Phase 3: Pedestrian Safety Improvement

To identify and address problems regarding pedestrian safety in California with the goal to reduce fatalities and injuries.

WHAT IS THE NEED?

The Pedestrian Safety Improvement Program (PSIP) is an effort of the California Department of Transportation (Caltrans) to identify and address systemic problems regarding pedestrian safety in California, with the long-term goal of substantially reducing pedestrian fatalities and injuries in California. While California has seen improvements in traffic safety compared to ten years ago, these gains disproportionately reflect improvements in safety of motorized modes. For example, while there was nearly a 10% decrease in overall traffic fatalities from 2007-2016, the gains were mostly realized for motorized modes (reduced by 19% in fatalities) but pedestrian deaths increased by 33%.

WHAT ARE WE DOING?

This research is the third phase of the PSIP; the previous phases supported the development of pedestrian and bicycle safety monitoring reports. This phase will address refinements and enhancements to previously developed techniques that were beyond the scope of previous studies.

The techniques and tools developed in this research will help Caltrans to target highway improvements and countermeasures at locations more efficiently, which will lead to the greatest reduction in pedestrian collisions. To achieve this, Caltrans is conducting research to enhance the pedestrian exposure modeling process, develop pedestrian-specific safety performance functions (SPFs), and develop new high collision concentration locations (HCCL) identification and prioritization approaches.
WHAT IS OUR GOAL?

The proposed research has the following goals:

- Develop enhancements to the pedestrian exposure modeling process
- Develop and incorporate a pedestrian corridor identification methodology
- Incorporate crash typology into prioritization of HCCL
- Develop protocols for calibrating pedestrian exposure estimates in future years
- Develop pedestrian-specific SPFs
- Incorporate exposure estimates into HCCL identification and prioritization
- Incorporate the new HCCL identification and prioritization techniques into the pedestrian safety monitoring report tool

WHAT IS THE BENEFIT?

This research aims to enhance pedestrian safety and refine the capabilities and resources needed to address the imbalance between pedestrians and motorized roadway users in California. The improvements to the pedestrian exposure modeling will allow Caltrans to perform more advanced safety and risk analyses. Pedestrian-specific SPFs will allow Caltrans to incorporate Empirical Bayes methods when evaluating pedestrian countermeasure effectiveness. The crash typology and risk-based HCCL identification and prioritization techniques are intended to identify HCCL more efficiently, with the greatest potential of safety improvements and reduce the number of false positives. Pedestrian corridor identification is meant to identify groups of contiguous segments or intersections with similar features and safety problems that can be addressed systematically.

WHAT IS THE PROGRESS TO DATE?

The expected start date for this research is December, 2018.

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