

SW 8TH STREET CORRIDOR STUDY

Executive Summary



Study Introduction

This study was commissioned to focus on developing transportation improvements with the potential to enhance mobility and safety, including transit and roadway, and to serve existing and future anticipated demand along the corridor. This study was developed to document evidence supporting the transportation problem(s) existing along the corridor and those anticipated in the future. A study advisory committee was formed consisting of representatives from the Miami-Dade MPO, FDOT, the City of Sweetwater, the Florida Turnpike, Miami-Dade Transit, and Florida International University (FIU).

Potential improvements developed focused on strategies that would alleviate congestion and support increased transit use planned for the corridor, as well as provide additional travel options throughout the corridor. The improvements analyzed included grade separations at congested intersections, Intelligent Transportation Systems (ITS), and potential enhancements for Bus Rapid Transit (BRT) and Enhanced Bus Service (EBS).

As part of this study:

- Extensive data collection was conducted
- Prior studies were reviewed
- Existing traffic conditions were analyzed
- Future traffic forecasts were developed including design traffic
- Conceptual alternative strategies were developed and evaluated using traffic simulation software
- Study coordination meetings were held to allow communication among governmental agencies impacted or with an interest in the study

Project Location

The study limits were SW 122nd Avenue on the west and SW 74th Avenue on the east. The four mile project traverses two municipalities: the City of Miami and the City of Sweetwater, as well as parts of Unincorporated Miami-Dade County. The project area is located in the western portion of Miami-Dade County, which includes dynamic neighborhoods, land uses, and employment opportunities. FIU, a major public institution with over 40,000 current faculty and students, is located along the corridor and is projected to grow by 65% in 2035 to over 65,000 faculty and students.



Within the project study limits, SW 8th Street varies from an eight-lane divided arterial to a four-lane undivided arterial. SW 8th Street provides direct connections to I-95, SR 826/Palmetto Expressway and SR 821/Florida Turnpike. Future development, mobility, and accessibility strategies are limited due to the Tamiami Canal on the northern side of SW 8th Street. Congestion levels are higher along north-south streets that cross the Tamiami Canal such as SW 107th Avenue, SW 97th Avenue, and SW 87th Avenue. Eastbound traffic along the corridor becomes more congested especially near the SR 826/Palmetto Expressway on and off ramps. East of the SR 826 lanes are reduced from four lanes in each direction to only two lanes in each direction. This creates a bottleneck situation for eastbound traffic flow.

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Traffic Methodology

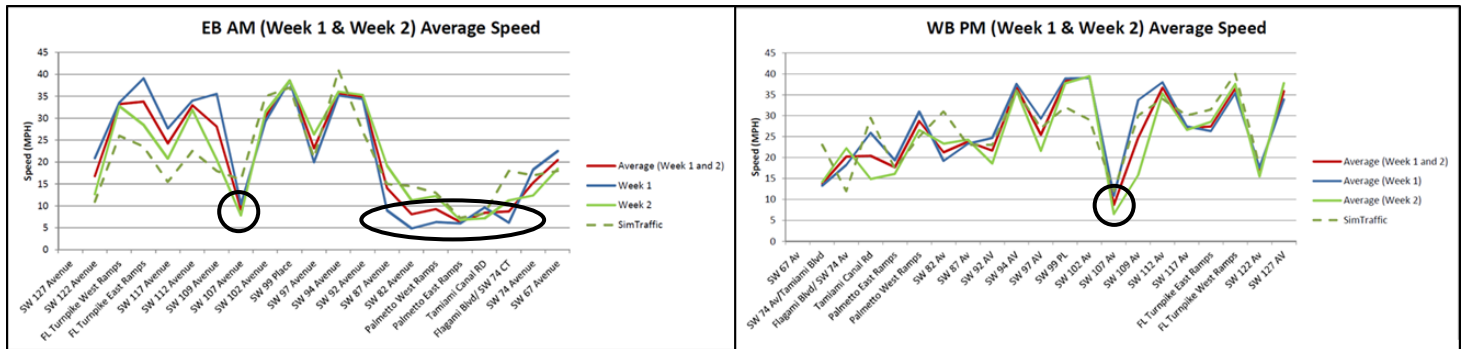
The methodology was divided in two parts, each consistent with the level of detail expected during each phase of the environmental process; namely, Corridor Evaluation and Alternatives Analysis. The first phase (i.e., Corridor Evaluation) served the purpose of validation of the travel demand model, creation of a Base Year model and Design Year No-Build model. The second phase (i.e., Alternatives Analysis) included development of the Opening Year No-Build and Build, and Design Year Build travel demand models, traffic operations screening analysis of a roadway alternatives, a transit alternative and a combined alternative. The recommended Build alternative was evaluated in a more detailed fashion in terms of traffic operations.



