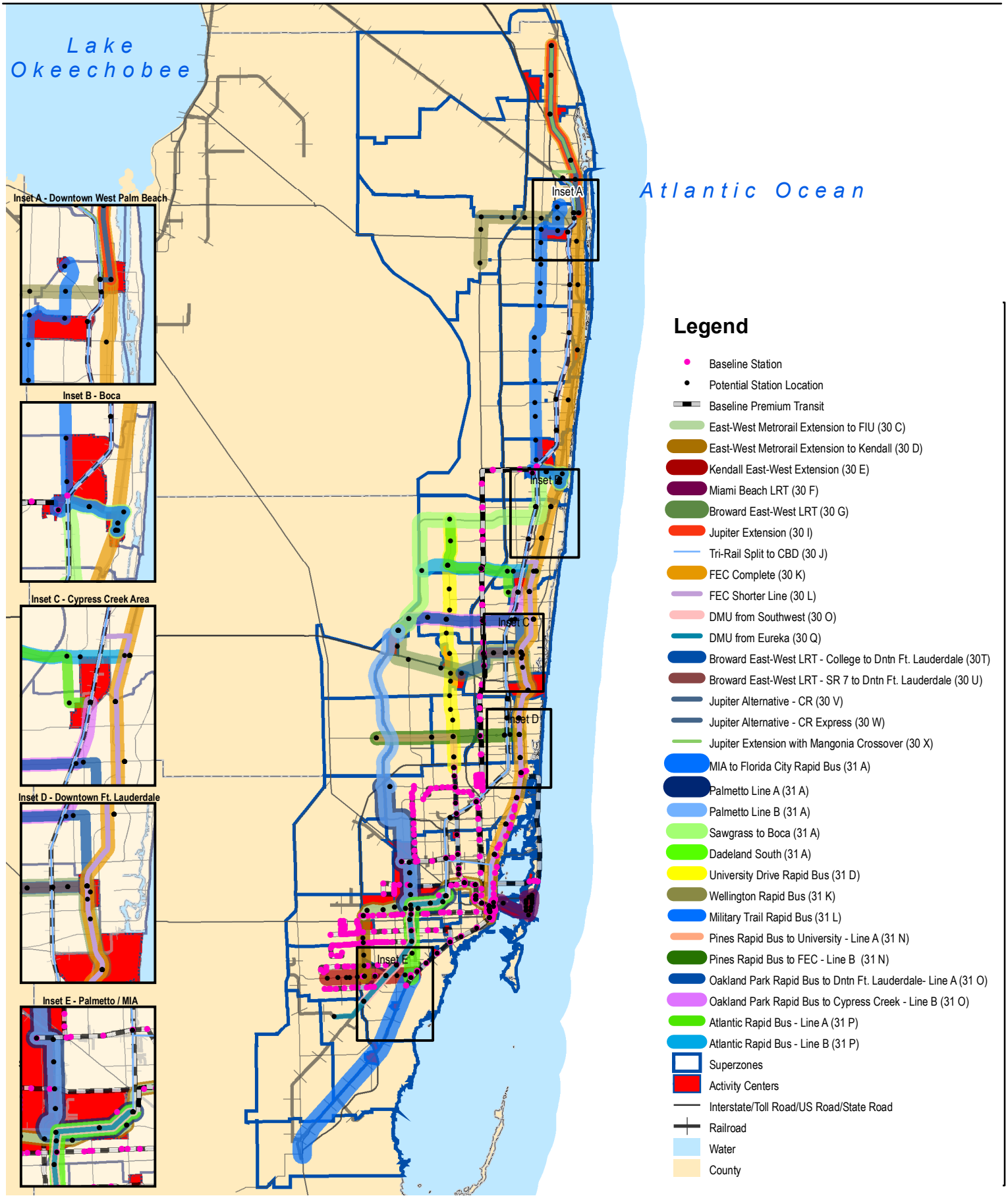
This project would extend Metrorail service from the MIC to FIU along SR 836/Dolphin Expressway corridor. This 10.1 mile alternative has seven stations. Trains would operate at six minute headways during peak hours and 10 minute headways during off-peak hours. The guideway would be completely grade separated (elevated). **This alternative will be tested, unaltered, through Screen Two.**

