

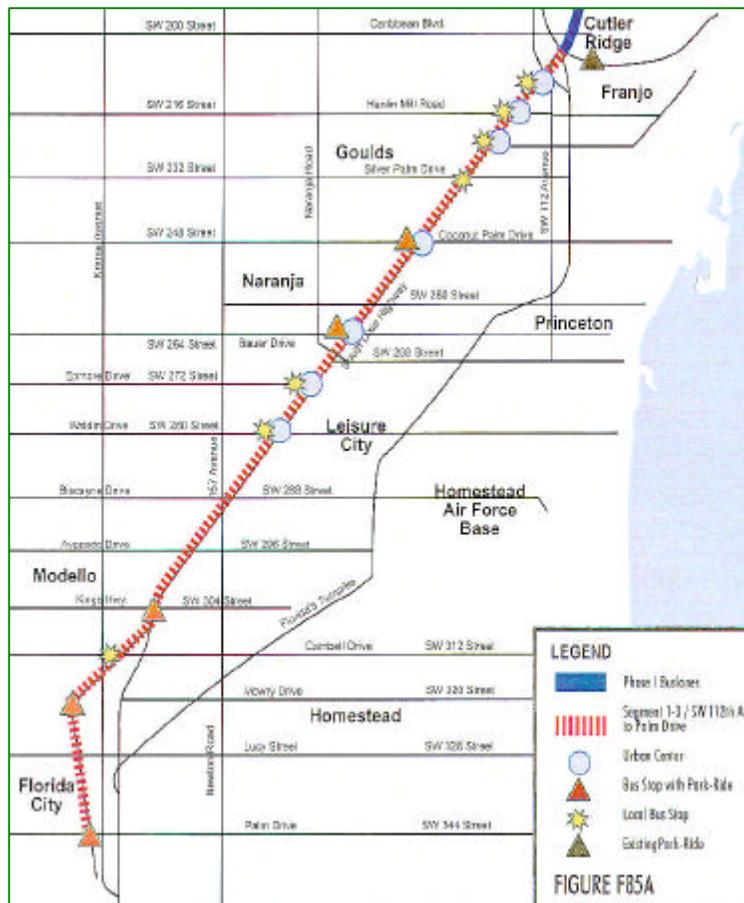


U.S. Department of Transportation



Federal Transit Administration Bus Rapid Transit Demonstration Program

MIAMI-DADE TRANSIT AGENCY THE SOUTH MIAMI-DADE BUSWAY



1. Project Description

• Type of Project

The South Miami-Dade Busway is an exclusive, two-lane, two-direction, 8.5-mile, at-grade transit facility. Operations on the Busway started in February 1997.

The busway is located with the former Florida East Coast Railroad corridor, connecting the Dadeland South Metrorail Station and Florida City, a distance of 20 miles. The portion of the Busway that has been built and is in operation is in the northern 8.5 miles

of the corridor between Dadeland South Metrorail station and the Cutler Ridge neighborhood at SW 112th Avenue.

Development in the corridor originally took place early in the twentieth century, from Miami to Key West along Henry Flagler's Florida East Coast Railroad.

Subsequently, the US 1/South Dixie Highway was built parallel, and mostly adjacent to, the railroad right-of-way. The busway corridor over much of its length is within 100 feet of the west side of US 1. This major arterial roadway remains one of the most heavily traveled corridors in Dade County and is a vital link between Dade and Monroe Counties.

The northern portion of the busway corridor serves the outer, primarily middle and upper middle class suburbs of the City of Miami. To the south are farming areas, small, unincorporated village-like settlements, and about 20 miles from Dadeland South Metrorail Station are the Cities of Homestead and Florida City. Subsequent segments of the Busway will be built to serve this area.

The County's Long Range Transportation Plan envisions that the population in the southern portion of the County will increase by about 185% in the period between 1990 and 2020. Accompanying that population growth will be a 175% increase in automobiles and associated traffic congestion. Because there are no plans for a significant increase in roadway capacity in the area, the Long Range Plan designated the US 1 corridor as one of the sites for a high capacity passenger facility.

The Busway is designed to be used exclusively by transit buses, along with emergency and security vehicles. For the length of the existing Busway, with the exception of the approach to the Dadeland South Metrorail Station, the bus lanes are in the center of the 100-foot former rail right-of-way. The lanes are 12 feet wide, separated from one another by a 4-foot striped median. To the west of the paved bus lanes is an eight-foot wide bicycle path. To the east of the paved bus lanes is a deep swale to capture runoff. The swale and the areas on either side of the bicycle path are heavily landscaped. There are 16 intersections along the 8.5-mile stretch of Busway, with 15 stations in each direction.

- **Method of Operation**

The South Miami-Dade Busway corridor is served by ten local and limited-stop bus routes: (1, 35, 52, 57, 65, 70, Busway Max, Busway Local, Coral Reef Max and Saga Bay Max). The local feeder routes circulate through surrounding residential neighborhoods, some operating on a portion of the Busway or connecting to other Busway routes.

The Busway Max and Busway Local operate the length of the Busway. The express Busway Max serves the area south of the Busway, continuing to the municipalities of Homestead and Florida City. The Coral Reef Max and the Saga Bay Max operate on the Busway and serve neighborhoods west and east of the Busway, which never before had transit service.

- **Service Levels**

Service on the Busway is provided seven days a week from 5:30 a.m. until 1:00 a.m., with frequent service at the busiest stations. In peak periods, up to 20 buses per hour operate in each direction.

