Improving Pedestrian Safety Near Transit Stops in Fort Worth, Texas

Pedestrian crashes near bus stops in Fort Worth, Texas, are a significant safety concern, with high-risk factors contributing to these incidents.

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Project Need and Approach

Pedestrian safety has become a growing concern due to an alarming rise in pedestrian fatalities in the United States. Despite a modest decline in vehicle fatalities, pedestrian fatalities increased by 12.54 percent between 2020 and 2021 and by 50.74 percent over the past two decades. Pedestrians face a higher risk of fatality, with 75 percent of these incidents occurring at non-intersections. In Texas, 5,766 pedestrian-involved crashes occurred in 2022, leading to 830 fatalities. Specifically, bus stops have been identified as high-risk locations for pedestrian crashes, with studies showing hotspots near transit areas. In Fort Worth, Texas, this issue is particularly pressing, as bus stops often lack adequate pedestrian safety infrastructure.

Pedestrian crashes near bus stops present unique challenges because these incidents are often dispersed across urban areas rather than concentrated in well-defined clusters. Traditional safety approaches, which focus on historical crash frequency, are insufficient due to the random and rare nature of pedestrian crashes. To address this issue, this project aimed to identify and prioritize high-risk bus stop locations in Fort Worth, Texas, using a comprehensive, data-driven approach. The project team identified bus stops with pedestrian crash histories and those with high passenger activity but no crash history. Data from the Texas Department of Transportation's Crash Records Information System and Fort Worth's Trinity Metro informed the analysis, focusing on bus stop and roadway characteristics. A scoring system was developed to assess the risk at each bus stop, factoring in variables such as traffic volume, crosswalk presence, intersection proximity, and socioeconomic factors. This systematic approach led to targeted safety improvements and outreach efforts designed to reduce pedestrian crashes near bus stops.

A data-driven risk assessment system was created, and outreach efforts were conducted to enhance pedestrian safety near bus stops in Fort Worth, Texas.

Project Activities

This project involved the systematic identification and analysis of bus stops in Fort Worth, Texas, focusing on factors contributing to pedestrian crashes. The research examined bus stop and roadway characteristics, such as traffic volume, pedestrian exposure, intersection type, and bus stop design. The analysis identified 26 significant risk factors influencing pedestrian crash risks near bus stops. A risk scoring system was developed to prioritize interventions, which led to the identification of 75 high-risk bus stops. These bus stops were grouped into eight corridors for targeted safety improvements. Key factors identified included traffic volume, crosswalk availability, bus stop proximity to intersections, and pedestrian activity patterns. Overall, the results of the analysis showed that improving infrastructure (e.g., adding crosswalks or sidewalks), controlling speed limits, enhancing lighting, addressing disparities in lower-income areas, etc. are essential for reducing crash risks.

Using these results, outreach activities complemented the data analysis by engaging with the community and raising awareness about pedestrian safety. The project team distributed safety materials at over 75 high-risk bus stops and launched social media campaigns in collaboration with Trinity Metro and the City of Fort Worth Public Works. Additional outreach efforts included internal and external presentations, bus posters, and a webinar. These efforts aimed to educate both pedestrians and drivers about safety measures, ensuring that the community actively participated in improving pedestrian safety.

Benefits to Texas Transportation Safety

The Pedestrian Safety near Bus Stops project improved transportation safety in Texas by addressing key factors contributing to pedestrian crashes near bus stops. Through analysis, the project identified high-risk elements such as unsignalized intersections, lack of crosswalks, poor lighting, and inadequate sidewalks. A scoring system helped local agencies prioritize safety improvements, including marked crosswalks, raised medians, better lighting, safer bus stop locations, and pedestrian-friendly infrastructure. These solutions, adaptable statewide, aligned with Vision Zero goals to reduce pedestrian fatalities and serious injuries. Educational outreach and collaboration with agencies like Trinity Metro further encouraged safer behavior.

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