

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION

BUS-ON-SHOULDERS EVALUATION

EXECUTIVE SUMMARY



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January 2009

EXECUTIVE SUMMARY

Major Findings

- 1) A Letter of Agreement (LOA) was executed between the Miami-Dade County Transit (MDT) and the Florida Department of Transportation (FDOT) Tallahassee Office for establishing a Pilot Project for Bus-on-Shoulders.
- 2) MDT entered into agreements with FDOT and the Miami-Dade Expressway Authority (MDX) to allow transit buses along the shoulders of the expressways under their jurisdictions.
- 3) The Pilot Project was created along State Route (SR) 874 (Don Shula Expressway) and the 878 (Snapper Creek Expressway) based on three existing MDT Kendall Area Transit (KAT) routes as the base for the Pilot Project. The three Kendall Area Transit (KAT) routes operate on Sunset (Route 272), Kendall Drive (Route 288) I and Killian Parkway (Route 204) respectively.
- 4) Results from the evaluation can safely conclude the following:
 - a) There was no increase in traffic accidents according to the Florida Highway Patrol.
 - b) Field surveys show no adverse wear on the highway shoulders, drainage culverts, or other physical roadway features with bus use.
 - c) The service did gain new riders from 2004-2005. However, cuts in MDT service in 2006 and 2007 adversely impacted bus ridership with minor changes, basically in-line with service changes.
 - d) Riders and drivers are very pleased with the service and judge the project favorably. Riders estimate a greater time savings than they actually receive, but this observation has been made in other cities as well. Many riders made comments that all drivers should use the shoulder and that the bus-on-shoulder service is very good.
 - e) Because drivers have the option to choose whether or not to operate on the highway shoulder, not all drivers do this voluntarily. Yet, enough change has occurred in route operations to substantially increase on-time performance from 2006 prior to the service experiment.



- f) Nearly 50% of MDT drivers say they almost always use the shoulder when conditions warrant, about 30% use the shoulder sometimes, and about 20% of drivers never use the shoulder. Overwhelmingly, drivers think the bus-on-shoulder operation is a good idea.
- g) Driver complaints mostly relate to a few issues, such as: (1)- The shoulder is not wide enough for good operation; (2)- The travel-lane/shoulder pavement edge creates a less than ideal ride; and, (3)- Other motorists are a problem as buses merge to and from the shoulder.
- h) The three bus routes operate on-shoulders on the roads maintained by the local toll road operator (MDX). There have been no adverse reports from MDX on expressway operations or from the Florida Highway patrol.
- i) Costs to implement the project were low – direct outlay of about \$15,000 for the creation and installation of the needed special traffic signs by MDX. There have been “soft” costs for driver training but those have not been calculated. According to MDT some 60-70 drivers received training to run these three routes.
- j) All three routes existed before the bus-on-shoulder demonstration. The operation did not add any costs to MDT. MDT had costs related to in-house driver training for the drivers. Drivers rated MDT training highly and overall thought the project was very satisfactory. This outlay and the decreased travel time for many runs yield a favorable cost-benefit, primarily in saving rider travel time.
- k) Use of the shoulder during congested periods is not mandatory. About 20% of drivers reported they did not use the expressway shoulder at any time. Thus, there is no uniform time saving for MDT or the schedule. However, MDT riders do save time and money when drivers operate on the shoulder. Many riders reported that they wished all drivers would take advantage of operating on the expressway shoulder when possible.



Bus driver road training

Recommendations

The existing three KAT routes can be strengthened by:

1 - Development of park-and-ride facilities near the western terminus of the three routes. There are several shopping centers at the western end of the three routes that might be willing to participate in park-and-ride agreements. Extra parking for the KAT routes could take some of the strain off both the Dadeland North and Dadeland South Metrorail parking garages which are at 90-100% occupied during normal weekdays.

2 - There is frequent peak-hour service on the three routes. Converting some existing KAT peak-period runs to express or limited bus service could attract more riders while not increasing Metrobus operating costs. From the on-board rider survey only one-third of riders are just local trips, but two-thirds of users connect to Metrorail. A faster service could be beneficial to Metrorail connecting riders – especially if there were also park-and-ride lots along the way which could reduce overall travel time.

