New sign manual to arrive soon

After years of work the Federal Highway Administration has nearly finished rewriting the nation’s road sign bible — the Manual on Uniform Traffic Control Devices (MUTCD). An almost-final version is available online. Paper copies will be printed in late spring when errors are corrected.

In Wisconsin the MUTCD will not take effect until after the Department of Transportation officially adopts it and puts out the Wisconsin Supplement. “It will probably be about a year until we formally adopt it,” says Pete Rusch, Traffic Engineer at WisDOT. Also about a year away is the new book on how to lay out and manufacture the signs.

The manual’s many changes reflect new technology, research and conditions. There are new signs for bike lanes, speed humps and traffic circles, for example, and guidance on accessible pedestrian signals that meet criteria in the American’s with Disabilities Act. A new section, Part V, addresses traffic-control devices for low volume roads.

An April T.I.C. workshop, Local Road Signing, will introduce participants to the book, its significant changes, and timetables for adopting them. “We want feedback from workshop participants,” says Bill Bremer, Wisconsin Coordinator for FHWA. “WisDOT will use the information when they work on the state Supplement.” (See the Calendar on page 4 for workshop details.)

What’s new in the MUTCD?

The new manual is more user-friendly and has many more charts and pictures. Especially helpful are new headings that organize and clarify which sections are mandatory, recommended or optional.

Standard — Designates required, mandatory, or specifically prohibited practices.

Guidance — Recommended, but not mandatory, practices in typical situations.

Option — For permitted practices having no requirement or recommendation.

Support — For informational statements.

Other changes and additions include:
- Elimination of the term “warrants” for Stop and Yield signs.
- Changes in advance warning crosswalk signs.
- New requirements and guidance for centerline and edgeline pavement markings.
- New guidance for street name signs.
- Signs and markings for speed humps and traffic circles.
- Standards and guidance on signs and markings for bike lanes, bike paths and shared use paths.
- Guidance on the use of accessible pedestrian signals.

You can read and download sections of the new MUTCD in Adobe Acrobat from the Web: http://mutcd.fhwa.dot.gov/kno-millennium.htm See the Calendar on page 4 for workshop information.

Signing on with inventory programs

Keeping road signs in shape is important for public safety and legal liability. To help with the job, some streets and highway agencies are using computer sign inventories.

“We’re using it primarily to identify what have out there and to help with budgets,” says Karl Manthe, Street Superintendent for the City of Stoughton Streets Department. The city has 1280 signs on its 57 miles of streets. Until last fall when they got the Sign View program working, crews recorded sign conditions in notebooks. Now they take a laptop computer out in the truck with them and record repairs and replacements at each sign job.

“It gives you a good idea of what you’ve got for signs,” says Manthe. “It helps when you are asking for more money if you can say: ‘gosh we have this many signs out there and here’s the percentage we have to replace and it will cost this amount.’” It cost about continued on page 7

Inside

Idea Exchange: Plowing private driveways too costly .................. 2

T.I.C. welcomes Ben Jordan .................. 2

Superpave mix designs offer more options .................. 3

Calendar .................. 4

Resources .................. 4

Weaving geotextiles into road projects .................. 5

Crossroad Index Spring ’99-Winter ’01 .. 6

PASERWARE for Windows available in Spring .................. 8
Plowing private driveways too costly so town ends service

“We put time clocks in every vehicle and the driver would punch in and out for each private driveway,” says Dale Siebert, Town of Drummond road foreman. “In a nine hour work day we were only charging for four-and-a-half hours, and that was time we couldn’t spend doing other work.”

For years the Town of Drummond, which lies about 30 miles south of Ashland in Bayfield County, Wisconsin, had plowed about 250 private driveways and charged residents a flat rate. In 1990 the town board changed the policy to charging for the actual time spent plowing at the state reimbursement rate ($45/hour).

At the end of the 1990-91 season the Town Clerk reported that crews had spent 20 percent of their work time plowing private driveways. More than half of the time (76 out of 131 hours) was unbilled, wasted in traveling from drive to drive. Reports for the 1991-92 plowing year were similar.

