

<b>MATERIALS AND ROAD RESEARCH SECTION RESEARCH PROJECT WORK PLAN</b>							
TITLE OF PROJECT: <p style="text-align: center;"><b>FHWA Joining the Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in Hot-Mix Asphalt Pavements (MnROAD Study) TPF-5(153)</b></p>							
IS THIS A RESPONSE TO A PROBLEM STATEMENT? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES IF YES, STATE NAME OF CONTACT PERSON.							
<b>PRINCIPAL INVESTIGATOR:</b> Thomas Wood (Mn/DOT Research) Minnesota Department of Transportation Office of Materials and Road Research 1400 Gervais Ave N Maplewood, MN 55109		TEL: (651) 366-5573 FAX: (651) 366-5616					
TOTAL BUDGET: <b>\$6,000</b>		TOTAL BUDGET PERIOD:					
<table border="0"> <thead> <tr> <th style="text-align: left;"><u>FUNDING SOURCES</u></th> <th style="text-align: left;"><u>AMOUNT</u></th> </tr> </thead> <tbody> <tr> <td>FHWA Funding</td> <td>\$6,000</td> </tr> </tbody> </table> <p><i>* 80-20 funded project using the original study funding with matched with 75K Local Road Research Board (State) funding. This federal funding will be used to join the pooled fund study at the same cost at the cost of the construction of the chip seal placed in September 2009.</i></p>		<u>FUNDING SOURCES</u>	<u>AMOUNT</u>	FHWA Funding	\$6,000	START DATE: 9/1/2009 END DATE: 12/21/2009 PROJECT LENGTH (MONTHS): 48 <i>Remaining time for the pooled fund study TPF-5(153)</i>	
<u>FUNDING SOURCES</u>	<u>AMOUNT</u>						
FHWA Funding	\$6,000						
<b>KEY PERSONNEL</b>							
<b>MnROAD Operations Engineer</b> Benjamin Worel <a href="mailto:Ben.Worel@state.mn.us">Ben.Worel@state.mn.us</a> Mn/DOT Research Engineer - Maplewood Lab		<b>FHWA Technical Contact</b> Robert Orthmeyer <a href="mailto:Robert.Orthmeyer@dot.gov">Robert.Orthmeyer@dot.gov</a> FHWA					
		<b>Administrative Liaison</b> Bruce Holdhusen <a href="mailto:Bruce.Holdhusen@state.mn.us">Bruce.Holdhusen@state.mn.us</a> Mn/DOT Research Services - Mn/DOT Central Office					
TECHNICAL LIAISON: (Check one electronic approvals accepted) Work Plan Approved <input type="checkbox"/> Work Plan Approved with Changes Noted <input type="checkbox"/> Work Plan Not Approved <input type="checkbox"/>		SIGNATURE – FHWA  _____ Date Phil Forst					
PRINCIPAL INVESTIGATOR:  I agree to accept responsibility for the scientific conduct of this project and to provide the required progress reports.		SIGNATURE – Principal Investigator  _____ Date Thomas J. Wood					
MANAGER, ROAD RESEARCH SECTION:  I hereby certify sufficient staff time will be scheduled for the Principal Investigator to complete the research as outlined in the attached work plan.		SIGNATURE – Manger, Road Research Section  _____ Date Maureen R. Jensen					
DIRECTOR, RESEARCH SERVICES SECTION:		SIGNATURE – Director, Research Services Section  _____ Date Linda K. Taylor					

**RESEARCH PROJECT WORK PLAN**

**KEY WORDS**

Hot Mix Asphalt, MnROAD, Chip Seal, Profiler, Surface Texture

**DESCRIPTION**

MnROAD is currently working with a number of research projects that utilize test cells constructed on both the mainline and low volume roadway. We have new and rehabilitation surfaces currently at MnROAD but do not have any chip seals to enhance our current research. The following studies would benefit from a chip being placed on MnROAD Low Volume Road (cell 27).

- Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in Hot-Mix Asphalt Pavements (MnROAD Study) TPF-5(153) currently is underway and is in the RFP process to hire a consultant to do the research for this pooled fund study. MnROAD has built test cell-24 on its low volume road to provide data to this study. A fog seal will be placed every year at 100’ intervals over the next five years to study the effects of aging with this sealant including the effects of traffic and a non-trafficked lanes. The addition of this Chip seal will allow the pooled fund states and consultant more options/ more information on this topic with the addition of this 3 year old test cell that received a chip seal at the “standard” accepted time. The pooled fund states have approved the use of the funding from this pooled fund study to place this surface treatment and allow FHWA to reimburse the \$6,000 back into the study.
- FHWA profiler comparison efforts being developed under Robert Orthmeyer is the primary reason we were able to develop a funding to provide a chip seal section at MnROAD. His efforts are looking at a number of different types of surfaces for both concrete and hot mix asphalt roadways. MnROAD has almost every type of surface needed for this study but a bituminous chip seal and longitudinal concrete tined surface. By providing funds to the pooled fund listed above we were able to construct the chip seal on the low volume road.
- This chip seal will also help the Hot Mix Asphalt surface characteristics study MPR-6(029) because it will add unique surface type that MnROAD previously could not provide insight into. Now after the placement of this chip seal the study will be able to include the data in its comparisons on how surface texture, friction, and noise interact.