30D East-West Metrorail Extension South to Kendall (Score=21, Advanced)

This project would extend Metrorail from the MIC to Kendall via FIU along SR 836/Dolphin Expressway and the Homestead Extension of the Florida Turnpike (HEFT) corridor. This 14.4 mile alternative includes 13 stations. Trains operate at five minute headways during peak hours and 10 minute headways during off-peak hours. The vertical profile for this alternative is largely grade separated (elevated). **This project will be tested, unaltered, through Screen Two.**

30E Kendall Drive East-West Extension (Score=16, Advanced)

This project would be a 7.8 mile Metrorail extension that operates along SW 104th Street from Kendall in the west to the proposed terminal station for the one-mile extension to the east. This alignment has 10 stations and runs at 10 and 15 minute headways during peak and off-peak hours, respectively. **This alternative is considered a "one seat" ride from Kendall to Downtown Miami and will be tested, unaltered, through Screen Two.**



SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

Prepared: June 15, 2007

Revised:

Prepared by:

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SCREEN ONE ALTERNATIVES

Figure 3

Figure 4a – Alternatives Analysis Flow Chart (Screen One) Fixed Guideway Projects

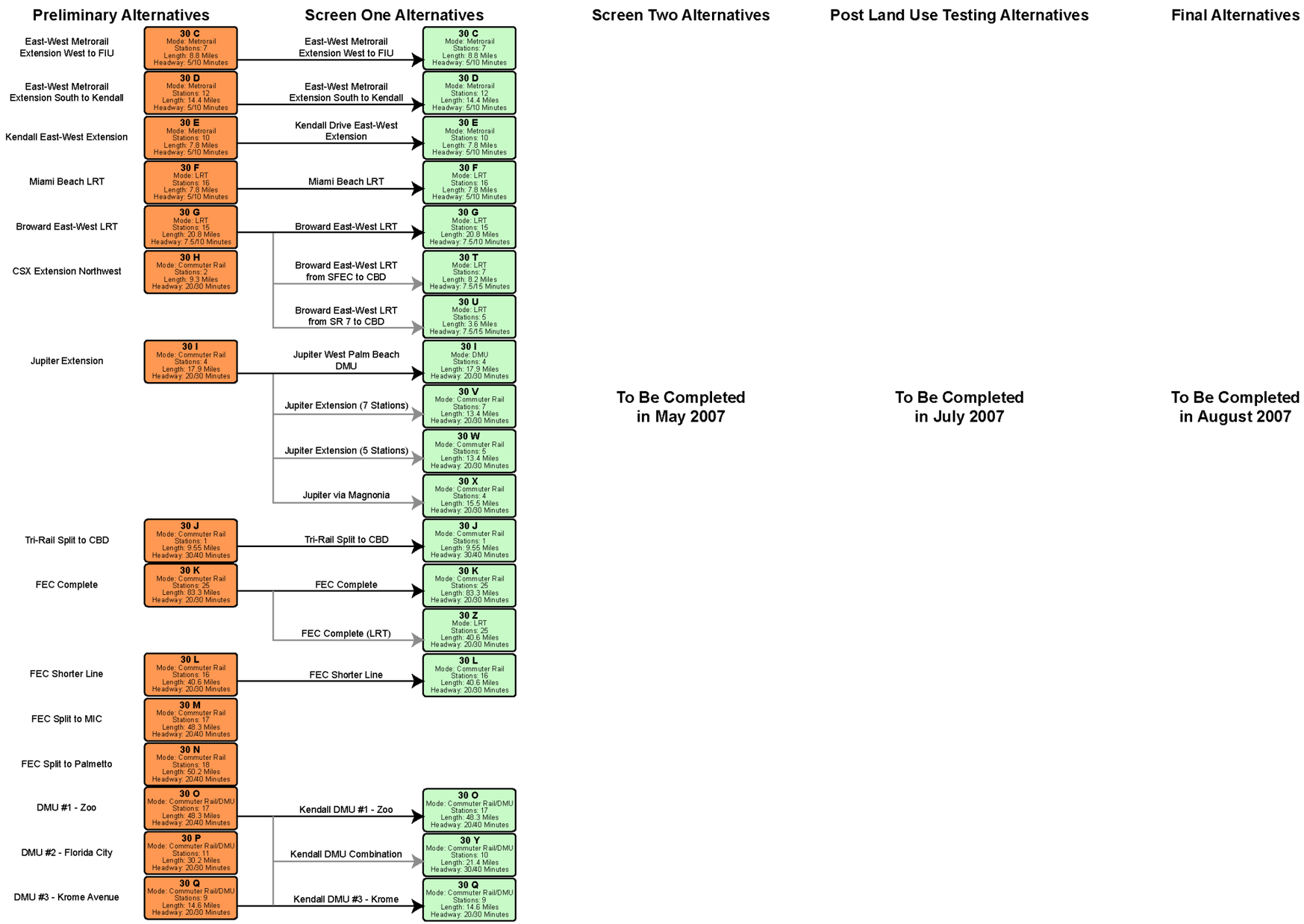
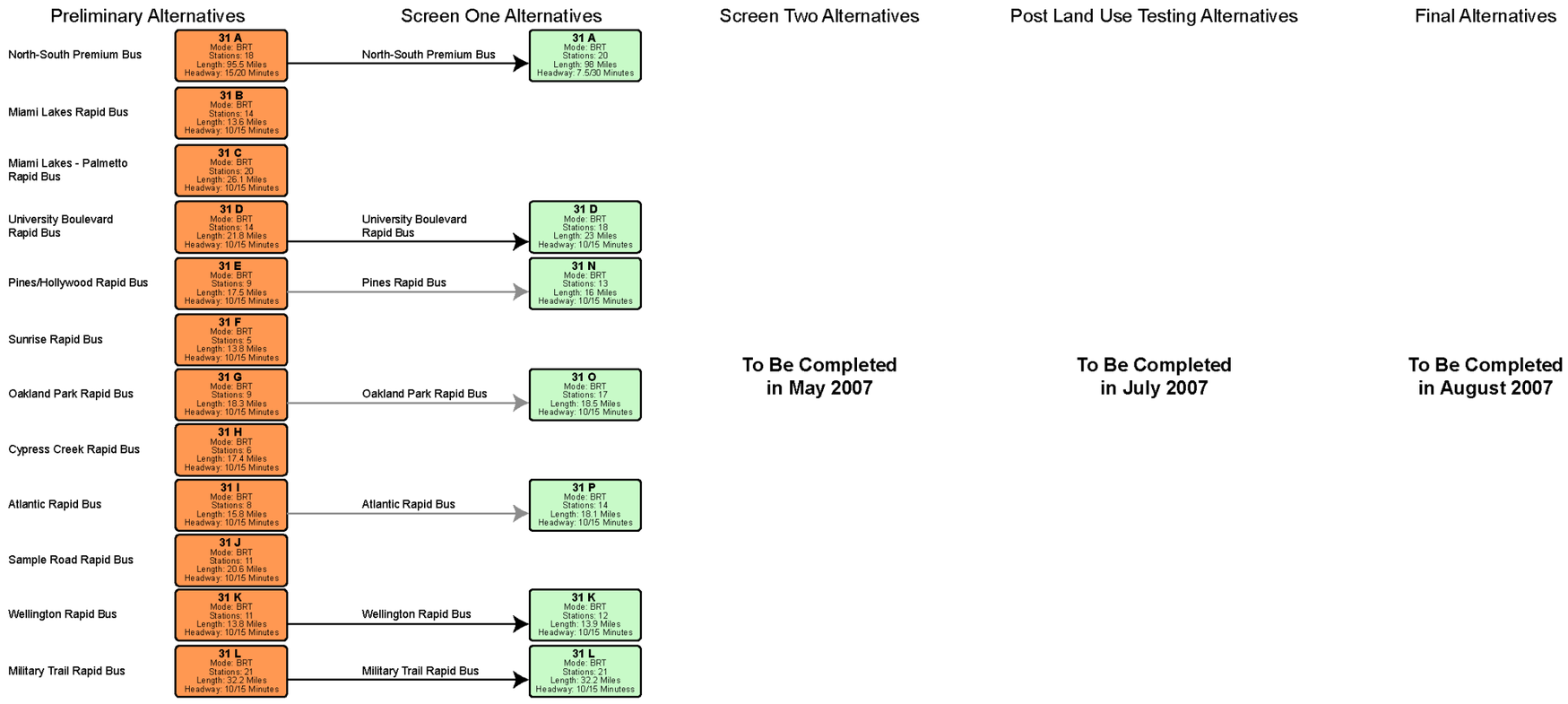


