



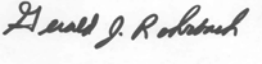
Minnesota Department of Transportation

MEMO

Office of Materials & Road Research
Mailstop 645
1400 Gervais Avenue
Maplewood, MN 55109

DATE: March 20, 2002

TO: District Engineers (DISTENG), District Materials Engineers, District State Aid Engineers (DSAE)
VIA Groupwise

FROM: Gerald J. Rohrbach, Director 
Office of Materials & Road Research

PHONE: 651-779-5590

SUBJECT: Mn/PAVE – Mechanistic-Empirical Thickness Design Procedure for Flexible Pavements.

Through cooperative efforts with the University of Minnesota and the Local Road Research Board, the Minnesota Department of Transportation has developed a software program entitled MnPAVE. MnPAVE is a mechanistic-empirical design procedure based on structural analysis of a layered pavement system and is intended for use by state and local agencies. It is now time to move into the training/implementation phase and begin using the design procedure on a trial basis.

MnPAVE has several key advantages over our current Mn/DOT design procedures. These include the capability to 1) adapt to different distress modes, 2) implement better materials tests, 3) adapt to changing load limits and configurations, and 4) achieve agreement between structural and material design. In short, MnPAVE will allow agencies to design and construct more cost-effective flexible pavements.

MnPAVE currently addresses the structural thickness design of new or reconstructed flexible pavements only. Future enhancements will be made to allow MnPAVE users to consider flexible pavement rehabilitation methods. The current program is a beta version and will be updated on a periodic basis based on feedback from users and pavement performance data.

Local Road Research Board Investigation 747 (Best Practices for the Design and Construction of Low Volume Roads), of which MnPAVE is an integral part, is nearly complete. The purpose of that study is to 1) develop a best practices manual for flexible pavement design and construction and 2) develop MnPAVE to address low-volume road design needs.

Training on the use of the program will begin in April 2002 and sessions will be held in each District. Please forward this message to local agencies and consultants in your

District. To facilitate the hands-on portion of the training we would like to keep the class sizes small (25 people at most). We also ask that participants bring their own laptop computers. Unfortunately we may not be able to serve every person that wants training the first time around. We can certainly arrange for subsequent training sessions for those that were not able to attend.

Attached are instructions on how to obtain the design program and associated documentation, training session agenda, what to bring, and list of instructors/contacts. Please try to have the program installed to your machines prior to the training date in your District. Participants are also asked to bring examples of their own pavement design problems. There will be time during the workshop to work on these.

For questions on operation of the program please contact Dr. Shongtao Dai, Research Operations Engineer at 651 779 5218. For questions on training and pavement design issues, please contact Dave Van Deusen, Pavement Design Engineer at 651 779 5564.

Thank you in advance for your help in this effort.

Cc:	ADEs	Mark Snyder, CPAM	Rich Wolters, MAPA
	Joseph Meade	Glenn Engstrom	John Garrity
	Dave Van Deusen	Dr. Shongtao Dai	Dave Janisch
	Tom Nelson	Dr. Gene Skok, U of Mn	Doug Schwartz
	Bruce Tanquist	John Siekmeier	Bill Lohr, FHWA
	Jonette Kreideweis	George Cephress	George Cochran
	Roger Olson		

MnPAVE Training Agenda

1. Brief Demo of MnPAVE (All) 9:00-9:10
2. Introduction (20 min, Dave) 9:10-9:25
3. Fundamentals of M-E Design (20min, Dai) 9:25-9:40
4. Climate, HMA material and transfer function calibration (30 min, Bruce) 9:40-10:10
>Break (10:10-10:30)
5. Aggregate Base and Subgrade Soil Properties and Laboratory Testing (30 min, John and Dai) 10:30-11:00
6. Traffic (30 min, Tom Nelson) 11:00-11:30
7. Best Practices for Pavement Design (30 min, Gene) 11:30-12:00
>Lunch on your own 12:00-1:00
8. Demo of MnPAVE (All) 1:00-1:30
9. MnPAVE Workshop (All) 1:30-2:30

Instructors/Contact Information

Name - Organization/Office	Phone	Email
Bruce Tanquist, Mn/DOT Materials and Road Research	651 779 5333	bruce.tanquist@dot.state.mn.us
Dr. Shongtao Dai, Mn/DOT Materials and Road Research	651 779 5218	shongtao.dai@dot.state.mn.us
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Dr. Gene Skok, University of Minnesota Civil Engineering Department	612 626 1341	skokx003@umn.edu
Dave Van Deusen, Mn/DOT Materials and Road Research	651 779 5564	dave.vandeusen@dot.state.mn.us

Instructions for Obtaining MnPAVE and Training Documentation

Training materials may be downloaded from the Materials and Road Research website at <http://www.mrr.dot.state.mn.us>. You will find the following items:

- MnPAVE install program. This is an install program that performs the installation onto your computer. The user will need a password (“mnroad”) to complete the installation.
- MnPAVE User’s Guide.
- Design examples.
- Training session slide presentations.
- LRRB Investigation 747 Executive Summary.

What to Bring

- We ask that participants bring their own laptop computers so that there is at least one computer per three participants.
- If possible, please load and install MnPAVE on to the computer you will be using prior to the training. In the event this is not possible we will be providing CDs at the training. Your computer must have a CD reader in order to install the software.
- Bring one or two project examples to work on in the workshop.

Training Schedule

April 2	District 8
April 9	District 7 (location TBD)
April 11	Metro (location TBD)
April 16	District 2
April 18	District 3
April 30	District 6
May 9	District 1
May 21	District 4