DRISI

CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

TRANSFORMING IDEAS INTO SOLUTIONS

Research Notes

Phase 4: Strategies for Reducing Pedestrian and Bicyclist Injury at the Corridor Level

Identifying sites for safety investigations under these programs will enable the California Department of Transportation (Caltrans) to utilize investigative resources more efficiently.

Safety

May 2025

Project Title: Strategies for Reducing Pedestrian and Bicyclist Injuries at the Corridor Level

Task Number: 3906

Start Date: January 1, 2022

Completion Date: December 31, 2024

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WHAT IS THE NEED?

Pedestrian and bicyclist fatalities in California increased 49 percent and 56 percent, respectively, between 2010 and 2018. As part of its 5 priorities, Caltrans wants to increase the mode share of pedestrians and bicyclists while also moving Towards Zero Deaths. To do so, Caltrans must work to improve safety for nonmotorized users. This study builds on the bicycle exposure modeling and pedestrian and bicycle safety monitoring program work from SMART3. It will help Caltrans understand the risk to bicyclists on the state highway system (SHS) and continue the implementation of the monitoring programs to prioritize the selection of sites for safety investigations. In addition, the rate groups models will enable safety investigators to select appropriate countermeasures.

WHAT ARE WE DOING?

This research has three objectives: 1) produce bicycle exposure estimates on the SHS based on the pilot model developed in SMARTs; 2) continue enhancements of the pedestrian and bicycle monitoring report tools by incorporating updated data, combining the spot, corridor, and systemic methodologies into one tool, and responding to functional needs that arise; 3) update all rate group estimates on the SHS based on the most recent five years of crash and traffic volume data.

WHAT IS OUR GOAL?

The goal of this project is to improve safety for all road users along the SHS. Reduction in crashes that can be achieved through proper countermeasures will benefit not only

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automobile users but also pedestrians, cyclists, and other road users affected by crashes along the SHS. This will result in improving a multi-modal transportation system across the state.

WHAT IS THE BENEFIT?

Identifying sites for safety investigations under these programs will enable Caltrans to utilize investigative resources more efficiently and allocate resources to the most critical locations. This will provide opportunities for safety investigators to recommend countermeasures that reduce crashes and save lives. In addition, preventing crashes can lead to a significant reduction in non-recurring congestion costs for road users.

WHAT IS THE PROGRESS TO DATE?

Tasks 3 and 4 involved completing the analysis and preparation of data and indicators to include exposure and equity measures in the safety monitoring tools. In Task 5, the research team provided additional support for the safety monitoring tools to the Caltrans Safety Programs staff, added extra summary output to streamline the preparation of monitoring reports for Caltrans staff, and incorporated the exposure and equity measures into the safety monitoring tools. Finally, in Task 6, the team worked on drafting the final report.

The final report draft has been submitted and it is currently under review by the Caltrans Safety Programs staff.

IMAGE

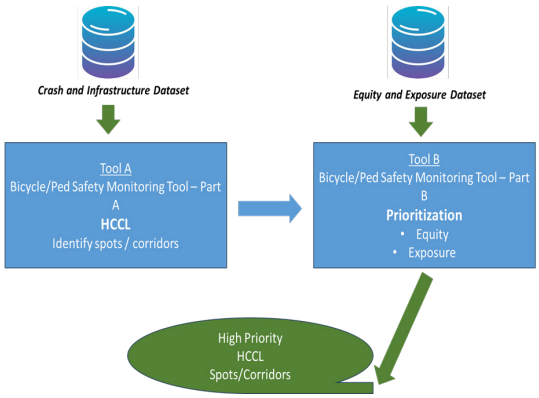

Image 1: Workflow of the Bicycle/Pedestrian Safety Monitoring Tools