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Crashes Related to Type and Location of Driveway Access

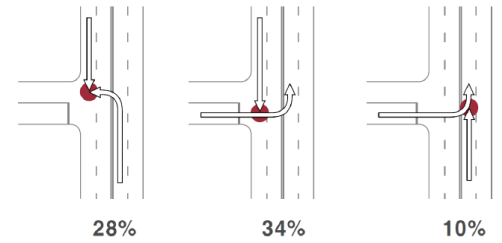
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Current Situation

Shopping centers generate activity that helps stimulate local economies in Florida. However, these centers – and other spaces for recreation and shopping – can also present an increased risk of pedestrian, bicycle, and vehicular crashes. Commercial driveways and side streets connecting to major roadways are a key source of these conflicts, especially in the areas surrounding highway interchanges.

While medians can reduce left-turn conflicts from driveway traffic, separating conflict areas through improved access spacing can reduce the exposure of all system users to traffic conflicts.

Despite the safety issues associated with driveways, relatively few studies have explored the issue and even fewer have examined how driveway type and location may influence crash frequency and severity.



Crash frequencies associated with driveway left-turn movements. Source: FHWA, 2010

Research Objectives

The objectives of this research were to provide a comprehensive study to examine safety issues associated with commercial driveways and to develop guidance for transportation agencies responsible for access management.

Project Activities

Following a literature review, the University of Central Florida – Center for Urban Transportation Research research team developed a sample for analysis that included 192 roadway segments with 9,889 commercial driveways and 10,596 driveway-related crashes, as well as 69 interchanges with 832 commercial driveways and 853 driveway-related crashes in the vicinity of the interchanges.

The team then used several model-based analytical methods to assess the safety effects of driveway type and location on crash type and severity in relation to roadway and interchange characteristics. The analyses were then divided into qualitative and quantitative assessments. The former assessment encompassed statics of crashes, severity levels, and crash, traffic, and geometric attributes. The latter involved statistical analysis and generalized data at corridors and interchange areas.

The team's analysis resulted in observations the team used to develop suggestions for commercial driveway access policy, permitting, and mitigation.

Project Conclusions and Benefits

FDOT and other transportation agencies responsible for access management have a better understanding of the interaction between commercial driveway access location and design, and vehicular, bicycle, and pedestrian safety. The guidance provided through this study can be used to make roads immediately safer for all road users near activity centers.

For more information, please see fdot.gov/research.