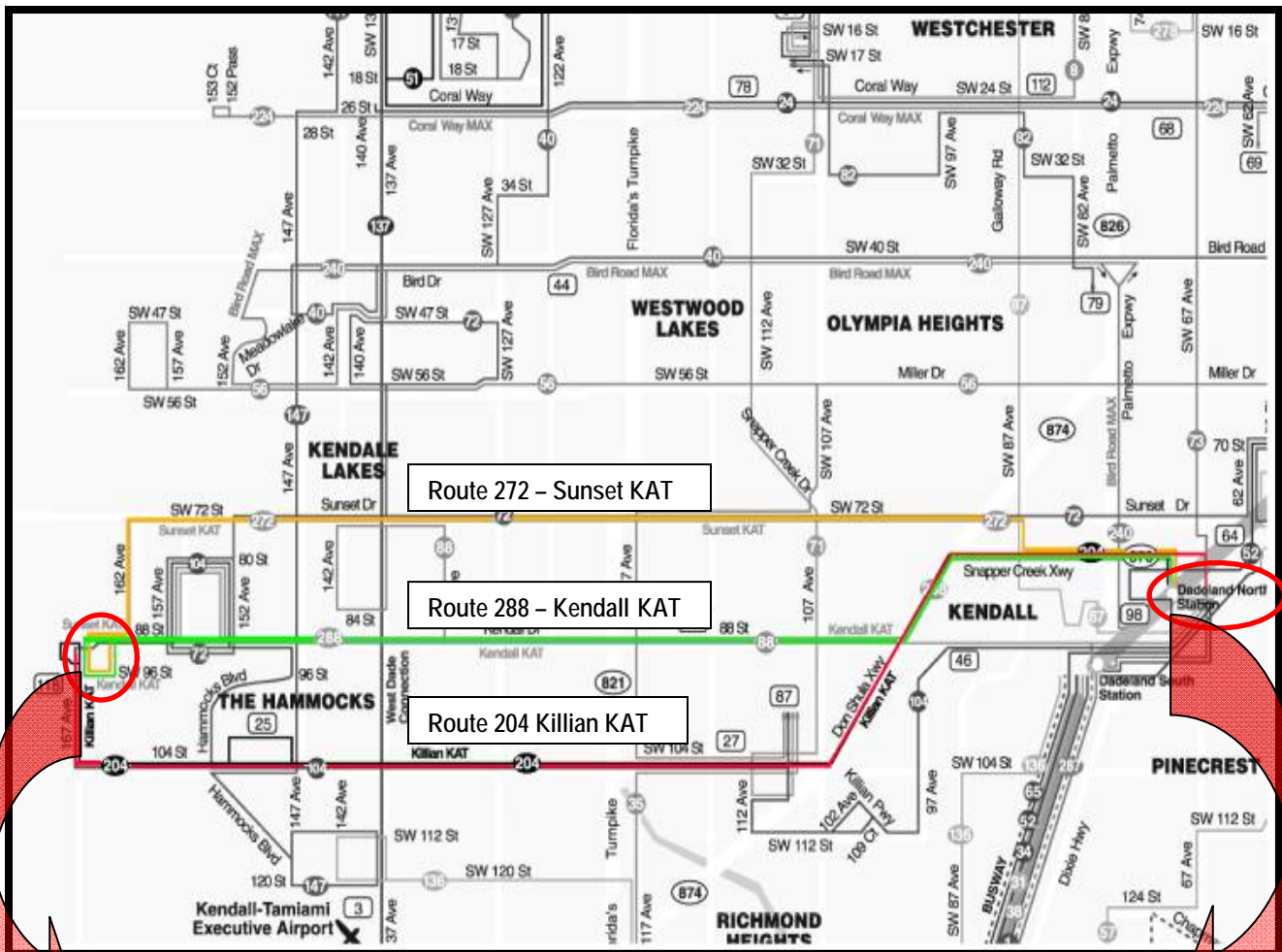


Passenger boarding KAT bus

Bus-on-Shoulders Expansion Outlook

- **Expanded Operations** Bus-on-shoulders can attract riders and improve overall bus transit service in a region. Other than the existing I-95 express buses, there are no major MDT express-bus routes using expressways – the Florida Turnpike, the 826 or 836 expressways. There are a few MAX routes that provide faster “limited” type service compared to regular MDT services. Examination of ways to provide more express bus service, possibly with the use of the bus-on-shoulder component, could attract new transit users in major corridors to help reduce congestion. These innovative projects would be eligible for FDOT service development funds.
- **Park-and-Ride Facilities** – Park-and-ride lots would help the service. Many communities do not build all their park-and-ride lots, but enter into lease or development agreements with private property owners. Weekdays, during work-hours, many shopping centers have unused parking areas. In Southern California, transit operators have agreements with churches or other religious institutions that have unused weekday parking.

