

Crossroads

Summer 2000



TRANSPORTATION Information Center — LTAP

University of Wisconsin—Madison

PASERWARE data convinces finance committee

Washburn County in far northwestern Wisconsin faces some highway challenges. Heavy log and gravel trucks pound the roads, many of which are old, narrow, and surfaced with cold mix. When Mark Servi took over as highway commissioner 18 months ago, he invested in an accurate road condition inventory.

Using PASERWARE, the T.I.C.'s pavement surface rating and evaluation computer software, he found that more than half the county's 200 miles of highway rated 5 or worse on the 10-point scale.

"Using the rating system, we showed the highway committee what kind of shape the roads were in. It was a real eye-opener for them," says Servi. "When we showed the finance committee the condition of the system, they agreed to become more aggressive on our road repairs."

Servi developed a five-year plan with PASERWARE's help. In addition to 4-6



Roads like this rate 5 on PASER's 10-point scale: good structure but needing sealcoat or overlay.

miles of reconstruction and 5-10 miles of resurfacing a year, the county plans to lay 4000-5000 tons of cold mix wedging. The maintenance will help keep the older roads serviceable until the county can afford a major upgrade.

"PASERWARE is a good tool," says Servi. "I would strongly advise anyone who has a road system to use it. It gives you a real good snapshot of what you

have right now. And, if you put in good data, the computer system pretty much does the planning and prioritizing for you." Servi and the Highway Committee applied their judgement and adjusted the computer plans to account for especially bad road geometrics, faster development growth, and heavier truck traffic.

"In my mind the program was real easy to work with," says Servi. "Doing the inventory is a little time consuming, but the end result was definitely worth the time we put into it."

What are PASER and PASERWARE, and how can they help?

The T.I.C. developed and supports both a way to rate roads called PASER and a computer program called PASERWARE. Many Wisconsin towns, villages, cities and counties now use these two tools to help them evaluate and manage their roadway systems. The new state requirement that local governments rate their roads has raised several questions. Here are some answers: *continued on page 2*

PASERWARE aids planning, accounting

"We're going into budget season soon, so I'm just sitting down to do some 'what ifs?' in PASERWARE," says Beloit City Engineer Mike Flesch. Their annual streets budget stays fairly static, so the computer inventory of surface conditions and costs is a big help in stretching maintenance dollars.

The city, which started using PASERWARE 10 years ago, keeps it a sharp tool by updating cost data from recent bids and adding new subdivision streets each year. Every two years engineering staff go out and do a new physical surface rating.

Using PASERWARE's flexible planning capability, Flesch reviews and refines the

city's five year plan every year. "We do run a number of scenarios," says Flesch. "It makes it easier to visualize and project the work that's going on."

The computer program also makes it easy to check on plans when a citizen calls in, Flesch says. "We can say that we have a five-year plan and it's not in the schedule right now, but when we re-rate the section it may move up in priority."

Flesch is also looking ahead to using data from PASERWARE next year to help Beloit meet new federal accounting standards. The new rules require municipalities to report the value of their infrastructures, including streets and highways.

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Idea Exchange

PASER and PASERWARE from page 1

PASER pavement surface rating system.

With a little training, anyone can use it to rate the condition of streets and roads. The T.I.C. has PASER manuals with pictures and brief text that explain how to rate asphalt, concrete, and gravel roads. T.I.C. workshops also teach how to use it. **It is state approved.**

Local road condition ratings must be reported to WisDOT by December 15, 2001. You have time to rate your roads using any state-approved condition rating system. DOT will explain how to submit condition ratings nearer the due date.

PASERWARE is a computer program to manage pavements. Local officials can use the program to keep an inventory of local roads. It will record physical characteristics like length and width, along with PASER condition ratings, and maintenance and repair actions. An initial inventory of your roads comes from the state's database of local roads. The program makes planning for road maintenance easier. The user can look at different maintenance strategies and budgets and see how they affect future road conditions. Printouts of graphs and tables help explain the alternatives to elected officials and citizens.

New versions of PASERWARE. 1.1, now available, updates the MS-DOS version for those whose computers don't run Windows. **2.0** is a Windows-based version written in Access 2000.