“If we were a business, we would be going under real fast,” says Siebert. To pay for the unbilled travel time the town would have to charge $111/hour, they calculated, and that didn’t include the Clerk’s billing time. Also, continuing the service would require buying an additional front-end loader and hiring a full time employee.

The alternative was to discontinue plowing private driveways. A survey of local contractors showed that private services could handle the plowing, and, in fact, it would be a welcome opportunity for workers on seasonal lay-offs.

After a public meeting, where citizens expressed a wide variety of views—“everything from yelling and screaming to feeling it was a better way to manage the town’s money”—the Board ended the service.

“It helped considerably, cost-wise,” says Siebert. Equipment breakdowns and damage were much less. Trucks were no longer getting stuck in driveways or losing a mirror or communications antenna to low hanging tree limbs.

Operators were overjoyed. “It cut their stress levels in half because they were worried about people’s property,” says Siebert. “Also the number of complaint calls to the Town Chairman and Foreman at home at all hours of the day and night has gone to zero,” he says.

The no-driveway-plowing policy is part of the Town’s general winter road maintenance policy. It does allow for an exception when the private contractor can no longer push the snow back. Then the town will widen the driveway for a $10 minimum charge plus an hourly rate.

“It’s working very well,” says Siebert. “Most citizens feel they are getting plowed faster by contractors than when the town did it. The town is able to handle the work we have, we’re not competing with private business, and operators get to go home after a long day and get some rest at night.”

For a copy of Drummond’s Winter Maintenance Policy and clerk’s analysis, contact the T.I.C. using the form on page 7. To talk to Road Foreman Dale Siebert, call 715/739-6641.
Superpave mix designs offer more options

Standard specs for designing asphalt pavement mixes using Superpave designs are now available. Superpave mixes offer more options for traffic loads and temperature extremes than previous design systems.

Since October 2000 the Wisconsin Department of Transportation has required Superpave designs for all its asphaltic pavement. As a result, most state asphalt suppliers are geared up to deliver the new higher-tech materials for the spring 2001 construction season.

A chart prepared by the Wisconsin Asphalt Pavement Association helps simplify the mix design choice. For most local applications the main difference from the old spec system is that there are now two mix designs for the old Moderate Volume (MV) category. A different mix is recommended for major arterials, local business streets and medium industrial streets with heavier traffic conditions as measured in ESALs or Equivalent 18,000 pound Single Axle Loads.

“The main difference is that at the upper end of medium volume mixes we’re looking for more angular sands than before, getting a little more support out of the aggregate structure,” says Tom Brokaw Asphalt Aggregate and Soils Engineer at the WisDOT Bureau of Highway Construction.

With the chart and guidelines from WAPA it shouldn’t be too hard to spec a Superpave design. “You really don’t have to know the technical reasons behind the selections,” Brokaw says.

New binder grading system

There is a new system for specing binders, the liquid asphalt component of a pavement mix. Performance Grades have replaced Penetration Grades and Viscosity Grades and are based primarily on climate conditions.

For lower volume traffic classes there are two recommended Performance Grades: PG 58-28 and PG 64-22. The first number is the maximum pavement design temperature in degrees Celsius and the second is the minimum pavement design temperature. The maximum affects a pavement’s rutting resistance and the minimum affects low temperature cracking.

“Normally in Wisconsin we have been specing PG 58-28 which pretty much compares to a 120-150 penetration graded material that we used in the past,” says Brokaw. “We’ve found in some situations where there is a lot of traffic stopping and turning at intersections you can get depressions or scuffing at high temperatures. So we are trying to bump up that high temperature end by adding polymers to the asphalt.” The PG 64-22 grade (which is close to 85-100 penetration type) stays stiffer at higher temperatures to resist rutting.

Choosing a PG category also depends on whether the surface will be laid on a new base or existing concrete or asphalt. Since an old pavement will produce reflective cracking in the new surface, there is currently no proven benefit in modifying the binder to resist cracking at lower temperatures.

