Phase 3: Strategies for Reducing Pedestrian and Bicyclist Injury at the Corridor Level

The research team accessed and compiled Open Street Maps bicycle infrastructure data and evaluated feasibility of using for the exposure model.

WHAT IS THE NEED?

While California has seen major gains in traffic safety over the last decade, these gains disproportionately reflect improvements in passenger vehicle safety. Crash data from California shows that the State experienced a 36% decline in passenger vehicle fatalities from 2006-2015, but only a 9% decline in bicycle fatalities and a 3% increase in pedestrian fatalities. In light of this, there is a need for a concerted effort to support activities that improve bicycle safety and pedestrian safety in California.

WHAT ARE WE DOING?

The proposed project has four main activities:

i. Develop a bicycle safety monitoring tool - The proposed tool will be based on the pedestrian tool and methodologies developed under 65A0547. The proposed tool will be used to identify bicycle-related High Collision Concentration Locations on the state highway system. This tool will be used to support a pilot bicycle monitoring program as proposed by California Department of Transportation (Caltrans).

ii. Support the pedestrian safety monitoring tool - The research team will respond to enhancements that need to be added to the functionality of the existing Pedestrian Safety Monitoring Report tool developed in a previous project.
iii. Develop a systemic approach and tool for bicycles - in addition to the spot approach developed in this project, the research team will also develop a systemic approach that seeks blanket improvements which can be implemented at sites across the road network, based on specific roadway features that are associated with a particular crash type.

iv. Develop an approach to model bicycle exposure for the state highway system - The existing Caltrans Traffic Accident Surveillance and Analysis System - Transportation System Network highway database does not include any bicycle volume data. To meet this challenge, the research team will develop an approach to modeling bicycle volumes across the state highway system. They will conduct a pilot to evaluate the validity of the model.

WHAT IS OUR GOAL?

By executing the activities of the project, the researchers would be supporting the overarching goals of the project that are to:

i. Provide a foundation for systemic and spot safety programs to identify and address safety problems regarding bicycle safety in California; and

ii. Continue and support the pedestrian safety programs that are being piloted by Caltrans.

WHAT IS THE BENEFIT?

The project would provide a foundation for systemic and spot safety programs to identify and address safety problems regarding pedestrian and bicycle safety in California. The direct benefits of establishing and institutionalizing such programs is expected to result in substantial reductions in pedestrian and bicycle fatalities and injuries in California.

WHAT IS THE PROGRESS TO DATE?

The following tasks have been accomplished this period:

- Began Geographic Information System (GIS) processing work to identify intersections where counts have been conducted and the corresponding segment legs where we will assign the turning movement counts.
- Continued refining the proposed bicycle exposure modeling approach.
- Requested origin-destination pair data for potential incorporation into the bicycle exposure model from Caltrans planning staff.