



Caltrans Division of Research,
Innovation and System Information

Research

Notes

Transportation,
Safety and
Mobility

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

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Pedestrian Safety Improvement Program Phase 2 (PSIP2)

This research will develop a Pedestrian Safety Improvement Program (PSIP) that would identify and address problems with regard to pedestrian safety in California.

WHAT IS THE NEED?

Over the past decade, pedestrians accounted for approximately 12 percent of all traffic fatalities in the United States, totaling more than 4,500 deaths per year. In California, the proportion of pedestrian fatalities is higher and accounts for approximately 20 percent of traffic related fatalities.

Additionally, progress in reducing pedestrian fatalities has been slower than progress for reducing passenger vehicle fatalities. While the State saw a 43 percent decline in passenger vehicle fatalities from 2006-2012, the State's pedestrian fatalities declined by only 15 percent. Data also indicates that pedestrians are 37 times more vulnerable than the rest of roadway users in California—that is, they suffer 37 times more injuries than they inflict on others.

WHAT ARE WE DOING?

PSIP is an effort of the California Department of Transportation (Caltrans) to identify and address problems with regard to pedestrian safety in California, with the long-term goal of substantially reducing pedestrian fatalities and injuries in California.

This task will identify the opportunities and challenges to integrating pedestrian data and analysis approaches into existing safety activities at Caltrans. The primary outcomes of PSIP include:

- (i) Tools to improve access to existing pedestrian safety data
- (ii) Pedestrian volume model for urban arterials
- (iii) Pedestrian Safety Report Card that provides a snapshot of pedestrian safety in California



DRISI provides solutions and
knowledge that improves
California's transportation system

- (iv) New pedestrian hotspot monitoring method and a corresponding tool
- (v) Analysis of the incidence and severity of pedestrian collisions across the State Highway System
- (vi) Survey of funding, training, and other institutional considerations to improve pedestrian safety

WHAT IS OUR GOAL?

The goal of PSIP would be to work closely with Caltrans to translate the tools and activities, and other relevant Caltrans funded efforts, into an implementable and sustainable program. These activities include:

- Implementation of a pedestrian volume data system for the California State Highway System. The data system would serve as: (i) a repository for ongoing district level efforts to collect pedestrian volume data conduct using automated or manual data collection methods; and (ii) data in the repository will be used to develop a pedestrian volume model for different facility types and will be used to estimate pedestrian volumes for the whole State Highway System. Such data can improve tools to identify high pedestrian collision concentration locations, and provide better insights for analysis of pedestrian collision factors and the effectiveness of different countermeasures.
- Refinement and implementation of improved methods and tools for monitoring concentrations of pedestrian collisions. The methods and tools could incorporate exposure from the pedestrian volume data system. The program would also make use of tools developed by Caltrans to implement systemic safety improvements.
- Implementation of a pedestrian infrastructure inventory for the State Highway System. This can be as part of a short-term state-wide effort or as a compilation of local efforts over many years. Such data can help identify locations that would benefit from additional infrastructure, and assist in analyzing the effectiveness of various safety improvements.

- Collision data enriched with pedestrian volume and infrastructure data would facilitate a meaningful analysis of pedestrian collision factors and countermeasures. A special emphasis will be given to analyzing the effectiveness of different crosswalk enhancements.

