FACT SHEET

Quality Review and Assessment of Pavement Condition Survey Vehicle Data Across New England

RESEARCH PROJECT TITLE

NETC 21-1 Quality Review and Assessment of Pavement Condition Survey Vehicle Data Across New England

STUDY TIMELINE

February 2022 – July 2023

PRINCIPAL INVESTIGATOR

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MORE INFORMATION

For more information, please see the project page at:

https://www.newenglandtransportationconsortium.org/projects/netc-21-1/

The New England Transportation Consortium, a cooperative effort of the transportation agencies of the six New England States, funded this research. Through the Consortium, the states pool professional, academic and financial resources for transportation research leading to the development of improved methods for dealing with common problems associated with the administration, planning, design, construction, rehabilitation, reconstruction, operation and maintenance of the region's transportation system.

Introduction

The New England Transportation Consortium (NETC) members spend a considerable amount of time and resources on pavement surface condition data collection in support of a wide range of reporting and decision-making functions, including evaluating the condition of the network; selecting sections for preservation, maintenance, and rehabilitation plans; and optimizing expenditure of funds through use of a Pavement Management System (PMS).

Since pavement networks represent a large-scale asset and the associated maintenance and rehabilitation budget is significant, data quality is critical to the stated functions. The data quality management plans (DQMPs) mandated by Congress in 23 CFR 490.319(c) provide a means to assist in achieving high-quality data, but the specific steps are not clear, which has resulted in plans that vary in their level of sophistication amongst the New England states. Accordingly, this project was undertaken to provide guidance on collecting quality pavement surface condition data.

Methodology

A review of existing DQMPs was undertaken to better understand the strengths and weaknesses of the New England transportation agencies data quality management practices. Numerous interviews were ~~also~~ held with transportation agency staff, with a focus on the identification and selection of control sites needed to establish the reference values for certification, validation, or verification of pavement surface data collection equipment. The resulting information was used to develop:

- Common terminology to facilitate clear and concise data quality-related communications between the NETC member states;
- Guidelines and supporting tool for the identification and selection of control sites, which consider site requirements and characteristics; and
- Recommendations for control site inter-agency sharing options to spread the certification, validation, and verification resource requirements amongst the New England states.

Conclusion

High-quality pavement surface condition data are of paramount importance to the NETC members; as the adage goes, "*garbage in, garbage out*." At the heart of establishing data quality—accuracy, precision, and repeatability—is the reference measurements obtained at certification, validation, and verification control sites. Consequently, much of the project effort focused on the identification, selection, and sharing of control sites within the New England region. However, other recommendations and guidelines were developed, such as certification, validation, and verification frequency; accuracy and repeatability acceptance limits; and error resolution.

Implementation

Adoption of the resulting recommendations and guidelines will lead to several benefits. A common terminology will improve data quality-related communications. An improved control site identification and selection process will lead to better reference data for data quality characterization, while inter-agency sharing of control sites will lead to improved regional efficiencies. Ultimately, these recommendations and guidelines will assist with compliance with the federal-mandated DQMPs data reporting requirements.