Figure 4b – Alternatives Analysis Flow Chart (Screen One) Rapid Bus Projects



30F Miami Beach LRT (Score=21, Advanced)

This project would consist of an 8.6 mile long at-grade LRT alignment with 16 stations connecting Miami Beach and Downtown Miami. Trains in this alternative would run at five and 10 minute headways during peak and off-peak hours, respectively. **This alternative will be tested, unaltered, through Screen Two.**

30G Broward East-West LRT (Score=23, Adjusted – 30T, 30U)

This project would be a predominately elevated LRT alignment connecting Sawgrass Mills Mall in the west to FLL Airport in the east. This alignment is mostly grade separated and contains 15 stations. The headways would be 7.5 and 15 minutes for peak and off-peak, respectively. **This alternative should be tested as shorter segments (Alternatives 30T and 30U) in addition to the full line.**

~~30H CSX Extension Northwest~~ (Score=19, Removed)

This project would be a 9.3 mile northwest extension of the existing Tri-Rail commuter rail service along the CSX rail tracks in the SR 710 corridor beginning at Mangonia Station (existing Tri-Rail station). **Due to low ridership projections, this project was removed from testing at this time.**

30I Jupiter West Palm Beach DMU (Score=20, Adjusted – 30V, 30W, 30X)

This project would be a 17 mile extension of the existing Tri-Rail commuter rail service from Downtown West Palm Beach to Indiantown Road in Jupiter. This alternative was adjusted to examine potential new operating conditions. The modified Alternative 30I would function completely in FEC right-of-way, with more closely spaced stations with DMU technology with a transfer to other systems at Downtown West Palm Beach. **This alternative was expanded to examine three new alignment alternatives (Alternatives 30V, 30W, and 30X).**

30J Tri-Rail Split to CBD (Score=21, Adjusted)

This project would be 9.55 mile spur extending from the existing Tri-Rail alignment in the vicinity of W 21st Street, going east and then south to terminate in Downtown Miami. The alignment would be completely at-grade, and includes one additional station. Headways for this alternative are 30 minutes during peak hours and 40 minutes during off-peak hours. **This alternative needs to be examined to determine if the increase in ridership is due to the higher level of service (LOS) on the mainline or due to the direct service to the CBD.**

30K FEC Complete (Score=21, Advanced – 30Z)

This project would be an at-grade commuter rail alignment operating in existing FEC rail right-of-way from Indiantown Road in Jupiter, Palm Beach County, to Downtown Miami. This 82.5 mile alignment is completely at-grade and contains 33 stations. Headways for this alternative would be 20 and 30 minutes during peak and off-peak hours, respectively. **This alternative will be tested, unaltered, through Screen Two. An additional alternative was added with different technology as Alternative 30Z.**

30L FEC Shorter Line (Score=23, Advanced)