PASERWARE and ROADWARE are the same. The name was changed to PASERWARE to avoid confusion with a Canadian business. Call the T.I.C. for information on compatibility between older ROADWARE versions and PASERWARE 2.0

Trailer speeds emergency road closings

Floods and washouts, crashes, smoke from grass fires, emergency response equipment—any number of situations make it necessary to close a road in a hurry. Is your agency ready? You need the right traffic signs, sign supports, warning lights and barricades, and you need to have enough of them. *MUTCD* guidelines for work zone signs have changed recently, so it's a good idea to check whether your signs qualify.



Does the person on call know where the necessary items are? How long will it take them to get the equipment together? One county in South Dakota has set up an emergency trailer. It holds 11 Type III barricades and base supports and can be quickly hooked to a pickup truck and towed to an emergency site. The trailer, which was built in the county's shop, is licensed and has lights so it can legally be towed at night. Also, be sure to routinely

check all emergency equipment. Signs get damaged, trailer tires may go flat, batteries go dead, and sandbags rot when you are not looking.

Who is on call for night, weekend and holiday incidents? Do local law enforcement offices know how to reach him or her? The on-call person should be qualified to do road and street closure. This means they need at least a basic knowledge of the *MUTCD's* recommendations for proper traffic control set ups.

Most Wisconsin road agencies are pretty well organized for snow emergencies. Now how about the other kinds? It's worth some serious thought.

Adapted from an article in The Connection, newsletter of the South Dakota LTAP agency.

Van measures sign reflectivity



Having efficient, accurate ways to measure sign reflectivity has become more urgent with FHWA proposing minimum values. The agency has developed a mobile unit that can measure sign reflectivity at normal highway speeds. This would make it possible to measure several hundred signs in a single day.

WisDOT will demonstrate the retroreflectivity van on June 12-16 at four state locations. Anyone responsible for sign maintenance and management is welcome.

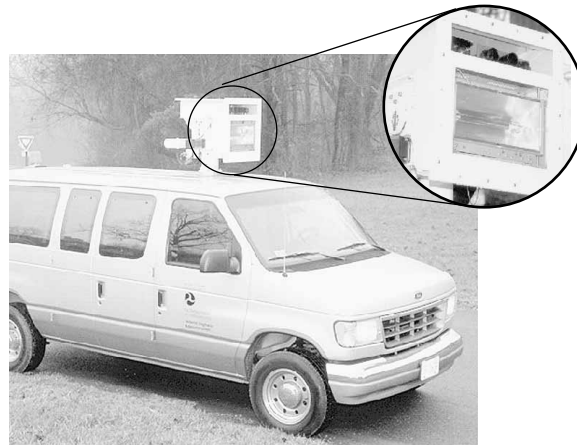
June 12 & 13, LaCrosse
Wisconsin County Highway
Association Conference

June 14, Eau Claire
WisDOT District 6

June 15, Green Bay
WisDOT District 3

June 16, Madison
WisDOT Highway Operations
Sign Distribution Center

For more information,
contact Matt Rauch
Bureau of Highway Operations
608/266-0150



Crossroads

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New snow removal gadgets get "Concept" test

Eight Wisconsin counties will be testing new options for snow removal equipment. Items under review range from a hands-free microphone for the radio to strobe lights on wing plows to combined salt and anti-ice tank systems.

With financial assistance from the WisDOT Bureau of Highway Operations section, the first three "Winter Concept Vehicles" hit the road last season in Florence, Columbia, and Manitowoc Counties. Five more will be operating for the 2000-2001 snow season. Early reports after one winter are enthusiastic about many of the new equipment additions.



Combining liquid anti-icing tanks with conventional spreaders is efficient and saves salt.

"From the operator's perspective, they really liked the single joystick, the 'no-hands' radio, the high intensity and strobe lights, and the clear door," says Bob Braunel, Manitowoc County Highway Department Highway Superintendent. "As superintendent, I see potential to save money using the ground speed controller, dual spinners, and anti-icing tanks." Results from Florence and Columbia counties generally agreed with Braunel's assessments. Following is a quick summary of the equipment tested and liked in Manitowoc County.

Single joystick A single control stick replaces four levers for equipment operation. It improves safety by requiring less attention from the driver.

Radio/microphone Communication is easier and less distracting with the radio microphone switch now mounted on the

horn pad on the steering wheel and the microphone mounted in the visor.

