

Research Notes

Program Steering Committee (PSC): Pavement

JUNE 2014

Title: PPRC 11 SPE 4.39: Monitoring of Selected Quieter Pavement Test Sections

Task Number: 2600

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Completion Date: September 30, 2014

Task Manager:

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TITLE:

Monitoring of Selected Quieter Pavement Test Sections

WHAT IS THE NEED?

This task is a sister task of the Task 2375, separated to distinguish the additional support funding arranged from the Division of Maintenance in late 2011. All contents of this Research Notes are same to those of Task 2375.

Traffic noise has become a growing concern and the public is expecting 'quieter pavement' be constructed to abate traffic noise levels. To respond to the public expectations, Caltrans initiated Quiet Pavement Research (QPR) program earlier in 2007, and has conducted various studies under the QPR program on the identification and implementation of quieter pavements through extensive field and laboratory studies. This task is a part of continued efforts of the Caltrans QPR program.

WHAT ARE WE DOING?

The study focuses on continuing the evaluation of pavement noise performance on selected quieter pavement test sections in California including bridges. This will be conducted through sub-tasks on the following three topics:

1. Noise Equipment – Install new equipment (wide spot laser) to better collect profiles on longitudinally textured surfaces. Investigate the effects of air and pavement temperature and tire characteristics on measured noise level in terms of OBSI (On-board Sound Intensity). Conduct an OBSI Rodeo in the greater Sacramento area.
2. Noise OBSI – Modify the existing list of selected quieter pavement test sections to produce a more balanced experiment design of texture types, ages, traffic levels, and rainfall. Collect OBSI and longitudinal profile, and condition data for the revised list of quieter pavement test sections for two years.
3. Noise Field – Select a subset of the list of quieter pavement test sections for surface and materials characterization. Schedule traffic closures and conduct field measurements for characterization.

WHAT IS OUR GOAL?

The objective of this task is to continue monitoring the pavement noise performance with time on selected quieter pavement test sections. The collected data will be used to further develop pavement noise models for use in the pavement management system, life cycle cost analyses, and by district and headquarters managers and engineers.

WHAT IS THE BENEFIT?

The study will bring more extensive quieter pavement database, which will be valuable to further related investigations, such as on the time trend of quieter pavement performance or the effect of pavement characteristics on the noise performance. These data can also be used to identify the most effective quieter pavement types in California and to develop recommendations for Caltrans practice for improving quieter pavement performance.

WHAT IS THE PROGRESS TO DATE?

The tasks are near completion. All tasks for field work and data analysis are completed, and the research team is preparing final reports that will be delivered on schedule. The efforts for monitoring quieter pavement performance will be continued through the next PPRC contract.