SERPM 6.5 was used for the travel demand modeling. Planned projects were included from the TIP or LRTP for modeling analysis; the most significant being the widening of S.W 107th Avenue programmed for construction in 2016. Sub-area model enhancements were performed for the 2005 base year using traditional procedures or Cube Analyst. Six future SERPM models were developed for opening, interim and design years under the Build and No-Build alternatives. Existing and future operational conditions were evaluated for the study area using SimTraffic. Measures of Effectiveness (MOE)'s included volumes, delay, and level of service at each intersection.

Existing Conditions Traffic Analysis

Existing traffic conditions were evaluated and detailed traffic operational analyses was conducted. A safety analysis was also conducted including detailed crash analysis. The figures below show the AM and PM peak period average speeds, which are as low as 5mph in the AM peak period near SR 826 and in the PM peak period near the intersection at SW 107th Avenue.



Conceptual Alternatives

Conceptual alternative strategies were developed that would address existing roadway and transit issues identified in the existing conditions analysis. These strategies included roadway, transportation demand management, and transit related improvements. These alternatives were then evaluated based on established criteria to determine which alternative would be included in the Build alternative. These criteria included impacts to corridor mobility, mode split, cross-street mobility, safety, local businesses, capital costs, O&M costs, constructability, and consistency with local plans. The following is a list of the alternative strategies analyzed:

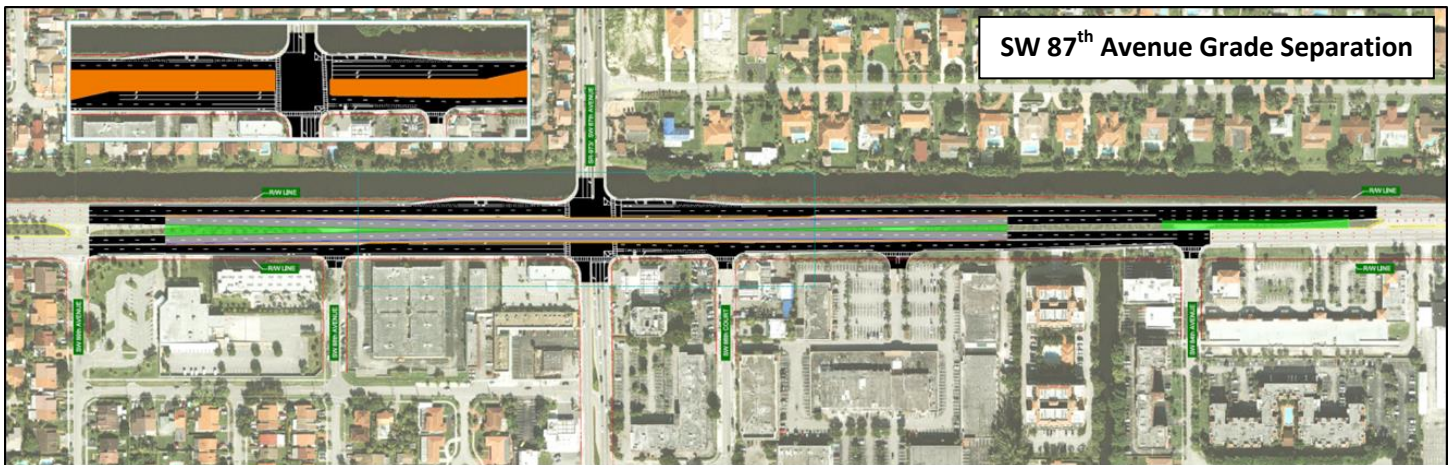
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- Street widening
- SW 87th Avenue Grade Separation
- SW 107th Avenue Grade Separation
- At-Grade Improvements at SW 87th Avenue
- FIU Ridesharing Program
- Adaptive Signal Project
- Flagler BRT
- SW 8th Street EBS
- EB to NB Flyover at SW 107th Avenue