This project would be an at-grade commuter rail alignment operating in existing FEC rail right-of-way extending from Downtown Miami to the Pompano area, where the line switches to the CSX corridor. This 36.1 mile alignment would be completely at-grade and contain 18 stations. The headways for this alternative would be 20 and 30 minutes for peak and off-peak hours, respectively. **This alternative will be tested, unaltered, through Screen Two.**

~~30M FEC Split to MIC~~ (Score=22, Removed)

This project would be an at-grade commuter rail alignment operating in existing FEC rail right-of-way extending from Mizner Park in Boca Raton (in the vicinity of Glades Road) to Downtown Miami. The alignment would split just south of NE 79th Street; follow the freight rail corridor to the east; and continue south to terminate at the MIC. **This alternative was examined to determine if the increase in ridership was due to the higher level-of-service or the split. This alternative was removed from testing due to duplicate service with 30K and 30L.**

~~30N FEC Split to Palmetto~~ (Score=22, Removed)

This project would be an at-grade commuter rail alignment operating in existing FEC rail right-of-way extending from Mizner Park in Boca Raton (in the vicinity of Glades Road) to Downtown Miami. The alignment would split just south of NE 79th Street; follow the freight rail corridor to the east to SR 826/Palmetto Expressway; and continue south to terminate at MIA. **This alternative was examined to determine if the increase in ridership was due to the higher LOS or the split. This alternative was removed from testing due to duplicate service with 30K and 30L.**

30O Kendall DMU #1 – Zoo (Score=18, Adjusted)

This project would be a 19.4 mile, at-grade commuter rail alternative, from the MIC to the Urban Service Area boundary, using DMU rail technology. The alignment would include eight additional stations and 20 and 30 minute headways during peak and off-peak hours, respectively. **This alternative will be tested, unaltered, through Screen Two.**

~~30P DMU #2 – Florida City~~ (Score=18, Removed)

This project would be a 30.2 mile, at-grade commuter rail alternative, using DMU rail technology. **This alternative was removed from testing, although a portion of the area served will continue to be tested under other alternatives (30O, 30Q)**

30Q Kendall DMU #3 – Krome (Score=18, Adjusted)

This project would be an at-grade commuter rail alternative, 18.1 mile alignment from the MIC to the Krome Spur, ending at church station, using DMU rail technology. This alignment would include eight additional stations and 20 and 30 minute headways during peak and off-peak hours, respectively. **This alternative has changed from the original alignment with the movement of stations.**

30T Broward East-West LRT from South Florida Education Center (SFEC) to CBD (New, Adjusted from 30G)

This project would be an elevated LRT alignment connecting the SFEC in the west to Downtown Ft. Lauderdale in the east. This 8.2 mile alternative would contain seven stations and operate at 7.5 and 15 minute headways during peak and off-peak hours, respectively. **This alternative will be tested as a shorter segment from 30G.**

30U Broward East-West LRT from SR 7 to CBD (New, Adjusted from 30G)

This project would be an elevated LRT alignment connecting SR 7 in the west to Downtown Ft. Lauderdale in the east. This 3.6 mile alternative would include five stations and run at 7.5 and 15 minute headways during peak and off-peak hours, respectively. **This alternative will be tested as a shorter segment from 30G.**

30V Jupiter Extension (7 Stations) (New, Adjusted from 30I)

This project would be a new, 13.4 mile extension of the existing Tri-Rail commuter rail service with seven stations between Downtown West Palm Beach and Indiantown Road in Jupiter. The alignment would carry trains from the existing CSX rail corridor to the FEC rail right-of-way. Vehicles would run at 20 and 30 minute headways during peak and off-peak hours, respectively. **This alternative will be tested as a separate alignment from Alternative 30I.**

30W Jupiter Extension (5 Stations) (New, Adjusted from 30I)

This project would be an express (limited stop) 13.4 mile extension of the existing Tri-Rail commuter rail service with five stations from Downtown West Palm Beach to Indiantown Road in Jupiter. The alignment would carry trains from the existing CSX rail corridor to the FEC rail right-of-way and have 20 and 30 minute headways during peak and off-peak hours, respectively. **This alternative will be tested as a separate alignment from Alternative 30I.**