- **Estimated Time Savings**

Currently the scheduled time saving is minimal because buses operate at-grade and are interrupted at intersections located at intervals of about one-half mile. Thus, service is not much faster than when the buses operated on US 1. The scheduled timesaving is less than ten percent. However, passengers perceive a timesaving.

- **Number and Type of Vehicles Providing Service**

Peak Vehicle Requirement (PVR) for the Busway Corridor is 49. The PVR for the existing Busway is 41 (25 full size buses and 16 minibuses). Articulated buses are scheduled to begin service on the Busway Max in October 1999.

- **Fare Collection and Boarding**

The fare is collected as passengers board the bus. Boarding is only through the front door of the bus. A free transfer to Metrorail is provided for northbound passengers. Southbound passengers pay for a transfer from Metrorail to the bus. Low-floor buses provide curb level boarding.

- **Use of ITS Capabilities**

An Automatic Vehicle Location (AVL) System has been implemented within the Metro-Dade Transportation Agency. This enables the Agency to track the vehicles in real time and obtain information needed to make timely schedule adjustments and equipment substitutions, when failures occur in the fleet.

In addition, the Computer Aided Dispatching (CAD) system helps the transit dispatchers and traffic controllers manage the dispatching and the performance of the buses throughout the County, communicating directly with drivers.

- **Traffic Engineering and Infrastructure**

Traffic on US 1 varies from about 30,000 average annual daily trips in the Cutler Ridge area, to about 90,000 approaching the Dadeland area. Intersections are located about every one-half mile. Prior to the construction of the Busway, left turn bays were provided at major intersections, but double left turn lanes and left turn signals were provided at only two intersections.

The construction of the Busway required major changes in traffic signalization to prohibit movements across the Busway that would interfere with bus operations at the east-west cross streets. Turns to the west had to be restricted, including the right turn on red from south to west. In addition, the east to south right-turn-on-red had to be restricted.

The basic concept for signaling on the Busway, in the section where it is adjacent to US 1, was to signalize the Busway and US 1 as a single intersection. Signals for Busway traffic were to be red unless loop detectors showed an approaching bus. If the approaching bus could clear the intersection while US 1 continued to move, then the Busway signal would turn green. Otherwise, the Busway traffic would have to wait until the next cycle.

All traffic turning west, across the Busway, could make that move only on a green arrow. Such signaling for a right turn was new for the State of Florida, and a great deal of attention was paid to educating drivers. At public meetings, and through the use of permanent and temporary electronic signs, drivers were told “no right turn on red.”

In the section of the Busway south of SW 160th Street, where the Busway and US 1 are separated by as much as a quarter mile, the signaling was originally designed so that the intersections of the Busway with east-west streets and with US 1 were timed independently. The Busway detector loops changed red lights to green as buses approached, without regard for the US 1 signals. It was in this area where there were many accidents. There were 32 accidents in the first four months of Busway operation. All the accidents were between eastbound vehicles on the cross street and transit vehicles on the Busway.

Analysis of the data showed that the eastbound drivers were watching the US 1 signal and ignoring the new signal at the Busway. The Busway intersections had been under construction for over a year, and the relatively light traffic on the Busway lulled the drivers into thinking that the Busway was not yet open.

To resolve this situation, the following actions were taken:

1. The Busway loop detectors were disengaged and the traffic signals were timed to be coordinated with those at the US 1 intersections.
2. Strobe lights were installed on the roofs of all minibuses operating on the Busway.
3. New “Busway Ahead” and “Busway Crossing” signs were erected at the approaches to these intersections.

As the result of these actions, the accident rate has declined significantly. The Agency is very interested, however, in developing more effective ways of handling traffic at the Busway intersections.

2. Problems Addressed by the Project

A major problem currently being addressed by the project is the existing traffic control system employed by the Busway. An alternative to the at-grade crossing traffic control system needs to be developed in order to address safety issues and increase the time savings currently being experienced by the Busway.

The Bus Rapid Transit Demonstration Program will allow Miami-Dade Transit Agency (MDTA)

to review and to offer more effective ways of handling traffic at the Busway intersections. The proposed schedule to implement the Demonstration Program is provided in Item 3 below.

3. Implementation and Operations Schedule

The demonstration project includes the following major activities listed in chronological order with their estimated duration.

1. Development of Design Concept/Scope (240 days)
2. Define Demonstration Issues (240 days)
3. Data Collection/Evaluation (240 days)
4. Final Design/Permits (270 days)
5. Construction/Evaluation (450 days)

The demonstration project is estimated to be completed in four years. The South Miami-Dade Busway Extension project is scheduled to be completed by the year 2004.

4. Funding Plan

BRT Demonstration Program
80% Federal
20% Local (County / State)

Busway Extension to Florida City
100% FHWA

5. Issues of Concern re: planning, design, implementation and/or operations

Any construction within the Busway must not interfere with the current operation of service.

6. Current Status

The existing Busway opened on February 1997. The right-of-way is owned by the State. Exclusively transit buses, along with emergency and security vehicles use the Busway.

The Miami-Dade Transit Agency operates the buses and maintains the Busway stations and landscaping. Miami-Dade County Public Works Department operates the signals and the Florida Department of Transportation maintains the road.

The Preliminary Engineering Report for the Busway Extension (Phase II) has been completed. The Busway Extension project will be a continuation of the existing Busway corridor to the south to the Cities of Homestead and Florida City. The Busway Extension will be divided into three segments: (1) Northern Segment, approximately 5.02 miles; (2) Central Segment, approximately 3.75 miles; and (3) Southern Segment, approximately 2.73 miles. The Northern Segment is currently under final design.

7. Contacts

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