Adding polymers raises the cost of the binder. Although it varies depending on the selected range, WisDOT has been paying $30-$70 more per ton of liquid asphalt for polymers on top of about $160 per ton for unmodified (or natural) binder. To save money, Brokaw recommends using an unmodified binder on the lower layer because the maximum temperatures stay cooler and minimums don’t get as cold in that layer.

“Locals should also keep in mind that you don’t want to use too many different binders on a project because it costs the contractor more to have multiple storage tanks on site,” says Brokaw. He recommends a maximum of two per project.

Current specs are on the WAPA web page: www.wispave.org. Use the form on page 7 to request WAPA’s handy design guide card from the T.I.C.

**WAPA DESIGN GUIDE UPDATE**

<table>
<thead>
<tr>
<th>Traffic Class</th>
<th>Design Daily ESAL*** Range</th>
<th>Old Spec</th>
<th>Superpave Type</th>
<th>Typical Examples of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>&lt;1</td>
<td>LV</td>
<td>E-0.3</td>
<td>• Residential driveways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LV</td>
<td>E-0.3</td>
<td>• Parking lots, 50 stalls or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LV</td>
<td>E-0.3</td>
<td>• School areas and playfields</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LV</td>
<td>E-0.3</td>
<td>• Seasonal recreational roads</td>
</tr>
<tr>
<td>II</td>
<td>1-5</td>
<td>LV</td>
<td>E-0.3</td>
<td>• Parking lots, more than 50 stalls</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LV</td>
<td>E-0.3</td>
<td>• Residential streets and low volume rural roadways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MV</td>
<td>E-1</td>
<td>• Collector streets and other roadways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MV</td>
<td>E-1</td>
<td>• Light industrial lots</td>
</tr>
<tr>
<td>III</td>
<td>6-50</td>
<td>MV</td>
<td>E-3</td>
<td>• Local Business Streets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MV</td>
<td>E-3</td>
<td>• Major arterial streets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MV</td>
<td>E-3</td>
<td>• Medium industrial streets/lots</td>
</tr>
<tr>
<td>IV</td>
<td>51-275*</td>
<td>MV</td>
<td>E-3</td>
<td>• Heavy truck terminals/truck stops</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MV</td>
<td>E-3</td>
<td>• Heavy industrial drives/lots</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MV</td>
<td>E-10</td>
<td>• Bus stops</td>
</tr>
<tr>
<td>V</td>
<td>276-1000**</td>
<td>HV</td>
<td>E-10</td>
<td>• TIA</td>
</tr>
</tbody>
</table>

*Note: Traffic Class IV under certain traffic conditions at the high end of the design daily ESAL range, i.e., heavy loads at slow speeds, lots of stop and go conditions; consideration should be given to changing the Superpave type or binder properties. Contact WAPA or your local WAPA contractor for more information.

**Note: Designs for extreme traffic conditions not covered by the table are available by contacting WAPA or your local WAPA contractor.

***Note: ESAL is defined as Equivalent 18,000 pound Single Axle Load
Calendar

T.I.C. workshops
Specific details and locations are in the announcements mailed to all Crossroads recipients. For additional copies, or more information, call the T.I.C. at 800/442-4615.

Asphalt Road Maintenance Learn how to best maintain your asphalt roads and get the latest information on which maintenance treatments extend pavement life. Learn about your options for asphalt pavement rehabilitation and the new WisDOT SuperPAVE mix designs.

Mar 7 Green Bay Mar 12 Tomah
Mar 8 Brookfield Mar 13 Cable
Mar 9 Barneveld Mar 15 Rhinelander

PASERWARE training Attend this course and you will receive the WINDOWS version of PASERWARE and learn how to use it. Specific training shows you how to develop a capital improvement program, project the results of street maintenance and improvement decisions, keep a history of projects, and report condition ratings to WisDOT. (Runs on Windows 95 or later. See story on page 8.)

