

# NW 27TH AVENUE

Enhanced Bus Service Concepts  
and Environmental Plan

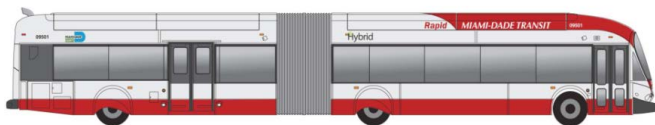
# EXECUTIVE SUMMARY

## OVERVIEW

The NW 27th Avenue Enhanced Bus Service (EBS) Concepts and Environmental Plan was developed by the Miami-Dade Metropolitan Planning Organization (MPO) in coordination with Miami-Dade Transit (MDT) and other partner agencies. The NW 27th Avenue EBS will build upon the incremental approach of improving transit service that has recently been applied to the "North Corridor" with the implementation of the Route 297 Orange MAX service. The objective of this project is to enhance transit service and increase transit ridership along the corridor, while working toward the long term goal of implementing rail transit.

The NW 27th Avenue EBS will be anchored by the Miami Intermodal Center (MIC) on the southern end of the corridor, providing connectivity among Metrorail, Metrobus, Miami International Airport (MIA), Tri-Rail, Amtrak, and Greyhound. At the northern end of the corridor, a new transit terminal and park-and-ride facility will be constructed at NW 215th Street near the Broward County Line. Enhanced transit stations will be spaced at approximately one-mile intervals along the corridor and major destinations.

The NW 27th Avenue EBS will provide rapid bus service every 10 minutes during peak periods and every 20 minutes during the off-peak. Service will be provided in new 60-foot articulated alternative fuel buses, with low-floors for faster boarding and alighting, larger seating areas with additional leg room for comfort and Wi-Fi.

