Transportation Safety and Mobility

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

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Identification of ROR, CCL, MCMC and Wrong-way Collision Locations

Develop a technical report describing the updated or preliminary criteria for evaluating ROR, CO, Wrong-way, and Speeding collisions.

WHAT WAS THE NEED?

The goal of this research was to propose improvements to the existing transportation safety management–Collision Monitoring Programs to identify Run-Off-Road (ROR), Cross Over (CO) [using criteria from the Two- and Three-Lane Cross Centerline (CCL) and Multilane Cross Median Collision (MCMC) Monitoring Program], and Wrong-Way (WW) crash locations.

This research effort also conducted analysis to support a new crash monitoring program to identify locations and provided appropriate traffic calming measures that can reduce fatal and serious injury crashes due to speeding – an initial criterion for a Speeding (crashes with speeding as the primary collision factor or other associated factor) Crash Monitoring Program across all Caltrans districts. The idea behind this was to evaluate the current criteria and the countermeasures used for these monitoring programs and to propose a new monitoring program.

WHAT WAS OUR GOAL?

The overarching goal was to develop a technical report describing the updated or preliminary criteria for evaluating ROR, CO, WW, and Speeding collisions.

To do this, it was necessary to define each of the data elements required for these programs to provide guidance for the subsequent tasks and any related future efforts. Identifying appropriate datasets included removing potential sources of error and checking the data for accuracy, completeness, consistency, and uniformity.

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WHAT DID WE DO?

Under this effort, we worked to improve the existing Crashes Monitoring Programs – Run-Off-Road, Cross Over, and Wrong-way crashes – that are aimed at reducing serious injuries and fatalities along the California State Highway System. This included an assessment of the current criteria and thresholds to flag relevant locations for investigation and the list of countermeasures under each program. Furthermore, this task reviewed the literature from NHSTA, FHWA, and TRB that is relevant to ROR, CO, and WW and the methodology used in practice to identify such locations. We also identified the existing data needs of these crash monitoring programs and explored data needs for developing/updating the criteria for Run-Off-Road, Cross Over, and Wrong-way crashes, and crashes with speeding as the primary collision factor or other associated factor.

WHAT WAS THE OUTCOME?

This study improved existing transportation safety management–Crash Monitoring Programs to identify ROR, CO, and WW crash locations. Furthermore, this research effort also developed preliminary analysis for a new crash monitoring program to identify locations and provide appropriate traffic calming measures that can reduce fatal and serious injury crashes related to speed.

This study recommended a desirable safety threshold by considering the necessary categories or subcategories, study period, and injury level combinations. The outcome of this study can improve Caltrans' ability to effectively address ROR, CO, WW, and speed-related crashes.

WHAT IS THE BENEFIT?

The developed criteria should enable Caltrans to generate a ranked list of crash locations that indicate a crash concentration for these programs. As a result of implementing these activities, Caltrans shall be able to reduce the rate of false positive for investigation and improve safety to establish better multi-modal traffic conditions. Also, the developed preliminary analysis for speed-related crashes will inform next steps towards developing a speed-related crash monitoring program.

The results can provide better utilization of time and resources. The identified locations need to be investigated to identify potential countermeasures to reduce crashes.

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