Mar 22 Barneveld Mar 28 Cable
Mar 23 Brookfield Apr 2 Eau Claire
Mar 26 Green Bay Apr 3 Tomah
Mar 27 Rhinelander

Local Road Signing This workshop presents the changes in the new Manual on Uniform Traffic Control Devices (MUTCD) that will impact your signing, and describes when and how they take effect. You will see examples of new signs, learn how to use the new Manual, review basics of effective signing and marking, and hear about funding for safety improvements from Federal and state experts. Useful for those with responsibilities for local road signs, marking and safety improvements from Federal and state funding for signing, marking, and hearing about funding for safety improvements from Federal and state.

Apr 4 Green Bay Apr 10 Cable
Apr 5 Brookfield Apr 11 Eau Claire
Apr 6 Barneveld Apr 12 Tomah
Apr 9 Rhinelander

Flagger Instructor Training This course is for road supervisors and safety trainers who supervise or train flaggers for construction and maintenance operations. Participants will get the training and tools they need to properly train their own employees to be effective work zone flaggers. Participants will receive an instructors training kit that includes the Flagger Training Instructors Guide, a professional quality training video, and 20 copies of the Flaggers Handbook.

May 8 Barneveld May 15 Cable
May 9 Brookfield May 16 Eau Claire
May 10 Green Bay May 17 Tomah
May 14 Rhinelander

UW-Madison Seminars
Local government officials are eligible for a limited number of scholarships for the following engineering courses in Madison. Fill in the form on page 7, call 800/442-4615 or e-mail tic@epd.engr.wisc.edu for more details.

Resources

Booklets
These booklets and material packets are available from the T.I.C.

WAPA Design Guide Update This pocket-sized quick reference card lists new Wisconsin SuperPAVE mix designs and asphalt cement specifications. It gives examples of typical uses and shows how new specs compare to older ones.

Geotextiles packet Includes applications booklet, WisDOT standard specs, EPA fact sheets on storm water management, and geotextile samples. Supplies limited.


Videotapes
Videotapes are loaned through County Extension Offices at no cost.

NEW! Gravel PASER, T.I.C., 15 min., #18385. Describes types of common distress in gravel roads and how to rate gravel roads using the Gravel-PASER Manual. Local agency officials can use this video to refresh their skills at evaluating and rating gravel roads in the field.


WEBSITES

The T.I.C. homepage offers workshops, publications, and video catalog, and lists transportation links: http://www engr wisc edu/centers tic/
The MUTCD Millenium Edition is online at http://mutcd fhwa dot gov/
The Wisconsin Asphalt Paving Association site includes a link to Wisconsin Department of Transportation’s SuperPAVE Specification: http://www wispave org/index2 html
Weaving geotextiles into road projects

Geotextiles can help with a wide range of road construction problems such as filtration, stabilization, reinforcement, and erosion control. It is very important, however, to select the right geotextile for the application and to install it correctly. One source of help is WisDOT specifications that identify the geotextile to be used in a specific application. The actual project conditions will determine the exact material that is appropriate. At a recent T.I.C. workshop, Rusty Payne, Soil Reinforcement Applications Engineer with SI Geosolutions, introduced the basics of geotextile use. Extra copies of workshop materials are still available.

Among geotextiles’ many uses are:

- separation between the subgrade and base on a paving project (similar to one shown in the Winter 2001 Crossroads Idea Exchange)
- moisture barrier between a new overlay and the old asphalt pavement
- separation around a drainage trench to keep the fines from plugging a sub-surface drainage system (French drain)
- erosion control, including, erosion control blankets, turf reinforcement mats, and silt fence
- soil stabilization, such as steep slopes and retaining walls

In Wisconsin geotextiles can be very useful when building a road over soft soils like clay muck. The right geotextile works as a separator and reinforcement between soft soils and gravel base material as well as helping stabilize embankments. They are especially useful given the state’s relatively large amount of rainfall and groundwater and the freeze-thaw cycles.

Erosion control is probably the most cost-effective use of geotextiles, Payne says. Cleaning up silt-choked streams, creeks, and dams is so much more costly if you don’t use it. “It’s much more effective than silt fence. Using silt fence is like catching the murderer after he’s done the damage.”

