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CALTRANS DIVISION OF RESEARCH,
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TRANSFORMING IDEAS INTO SOLUTIONS

Research

Notes

Transportation
Safety and
Mobility

MAY 2023

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

Task Number: 3781

Start Date: March 1, 2021

Completion Date: August 31, 2023

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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 IS THE NEED?

The goal of this research is 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 collision locations.

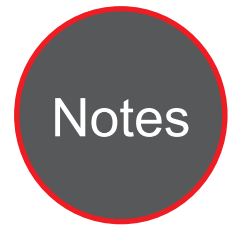
This research effort will also develop a new collision monitoring program to identify locations and provide appropriate traffic calming measures that can reduce the fatal and severe collisions due to speeding – an initial criterion for Speeding (collisions with speeding as the primary collision factor) Collision Monitoring Programs across all California Department of Transportation (Caltrans) districts. The idea behind this is to evaluate the current criteria and the countermeasures used for these monitoring program and to propose a new speeding collision monitoring program.

WHAT ARE WE DOING?

Under this effort, we will work to improve the existing Collision Monitoring Programs – Run-Off-Road, Cross Over, and Wrong-way Collisions – that are aimed at reducing severe injuries and fatalities along the California State Highway System. This will include assessment of the current criteria and threshold to flag relevant locations for investigation, and the list of countermeasures under each program. Furthermore, this task reviews the literature from NHSTA, FHWA, and TRB that is relevant to ROR, CO, and Wrong-way and the methodology used in practice to identify such locations. This will allow Caltrans to evaluate the existing practices and consider other potential approaches.



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We will also identify the existing data needs of these collision monitoring programs and explore data needs for developing/updating the criteria for ROR, CO, and Wrong-way collisions, and collisions with speeding as the primary collision factor.

WHAT IS OUR GOAL?

The overarching goal is to develop a technical report describing the updated or preliminary criteria for evaluating ROR, CO, Wrong-way, and Speeding collisions.

To do this, it is required to define each of these data elements required for such programs so it can provide guidance for the subsequent tasks and any related future efforts. Identifying appropriate dataset includes the removal of any potential sources of error as well as check the data for accuracy, completeness, consistency, and uniformity.

WHAT IS THE BENEFIT?

The developed criteria should enable Caltrans to generate a ranked list of collision locations that indicate a collision 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 criteria for speeding should enable Caltrans to generate a list of collision locations that indicate a speeding collision concentration. The identified locations can be investigated to identify potential countermeasures to reduce collisions due to speeding.

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

WHAT IS THE PROGRESS TO DATE?

The following tasks have been accomplished within this period:

Addressed Safety Program staff comments on the draft technical memo for recommendations for Wrong Way Program Inputs and Criteria and submitted the final memo. The memo has 4 recommendations based on the descriptive data analysis for wrong-way crashes. The recommendation includes reducing the minimum density of crashes, increasing segment length for freeways, and a more structured countermeasure list.

Began drafting a technical memo for the CO Program Inputs and Criteria to be submitted to Caltrans by mid-April.

Presented additional findings on the speeding program to Caltrans during a meeting with additional stakeholders from Office of Traffic Safety (OTS) and California Highway Patrol (CHP). Began drafting the speeding report, including revised spatial analysis based on feedback from the meeting.