30X Jupiter via Mangonia (New, Adjusted from 30I)

This project would be a local 15.5 mile extension of the existing Tri-Rail commuter rail service from Downtown West Palm Beach to Indiantown Road in Jupiter, with a connection to the existing Mangonia station. The alignment would carry trains north on the existing CSX rail corridor to northwest of Mangonia Park, then jog east to the FEC rail right-of-way. Operationally, it would have 20 and 30 minute headways during peak and off-peak hours, respectively. **This alternative will be tested as a separate alignment from Alternative 30I.**

30Y Kendall DMU Combination (New, Adjusted as Combination of 30O, 30Q)

This at-grade commuter rail alternative is a 21.4 mile long alignment combined from two alternatives, the MIC to the Urban Service Area Boundary, and the MIC to the Krome Spur, ending at Church Station. There are 10 stations in this alternative and 30 and 40 minute headways during peak and off-peak hours, respectively. **This alternative is a modified combination of Alternatives 30O and 30Q.**

30Z FEC Complete (LRT) (New, Adjusted from 30K)

This project would be a mostly at-grade LRT alignment from Indiantown Road in Jupiter to Downtown Miami. This alternative would contain 33 stations and run at 20 minute headways during peak hours and 30 minute headways during off-peak hours. **This alternative is the same alignment as the Alternative 30K commuter rail, but with different technology.**

31A North-South Premium Bus (Score=22, Adjusted)

Formerly a 90 mile at-grade/surface BRT service operating largely in freeway right-of-way from Florida City to Downtown Boca Raton via the MIC, this alignment will be split into five services – "A" service would connect Miami-Dade Busway to the MIC; "B" service would connect the Dadeland South to the MIC; "C" service would connect the Palmetto area to the HEFT; "D" service would connect the Palmetto area to the Sawgrass Mills Area; and "E" service would connect the Sawgrass Mills area to I-95, Boca Town Center, and Mizner Park. Headways would range from 7.5 minutes in peak hour to 30 minutes in off-peak. **This line was split into separate services for testing from the original alignment.**

~~31B Miami Lakes Rapid Bus~~ (Score=16, Removed)

This project would be a 13.6 mile at-grade/surface BRT service operating on Miami Gardens Drive (NW 183rd Street) from Miami Lakes to Aventura Mall. **Due to low ridership projections, this project was removed from testing.**

~~31C Miami Lakes – Palmetto Rapid Bus~~ (Score=14, Removed)

This project is a 26.1 mile long at-grade/surface BRT operating in SR 826/Palmetto Expressway corridor and Miami Gardens Drive (NW 183rd Street) using NW 67th Avenue from Mall of Americas to Aventura Mall. **Due to low ridership projections, this project was removed from testing.**

31D University Drive Rapid Bus (Score=16, Adjusted)

This project would be a 23.4 mile long at-grade/surface BRT service operating on SR 817/University Drive from Florida's Turnpike to the Sawgrass Expressway in Broward County. This alignment would include 18 stations and operate at 10 and 15 minute headways during peak and off-peak hours, respectively. **This line was extended north to the Sawgrass Expressway.**

31E Pines/Hollywood Rapid Bus (Score=17, Adjusted – 31N)

This project would be a 17.5 mile at-grade BRT service operating on Pines/Hollywood Boulevard and US 1 traveling from west of I-75 in Broward County to Aventura Mall in Miami-Dade County. **This alternative was revised by increasing the number of stations and revising the station locations. Service was revised into two services and tested as one alternative (Alternative 31N). "A" service connects west of the Sawgrass to University/NW 27th Avenue; "B" service connects west of the Sawgrass to the FEC.**

~~31F Sunrise Rapid Bus~~ (Score=16, Removed)

This project would be a 13.8 mile at-grade BRT service operating on Sunrise Boulevard from Sawgrass Mills Mall to Downtown Ft. Lauderdale. **This alternative was compared for the same market served on the Oakland Park route. Oakland Park was chosen for service to the transit dependent population and its spacing between the Central Broward East-West and Atlantic Boulevard services. This alternative was removed from testing.**

