

State Planning and Research Program Annual Report

PROJECT TITLE: Pavement Surface Characteristics Rehabilitation MnROAD Study. TPF 5 (134).

OBJECTIVES: To demonstrate and field-validate some lab-tested unique diamond grinding configurations that optimize noise, Friction, Texture and Ride Quality

PERIOD COVERED: Jan to March 2010. **STATUS :** Active.

LEAD STATE: Minnesota

PARTICIPATING AGENCIES: Mn/DOT, TXDOT, FHWA, ACPA, IGGA.

PROJECT MANAGER:

Bernard Izevbekhai

SP&R PROJECT NO:

TPF-5 (134)

PROJECT IS:

☐ Planning
☒ Research &
☐ Development

LEAD AGENCY:

Mn/DOT

PRINCIPAL INVESTIGATOR:

W. James Wilde, PhD, P.E.

ANNUAL BUDGET:

\$275,000 for 5 years

PROJECT EXPENDITURES TO DATE:

Non-Federal Match.
 In-Kind Cost of Grinding And Noise Testing On Cell 37
 MnRoad. As A Proof Of Concept.
 Full Width Grinding On Cells 7-8 MnRoad Mainline I-94
 Mn/DOT Initial Testing, Mn/Dot Rodeo (June 2008)
 Spring Noise Texture, Ride Friction Measurements
 Consultant Appointed For Data Analysis And Reporting
 Strategies For Additional Testing
 Testing And Monitoring of Cell 9
 Draft Brief on cell 9
 Construction Report 7 8 & 9.
Spring OBSI testing (Mn/DOT)
Spring Ride Quality testing (Mn/DOT)
Publication of Task 1 (Jim Wilde) (MSU)
Completion of Draft Report on SPPB Tests on I-94 and
MnROAD Cells (HDR)

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WORK COMPLETED:

- ACPA / IGGA performed the Grinding of 3 configurations at MnROAD Cell 37 for a proof –of – Concept and Preliminary On-Board -Sound –Intensity (OBSI) pre and post grind measurements on the 3 configurations + control. Mn/DOT performed Ride Friction, and Texture measurements on the same pre and post grind configurations.
- Memorandum of Understanding with Diamond Surface Incorporated to perform the Diamond Grinding Full width on cell 7 and 8 MnROAD.
- Measurements of Surface Characteristics parameters on the MnROAD Low volume Road
- Actual grinding of the Mainline cells 7 and 8 to the current and Innovative grinding configurations.
- Pre-grind Measurements for the MnROAD Mainline
- Grinding of Cells 7 and 8 full Width by Diamond Surfaces Inc.
- Initial Post Construction Ride texture friction Ride measurement by Mn/.DOT
- Draft Construction (Grinding Report for cells 7 and 8 Innovative Grinding & Conventional configurations)
- Development of Limited Scope of Consultant Activity for MnSCU Mankato
- Mn/DOT Initial Testing, Mn/DOT Rodeo (June 2008)
- Spring Testing Noise texture, Ride friction Measurements
- Consultant (Minnesota State University, Mankato) Appointed for Data Analysis and Reporting. Principal Investigator is W. James Wilde, PhD.
- MnROAD Cell 9 Ultimate Grinding Cell Created Ground and Tested.
- Spring Testing (Texture ASTM E-965, E-2157, Friction GN & FN, IRI, OBSI)
- Proposal to Conduct comprehensive evaluation (OBSI, CPB, SPB) on a Real Roadway. (Prescott WI or Monticello TH 94 MN) Estimated to Cost \$62,000. (\$20,000 Approved from by the Pooled Fund) Contract with HDR executed.
- OBSI and SPB in Progress near Hasty MN. The 1000-ft section is ground and east of that section an unground portion is being evaluated.
- Successful Web meeting on June 1 2009. Plans for a RODEO discussed but not yet done.
- Analysis of Friction Ride and OBSI over time Presented by W.J. Wilde
- Omnibus Cell 7 8 & 9 Report
- Mn/DOT Transtec Rodeo on Cells 37 7,8, 9 and others.
- OBSI and SPB in Progress near Hasty MN. The 1000-ft section is ground and east of that section an unground portion is being evaluated. Draft SPB Report Review.
- Summer 2009 Measurements
- Fall 2009 Measurements
- **Statistical Pass Bys Testing Completed (HDR).**
- **Statistical Pass Bys Testing Completed (HDR).**
- **Draft report on Statistical Pass Bys Testing Completed (HDR).**
- **Spring testing by Mn/DOT OBSI Ride and texture (Mn/DOT).**

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT Quarter:

- Continuous monitoring
- Annual Report
- Final Report on SPB

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STATUS AND COMPLETION DATE:

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| <ul style="list-style-type: none">• Project is on schedule. Consultant Task 1 Draft report Completed• Data Analysis (OBSI Friction, texture , IRI)• Can be completed On Schedule |
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