

DRISI

CALTRANS DIVISION OF RESEARCH,
INNOVATION AND SYSTEM INFORMATION

Research Notes

Pavement

MAY 2024

Project Title:
PPRC23: Pavement Management
System

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Task Manager:
Somayeh Mafi
somayeh.mafi@dot.ca.gov

Advanced Image Analysis of Automated Pavement Condition Survey (APCS) data

Examine Methods to Use APCS Data for Shoulder and Drainage Evaluations

WHAT IS THE NEED?

Caltrans manages its pavements with a new and modern pavement management system, *PaveM*. One key component to the system is the automatic pavement condition survey (APCS) which collects millions of rights-of-way (ROW) and downwards images of the pavement. This data can be used to improve the pavement survey and other aspects of maintaining a roadway (e.g. drainage, etc.).

WHAT ARE WE DOING?

The annual APCS survey collects a very large amount of data on the Caltrans network. While many condition variables are derived from the data, there are many opportunities to use deep learning and other advanced methodologies to extract additional information from the images and surface profile data, which has already been started in the current contract. This project would focus on moving the models developed in the current contract into vendor practice, improving or building on those models, and developing new models as needed for *PaveM* and other Caltrans users.

WHAT IS OUR GOAL?

A tech memo on models developed, and models that could be used by a vendor.

WHAT IS THE BENEFIT?

The improved APCS data will allow *PaveM* to make better pavement predictions and, thus, Caltrans can be more proactive in maintaining its pavements. This will lead to reduce maintenance costs and create savings by maintaining longer lasting pavements.



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WHAT IS THE PROGRESS TO DATE?

Continued work on documentation for previous phase (2% of work is completed).