Temporary erosion control blankets (ECBs) hold soil particles down, keeping them out of silt fences. Permanent turf reinforcement mats (TRMs) hold soil in place while vegetation grows through the mat and permanently anchors the soil. TRMs allow vegetation to withstand higher velocity and higher water energies—up to 25 fps velocity. Without TRMs vegetation can only withstand about 5-6 fps velocity. “It lets us take concrete and rock off the job and put in more vegetation,” says Payne. Vegetation purifies water by absorbing pollutants. It allows surface water to recharge groundwater and reduces thermal pollution.

Common mistakes

Probably the most common mistake in using geotextiles is specifying the wrong product for a particular application, Payne says. You have to understand the capabilities of the geosynthetic. It can be complicated because they come in a wide variety of types and characteristics, including:

- Woven, like typical cloth, or non-woven, like felt fabric or like snow fence which is extruded and punched
- Fiber shapes with round and flat yarns in woven fabrics
- Materials such as polyester, polypropylene, straw materials, etc.
- Openings between threads providing filtration for various particles sizes
- Strength, stretch, and creep
- Special properties for special uses

“The best way is to learn through manufacturers and/or distributors,” says Payne “We’re pretty up front with where we are good and where we are not. We make many different types of products to fit different situations. You have to know their limits and qualities.” DOTs have standard specs for these products and geosynthetic associations have information too. The International Fabrics Association puts out an annual periodical, Geosynthetics Fabrics Report, which describes performance properties for all currently available products. Local American Society of Consulting Engineers (ASCE) chapters have a lot of information and can tap into the national library.

Most problems happen during installation. “People install it upside down and backwards,” says Payne. “It’s not hard to install, no more than changing the oil in your car, but you just need to understand how to install it.” Common mistakes include driving directly on the fabric with an end loader, and leaving too little overlap between fabric pieces or overlapping uphill so water can seep under the joint. Another problem is inadequate compaction over the geosynthetic.

“All manufacturers supply installation guidelines,” says Payne. “Inspectors should get those guidelines from the vendor and make sure the contractor is following them. If a contractor wants to change the installation procedures he should have cleared them with the vendor before he bid the job.”

In the end, though, it’s important to remember that geosynthetics have two jobs: keep the good material from mixing with the bad material and keep the water out or drain it away quickly. When they do these jobs well, you can save money by extending pavement life, preventing erosion, stabilizing embankments, and even building on marginal sites.

For more information, request the T.I.C. Geotextiles Workshop information packet (see Resources on page 4).
Crossroads Index

This index lists all articles in the past eight issues of Crossroads. Previous issues are indexed in Spring of odd-numbered years. To request copies of stories listed here, use the reader response form on page 7 or e-mail: tic@epd.engr.wisc.edu

Administration
Anticipating Y2K for roadway operations .................................. Su99
Overweight trucks cause costly road damage .............................. F00
T.I.C. Advisory Committee changes ........................................... F99

Bridges
Washing, sealing, sweeping, and spot painting extend bridge life .......................................................... Su99

Drainage
Good drainage lengthens road life ............................................. Sp00
Underdrains extend pavement life ........................................... W01
Water, water everywhere will wreck your roads .......................... F99
New approaches for drainage .................................................... F00

Equipment
“Wet-Blade” mower system shows promise ............................... F00
Backhoe converted to roadside mower ...................................... W01
Long idling hard on newer diesel engines ................................. F99
Prongs prod birds to flap on ...................................................... F00
Quick fix for hot mix repairs .................................................... Sp99
Trailer speeds emergency road closings .................................. Su00
Windshield treatment improves vision in rain ............................. Sp00

Maintenance
Shoulder maintenance—too important to defer till spring .......................... F00
Spray patchers speed repairs .................................................... Sp00

