DRISI
Caltrans Division of Research, Innovation and System Information

Research Notes

Transportation Safety & Mobility

TPF-5(384) - Exploring Non-Traditional Methods to Obtain Vehicle Volume and Class Data

Develop and deploy methods and approaches to obtain vehicle volume and classification data using passive data-based, nontraditional methods.

AUGUST 2022

Project Title:
Exploring Non-Traditional Methods to Obtain Vehicle Volume and Class Data- TPF-5(384)

Task Number: 3311

Start Date: September 1, 2019

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WHAT IS THE NEED?

Pavement embedded sensors such as loops and piezos, along with roadside-based radar/light devices and other fix point installed detection systems offer the most reliable traffic volume and classification data. However, it is also known that such point based traditional detection systems are expensive to install and operate.

New technologies and new data seeming unrelated to vehicle travel have been explored successfully to characterize vehicle travel. It has been proven that such new passively collected data are successful in characterizing traffic patterns.

One of the most successful initiatives is the National Performance Management Research Data Set (NPMRDS). The NPMRDS data, which is based on a wide range of non-traditional data, offers vehicle travel time on all the national highway systems in a timely manner and with great reliability, accuracy, and precision. There is a need to develop and deploy methods and approaches to obtain vehicle volume and classification data utilizing these passive data-based nontraditional methods.

WHAT ARE WE DOING?

California Department of Transportation (Caltrans) is participating in this pooled fund study that will develop non-traditional methods and approaches to collect and estimate Annual Average Daily Traffic (AADT) by vehicle type. They will validate the AADT from the newly developed non-traditional methods with the Federal Highway Administration's (FHWA's) Travel Monitoring Analysis System data, Highway Performance Monitoring System data, and other ground truth sources to determine data accuracy and precision of the data and will provide levels of data accuracy and output formats.

WHAT IS OUR GOAL?

The goal is to develop and deploy methods and approaches to obtain vehicle volume and classification data utilizing passive data-based, nontraditional methods rather than using the traditional detection systems that are expensive to install and operate.

WHAT IS THE BENEFIT?

The passive data-based non-traditional method, once validated, could reduce costs and improve efficiency for Caltrans to collect AADT data, including vehicle class. It could also reduce risks to employees and contractors who go out to place sensor devices in and on the roadways to collect this data in the traditional way.

WHAT IS THE PROGRESS TO DATE?

-FHWA researched and completed work for the next phase of the Pool Fund work to be bid through the BPA contract.

- FHWA will continue with the contract award and next phase of the Pool Fund.

IMAGES

https://pooledfund.org/Details/Study/636