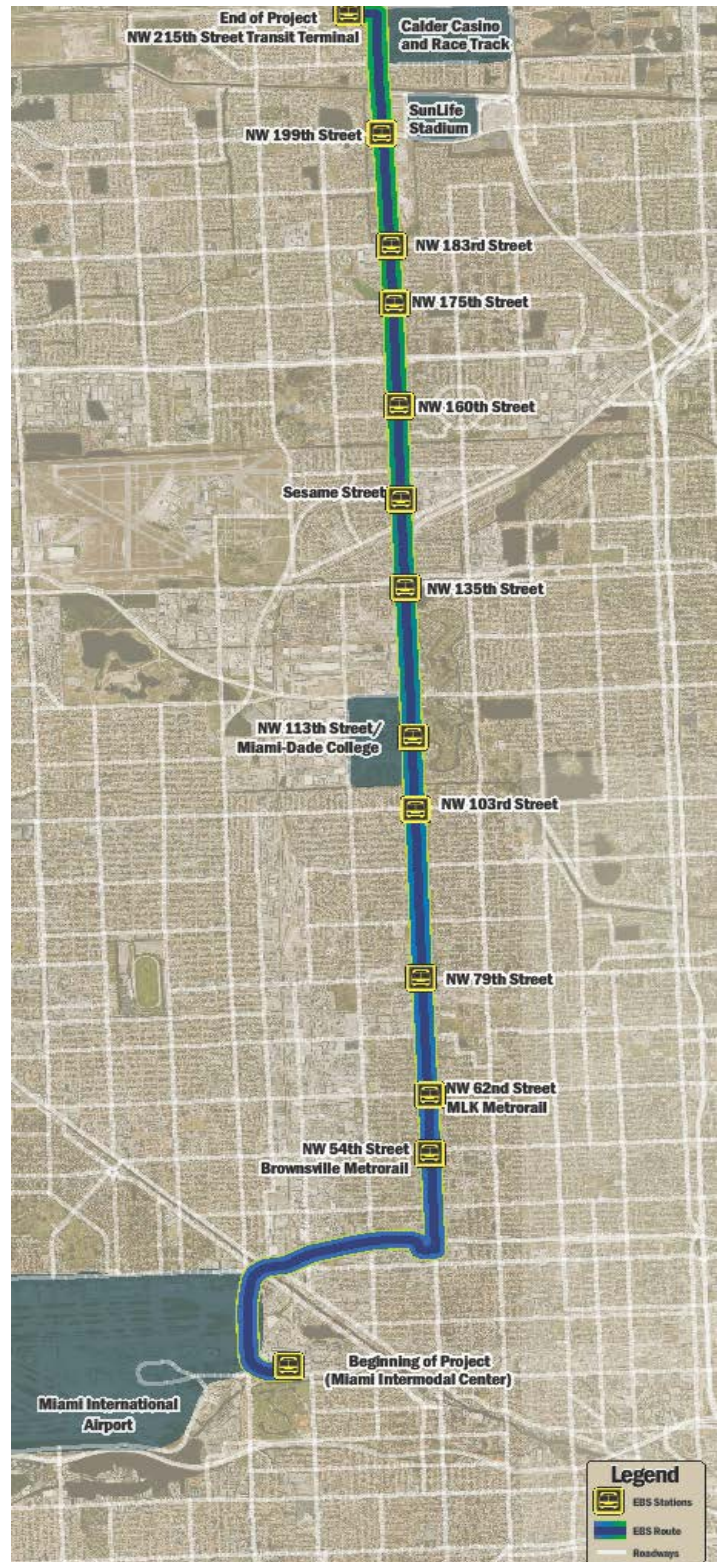


EBS BRANDED BUS

The major elements of the NW 27th Avenue EBS include:

- Transit signal priority (TSP)
- Bus queue jumps at several key intersections
- Transit terminal and park-and-ride facility
- State-of-the-art bus stations
- Distinctive service branding

The NW 27th Avenue EBS Concepts and Environmental Plan also estimated capital and operations and maintenance (O&M) costs for the project, and prepared an evaluation of the environmental effects of the project.



PROJECT LOCATION MAP

# NW 27TH AVENUE

## Enhanced Bus Service Concepts and Environmental Plan

### SERVICE CHARACTERISTICS

The NW 27th Avenue corridor experiences strong peak morning and afternoon demands and loads on existing bus routes, but the corridor also exhibits considerable demand in the mid-day and off-peak periods, suggesting support for EBS throughout the day. The NW 27th Avenue EBS improves on the existing Route 297 Orange MAX service that operates on weekdays between 5:30 AM and 8:00 PM with 15 minute headways during the peak periods and 30 minute headways during the midday. The recommended hours of operation and headways for the NW 27th Avenue EBS are presented in Table ES-1.

**Table ES-1: NW 27th Avenue Service Characteristics**

Time Period	Hours	Headway
<b>Proposed NW 27th Avenue EBS</b>		
<b>Morning Peak</b>	5:30 AM to 9:00 AM	10 minutes
<b>Midday</b>	9:00 AM to 3:00 PM	20 minutes
<b>Afternoon Peak</b>	3:00 PM to 6:00 PM	10 minutes
<b>Early Evening</b>	6:00 PM to 8:00 PM	20 minutes
<b>Existing 297 Orange Max</b>		
<b>Morning Peak</b>	5:30 AM to 9:00 AM	15 minutes
<b>Midday</b>	9:00 AM to 3:00 PM	30 minutes
<b>Afternoon Peak</b>	3:00 PM to 6:00 PM	15 minutes
<b>Early Evening</b>	6:00 PM to 8:00 PM	30 minutes

### TRANSIT SIGNAL PRIORITY (TSP)

TSP changes traffic signal timing at intersections to give priority to transit vehicles and is a proven method to provide time savings and improve schedule adherence in corridors where it is not possible to dedicate an exclusive travel lane to buses. TSP for the NW 27th Avenue EBS will be based on headway logic. In headway based TSP operation, the signal priority is granted based on a pre-defined headway (spacing or frequency) between the buses. The bus transmits its TSP request to the intersection, and the priority request server manages the priority activity to maintain the desired headway between buses. Buses that arrive sooner than the defined headway will not receive priority and buses that arrive later will receive the benefit of TSP. A headway based TSP reduces “bunching” of buses along a route and thus improves system efficiency.

