

DRISI

CALTRANS DIVISION OF RESEARCH,
INNOVATION AND SYSTEM INFORMATION

Research Notes

Pavement

DECEMBER 2023

Project Title:
Multi-Criteria Decision Support for
Prioritization of Strategies to Reduce
Environmental Impacts

Task Number: 3820

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Multi-Criteria Decision Support for Prioritization of Strategies to Reduce Environmental Impacts

This task will develop multi-criteria decision support tool to prioritize means and strategies for Caltrans to reduce its environmental impacts related to pavement improvement and other construction processes.

WHAT IS THE NEED?

The California Department of Transportation (Caltrans) roadway decision makers need to prioritize existing and new changes in practices and policies to reduce greenhouse gases (GHG) emissions and other environmental impacts, considering both cost and reduction in environmental impact, to arrive at the most cost-effective use of limited resources.

WHAT ARE WE DOING?

Supply curves are one of the approaches where both cost and GHG emissions could be considered within a life cycle perspective. These have been developed in the 2017-2020 contract. There are several other approaches that consider both life cycle assessment (LCA) and life cycle cost analysis (LCCA) methodologies and can be used for decision support. In this project, additional case studies will be performed for alternative changes Caltrans can consider in roadway operations under Pavement, METS, and Construction. Additional approaches will also be investigated, summarized, and the most relevant to Caltrans will be further developed for evaluating Caltrans strategies/projects that considers both costs and environmental impacts.

WHAT IS OUR GOAL?

The goal of the continuing Task is to develop multi-criteria decision support tool to prioritize means and strategies for Caltrans to reduce its environmental impacts related to pavement improvement and other construction processes.



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WHAT IS THE BENEFIT?

Although supply curves for both cost and GHG emissions are already developed, additional cases studies are required that will focus on pavement and roadways.

WHAT IS THE PROGRESS TO DATE?

This research task was completed on June 30, 2023.