Hi Cab headlights and strobes High intensity lighting mounted on the truck cab and at the end of the wing plow improves the truck's visibility to other traf-



A small tv monitor in the cab shows salt-spreading and traffic conditions behind the truck as seen by rear mounted cameras.

fic but doesn't distract or blind other drivers. "You can see it for 250-300 feet and in whiteout conditions," says Braunel.

Lexan door Replacing the cab's passenger side door with clear Lexan costs \$500 and gives the driver a clear

view of the plow's operation on the right side. New versions will be hinged and have a kick-out plate for safety.

Raven DSC 700 Ground Speed Controller Automatically varies material delivery (liquid or solid) based on truck speed. The Raven is accurate and effective. "In general ground speed controllers are the only way to go," says Braunel. "They help with inventory control and deliver accurate applications for varying conditions."

Anti-icing tanks Mounting a 900 gallon anti-icing system along with the 9-yard V-box spreader makes it easy for a patrol superintendent to switch from spreading liquid to solid materials while the truck stays on the road. "You can respond to

a weather change and get snow or ice cleared off the road quicker without having to send the truck back to the shop to pick up chemicals," says Braunel. Both Manitowoc and Florence County used less salt overall by combining liquid anti-icing applications with salting.

Dual spinners Spinners mounted on both sides at the rear of the truck save salt by making it easier to salt the centerline of two freeway sections when driving in the passing lane.

Rear mounted cameras Cameras mounted at the rear of the truck display on a small in-cab monitor the spinner operation and following traffic conditions. These are especially helpful when backing up the truck.

Front airfoil on plow Florence County found that a front plow snow shield effectively keeps snow from accumulating on the truck's windshield.

Other equipment that needs more on the road testing includes: remote heated mirrors, air foils to prevent snow build-up on the rear of the truck, and global positioning system equipment.

These new equipment options can add up to \$60,000 to the base cost of a new snow plow truck, but they're worth it, Braunel believes. "We cut back 30% on salt usage by using the Concept Vehicle," he says. "We are able to give better service at a lesser cost, and we will have savings that are far more than the cost of the extra equipment."

The Concept Vehicle program is a partnership among the eight volunteer counties, the WisDOT Bureau of Highway Operations, and Monroe Truck Equipment Company. By the time the three-year project ends, WisDOT's winter equipment committee will have a benefit/cost analysis of all the equipment tested, and will probably develop a set of standard specs and recommendations based on these "real world" tests.

For more information on the Concept Vehicle program, contact Tom Martinelli at WisDOT, 608/266-3745. You can reach Bob Braunel in Manitowoc at 920/683-4351.

Roundabouts make safer, more efficient intersections

What's round and has three, four, five or more legs? It's a modern traffic roundabout. Wisconsin's first two opened in the Village of Howard last October. The roundabouts, about a block apart, have slowed traffic speeds and eased congestion in front of the Howard elementary and middle schools.

"It has increased safety dramatically," says Cole Runge, a principal planner with the Brown County Planning Commission. "Six months after the roundabouts went in, the sheriff's department removed the intersection's 25-year-old hazardous designation. Students from nearby subdivisions can now walk and bicycle to school."

Pedestrians are safer in roundabouts because they cross one lane at a time and they only have to look for traffic in one direction. Bikes can cross like pedestrians or enter with traffic. The slow speeds are safer for bikes too.

Speed studies on the Howard roundabouts show that nearly all traffic is traveling at less than 20 mph at the crosswalks, yet traffic flow has been improved dramatically. School buses and cars no longer stack up to the previous intersection as they did at the old two-way stop. Roundabouts are also safer for vehicles because they cut the potential conflict points from 32 to 12 (see diagrams).

"I think the newest, best idea out there is the roundabout," says Village of Howard Public Works Director Bob Bartelt. "I think they're going to take off in the state." Howard is looking at building more roundabouts, the next one in a subdivision. Brown County also plans to build three more in the City of De Pere in 2001 and

others throughout the county in the future.