Pavement management
Help with evaluating and rating local roads .............................. W01
Long-term investment in roads pays off ...................................... F00
New roads data base taking shape ............................................ Su99
PASER and PASERWARE—Clarifying the facts .......................... Sp00
PASERWARE aids planning, accounting .................................. Su00
PASERWARE data convinces finance committee ......................... Su00
PASERWARE update in the works .......................................... F99
What are PASER and PASERWARE, and how can they help? ...... Su00
Special rating system for sealcoated roads ............................... W01

Planning
New opportunities with Comprehensive Planning ..................... W01
Regulation is Rx for driveway headaches ................................. F99

Project management
Aids for choosing consultants .................................................. Su00
Better bidding for local road projects ...................................... W01
Help with finding an architect or engineer ............................... W01
Quiz yourself: What’s the better deal? ..................................... W01

Road construction
Asphalt pavement warranties successful .................................. Sp99
Concrete over asphalt has promise ......................................... F99
Good sampling and testing make better roads ............................ W00
Pulverize for longer pavement life ......................................... Sp00
SUPERPAVE benefits now available ....................................... Sp99
Using recovered materials in highways .................................... Sp99

Roadsides
Managing crowded right-of-ways ......................................... Su00
Plan ahead with utilities; avoid costly construction delays ......... W01
Tips for better brushing ......................................................... F00

Safety
Roundabouts make safer, more efficient intersections .............. Su00
Alerting citizens to sign vandalism hazards .............................. W01
Communities make walking safer and easier ............................. Su00
RR-xings get safety upgrade ................................................... Sp00
Rumble strips make roads safer .............................................. F99
Setting speed limits on local roads .......................................... Sp99
Taking aim at deer-vehicle crashes ......................................... W01
Time to fix roadside safety hazards ........................................ W00
Plastic better for temporary signs .......................................... Su99
Step up to sign challenge; win $100 ....................................... F99
Van measures sign reflectivity ............................................... Su00

Safety/worker
New mine safety training rules ................................................ F00

Utilities
Pavement cuts cost more than you think ................................. W00
Many advantages to flowable fill ............................................. W00

Winter maintenance
Reflective stakes mark plow ends ............................................ F00
Wheels on plows conserve gravel .......................................... F00
Staying alert—tips for snow plow operators ............................. F00
Winter is a good time to inspect signs ..................................... W00
New approaches for winter maintenance ............................... Su99
New snow removal gadgets get “Concept” test ......................... Su00
Signs, mirrors, and lights help plow drivers ......................... W00
Tips from Winter Maintenance Workshops ............................. W00

Work zones
Safety in mobile and short-term stationary work zones ............. Su99
Test your flagging I.Q.—what’s wrong with these pictures? ......... Sp99
Training flaggers to be safe and effective ................................ Sp99
Yellow-green vests more visible in work zones ......................... Su99
New standards for crashworthy work zone devices .................... Sp00
On-site work zone training gets everybody on board .................. F00
Three tips for better work zones .......................................... Su00
Work zone training at your site .............................................. F99
Inventory programs

$8,800 to get started: $2185 for the software and $6632 for consulting.

Stoughton hired consultant Bill Wiedenbeck to create the initial data base. However, it wasn’t until they added clerical help that they could really begin to use the program. “Some places don’t have anybody in the office who can download the records and keep the inventory up,” says Wiedenbeck. “One agency inventoried all their signs, then put the data on the shelf and five years later it’s still sitting there.”

For a sign inventory to be effective crews have to be willing (and able) to use it and management has to commit adequate staff resources.

**Program protects liability**

Liability concerns prompted Dodge County to invest in a computer sign inventory recently. “We get into court cases sometimes where they question the quality of the sign and when it was last updated,” says Highway Commissioner Bob Sindelar. “This program gives us a legal history of sign condition.”

Each sign record includes a digital photo which crews update when they replace the sign. Dodge County crews also take laptops along in the truck to record their actions. The program helps Dodge County manage its sign inventory and schedule maintenance work. They plan to integrate their sign inventory with a county-wide GIS system when it is fully installed and the sheriff will also have access to sign data for the 911 system.

For 6,200 signs on 545 road miles it cost the county about $30,000 to get the inventory program going: $4500 for software, $23,000 to the consultant for the initial inventory, and about $2000 for the laptop computer. Staff time was extra.