31G Oakland Park Rapid Bus (Score=16, Adjusted – 31O)

This project would be an 18.3 mile at-grade BRT service connecting Sawgrass Mills Mall to BCT Central Terminal via Downtown Ft. Lauderdale. Buses would use Oakland Park Boulevard, US 1, Sunrise Boulevard, and Andrews Avenue to provide transit service. **This alternative was compared for the same market served on the Sunrise route. This alignment was chosen for service due its proximity to the transit dependent population and its spacing between the Central Broward East-West and Atlantic Boulevard services. This alternative includes two services tested as one alternative (Alternative 31O). "A" service connects the Sawgrass Activity Center to the FEC in Downtown Ft. Lauderdale; "B" service connects the Sawgrass Activity Center to the Cypress Creek Tri-Rail Station.**

~~31H Cypress Creek Rapid Bus~~ (Score=16, Removed)

This project would be a 17.4 mile surface BRT service operating at-grade and on the freeway from Sawgrass Mills Mall to the existing Cypress Creek Tri-Rail station. Buses use Sawgrass Expressway, Commercial Boulevard, Nob Hill Road, and McNab Road/Cypress Creek Road to provide transit service. **This alternative was compared for the same market served in the Atlantic Boulevard and Sample Road routes. Three arterials were reviewed in field to determine best opportunities for service. The route on Cypress Creek was moved to Atlantic Boulevard and this alternative was removed from testing.**

31I Atlantic Boulevard Rapid Bus (Score=17, Adjusted – 31P)

This project would be a 15.8 mile at-grade BRT service operating largely on Atlantic Boulevard from Sawgrass Expressway to the Cypress Creek area in the vicinity of the existing Cypress Creek Tri-Rail station. **This alternative was compared for the same market served in the Cypress Creek and Sample routes. Three arterials were reviewed in field to determine best opportunities for service. This route was chosen and the alignment includes two services, but tested as one project (Alternative 31P).**

~~31J Sample Road Rapid Bus~~ (Score=18, Removed)

This project would be a 20.6 mile at-grade BRT service operating largely on Sample Road, US 1, and Cypress Creek Road from Sawgrass Expressway to the Cypress Creek area in the vicinity of the existing Cypress Creek Tri-Rail station. **This alternative was compared for the same market served in the Atlantic Boulevard and Cypress Creek routes. Three arterials were reviewed in the field to determine the best opportunities for service. The route on Cypress Creek was moved to Atlantic Boulevard and this alternative was removed from testing.**

31K Wellington Rapid Bus (Score=19, Advanced)

This project would be a 13.8 mile at-grade BRT service operating largely on Okeechobee Boulevard from Wellington in the vicinity of US 441 and Forest Hill Boulevard to Downtown West Palm Beach. This alternative would contain 12 stations and run at 10 and 15 minute headways during peak and off-peak hours, respectively. **This alternative will be tested, unaltered, through Screen Two.**

31L Military Trail Rapid Bus (Score=24, Advanced)

This project would be a 32.2 mile at-grade BRT service operating largely on Military Trail from Downtown Boca Raton to north of Downtown West Palm Beach. There would be 21 stations along the alignment and buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. **This alternative will be tested, unaltered, through Screen Two.**

31N Pines Rapid Bus (New, Adjusted from 31E)

This project would be a 16 mile at-grade BRT service operating on Pines/Hollywood Boulevard in Broward County. There would be 13 stations and buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. **This alignment includes two services (from Alternative 31E), but tested as one project. "A" service connects west of the Sawgrass Expressway to University/NW 27th Avenue; "B" service connects west of the Sawgrass Expressway to east of the FEC.**

31O Oakland Park Rapid Bus (New, Adjusted from 31G)