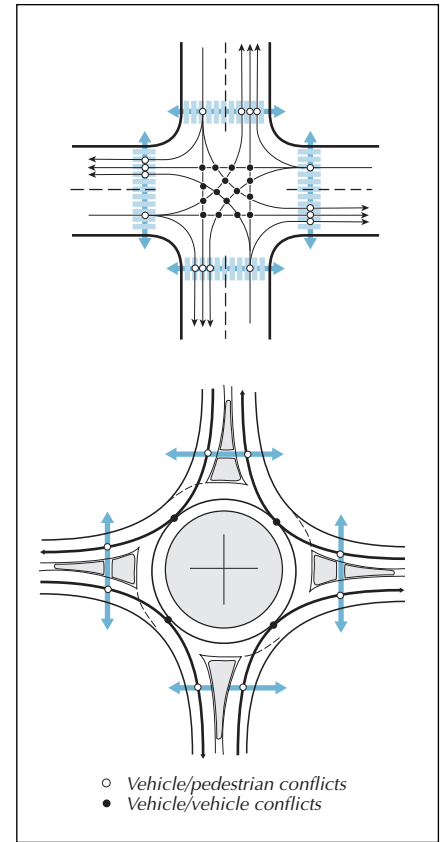
Turning the Lineville Road intersections into roundabouts added only about \$25,000 to the cost of reconstructing the street that fronts the schools. The extra cost paid for additional curbing and colored concrete for the crosswalks. And as a bonus, the flowers and other plantings in the roundabout's center make the area much more visually attractive than a standard intersection. (Color photos are on the village web site.)

Modern roundabouts

Modern roundabouts are well established in Colorado, Florida and Maryland. They are easy to drive, unlike old fashioned rotary intersections found in Boston and elsewhere. Entering traffic yields to vehicles already in the intersection and only merges with traffic from the left. Each approach leg has a merge and diverge point and there is no crossing traffic.

"Once the public gets used to them, they start going in like wildfire," says Pat Hawley, traffic section director at HNTB consulting engineers in Milwaukee. "They have good operational characteristics with less delay per vehicle than at a standard intersection, and they are quite a bit safer than a signalized intersection because speeds are so much lower." Hawley is evaluating a roundabout for an intersection in Brookfield, near Milwaukee.

Roundabouts don't necessarily need more right of way space than a standard four-way stop intersection, and they can take less space than a signalized intersection with extra turn lanes. They operate



well under a wide range of traffic volumes, but it is best if traffic flows are relatively balanced from all approaches. They need level terrain and the legs should be perpendicular, although roundabouts can also be very effective at non-perpendicular intersections. Roundabouts don't work as well as part of a progressive signal system or too close to another intersection that is signalized.

Single lane roundabout capacity is 20,000 vehicles a day, though some actually carry more. There are also two-lane and three-lane roundabouts which handle higher traffic volumes. Colorado recently solved traffic congestion by building a roundabout at an Interstate interchange. Vehicles no longer back up into the freeway during peak times.

"Typically it takes drivers a very short time to adjust to roundabouts," says Hawley. "The hardest part, and the most important, is educating the public that this is a tried and true method of traffic control and that it does work."

A new Roundabout Guidebook is due out this summer from FHWA. WisDOT has a brochure on roundabout policies on state highways. See the Village of Howard roundabout on the Web at www.village.howard.wi.us. Contact Bob Bartelt at 920/434-4060, Cole Runge at 920/448-3400, or Pat Hawley at 414/359-2300.



Communities make walking safer and easier

"When we moved to Cedarburg from Washington, DC, we found that though it has beautiful sidewalks, you would take your life in your hands when you tried to cross the street," says Kit Keller, a consultant and former Cedarburg City Council member. She hopes that will begin changing in June when the city's newly reconstructed main street opens and a pedestrian safety education project begins with it.

"We want to open the roadway with a new sense of awareness of pedestrians," she says. We will emphasize stopping for pedestrians in crosswalks especially at the stop bar rather than over it. Unsafe behaviors like speeding and tailgating may also be targeted."

Keller found that pedestrian safety was a "tough issue to crack," even as a member of the city council. "I don't think people take the problem seriously. It's just not on equal footing with sewers, water, snow plowing, and things like that."

She learned of a FHWA program, the Pedestrian Road Show, at a Governor's Conference on Highway Safety. She was inspired that the participants were able to develop a consensus about pedestrian safety issues. Keller attended a training session offered by the Federal Highway Administration and became a Pedestrian Road Show facilitator. She organized a workshop in Cedarburg for last February.

