DRISI
CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

Research Notes

Pavement

MAY 2024

Project Title:
Partnered Pavement Research Center (PPRC) 23: Pavement Management System

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Task Manager:
Alireza Shams
Research Engineer
Alireza.Shams@dot.ca.gov

Updates and Improvements to Web-Based RealCost-CA

Updating Caltrans' Life Cycle Cost Analysis (LCCA) procedure manual and improving LCCA and RealCost-CA tools.

WHAT IS THE NEED?

Since 2007, an LCCA has been required for all major pavement projects on the State Highway System, including new construction, reconstruction, and rehabilitation. LCCA was initially developed by the Federal Highway Administration (FHWA) and has since been continuously updated and utilized by Caltrans. To ensure alignment with current policies and guidelines, the University of California Pavement Research Center (UCPRC) has customized the software for California, known as RealCost-CA, 2.2CA in 2007, 2.5CA in 2013, and 3.0 CA in 2023. RealCost-CA needs to be updated regularly so pavement engineers can conduct the required LCCA.
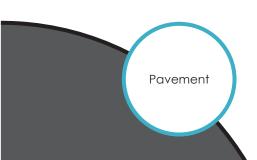
WHAT ARE WE DOING?

This task order develops a methodology to integrate common cost data used in web-based design, pavement management, and decision support tools, which include CalME (asphalt pavement design), PavementME (concrete pavement design), PaveM (pavement management system), eLCAP (environmental life cycle analysis), and RealCost-CA. Once established, the integrated cost database will be regularly updated with new data.

Previous and ongoing efforts focused on creating empirical and mechanistic-empirical performance models for various treatments, materials, and construction practices, all of which will be incorporated into RealCost-CA. UCPRC will host, support, and maintain the updated RealCost-CA.

WHAT IS OUR GOAL?

The primary goal of this task order is to update Caltrans' LCCA procedure manual and enhance the RealCost-CA tool. This ensures accurate determination of the most cost-effective pavement alternative for the state highway projects.

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WHAT IS THE BENEFIT?

The benefit of implementing LCCA, RealCost-CA, and other tools is to further enhance the managers' ability to make informed decisions that result in the most cost-effective pavement solutions for the state highway projects in California. By utilizing this software, Caltrans can systematically evaluate the long-term costs and benefits of various pavement alternatives, including new construction, reconstruction, and rehabilitation. This ensures an efficient solution over the entire life cycle of pavement.

Additionally, the continuous updates and customization of the RealCost-CA ensure that it remains aligned with current policies and guidelines, enhancing its accuracy and relevance. Overall, the implementation of RealCost-CA facilitates prudent decision-making, resulting in optimized resources, improved project outcomes, and enhanced sustainability of California's highway pavement.

WHAT IS THE PROGRESS TO DATE?

Integrating methodology cost data and updating LCCA methodology for new performance models, strategies, materials, and treatments have been ongoing since the start of the project and will continue for the duration of the contract.