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Caltrans Division of Research, Innovation and System Information

Research Notes

Developing A Safe System Approach to Setting Speed Limits

Develop and implement a new roadway-based context sensitive approach to establish speed limits that prioritizes the safety of all road users.

Transportation Safety and Mobility

NOVEMBER 2022

Project Title:
Developing A Safe System Approach to Setting Speed Limits

Task Number: 3896

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WHAT IS THE NEED?

Transportation professionals and policy makers in California are confronting a growing problem: increases in road traffic fatalities, injuries, and crashes despite a commitment to safety. In California, nearly 3,600 people die each year in traffic crashes and more than 13,000 people are severely injured. Collectively, these traffic crashes cost California over $53.5 billion, and speeding-related fatalities continue to represent a large portion of California's total traffic fatalities. Recent research has demonstrated that speed increases crash risk in two ways: it increases the likelihood of being involved in a crash and it increases the severity of injuries sustained by all road users in a crash.

In California, the relationship between speed and crash involvement has prompted calls from local governments to change the way that speed limits are set. In response, the Legislature passed Assembly Bill 2363, which directed the California State Transportation Agency (CalSTA) to convene a Zero Traffic Fatalities Task Force (ZTFTF) comprised of experts from across the state to brainstorm, evaluate, and recommend alternatives to the current speed-limit-setting methodology.

This research project represents the first step towards developing a Safe Systems approach to setting speed limits, per CalSTA's recommendation. The Safe Systems approach is used in other countries, most notably Sweden, the Netherlands, and Australia, and has been studied extensively. But it has yet to be implemented in North America. Changing how California establishes speed limits will be a significant undertaking that will require funding, time, and expertise to facilitate strategic decision and policy-making.

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WHAT ARE WE DOING?

The following activities will be completed to successfully conduct the research:

- Literature Review about Safe Systems from a California Perspective
- Conduct individual and/or group interviews with relevant agency and department safety personnel at the California State and regional level.
- Convene an expert advisory group and obtain their input on developing a Safe Systems approach to setting speed limits in California.
- Case Studies: Use California specific examples where utilizing a Safe Systems approach can have a more favorable outcome than existing practices.
- Custom crash data analysis for California: Use 10 years of existing crash data records to estimate the crash magnitude (in terms of kinetic energy) that was carried by parties that were involved in crashes, at the onset of the hazardous event. This will include different modes (e.g., motorists, bicyclists, pedestrians).
- Produce Final Report

WHAT IS OUR GOAL?

The objective of this research is to develop a Safe Systems approach to setting speed limits in California. The desired outcome is a data-driven analysis that will lay the foundation for implementing a Safe Systems approach in the State.

WHAT IS THE BENEFIT?

Increases the safety of the users of the State's roadways system , which includes motorists, bicyclists, and pedestrians.

Furthermore, this research project directly supports Goal 1 of the California Department of Transportation (Caltrans) Strategic Management Plan (2015-2020), namely to, "Provide a safe transportation system for workers and users and promote health through active transportation and reduced pollution in communities," as well as its associated strategic objective to ,"Reduce user fatalities and serious injuries by adopting a 'Toward Zero Deaths' practice."

WHAT IS THE PROGRESS TO DATE?

- Quarterly progress meeting
- Finalized interview questions to conduct virtual 1-on-1 interviews with some Caltrans personnel and representatives from local and regional DOT's in California.
- Convene expert advisory group.
- Interviews with relevant stakeholder at state, regional and local level.
- Performed Case studies

IMAGES

Image 1: The Safe Systems Approach Principals and Elements

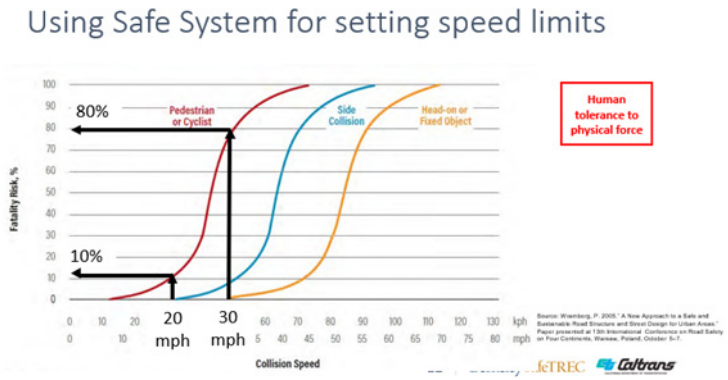

Image 2 : Using Safe System for setting speed limits

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