State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

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To: DISTRICT DIRECTORS
DEPUTY DISTRICT DIRECTORS,
MAINTENANCE AND OPERATIONS
DEPUTY DISTRICT DIRECTORS, DESIGN
CHIEF COUNSEL, LEGAL DIVISION
CHIEF, DIVISION OF DESIGN

Date: October 28, 2014

File:

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Subject: **USE OF SEVERE-DUTY CRASH ATTENUATORS**

The primary reason for this memorandum is to establish criteria and guidance for the use of severe-duty crash attenuators (i.e. crash cushions) in capital outlay projects and as replacements by maintenance forces. Implementing this criteria and guidance will assist the California Department of Transportation (Caltrans) in meeting the goals of safety and stewardship.

BACKGROUND

Severe-duty crash attenuators are appropriate for high-incidence roadway locations, offering superior cost effectiveness and improved safety for the traveling public and highway workers. The attenuators perform well in high-speed frontal and side impact tests, thereby reducing repair costs and the time needed for repairs. A reduction in repair time directly benefits the traveling public and highway workers.

Caltrans currently has four approved crash cushions that meet the guidance of this memorandum for severe-duty crash attenuators. These are the REACT 350, Compressor, SMART SCI 100GM and the Quad Guard Elite/LMC Systems. Additional products will be added to the list as they are approved.

CRITERIA

Conditions for the use of a severe-duty crash attenuator are as follows:

- History or expectation of multiple impacts per year.
- Sites that require short repair times or have repair time limitations, or sites that are difficult to access.
- Sites that require a ramp closure or lane closure to repair.
- Roadways with annual average daily traffic greater than 20,000 where repair activity is impacted by traffic.

The use of a severe-duty crash attenuator is recommended to reduce delay to the traveling public and minimize exposure of highway workers during the repair activities. A repair or reset time of 15-30 minutes is typical for these crash cushions.

GUIDANCE FOR SELECTION

These items should be considered when selecting the type of severe-duty crash attenuator:

- Crash cushions that self-restore or can be easily pulled/reset to their original shape, and position, after being impacted with minimal need for replacement parts.
- Ability to repair or reset during the initial accident call.
- Ease of repair; no specialized equipment is required to install, repair or remove the product from service by a standard work crew.
- A repair toolkit is available.
- Components can survive the varied and often harsh environmental conditions.
- Life-cycle cost in locations that experience high numbers of impacts.

For on-going capital outlay projects, Districts should implement the following:

- Projects before Ready to List (RTL): Districts should implement this memorandum.
- Projects after RTL: Districts may consider implementing this memorandum when it does not cause significant delay in this contract item.

A non-standard special provision is posted on the Headquarters Traffic Safety Devices web site for capital outlay projects and a link is located below. The special provision will be posted by Division of Engineering Services Office Engineer when approved as standard.

<http://onramp.dot.ca.gov/hq/traffops/engineering/safety-devices/docs/83-5.05_severe_duty__2015.docx >

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