



Caltrans Division of Research,
Innovation and System Information

Research

Notes

Design

JANUARY 2022

Project Title:
Cost-benefit analysis for concrete vs
metal guardrails and wood vs metal
posts for signs and guardrails

Task Number: 3848

Start Date: December 1, 2021

Completion Date: November 30,
2023

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Cost-Benefit Analysis for Concrete vs Metal Guardrails and Wood vs Metal Posts for Signs and Guardrails

Conducting cost benefit analysis to develop guidelines for choosing between different guardrail types, and posts for guardrails and signs.

WHAT IS THE NEED?

This is a follow up project, to work on California Department of Transportation (Caltrans) Districts' recommendations to improve the safety of their field maintenance workers. This project plans to improve the safety and efficiency in Caltrans design and maintenance related activities by developing a decision-making process when choosing between different roadside features and their replacements.

WHAT ARE WE DOING?

This project plans to perform cost-benefit analysis studies to develop methodology for choosing between concrete vs metal beam guardrail barriers, based on requirements at each location, considering long term maintenance savings, and improvements in worker safety, due to less time spent on repairing guardrails in high traffic exposure environment.

This project also plans to develop guidelines to objectively support the decision for replacement of wooden posts with metal posts (for signs and guardrails), based on the maintenance costs, fire hazards, weed control, crash performance, and improvements in worker safety etc.



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California's transportation system

WHAT IS OUR GOAL?

The goal of this project is to perform research to help provide methods for life cycle cost estimation that can be used in decision-making process when choosing between different roadside features and their replacements. The cost benefit analysis will consider long-term maintenance savings as well as improvement in worker safety due to less maintenance time in high traffic exposure environment.

WHAT IS THE BENEFIT?

The benefits of this project include improved safety for maintenance workers by identifying roadway areas where maintenance workers have a high-risk in maintaining roadside features, and providing help in decision making process when choosing between different roadside features and their replacements, including; choosing between concrete versus metal guardrails, replacing wooden vs metal guardrail posts, and evaluating the use of steel vs wooden posts for signs.

WHAT IS THE PROGRESS TO DATE?

The kick-off meeting for this project was held on December 3, 2021.

The scope of work for this research task was approved, and a project panel has been formed.