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CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

Research Notes

Tri-Annual Performance Model Update

Pavement Management System (PaveM) Performance Model Update

Pavement

DECEMBER 2023

Project Title:
Pavement Management System

Task Number: 3814

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WHAT IS THE NEED?

Caltrans manages its pavements with a new and modern pavement management system, PaveM. One key component of the system is deterioration models for the various types of pavement types, locations, and traffic. The accuracy of these models is continually improved by evaluating them against actual performance as measured by the automatic pavement condition survey (APCS). By 2023 Caltrans will have collected four additional years of APCS data which are not included in the current performance models.

WHAT ARE WE DOING?

This project will use the new APCS data, along with any improved processing on the old data (the 2015/16 APCS data was full of errors, it is going to be re-processed), to improve the performance models in PaveM. This project will also investigate moving all of the PaveM models from their framework to a custom script-based implementation to enable the direct use of the more comprehensive statistical models in PaveM.

WHAT IS OUR GOAL?

The improved models will give more accurate predictions and help the Districts better program treatments, reduce pavement maintenance costs, and thus create longer-lasting pavements.

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WHAT IS THE BENEFIT?

Better performance models will allow for more accurate predictions of pavement performance. Caltrans can be more proactive in maintaining its pavements and thus reduce maintenance costs and create savings by maintaining longer-lasting pavements. Additionally, better maintained roads (especially smoother roads) will save the traveling public in energy costs and reduce greenhouse gases.

WHAT IS THE PROGRESS TO DATE?

1. Performance model database was updated with new data.
2. The empirical models were updated with new information from APCS data.
3. New performance models were delivered and integrated into PaveM.
4. Developing report of model results.

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