### QUEUE JUMP/QUEUE BYPASS LANE OPERATIONS

Queue jump is a strategy where transit vehicles are provided the means to pull ahead of regular vehicular traffic that is stopped

at an intersection, thereby providing the transit vehicles with an advanced green (“a jump”) in relation to other vehicular traffic. Queue jump operations allow the transit vehicles to bypass the regular traffic through the use of special bus signal phasing. Queue jumps can also be an effective way to provide time savings to buses in corridors where it is not possible to dedicate a full travel lane as an exclusive bus lane. An analysis was performed to determine potential intersections along NW 27th Avenue for queue jump operations, and queue jump operations are recommended at the following intersections:

- NW 199th Street
- NW 119th Street
- NW 79th Street

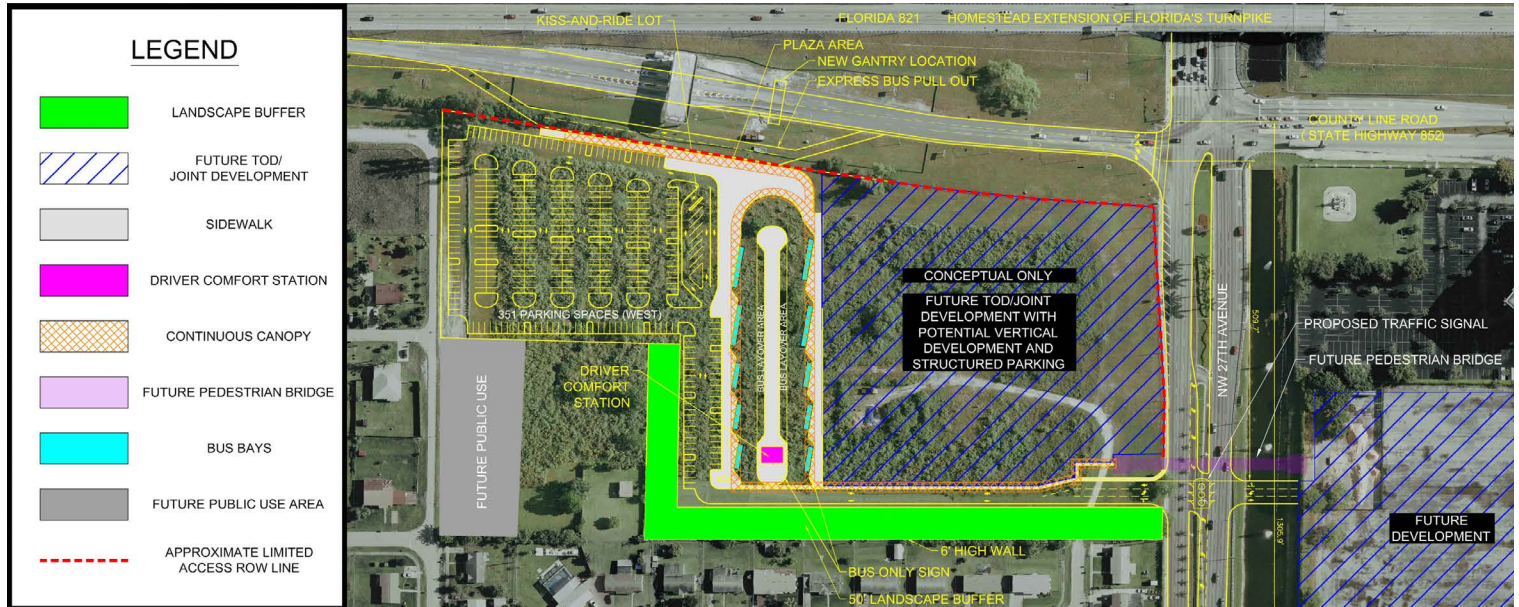


QUEUE JUMP OPERATION

### NW 215TH STREET TRANSIT TERMINAL AND PARK-AND-RIDE FACILITY

The NW 215th Street transit terminal and park-and-ride facility will be built on an approximately 14-acre property already owned by Miami-Dade Transit in the City of Miami Gardens. Approximately 350 park-and-ride spaces are proposed for the facility along with kiss-and-ride/short-term parking accommodations, approximately ten bus bays, passenger seating under canopies, and a bus driver comfort station. The facility will serve as a transit terminal for several MDT and Broward County Transit (BCT) bus routes and will facilitate transfers between the two systems. In addition, this facility will provide an end-of-the line layover for NW 27th Avenue EBS as well as MDT Route 27, eliminating the two-mile turnaround presently required. The property also provides long-term transit-oriented development (TOD) opportunities, and the facility will be designed in a manner to preserve space for future Metrorail station development.

