



Florida Department of Transportation Research

Moving the Bus Safely Back into Traffic, Phase II
BDK85 977-03

The difficulty experienced by transit buses merging back into traffic from bus pull-out bays is a serious problem due to potential hazards between buses and the surrounding traffic. Currently, decals installed on the back of buses advise motor vehicle drivers to yield to buses.

Researchers at the Center for Urban Transportation Research, University of South Florida, studied the effects of installing lighted Yield-to-Bus Light Emitting Diode (YTB-LED) signs on the back of buses. The lights flash when the bus begins to merge with traffic. The purpose of the study was to determine how the YTB-LED signs affect the behavior of motorists behind the bus; to assess the potential effects on traffic safety through the use of the YTB-LED signs; to determine the operational benefits of the YTB-LED signs, and to develop recommendations for implementing YTB-LED signs and a public awareness campaign.

Researchers installed two types of commercially available YTB-LED signs on buses in Hillsborough, Lee, and Volusia counties. They collected data by installing a camera on the back of the buses to collect YTB behavior, traffic conflicts, and re-entry time. Researchers found that on a test corridor in Hillsborough County, the proportion of vehicles yielding to buses with the YTB-LED signs increased 34 percent compared to buses with only decals, the proportion yielding in Lee County increased 20 percent, and the proportion yielding in Volusia County increased 50 percent. In Hillsborough County the total number of maneuvers involving conflicts was reduced by 80 percent through implementation of the YTB-LED signs, and 66 percent in both Volusia and Lee counties.

Researchers determined that the use of YTB-LED signs has great potential for reducing the number of conflicts for buses merging into traffic from pull-out bays on urban minor arterials. Researchers found that the use of YTB-LED signs helps reduce re-entry time of buses from bays by 10-23



A bus equipped with a lighted YTB-LED sign (lower left) that flashes when the driver merges with traffic, and an advertisement informing motorists of the law.

percent and helps buses to merge back into traffic during peak hours.

For major roads, researchers found that use of YTB-LED signs may improve YTB behavior without compromising safety or creating traffic conflicts.

Researchers recommend that transit agencies install YTB-LED signs on buses to help alert drivers when buses need to merge back into traffic. They recommend that the YTB-LED sign design should be unified to help motorists become familiar with a single style. They recommend introducing YTB-LED signs through public awareness campaigns such as ads on the back of buses, print advertising, flyers, posters, and incentive items. In addition, researchers made recommendations concerning YTB-LED sign installation, operation, and bus driver training, and recommend adding more roadside signs and pavement markings to help improve driver behavior.

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For more information, visit <http://www.dot.state.fl.us/research-center>