**State managing 500,000 signs**

WisDOT districts have inventoried about half of the state’s estimated 500,000 highway signs, says Matt Rauch the DOT civil engineer in charge of the sign program. “It takes a lot of work to get going, but we feel it is worth it,” he says. “It will allow us to operate more efficiently in the future, especially when the Federal Highway Administration’s minimum retroreflectivity standard for signs takes effect.”

Currently the big benefit is in helping Districts plan their work activities—both for immediate assignments and for the budget year. It also gives them more effective control of their sign inventories. In addition, it can help prevent replacing signs prematurely. For example, a crewman may think a sign looks bad, but the history shows it is only eight years old and probably has three or four years of life left.

Plans are to make the sign database accessible to anybody who is interested, probably on an Internet web page.

For more information contact Karl Manthe, Stoughton, at 608/873-6303, Bob Sindelar, Dodge County, at 414/386-3653, or Matt Rauch, WisDOT, 608/266-0150.

---

**Reader Response**

If you have a comment on a Crossroads story, a question about roadways or equipment, an item for the Idea Exchange, a request for workshop information or resources, or a name for our mailing list, fill in this form and mail in an envelope to:

**Crossroads**  
Transportation Information Center  
University of Wisconsin-Madison  
432 North Lake Street  
Madison, WI 53706

Or call, fax, or email us:
phone  800/442-4615  
fax  608/263-3160  
email  tic@epd.engr.wisc.edu

☐ Please put me on your Crossroads mailing list.

☐ Please send me information on ____________________________

__________________________________________________________
__________________________________________________________

☐ My idea, comment or question is ____________________________

__________________________________________________________
__________________________________________________________

(We’ll contact you to get more details or answer your question.)

Name ____________________________

Title/Agency ____________________________

Address ____________________________  
City ____________________________  
State ________ Zip ________

Phone (______________)  
fax (______________)  
email ____________________________
PASERWARE for Windows available in Spring

This spring the WINDOWS-based version of PASERWARE will be demonstrated and distributed at a series of PASERWARE training workshops around the state in late March and early April. Additional information about the workshop is listed in Calendar on page 4. This workshop will be helpful to both new and current PASERWARE users.

PASERWARE 2.0 is written in Access 2000 and works in WINDOWS 95, 98, NT, ME, and 2000 Professional. At a minimum, PASERWARE 2.0 requires a Pentium-class PC with at least 64 megs of RAM. The WINDOWS version is nearly identical to the current MS-DOS version (PASERWARE 1.1). However, several new features and improvements make PASERWARE easier to use. These include:

- A run-time version of ACCESS 2000 so you don’t need to have Access 2000 to use PASERWARE.
- Printers run through the WINDOWS operating system not PASERWARE.
- All menus and all features are mouse driven.
- In addition to the data entry screen for each road segment in the current version, there is a new datasheet screen that lists the most important data, such as condition rating and rating year, in a spreadsheet-type table. This datasheet screen makes it easier to update condition ratings.
- Because WisDOT will be changing the way segment locations are described, PASERWARE 2.0 has a pop-up screen for each segment to enter the new “ON/AT” location description system.
- The History File can now be sorted and printed by the year the work was done.
- Instead of a single five-year budget for the simulation, the new version allows three five-year budgets: one for preventive maintenance, one for rehabilitation, and one for reconstruction projects. It also suggests trial budgets to begin the simulation process.
- A new report has been added that can be used to submit road condition data to WisDOT when it’s required in December 2001.

In addition to PASERWARE, there are other ways to submit condition rating data to WisDOT next fall. WisDOT will provide a printed form that local governments can use and there will also be a way to submit condition ratings electronically by e-mail and over the Internet. While you can use PASERWARE to submit data to the state, its primary benefits for local governments are: to manage pavements by keeping track of what has been done, to optimize budgets, and to communicate needs and performance to elected officials and the public.

PASERWARE training courses are being offered around the state in late March and early April. See Calendar on page 4 for dates.