KENDALL AREA TRANSIT BUS ROUTES BUS ROUTE MAP



Shops at Paradise Lake

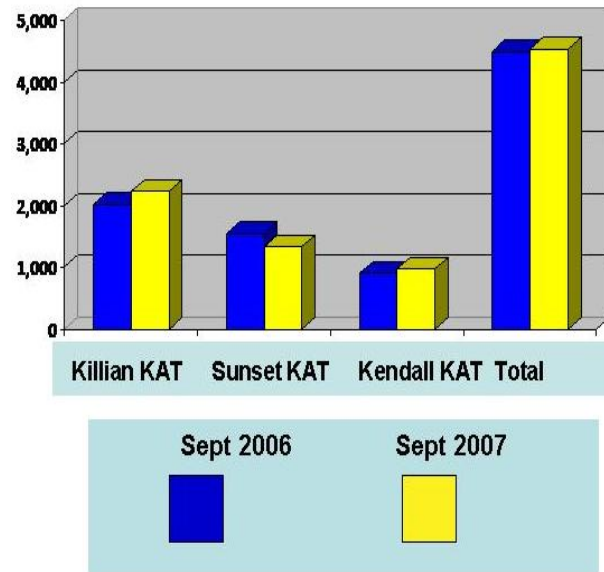
Dadeland North Metrorail Station



User Response

Ridership increased after institution of the bus-on-shoulders demonstration. Later in 2007 despite service cuts and frequency changes on the three routes, ridership stayed constant or increased slightly from before the demonstration period. While MDT cut service on many routes, the three KAT routes lost very few customers and overall had a slight increase in ridership.

Daily Passenger Boardings



On-Time Performance

As can be seen by the data shown below all three routes improved their on-time service to levels higher than for the MDT system-wide bus routes. Prior to the demonstration, on-time rates were at or below overall MDT average, but within the year with the demonstration project all three improved to above MDT's system-wide average. This experience is consistent with national findings.

KAT AND MDT ON-TIME BUS PERFORMANCE COMPARISON

Weekday Operations Bus-On-Shoulders Routes			
Route Number	On-time Status	Sep-06	Sep-07
Killian KAT (Route #204)	Late	13.5%	7.8%
	Early	8.1%	13.1%
	On-time	78.4%	79.1%
Sunset KAT (Route #272)	Late	20.6%	18.1%
	Early	9.9%	5.2%
	On-time	69.5%	76.7%
Kendall KAT (Route #288)	Late	33.3%	14.1%
	Early	8.3%	8.8%
	On-time	58.3%	77.1%
Overall MDT Bus System	Late	19.7%	18.3%
	Early	13.8%	8.6%
	On-time	66.5%	69.7%

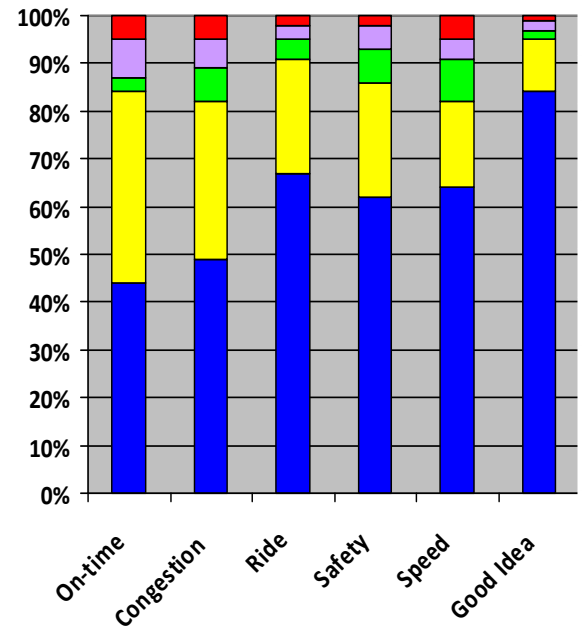
Source: MDT On-Time Schedule Reports 2006 and 2007

User Satisfaction

KAT riders were surveyed regarding their opinion of the service. As shown by the graph to the right, over 80% of KAT riders agreed or strongly agreed that bus-on-shoulders was a good idea. Over 80% strongly agreed that the project was a good idea. Over 80% strongly agreed that the program helped to mitigate congestion and improve on-time performance. Over 80% agreed or strongly agreed that the ride quality was good.

All KAT Routes

- Strongly Disagree
- Somewhat Disagree
- No Opinion
- Somewhat Agree
- Strongly Agree



Bus-on-Shoulder User Satisfaction Passenger On-Board Survey 2008

Facility Operations and Roadway Repair

Originally, there were concerns regarding undue wear on the roadway by bus use of the shoulders on the highways and there might be damage to pavement and drainage culverts. After one-year, inspection showed no adverse impacts.

As seen on the right, special signs were placed along the shoulders warning motorists of bus use of the shoulders. No accidents or incidents were reported by the Florida Highway Patrol or MDX due to the project.





MIAMI-DADE COUNTY TRANSIT - BUS ON SHOULDERS DEMONSTRATION

A SUCCESS STORY!

PARSONS