# EXECUTIVE SUMMARY



CONCEPTUAL SITE PLAN FOR NW 215TH STREET TRANSIT TERMINAL AND PARK-AND-RIDE FACILITY

## EBS STATION CONCEPTS

Enhanced transit stations will be spaced at approximately one-mile intervals along the NW 27th Avenue corridor. The stations will be branded and visibly recognizable as part of the NW 27th Avenue EBS, and will include the following elements.

- Enhanced shelters and seating
- Station marker or totem
- Ticket vending machines (TVMs)
- Real-time arrival traveler information displays
- Bicycle parking

Two station designs will be applied to the NW 27th Avenue EBS project:

- A full station concept that has a footprint 25 feet in length and 15 feet in width.
- A restricted right-of-way or "slim" station concept that has a footprint approximately 26 feet in length and 8 feet in width.

Full station design concepts are provided at station locations where existing right-of-way is sufficient or where a high level of boardings is anticipated. Slim station design concepts are provided at station locations where right-of-way is not sufficient

to accommodate a full station design concept and higher levels of boardings are not anticipated. Table ES-2 lists full and slim station design concept locations for the NW 27th Avenue EBS.



EBS BRANDED STATION

# NW 27TH AVENUE

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# EXECUTIVE SUMMARY

**Table ES-2: Station Design Concepts**

Station Location	Full Station	Slim Station
NW 199 <sup>th</sup> Street	●	
NW 183 <sup>rd</sup> Street	●	
NW 175 <sup>th</sup> Street	◐	◐
NW 160 <sup>th</sup> Street	◐	◐
Sesame Street	◐	◐
NW 135 <sup>th</sup> Street	●	
NW 113 <sup>th</sup> Street/ Miami-Dade College	●	
NW 103 <sup>rd</sup> Street	◐	◐
NW 79 <sup>th</sup> Street	◐	◐
NW 62 <sup>nd</sup> Street		●
NW 54 <sup>th</sup> Street		●

Notes: Northbound=◐ Southbound=◑ Northbound and Southbound=●

## ENVIRONMENTAL DOCUMENTATION

As required under the National Environmental Policy Act (NEPA) for projects receiving federal funds, an evaluation was performed of the environmental effects of the project. Documentation was prepared and submitted to the Federal Transit Administration (FTA) for determination that the project meets the criteria for a NEPA Categorical Exclusion, which is applied to projects that do not have a significant environmental effect.

The environmental documentation summarizes the project's consistency with adopted transportation and land use plans. The environmental analysis determined that the project would not negatively impact traffic, historic and cultural resources, noise and vibration, contamination, community disruption and environmental justice, and ecologically sensitive areas and endangered species. The environmental analysis also determined that adverse construction-related impacts, such as dust and vibration, will be mitigated through the implementation of best management practices and adherence to all federal, state and local regulations.

## ESTIMATION OF COSTS

Conceptual capital and operations and maintenance (O&M) costs were estimated as part of the NW 27th Avenue EBS Concepts and Environmental Plan and are summarized in Table ES-3.

Capital costs for the project includes new buses, the NW 215th Street transit terminal and park-and-ride facility and bus stations, roadway infrastructure improvements, right-of-way acquisition for bus stations, and signal and infrastructure required for queue jumps and bus bulbs. The capital cost estimate also includes a contingency to account for uncertainty in the scope of the project and the current conceptual level of project definition. As the NW 27th Avenue EBS project progresses through subsequent phases of project development and is better defined, the capital cost estimate for the project will be refined.

The O&M costs account for general bus operations and maintenance. There will be additional O&M costs for the NW 27th Avenue EBS project associated with the NW 215th Street transit terminal and park-and-ride facility and the other stations along the alignment.

**Table ES-3: Capital and O&M Costs**

Total Capital Costs	Net Change in Total Annual O&M Costs
\$27,575,000	\$1,999,000

## PROJECT IMPLEMENTATION

A majority of the funding needed for the implementation of the NW 27th Avenue EBS project is already programmed in the Miami-Dade MPO's Transportation Improvement Program (TIP). A total of \$24.1 million in local, state and federal funds is included in the 2014 TIP under four separate project components. The timeline for the advancement of the project is provided in Table ES-4.

**Table ES-4: Project Schedule**

Phase	Year
Preliminary Engineering and Final Design	2014–2015
ROW/Construction	2015–2017
Revenue Service	2017