**IMPLEMENTATION**

*What methods, procedures, products, and/or standards should change as a result of this research project?*

*What are the specific benefits of this change(s), why would this change(s) be important, and how can these benefits be measured?*

1. Development of better specifications related to understanding when surface treatments should be placed based on the factors that act on our pavements related to aging. When is the right time to place surface treatments? Pooled fund TPF-5(153) work plan outlines the benefits and implementation.

Key Implementation Contacts:

- State Pooled Fund Technical Contacts
- Jerry Geib, Mn/DOT Pavement Design Engineer

2. Development of better specification related to measurement of ride. This includes all many types of equipment and surface types which are used a pay factors with the contractors and as a primary factor how our pavement management recommends which roadway is a priority for funding in upcoming years. FHWA efforts in developing a better ride specification will benefit anyone who uses ride.

Key Implementation Contacts:

- Robert Orthmeyer, FHWA
- Bernard Izevbekhai, Mn/DOT Research Engineer
- Jerry Geib, Mn/DOT Pavement Design Engineer
- other DOT Pavement Offices

3. Development of better specification related to the surface types we construct related to surface texture, friction, and noise for Hot Mix Asphalt pavements. Should extra money be spent on one surface type or another and how long of a benefit is achieved when different surface types are used? Hot Mix Asphalt surface characteristics study MPR-6(029)

work plan outlines the benefits and implementation and attached to this document is a list of some of the more common routine measurement that are being done at MnROAD.

Key Implementation Contacts:

- State Pooled Fund Technical Contacts
- Jerry Geib, Mn/DOT Pavement Design Engineer

**TASKS**

Task 1 – MnROAD Data and Access to the Facility

The pooled fund study participants and Mn/DOT will provide FHWA access to the data collected and the MnROAD test facility by joining Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in Hot-Mix Asphalt Pavements (MnROAD Study) TPF-5(153) pooled fund study. FHWA will provide surface profiler reports and any data collected on MnROAD’s test cells to be placed into the MnROAD database.

Deliverable: MnROAD Data and Access to the test facility

Duration: 48 Months

DETAILED BUDGET FOR ENTIRE PROJECT	
<b>SALARY:</b>	DOLLAR AMOUNT (OMIT CENTS)
NAME/ROLE	Total
No Salary to this effort – MnDOT will donate its time to this effort.	0
<b>TOTAL SALARIES</b>	<b>0</b>
<b>DIRECT COSTS:</b>	
CONSULTANT/CONTRACTOR COSTS (See Note <sup>(1)</sup> )	6,000
Join Pooled Fund Study	
EQUIPMENT (ITEMIZE)	0
SUPPLIES	0
TRAVEL (In-state only)	0
OTHER EXPENSES	0
<b>TOTAL DIRECT COSTS</b>	<b>6,000</b>
<b>TOTAL PROJECT COSTS</b>	<b>\$ 6,000</b>

Note<sup>(1)</sup>: Contracts for consultants/contractors will be processed by P.I. through Consultant Services and encumbered directly from LRRB accounts. Requisition for contract is sent through Research Services for coding of accounting information

**BUDGET BY TASK:**

Task #	Name	Duration, months	Task Value
1	Join Pooled Fund Study to gain access to the MnROAD facility	48	\$6,000
Total			\$6,000

\* 2009 FHWA amendment funding addition

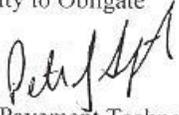
## 2009 FHWA Memorandum to Support TPF-5(153) - Dated September 18, 2009



# Memorandum

Subject: **ACTION:** Authority to Obligate

Date: September 18, 2009

From: Peter J. Stephanos   
Director, Office of Pavement Technology

In Reply Refer To: HIPT

To: Mr. Derrell Turner  
Division Administrator  
St. Paul, Minnesota

This memorandum allocates \$6,000 to support the Minnesota Department of Transportation (DOT) project TPF-5(153), Optimal Timing of Preventive Maintenance for Addressing Environmental Aging in Hot-Mix Asphalt Pavements (MnROAD Study) for the purpose of conducting a research and development project on the effects of a chip seal on asphalt pavement. This research and development project also supports the development and placement of one of the test sections required for the evaluation of potential reference devices, a chip seal section at the MnROAD facility.

These funds are specifically allocated for this effort and may not be used for other purposes without prior approval. Please coordinate progress of this activity with this office.

By copy of this memorandum we are requesting that the Finance Division (HABF) make \$6,000 available for obligation to Minnesota DOT. These funds should be obligated through the Fiscal Management Information System (FMIS), using FMIS program code 4L10 and paid through the State's current billing. The Delphi code is 15X0432060. The fund year is 2009. The State's obligation limitation will be increased by the amount of this allocation. These funds should be obligated as soon as possible.

Mr. Robert Orthmeyer is the Headquarter contact for this activity, and he can be reached at (708) 283-3533. Local contacts are Mr. Phil Forst, of the Minnesota Division Office, and Mr. Ben Worel of Minnesota DOT. Please send a copy of the executed project agreement, the detailed work plan, progress reports, and the final report to Mr. Orthmeyer, Office of Technical Services Resource Center.

