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CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

TRANSFORMING IDEAS INTO SOLUTIONS

Research Notes

Phase 2: Identification of Speeding-related, ROR, CO, and WW Collisions Locations

Developing a methodology for a speed-related safety monitoring program and updating other monitoring programs for alignment with the Safe System Approach.

Safety

May 2025

Project Title: Methods for Identifying High Collision Concentration Locations for Potential Safety Improvements

Task Number: 4287

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WHAT IS THE NEED?

The California Department of Transportation (Caltrans) is committed to safety as the top priority. Existing Safety Monitoring Programs are aimed at reducing injuries and fatalities along the California State Highway System. While these programs are effective, it is necessary to evaluate the alignment of these programs with best practices and existing policies. the California Zero Traffic Fatalities Task Force, assembled by AB 2363, has called for a speed-related safety program. The foundation for such a program was also laid out in the prior study phase. Considering this, there is an urgent need to build on the preliminary work that was done and establish a data-driven speed-related safety program. Additionally, the previous phase has identified a set of desirable safety thresholds considering the necessary categories, study period, and injury level combinations for the Run-Off-Road (ROR) Crashes; Cross Over (CO) Crashes; and Wrong Way (WW) Crashes across the state highway system. However, the state has recently adopted Director's Policy 36 which calls for an adoption of the Safe System Approach (SSA). The SSA specifies principles that can be incorporated into existing programs. To this end, the need is to re-develop these programs to be aligned with SSA principles.

WHAT ARE WE DOING?

The research team will work with Caltrans bridge inspectors to identify inspection requireme The research addresses the needs in two different paths. First, the research will expand the methodology to identify speed-related crashes and develop a tool to conduct such screening along the state highway system. The methodology will be aligned with the SSA and

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may consider non-crash data too. Second, a best practices literature review and data analysis will be conducted for ROR crashes; CO crashes; and WW crashes. The results of the analysis will guide efforts to develop a methodology and accompanying tool to conduct safety programs for ROR crashes, CO crashes, and WW crashes. The methodologies will also be aligned with the SSA.

WHAT IS OUR GOAL?

The research will produce a SSA-based methodology for speed-related crashes and tool for safety programs on ROR, CO, WW.

The outcome of the research will be used to roll out a new pilot safety program for speed-related crashes and will also be accompanied with detailed documentation and training. Second, the project will implement a new pilot safety program for ROR, CO, and WW crashes. The revised program roll out will be accompanied by a user manual and a training session for the Division of Safety Programs to support implementation. All programs will be developed to allow for future incorporation into the Caltrans Transportation System Network Replacement.

WHAT IS THE BENEFIT?

Identifying crash locations and corridors under these programs will enable the Caltrans to utilize investigative resources more efficiently and allocate resources to the most critical crashes and locations. Moreover, this will provide opportunities for safety investigators to recommend countermeasures that reduce crashes and save lives. In addition, better identification would result in better utilization of the time and resources of Caltrans' traffic safety investigators, thus help to improve safety, and save time and money for Caltrans.

WHAT IS THE PROGRESS TO DATE?

In Task 1, progress was presented to Caltrans during the quarterly meeting. For Task 2, work continued on a best practice review aimed at identifying concentrations of speed-related crashes on state highways. A proposed methodology for a speed-related safety monitoring program was developed and presented to Caltrans. Additionally, multiple meetings were held with Caltrans staff to define the parameters, goals, and specifications of the speed-related monitoring program.