As a result of the evaluation, only two conceptual alternatives were included in the Build Alternative: the grade separations at SW 87th and SW 107th Avenues, both of which are shown below. The design of these two grade separations focused on the location of the touchdowns, maintaining existing lanes and turning movements, and future planned roadway improvements. The SW 107th Avenue grade separation also considered access to FIU and the proposed pedestrian bridge at SW 109th Avenue.



Other alternatives such as the FIU ride sharing program, the adaptive signal project, and the Flagler BRT service were recommended for further implementation and consideration, but were not modeled in the traffic simulation.

Conceptual Alternatives Analysis

In order to perform the traffic operational analysis, a No-Build Alternative and a Build Alternative were evaluated for two different years: 2025 and 2045. The No-Build Alternative incorporated all of the programmed projects within the

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limits of the study area (from west of SW 122nd Avenue to east of SW 74th Avenue) that considered changes in roadway geometry, as well as future transit service improvements. At the direction of the MPO, the composite Build Alternative ultimately included all the projects listed in the No-Build alternative, except for the exclusive bus lanes between SW 109th Avenue and SW 112th Avenue proposed by FIU and Miami-Dade Transit. There was, however, an evaluation with the bus lanes for year 2025 No-Build to determine their impact.

Final Summary

Based on the analysis it was determined that the grade separations over SW 87th Avenue and SW 107th Avenues do not result in more traffic attracted to SW 8th Street. For the year 2025, it was determined that commuters could potentially save approximately five minutes during the morning peak hour in the peak direction (eastbound), and could potentially save about seven minutes during the morning peak period in 2045. The difference in average speeds between the No-Build and Build Alternatives in the afternoon peak period was not significant.

The minimal improvement in corridor speeds and travel times was not deemed to justify the cost of \$56 million to implement the grade separation projects. Grade separation projects may prove to be viable in the future if implemented systematically throughout the corridor. However, as evidenced in the findings, the interchange with SR 826 and the operations at the interchange now and in the future has a significant impact on corridor mobility. From a subarea regional perspective, any improvements along SW 8th Street west of SR 826 may be short term unless the narrower typical section on the east and/or the SR 826 interchange is further analyzed for improvement.

The following table is a summary of the study recommendations and action plan.

Project	Agency	Recommendation/Action
SW 87th Avenue Grade Separation	Florida Department of Transportation (FDOT) / Miami-Dade County	No Build
SW 107th Avenue Grade Separation	Florida Department of Transportation (FDOT) / Miami-Dade County	No Build
FIU Ridesharing Program	Florida International University (FIU) / Florida Department of South Florida Commuter Services	Expand program
Adaptive Signal Technology Pilot Project	Florida Department of Transportation (FDOT) / Miami-Dade County	Implement project and review impacts
Flagler Bus Rapid Transit (BRT)	Miami-Dade Transit (MDT)	PD&E
Access Management Improvement Northbound to Westbound movement at Intersection of SW 8 th Street and SW 76 th Avenue	Florida Department of Transportation (FDOT) / Miami-Dade County	FDOT to Evaluate
Lengthening Eastbound to Northbound left turn lane at SW 8 th Street and Tamiami Canal Rd (by closing the median opening allowing access from Northbound SW 76 th Avenue to Westbound SW 8 th Street)	Florida Department of Transportation (FDOT) / Miami-Dade County	FDOT to Evaluate
Implement Pedestrian Bridge at SW 109 th Avenue	Florida Department of Transportation (FDOT) / Florida International University (FIU)	Consider elimination of at-grade pedestrian crossing