South Dade TransitWay BRT to Rail Conversion Guide

Miami-Dade Transportation Planning Organization

The South Dade TransitWay is one of the six premium transit corridors of the Strategic Miami Area Rapid Transit (SMART) Program. The location of the South Dade TransitWay is illustrated in **Figure 1**. The South Corridor is a Bus Rapid Transit (BRT) corridor that spans approximately 20 miles from SW 344th Street to the Dadeland South Metrorail Station.

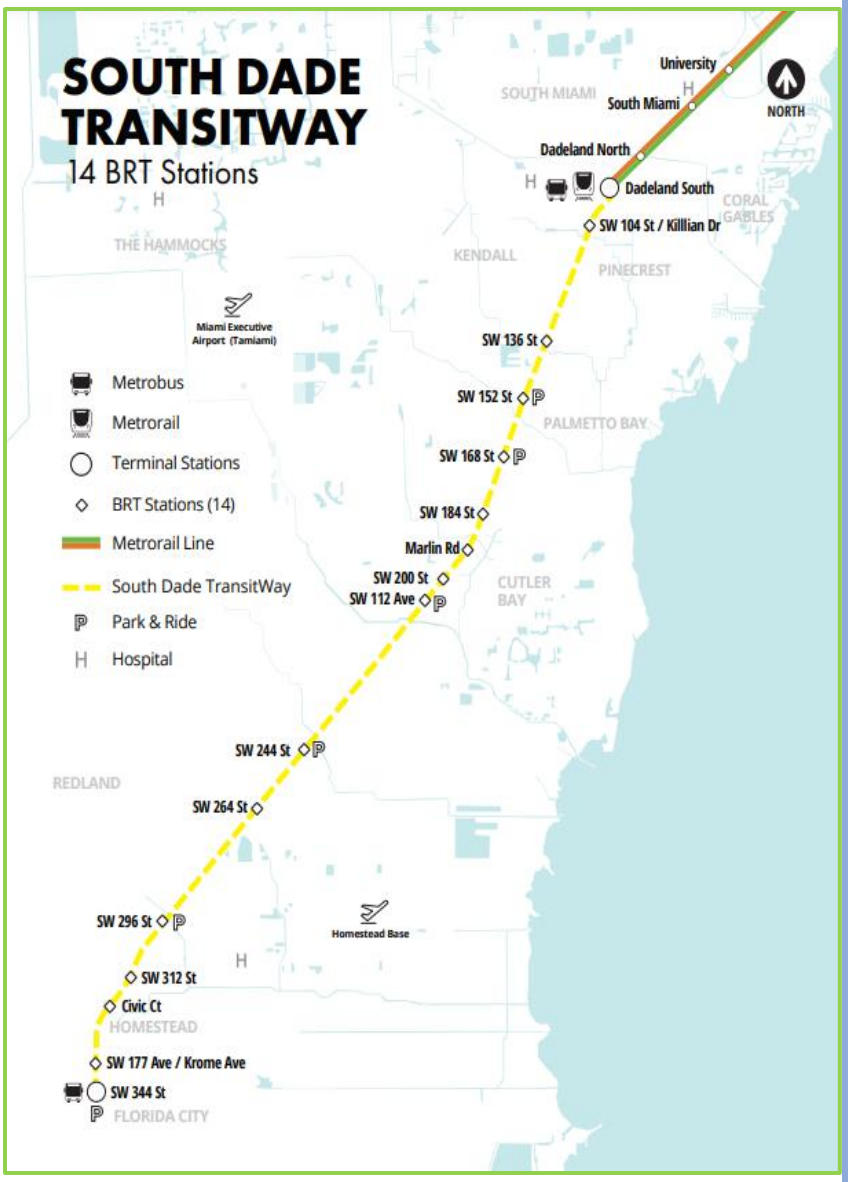

Figure 1 - South Dade TransitWay Map

Current Status

The South Dade TransitWay is currently under construction. The Transit Way Corridor is envisioned to be converted to heavy rail operation in the future. This 20-mile-long heavy rail extension was meant to preserve a "one seat ride" for passengers from the existing end of the line station at Dadeland South to Florida City. To that end, the BRT stations are being built to accommodate the operation of Metrorail heavy rail vehicles. The gate arm design at all intersections has been developed to account for the dynamic envelope of Metrorail vehicles retrofitted with a pantograph to draw electric power from an Overhead Contact System (OCS), as light rail systems.

Background

BRT-to-rail conversion projects are a popular consideration when designing or expanding a BRT system. Cities with heavy traffic congestion and high-capacity transit needs often opt for BRT over Light Rail Transit (LRT) or Heavy Rail Transit (HRT) due to the lower up-front costs and greater flexibility but want to keep the possibility of future conversion to LRT or HRT open.

While numerous BRT projects have been designed with rail conversions in mind, there are very few examples of completed BRT to rail projects in the U.S. and Canada. As such, this report focuses on information from the Ottawa Canada BRT to LRT conversion project. The extent to which BRT to rail projects can successfully convert to rail varies based on a number of factors, including the type and size of BRT and rail vehicles, physical station characteristics, and compatibility with current technologies.

Report Structure

The Conversion Guide Report includes the following sections: a Literature Review, a BRT to Rail Conversion Guide, and the South Dade TransitWay BRT to Rail Blueprint. The Literature Review is comprised of a summary of BRT to rail projects in the United States and Canada. The BRT to Rail Conversion Guide explores applicable federal, state, and local regulations in further detail, as well as any potential constraints of converting the South Dade TransitWay Corridor from BRT to rail. The South Dade Transitway BRT to Rail Blueprint provides a roadmap for the conversion of the South Dade Transitway from BRT to modified Metrorail heavy rail technology.

Key Findings

The Blueprint indicates that all station locations support the BRT to HRT conversion, except SW 184th Street, which lacks sufficient tangent length for Metrorail platforms. Further review is required to determine if this station can be converted, relocated, or removed. A summary of anticipated components needed at each station and key elements along the corridor is provided in Table 5 of the report. Several design considerations were examined in the Blueprint.

A summary of the Blueprint findings is included here:

- Existing BRT station canopies have adequate clearances for rail conversion.
- Platforms will need to be raised and lengthened.
- Power supply type (OCS preferred) and safety features must be determined.
- New maintenance facility and additional maintenance vehicles will be required.
- Overhead utility crossings and compatibility need a thorough review.

Timeline and Next Steps

The FTA has indicated that **the BRT currently under construction needs to operate for a minimum of a five year period** before they will consider conversion to rail. Upon conclusion of this time period, the next step before consideration would be to perform a STOPS ridership model that would result in a competetive ranking in the FTA New Starts process, after which the following activites would be required:

- Perform Pre-FTA Planning/NEPA 3 years
- Program Local Funding PTP (26%) 2 years
- Secure FDOT funding 2 years
- FTA Project Development 2 years
- FTA Engineering Phase 2 years
- FTA Full Funding Grant Agreement 1 year
- Final Design and Construction 5 years
- Complete Rail Fleet Conversion 3 years
- Testing/Commissioning before Revenue Service 1 year