**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:** July to Sept 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
- [X] 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
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 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 Transect Rodeo on Cells 37 789 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
### 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)
- Completion of SPB in 4 MnROAD Cells and Final Report on TH 94 Test Section

### STATUS AND COMPLETION DATE:
- Project is on schedule. Consultant Task 1 Draft report Completed
- Data Analysis (OBSI Friction, texture, IRI)
- Can be completed On Schedule