DRISI

CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

Research Notes

Improve pavement surface distress and transverse profile data collection and analysis, Phase II

FHWA, in partnership with state Departments of Transportation (DOTs), analyzed transverse profile data to identify pavement distress, Also, precise methodology for data collection and analysis among State Highway Agencies (SHAs) have been proposed and deployed.

Pavement

MAY 2024

Project Title:
Improve pavement surface distress and transverse profile data collection and analysis, Phase II

Task Number: 3999

Start Date: April 1, 2019

Completion Date: March 31, 2025

Task Manager:
Jessaneil Perez
Research Engineer
jessaneil.perez@dot.ca.gov

WHAT IS THE NEED?

The technical capabilities of systems to collect and analyze Pavement Surface Distress and Transverse Profile (PSDATP) have increased dramatically in the last 5-10 years. Many SHAs are in the process of assessing the procurement of equipment/systems or procuring vendor services for network and project level pavement condition assessments. The collection of quality PSDATP is critical for pavement management and design. The current national and state efforts to develop and refine pavement performance measures highlight the high value provided by quality PSDATP.

This study is being established to provide direction that will unify the strategies, address implementation efforts, and promote practices that improve the accuracy and repeatability of the data collection and analysis systems, and promote the knowledge and understanding of PSDATP measurements.

This study aims to devise a systematic approach for collecting transverse profile data to analyze and identify pavement distress. This method is intended for implementation across State DOTs, including Caltrans.

WHAT ARE WE DOING?

Propose a systematic methodology for collecting, analyzing, and implementing the identification of pavement distress. Conduct an extensive literature review and survey distributed among states to assess the existing efforts by state DOTs. The Federal Highway

Caltrans

DRISI provides solutions and knowledge that improves California's transportation system

Administration (FHWA) will then develop a robust methodology to identify pavement distress and ensure its feasibility for implementation across state DOTs. This study will be conducted into 3 different tasks.

Task 1. Administration.
Assemble a Technical Advisory Committee (TAC) - It is proposed that all SHAs that elect to participate in this study will be provided the opportunity to attend and participate in a kick-off and periodic meetings. The main mission of the kick-off meeting is to organize the specifics of the pooled-fund study. It is expected that the first activities will include the development of a "Study Charter" to outline how the TAC will function in carrying out its main duties of identifying needs, proposing projects, and selecting projects to be carried out within this pooled-fund study. It is envisioned that the TAC will meet twice a year over a 6-year period. The participating SHAs will receive priority for all the developed equipment and procedures.

Task 2. Identify, prioritize, and select projects as necessary.
Identify, prioritize, and select projects to be conducted within this pooled-fund project. As needed, update the projects list. Potential projects may include efforts that are conducted by members of the TAC or contracted resources. Potential projects may include, but are not limited to:

- Verification/validation of existing standards
- Field Evaluations of vendor data collection and analysis systems (rodeos)
- Analysis standards for transverse profiles related to water retention
- Implementation/demonstration of results
- Procurement standards for vendor services
- Calibration standards
- Verification standards
- Feasibility studies for innovative technologies
- Technical assistance services to assist SHAs in implementing standards
- Define critical accuracy requirements
- Monitor emerging technologies
- Develop surface distress indices

Task 3. Project Execution.
Selected projects will be developed into project plans. If a project requires a contract, then the project plan will be suitable for a contract statement of work. Appropriate level of TAC oversight will be conducted for each project. Project results/reports are expected to be published by FHWA so the results will be available to all, and other results may become AASHTO standards.

WHAT IS OUR GOAL?

- Develop an accurate methodology for identifying pavement surface distress using transverse profile data.
- Establish a practical approach for broad implementation across state DOTs, including Caltrans.

WHAT IS THE BENEFIT?

The proposed method will improve the efficiency and the accuracy of pavement surface distress and transverse profile data collection and analysis,

WHAT IS THE PROGRESS TO DATE?

The work is fifty (50) percent complete to date.