



DATE: May 27, 2021

TO: Transportation Advisory Commission

FROM: Laura Rubio-Cornejo, Director of Transportation

SUBJECT: **Traffic Safety Toolbox**

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BACKGROUND:

This report is for information only.

The Department of Transportation uses a multifaceted approach to address traffic safety throughout the City including engineering, education, encouragement, enforcement and evaluation. The purpose of this informational report is to provide an overview of various engineering safety enhancement options available and present their effectiveness at reducing the frequency of collisions based on national research. Safety enhancements deployed throughout the City are considered tools within our Traffic Safety Toolbox. The effectiveness of these enhancements at reducing collisions has been documented by a number of state and federal research studies and are considered best practices by national and international associations, including the Institute of Transportation Engineers and the National Association of City Transportation Officials.

In addition to the tools used to reduce the number of traffic collisions, the City also implements strategies to reduce the severity of collisions. These strategies are part of our Traffic Calming program that is intended to reduce speed, enhance visibility and provide a more comfortable environment for all modes of transportation, including pedestrians and bicycles.

Safety Enhancements within this presentation are categorized by location type:

- Signalized intersection
- Non-signalized intersection
- Roadway segment

Within these location types, traffic safety solutions are further identified by treatment type:

- Lighting
- Operational improvements, such as assignment of right of way or signal timing modifications

- Warning devices
- Geometry and roadway design
- Pedestrian and bicycle treatments

Referenced within the presentation is the Crash Reduction Factor (CRF). The CRF is the standard metric used to quantify the effectiveness of safety enhancements based on research studies conducted to evaluate crash rates at locations where the enhancements have been installed. While the effectiveness of safety enhancements varies based on site specific conditions, CRF values provide a general understanding of the measured effectiveness of the safety treatments.

Two sets of values are provided for the CRF. The first CRF value provided is the CRF value identified by Caltrans for the application of Highway Safety Improvement Program (HSIP) Grant funds. This value is important, because it is used to determine the benefit cost ratio of proposed enhancements when applying for competitive HSIP grant funding. The second value provided is a CRF range identified through the FHWA Crash Modification Factor Clearinghouse. The FHWA CRF range takes into account site specific conditions to provide a more thorough understanding of the potential for safety enhancements to reduce crash frequency. The FHWA clearinghouse allows engineers to review the safety studies which established the CRF values to make a better determination of the effectiveness of the safety enhancement based on how and where they were applied.

In addition to providing the CRF values for numerous safety enhancements, this presentation provides an example of how quick-build solutions can be implemented to evaluate the effectiveness of proposed safety enhancements. Also, a decision making flow chart is presented that City staff uses to determine when a marked crosswalk should be installed.

NEXT STEPS:

The Department of Transportation continues to evaluate safety throughout the roadway network, identifying locations for potential safety enhancements and working with the community to identify traffic calming measures through the Neighborhood Traffic Management Program. In Fiscal Year 2022, the Transportation Department will complete the update to the Pasadena Pedestrian Plan and develop a Local Road Safety Plan that details the City's systematic approach to identifying and addressing traffic safety for motorists, pedestrians and bicyclists. In addition, the Department of Transportation will continue to research innovative safety enhancements, reviewing best practices of local, state and federal agencies while continuing to evaluate the effectiveness of safety enhancements implemented throughout Pasadena.