"It's very important that the mayor take a leadership role and that all the key players actively participate," says Keller.

Cedarburg's new pedestrian and bicycle safety committee includes Police Chief Tom Frank, Public Works Director Tom Wize, high school students and the superintendent of the school system, representatives of business, civic and historic preservation groups, the senior center, and news media. They gave a first round of recommendations to the mayor in mid-May based on their consensus that education would make the most difference.

"We want people to begin thinking about: What is the effect of my driving behavior on the total transportation environment? Am I making my community unsafe for people on bikes, seniors, or children?" says Keller.

Several other communities have sponsored Pedestrian Road Shows in the last year including Stoughton, Beloit, Elk Mound, Hayward, Marshfield, and, this summer, Door County. "We are hoping we can get to 20-30 communities with our

current funding," says JoAnne Pruitt-Thunder, WisDOT Pedestrian Safety coordinator.

Making sidewalks and crosswalks accessible and safer for citizens with disabilities is also important, and required under federal law. It will be easier now that FHWA and the federal Access Board have published a design guide with photos and illustrations. The guide covers best practices for sidewalks, intersections, curb ramps, and street crossings. It also addresses commonly overlooked problems with street furniture and temporary facilities. For example, some older single ramps at corners are unsafe. They direct the pedestrian using them out into traffic at an odd angle rather than into the crosswalk. Communities doing any sidewalk replacements should plan to replace these designs for safer ones.

"The Pedestrian Road Show is a way that communities can look at pedestrian problems and resources both for behavior and facilities," says Tom Huber, WisDOT Bicycle and Pedestrian Coordinator. "And these Access Board guidelines help communities make sure that they are developing for the whole range of pedestrians." Huber also facilitates these shows in local communities.



Cedarburg's pedestrian safety efforts started with a February program.

Improving pedestrian safety takes persistence says Kit Keller. "The Road Show is not a one-shot deal. The angels will not sing and the crosswalks will not open to let pedestrians pass. We didn't create barriers to safety overnight and won't fix them overnight." But it's certainly a step in the right direction.

For information on Pedestrian Road Shows, see the FHWA web site <http://www.ota.fhwa.dot.gov/walk/> or contact Joanne Pruitt-Thunder at 608/267-3154 or Joanne.pruitt-thunder@dot.state.wi.us. A 13-min. videotape, **Children and Traffic**, is available from WisDOT's regional Bureau of Transportation Safety offices. Copies of **Accessible Rights-of-Way** are available from the Access Board at 800/872-2253. Another useful resource is FHWA's Bicycle and Pedestrian Program Office: <http://www.fhwa.dot.gov/environment/bikeped/>

Resources

These materials are available from the Wisconsin T.I.C. unless otherwise noted. To get your copy, call 800/442-4615 or use the form on page 7. Videotapes are loaned free through County Extension Offices.

Insights into Pavement Preservation, FHWA, Jan. 2000, 26 pp. T.I.C. will send you the section on the benefits of preventive maintenance and several case studies. A short companion videotape, *Protecting our Pavements: Preventive Maintenance*, is available from the T.I.C. video lending library (tape #18181).

Motor Grader Operator Handbook and Operation Tips and Techniques, Kansas LTAP 1999. Distributed at March 2000 T.I.C. gravel road workshop. Packet includes T.I.C. fact sheets No. 5, *Gravel Roads*, and No. 13, *Dust Control*, and several handy charts and specifications for spreading stone.

Maintaining Gravel Roads (videotape), 1997, 39 min. This tape was prepared for an ETN session on gravel road maintenance. It covers basic gravel road grading, gravel quality, and how to correct common problems such as ruts, washboards, and potholes. Quantity limited.

Using Oxyacetylene Welding Equipment, 1973, Cornell University, College of Agriculture, 12 pp. Simple descriptions and pictures cover important safety practices; using the torch to cut steel, braze and weld various metals like low carbon steel, galvanized sheet metal, cast iron, aluminum, copper, bronze, and brass.