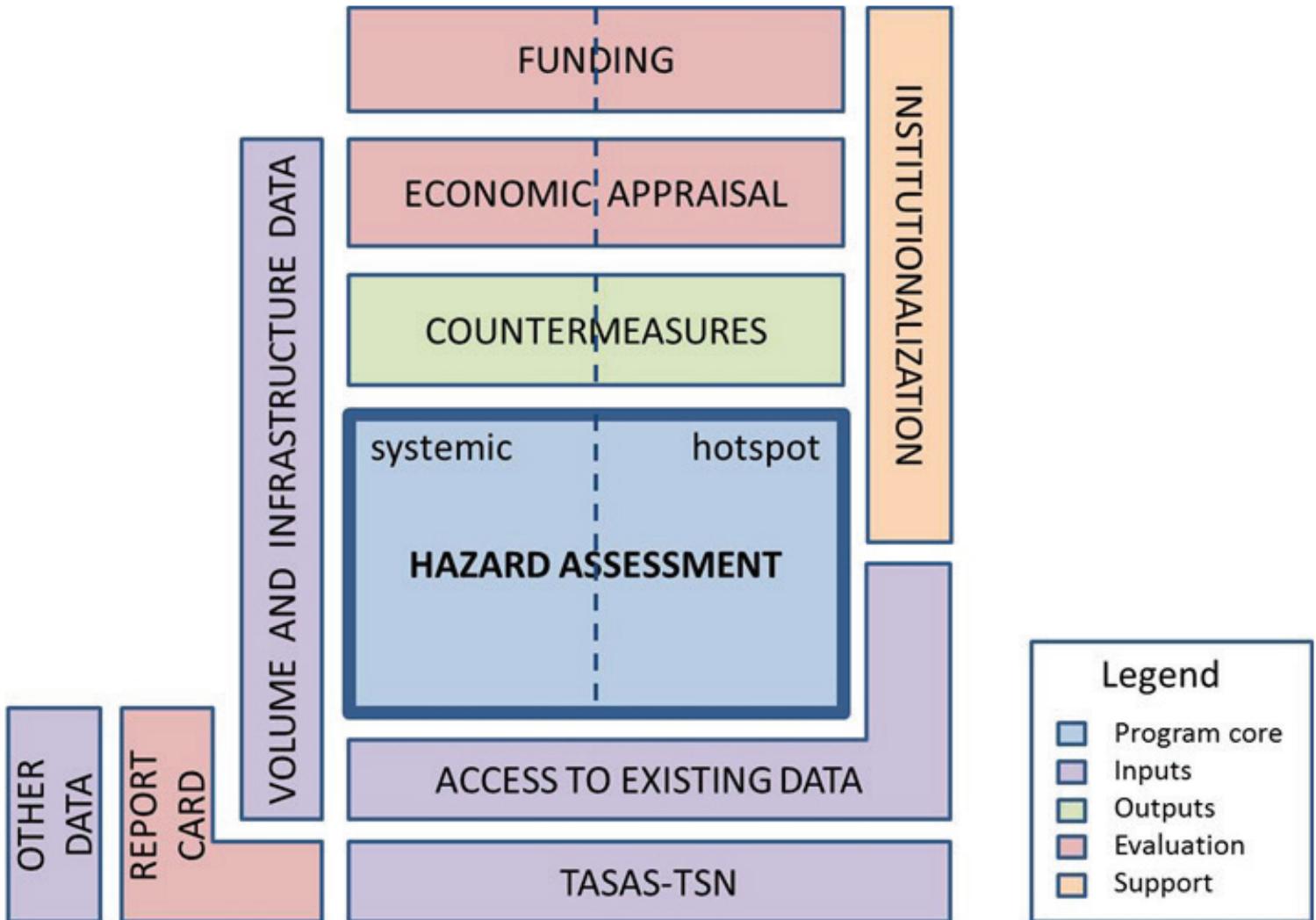
WHAT IS THE BENEFIT?

As a result of implementing these activities, pedestrian considerations will be institutionalized within Caltrans Headquarters and District safety analysis practices. Caltrans data systems will become capable of detailed analyses of the causes of pedestrian collisions. Staff throughout Caltrans Districts will be educated about new resources available for pedestrian safety analysis and guidance on pedestrian collision countermeasures. Ultimately, these changes will lead to fewer pedestrian injuries and fatalities on the California State Highway System.

WHAT IS THE PROGRESS TO DATE?

Phase I of this task has been completed. This phase has identified the components that are needed to implement a PSIP for California. The research team mapped the activities that are needed under each of these components and has conducted the initial steps towards these activities. PSIP 2 would be to work closely with Caltrans to streamline the entire components into an implementable program as depicted in Figure C-1.

Figure C-1. PSIP Implementation Plan



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