SOUTH FLORIDA REGIONAL TRANSPORTATION AUTHORITY

Strategic Regional Transit Plan

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Chapter 5:

Fare Policy Assumptions

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FARE POLICY ASSUMPTIONS
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1.0 FARE ASSUMPTIONS IN THE TRAVEL DEMAND MODEL

Fare assumptions are a critical part of the travel demand modeling process. The Southeast Florida Regional Planning Model Version 5 (SERPM 5) travel demand model currently in use for the SFRTA Strategic Regional Transit Plan was calibrated in 1999, so the model uses the regional transit fares from that year. In the years after 1999, nominal fares are assumed to rise at the same rate as the consumer price index (CPI), meaning that real fares are assumed to remain constant. Of course, real increases in the 2000-2007 period have been more lumpy and episodic than this, and irregular increases are likely to continue in the future. However, the variances between the model's assumed fares and the actual current fares for the various transit modes in Miami-Dade, Broward, and Palm Beach are modest, and the relative differences in the travel demand results for the various alternatives under consideration are still meaningful in the context of the Strategic Regional Transit Plan. In the next stage of more detailed corridor planning, a closer linkage between modeled and actual fares will be appropriate.

The base cash fares for the various transit modes in the SERPM 5 model are as follows:

- PalmTran and Broward County Transit (BCT) buses: $0.80
- Miami-Dade Transit (MDT) local buses: $1.25
- MDT express buses: $1.50
- MDT Metrorail: $1.25

- MDT Metromover: In 1999, the Metromover base fare was $0.25 per trip. After the approval of the People's Transportation Plan (PTP) in Miami-Dade County in 2002, the Metromover fare was eliminated, and passengers now ride for free. Thus, Metromover ridership is likely to be somewhat under-estimated in the current model framework. However, the Metromover serves a relatively limited ridership base in and around downtown Miami, and there are no extensions of the Metromover under consideration in the Plan. Thus, the impact of this difference is expected to be minor.

- Transfers:
  - Within a single transit system, transfers are generally priced at $0.25 plus any cost differential if transferring to a more expensive mode (e.g., if transferring from MDT local bus to MDT Metrorail).
  - Most inter-system transfers (e.g., between BCT and MDT services) require an additional full fare payment, though there are exceptions for Tri-Rail connections (see below).

- Tri-rail fares (for both existing services and proposed alternatives) are priced by zone, as follows:
  - 1 zone: $1.67
  - 2 zones: $2.50
  - 3 zones: $3.33
  - 4 zones: $3.75
  - 5 zones: $4.17
  - 6 zones: $4.58

  - Additional Tri-Rail zones for the proposed DMU corridor alternatives are priced at $0.42 per zone.

  - Tri-Rail fares are assumed to cover bus and Metrorail access and egress (i.e., no additional transfer is required).

  - The FEC commuter rail alternatives are treated the same as Tri-Rail

- For the proposed LRT and BRT alternatives, fares are assumed to match local bus fares for the jurisdiction involved.

2.0 FARE ASSUMPTIONS IN THE ALTERNATIVE SCREENING MODEL

The alternative screening model provides a consistent method of comparing and ranking the various alternatives in the Strategic Regional Transit Plan. For each alternative, the outputs from the travel demand model (passenger trips and passenger miles on the various modes) are combined with the modal characteristics of the proposed new corridor service (revenue hours, revenue miles, peak vehicles, and route miles) to produce an estimate of incremental capital costs, operating and maintenance costs, and farebox revenue. From these model results, various ratios – such as annual cost per new trip or farebox recovery ratio – can be constructed, and these ratios can be used to evaluate the relative performance or effectiveness of each alternative.

In order to calculate farebox revenue for each alternative, fare policy assumptions are required. The SERPM 5 travel demand model provides both passenger trips and passenger miles for each alternative, thus offering two different potential methods for estimating fare revenue. As noted above, some services in the region are priced on a per trip basis, while others (most notably Tri-Rail) are priced on a zonal system which is effectively a per mile charge. It was decided that fare revenues would be estimated based on the change in passenger miles for each alternative. This allows fare revenues for the commuter rail and DMU alternatives to be estimated directly from the increase in passenger miles. At the same time, it is assumed that average trip lengths for the bus,

LRT, and Metrorail modes do not change significantly, and thus per-mile fare revenue estimates for those modes will be approximately the same as if done on a per-trip basis.

Estimates of fare revenue per mile for the various modes were drawn from the most recent historical data in the National Transit Database (NTD). Since South Florida currently has no LRT service, data from the Dallas Area Rapid Transit (DART) LRT was used as a proxy. The 2005 average fare revenue per mile for the various modes is as follows:

- Metrorail: $0.08/mile
- Tri-Rail: $0.07/mile
- BCT Bus: $0.12/mile
- MDT Bus: $0.23/mile
- PalmTran Bus: $0.13/mile
- DART LRT: $0.07/mile

Bus rapid transit (BRT) alternatives are assumed to have the same per mile fare revenue as the local buses in the jurisdiction in which they operate. FEC commuter rail is assumed to have the same fare revenue as Tri-Rail.

This fare revenue estimation method is somewhat rough, but it is appropriate for a high-level planning and evaluation study such as the Strategic Regional Transit Plan, and the farebox recovery ratios which result from the alternative screening model are well within the expected ranges for transit in South Florida (e.g., Metrorail farebox recovery ratios of 16% to 28%, commuter rail ratios of 9% to 35%, etc.).