

QUANTIFYING THE EFFECTS OF RAISING THE MINIMUM SPEED ON RURAL FREEWAYS AND THE EFFECTS OF RESTRICTING THE TRUCK LANES ONLY IN DAYTIME

Volume 2: Safety and Operational Evaluation of Truck Lane Restriction on Interstate 75

PROBLEM STATEMENT

The trend to manufacture larger trucks and smaller passenger cars has resulted in a significant variability between the operational characteristics of the two vehicle types. This variability raises concerns regarding the safety of the traveling public, particularly on high truck volume roadways such as limited access facilities. To reduce conflicts between trucks and smaller vehicles, most highway agencies in the United States, including the Florida Department of Transportation, have implemented various truck restriction strategies. The strategies employed in various states include restriction by speed, lane, time, or route. Trucks may be restricted to a certain speed limit, to certain lane(s) at all times, or to certain lanes at certain times of the day. In some cases, trucks are prohibited from using a particular route altogether. While highway agencies implement these restrictions with the aim of improving the safety and efficiency of highway travel, trucking agencies occasionally raise concerns about such restrictions, suggesting that some are excessive and/or that they negatively impact truck travel times—and, consequently, the profitability of trucking companies.

OBJECTIVES

This study was conducted partly to address such concerns with regard to the Interstate 75 corridor, where trucks are not allowed to use the inside lane—i.e., lane closest to the median—of the six-lane facility. The restriction is in force throughout the day. Field and simulation analyses of traffic operating characteristics of trucks and passenger cars were conducted to determine differences in speeds and travel times across the corridor under various restrictive scenarios and by time-of-day. The study also analyzed crashes that occurred in the study corridor to determine the safety experience associated with the inside lane truck restriction.

FINDINGS AND CONCLUSIONS

The field data demonstrated that approximately two thirds of both passenger cars and trucks were traveling within the 10-mph pace ranging from approximately 70 mph to 80 mph (corridor has a speed limit of 70 mph). The simulation results showed that there would be no gain in travel times or reduction in delays by rescinding the current policy of not allowing trucks to use the inside lane for a 24 hour period. However, they also revealed that the number of lane changes would increase—predicting a likelihood of increased crashes in the corridor—

if all lanes were opened to trucks. It is noteworthy that the review of crashes occurring in the corridor indicated that improper lane change was one of the major contributing causes for the crashes that occurred in this corridor. Thus, the results ultimately suggest that the current lane restriction policy has positive impacts on safety and operating characteristics in the corridor and should be left in place.

BENEFITS

The review of the safety and operational characteristics associated with truck lane restrictions on I-75 has revealed some positive information that could be used in other parts of Florida. The studied corridor was rural, so further study will investigate the effects of truck lane restrictions on urban freeways. The combined findings of both studies will be used to develop uniform statewide policies on the handling of truck traffic. The goal will be to optimize the safety of the facilities while facilitating maximum travel efficiencies for both truck and automobile travel.

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