



Impact of Transit Stop Location on Pedestrian Safety

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Current Situation

Pedestrians can be vulnerable in many roadway situations so pedestrian safety and reducing pedestrian collisions are always a high priority for the Florida Department of Transportation (FDOT). As more people use public transportation to get from home to work to shopping, pedestrian safety near bus stops is a particular interest.

Research Objectives

University of South Florida researchers examined crashes involving pedestrians within 100 feet of a bus stop in two Florida counties with the goal of identifying common characteristics of these crashes and providing recommendations for improving pedestrian safety near these bus stops.



Jaywalking is a leading cause of pedestrian collisions.

Project Activities

The researchers examined the existing guidance for placing bus stops and providing access to them. Reports from the Transit Cooperative Research Program (Reports 19 and 153), guides from the Federal Highway Administration, and others were examined. Important lessons from those documents were highlighted. They drew on a study by Pulugurtha and Vanapalli using GIS to identify hazardous bus stops to develop ranking methods for this project.

The researchers correlated pedestrian crashes with bus stops using several data sources: Florida pedestrian crash data from Signal Four Analytics; bus stop location and passenger on/off data from Broward and Palm Beach counties' transit authorities; and annual average daily traffic (AADT) data from the FDOT Roadway Characteristics Inventory (RCI). These data were mapped using GIS, and for each bus stop, the number of pedestrian crashes within 100 feet of the stop were tallied.

The researchers found 357 crashes that fit their criteria, for which they compiled more in-depth information: weather and light conditions, day of the week, age of the pedestrian, possible drug or alcohol use, and posted speed limit. Police narratives for all 357 crashes were examined to determine which crashes involved a bus patron. Bus stops were ranked on how many pedestrian crashes had occurred within 100 feet, the AADT of the street near the stop, and the average weekday passenger on/off for the bus stop. The five most hazardous stops in Broward County and the six most hazardous in Palm Beach County were selected for more in-depth analysis.

The researchers shared their findings with stakeholders in Broward and Palm Beach counties and solicited their feedback regarding, for example, guidance they used to place bus stops or areas they believed were problematic. Based on their studies and interaction with stakeholders, the researchers provided a number of recommendations, including very specific ones for the most hazardous stops and more general ones for promoting pedestrian safety at bus stops.

Project Benefits

Projects like this can reduce pedestrian crashes by providing greater insight into how pedestrian crashes happen and effective methods for reducing hazards.

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