

**State Planning and Research Program
Quarterly 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: April –June 2009

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

PROJECT MANAGER:

Bernard Izevbekhai

LEAD AGENCY:

Mn/DOT

PRINCIPAL INVESTIGATOR:

W. James Wilde, PhD, P.E.

SP&R PROJECT NO:

TPF-5 (134)

PROJECT IS:

Planning
 Research &
Development

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

State Planning and Research Program Quarterly Report

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
- 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

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Consultants Construction And First Year Report.
- Pooled Fund Meeting: Strategies For Further Testing And Initiatives
- OBSI Mini Rodeo Mn/DOT And Transtec Results Available.
- Additional Monitoring Innovative Grind Cell (Cell 9 MnRoad) Providing Improved Friction Ground In October 2008
- Additional Testing (Mn/DOT) & Continuous Monitoring
- Meeting June 1 2009
- Summer Monitoring
- Conduct comprehensive evaluation (OBSI, CPB, SPB) on a Real Roadway. (Prescott WI or Monticello TH 94 MN) Estimated to Cost \$62,000. (\$20000 committed by the Pooled Fund).
- Study will grind 4 adjacent lanes, 2 lanes each direction (1000 ft or 4000 lane-ft)

**State Planning and Research Program
Quarterly Report**

STATUS AND COMPLETION DATE:

- Project is on schedule. Consultant Task 1 Draft report Completed
- Data Analysis (OBSI Friction, texture , IRI)