Utility Accommodation Policies To help your agency review, update or draft a new utility accommodation or street occupancy policy, the T.I.C. offers two samples. 1) The Marathon Co. Town Utility Policy based on the WisDOT Utility Accommodation Policy. It can provide a consistent approach and permit process on state, county, and town roads. 2) The City of Madison Street Occupancy Ordinance and Permit, adopted in 1999 has a degradation fee.

Pedestrian safety resources Children and Traffic (13 min. video) available from WisDOT's regional Bureau of Transportation Safety offices. **Accessible Rights-of-Way** (148 pp., 1999) available from the Access Board at 800/872-2253. FHWA Web sites: Pedestrian Roadshow at <http://www.ota.fhwa.dot.gov/walk/> and Bicycle and Pedestrian Program Office at <http://www.fhwa.dot.gov/environment/bikeped/>

Aids for choosing consultants

Selecting a consulting engineer can be a challenge, especially when it only happens every year or two. Using the qualifications based selection process required for Federal Aid highway projects can add complexity.

Now WisDOT is offering to share information about consultants from their databases. "We collect information on consultant evaluations and record a numerical score," says Randy Knoche, Central Office contract manager. "Our District staff can run reports and make comparisons, using those scores and other information." The reports can help local governments evaluate consultants, find similar projects, and see what was negotiated.

"When they talk to consultants, they are more informed and can negotiate more efficiently," says Knoche. "While procuring design engineering is very different from buying a car, having this information is like negotiating with a car dealer and knowing the lowest prices they have sold a car to others for."

Consultants are rated on a 1-5 scale according to five categories: project management, human relations, engineering skills, quality of work, and timeliness. Many of the consultant ratings are for bridge projects. The WisDOT District local program coordinator has access to the information and will provide it to locals who ask for it.

The local coordinator for District 1, Kimberly Johnson, trains locals on choosing consultants. She also administers all federally funded locally matched projects in southwestern Wisconsin. In addition, she is a consulting engineer herself.

"The rating information is available, but personally I think it makes a lot of sense to work with consultants who are local and to talk with neighboring communities who have done similar projects," says Johnson. Even though the state and federal guidelines don't require interviews, Johnson believes they are a good way for the government staff and officials to build confidence in the consultants and to make sure they can work together.

In her training sessions, Johnson describes two approaches to interviewing. One is to address the consultant as an employee and ask a series of specific questions. The alternative is to let the consultant make a presentation that covers: the firm, the people who will work on the project, similar projects, and the consultant's thoughts on the issues involved in the project.

"In the training we try to give the locals a feel for what to expect in the answers that consultants give," says Johnson. She also has developed a quick check-off rating sheet to use during interviews. It helps remind the interviewers of important topics that may be overlooked like public involvement, and environmental, right-of-way, and utility issues. Johnson also points out that county highway commissioners routinely hire consultants and can help and advise smaller communities on the process.

For consultant rating information contact the local programs coordinator at your WisDOT District office. For training opportunities and written guidelines, contact Kimberly Johnson, Kjohnson Engineers, Inc., 608/829-3858, or Kaj8293858@AOL.com

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.

Winter Road Maintenance Prepare for winter operations. This workshop covers equipment preparation, the latest on ice control materials, operations planning, and an opportunity to share experiences and tips for better winter operations.

Oct 4	Green Bay	Oct 10	Cable
Oct 5	Brookfield	Oct 11	Eau Claire
Oct 6	Barneveld	Oct 12	Tomah
Oct 9	Rhineland		

Local Transportation Issues T.I.C. and the UW Local Government Center present an ETN series of five 2-hour workshops that focus on transportation issues. This series is available at over 103 locations throughout Wisconsin. You can register for one workshop or the whole series. Look for a brochure in August.

Fall 2000

Oct 5 Utility permit process and control
Nov 9 Effective pavement marking

Winter 2001

Jan 18 Analyzing traffic impacts on your roads
Feb 9 Liability for local road agencies
Mar 9 Transportation Aids

Using Geotextiles You will learn about the many kinds of geotextiles, their costs and benefits, and when and how to use them in road construction and maintenance, drainage projects, soil erosion control and stabilization.

