## 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
October to Dec 2010.

## STATUS
Active.

## LEAD STATE
Minnesota

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

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<tr>
<th>PROJECT MANAGER</th>
<th>SP&amp;R PROJECT NO</th>
<th>PROJECT IS:</th>
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<tr>
<td>Bernard Izevbekhai</td>
<td>TPF5-(134)</td>
<td>Planning</td>
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## LEAD AGENCY
Mn/DOT

## PRINCIPAL INVESTIGATORs
(1) Data Analysis, Rolling Resistance
- W. James Wilde, PhD, P.E. MSU
- Jerzy Ejsmont DSc. Tech University of Gdansk, Poland

(2) Statistical Pass By
- Tim Casey (HDR) Inc

## PROJECT MANAGER
Bernard Izevbekhai

## ANNUAL BUDGET
$275,000 for 5 years
+$45000 for Rolling Resistance

## 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 1-94
- 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
- Spring OBSI testing
- Spring Ride Quality testing
- Publication of Task 1 (Jim Wilde)
- Completion of Draft Report on SPPB Tests on I-94 and MnROAD Cells
- Completion of HDR SPPB /Mn/DOT OBSI Report.
- Development of Rolling Resistance Initiative Assistance with Technology Deployment: Mn/DOT Metro, Mn/DOT District 1 Duluth Projects
- Summer OBSI, Ride Texture and Friction measurement
- Fall OBSI, Ride Texture and Friction Measurement
- Test Strip #5 Ground on Cell 37. Innovative with Improved friction.
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.
- Statistical Pass Bys Testing Completed.
- Draft report on Statistical Pass Bys Testing Completed.
- Spring testing by Mn/DOT OBSI Ride and texture.
- Final Statistical pass-by report Submitted for Publication.
- Test Strip #5 ground on cell 37.
- Cell 71 ground innovative Driving and conventional passing.
| State Planning and Research Program  
<table>
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<tr>
<th>Annual Report</th>
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<tr>
<td><strong>SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT Quarter:</strong></td>
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<tr>
<td>• Continuous monitoring</td>
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<td>• Final Report on SPB</td>
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<td>• Rolling Resistance Contracts</td>
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<td><strong>STATUS AND COMPLETION DATE:</strong></td>
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<tr>
<td>• Project is on schedule. Consultant Task 1 Draft report Completed</td>
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<td>• Data Analysis (OBSI Friction, texture, IRI)</td>
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<td>• Can be completed On Schedule</td>
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