This project includes service from Sawgrass Mills, east on Oakland, and north on I-95 to Cypress Creek Station. There would be 17 stations on this alignment and buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. **Oakland Park was chosen for service to transit dependent population and spacing between Central Broward East-West and Atlantic Boulevard Service. This alignment includes two services (from Alternative 31G), but tested as one project. This alignment includes two services (from Alternative 31E), but tested as one project. "A" service connects the Sawgrass Activity Center to the FEC in Downtown Ft. Lauderdale; "B" service connects the Sawgrass Activity Center to the Cypress Creek Tri-Rail Station.**

31P Atlantic Rapid Bus (New, Adjusted from 31I)

This project includes one service from the Sawgrass Expressway at University, south to Atlantic Boulevard, east to SR 845, south to the FLL; and a second service from the Sawgrass Expressway at Atlantic Boulevard east to FEC. There would be 14 stations on this alignment and buses would operate at 10 and 15 minute headways during peak and off-peak hours, respectively. **This route was chosen from three arterials in the field. The alignment includes two services (from Alternative 31I), but tested as one project. "A" service connects the Sawgrass Expressway at University to Atlantic Boulevard to the Cypress Creek Tri-Rail Station; "B" service connects the Sawgrass Expressway at Atlantic Boulevard to the FEC north of the Cypress Creek Activity Center.**

6.0 NEXT STEPS

The resulting 25 Screen One Alternatives will proceed to Screen Two analysis. The resulting Screen Two Alternatives will advance to a Categorical Screening where they will be tested again, then grouped to comprise three networks utilizing the highest scoring alignments in each criteria classification: Productive Network, Connective Network, and Cost-effective Network. After the networks have been established they will be examined using three different land scenarios: 2030 Base Scenario; Proposed Regional Activity Centers Scenario; and Proposed Transit Corridor Scenarios.

After land use scenario testing, a preferred network (system plan) will be selected for Board approval. Each corridor of the preferred network will go through detailed corridor-level analysis in order to advance toward implementation through the next stage of project development.

6.1 SCREEN TWO ALTERNATIVES TESTING

Screen Two will consist of reevaluating the Screen One Alternatives using similar performance criteria used in Screen One, but with a weighted scoring methodology. Each corridor will be examined for its ability to perform in the criteria categories and redundancy against the other alternatives, and then modified as needed. The alternatives, as modified will result in the Screen Two Alternatives. **Figure 5** shows the advancement of alternatives through the screening process.

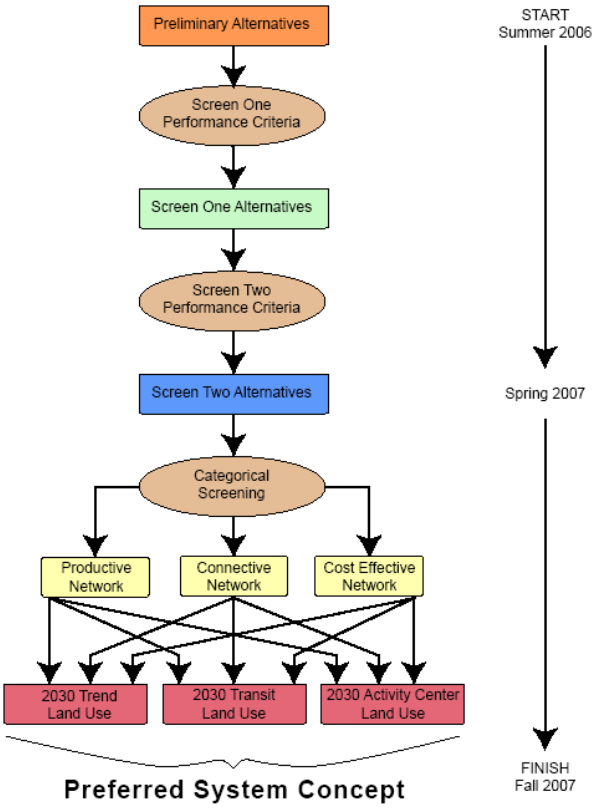



Figure 5 – Alternative Development Process