Nov 1	Green Bay	Nov 7	Cable
Nov 2	Brookfield	Nov 8	Eau Claire
Nov 3	Barneveld	Nov 9	Tomah
Nov 6	Rhineland		

UW-Madison Seminars

Local government officials are eligible for a limited number of scholarships for the following engineering courses in Madison. For details, use the form on page 7, call 800/442-4615, or e-mail: Sauer@engr.wisc.edu

Neighborhood Design and Traffic Calming, Oct 11-13

Managing Snow and Ice Control Operations, Oct 23-24

Implementing a Sidewalk Management System, Oct 25-26

Effective Urban Forestry Techniques for Engineering and Construction, Nov 13-14

Soil Engineering for Non-soils Engineers and Technicians, Nov 16-17

Highway Bridge Design, Dec 4-6

Effective Bridge Rehabilitation, Dec 6-8

Minimizing Pavement Damage Caused by Utility Cuts, Dec 11-12

Other Training Opportunities

The Wisconsin Chapter American Public Works **Snow Plow Roadeo** is your opportunity to test the best crew you've got against the best crews from other communities in friendly competition. It's also a great way to get everyone tuned up and ready for winter. Held Wednesday, September 27, 2000 at the Waukesha County fairgrounds. Call Mark Hochschild at 414/761-5372 for more details.

Three tips for better work zones

Basic work zone traffic control training reached more than 500 people this spring. Local government, utility, and contractor employees attended 20 one-day workshops offered by the T.I.C. around the state. Many other workers got refreshers in work zone traffic control during spring safety days. The programs were based on the T.I.C.'s pocket-sized guide, *Work Zone Safety*. Nearly 18,000 copies of the guide have been distributed since its publication in June 1999.

The training and guide are designed to improve safety by helping people who set up work zones give clear, safe guidance to motorists and pedestrians traveling through them. A well laid out work zone also improves worker safety by creating a buffer between them and traffic. Work zone layout requires using judgement and care in applying the guide at each site. Three basic steps will improve work zone traffic control programs.

Use only approved devices. Meeting the minimum requirements for traffic control devices is essential. Sometimes a safe and effective work zone set-up requires more devices, more expensive devices, or devices in better condition than a crew has on hand. The lack of approved devices may be due to budget constraints, lack of knowledge, or poor work planning.

Incorrect or poor quality traffic control devices should not be used, no matter what the reason. Supervisors should regu-

larly evaluate the inventory and condition of their temporary traffic control devices, determine if different or additional devices are needed, and prepare a budget or purchasing proposal to upgrade, expand, or replenish the devices.

Use approved devices in an approved way. The *Work Zone Safety* guide is filled with specific requirements such as sign spacing; sign size, shape, color, mounting height, and wording; taper lengths; and buffer lengths. Applying these requirements takes judgement because the actual conditions at the work site must govern the set-up. Traffic speed, traffic volumes, the number of trucks, sight distances, obstructions, conflicts, duration of the work, specific location of the work, and the nature of the work itself make each set-up a new problem to solve.

Those responsible for the work zone setup need to do a field inspection before work starts to identify how to best set up the work site and the traffic control. Work zone traffic control should be part of the work planning, not an afterthought. After



Setting up work zones takes the right equipment, judgement, and inspection.

the initial setup, supervisors should drive the work zone in both directions to verify that it gives the motorist clear guidance.

Inspect, maintain, and modify when needed. Once the work site is operational, observe traffic flow during various traffic conditions such as during rush hour or at night, and periodically drive the work zone. Look for evidence of specific problems: skid marks, panic stops, drivers confused by the set up, unnecessary slow downs, missing or misplaced devices.

Should there be a crash, evaluate it to see if the traffic control set up could be adjusted to improve safety. Make the modifications that are necessary and continue to observe and inspect. File away what you've learned to help set up the next site.

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 sauer@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 _____



Managing crowded right-of-ways

Demand for space in road right-of-ways is high and growing. The telecommunications industry boom has increased pressure on right-of-ways that are already crowded. In response, many local governments have developed permitting and inspection systems to protect the quality and safety of local roads. In some states they have even begun charging franchise fees of up to five percent of income for access to rights-of-way.

The Wisconsin Alliance of Cities developed model ordinances in 1998 for managing right-of-ways (see Winter 2000 issue of **Crossroads**). In response, some private utilities asked the state Public Service Commission (PSC) to develop administrative rules in the matter. It will likely hold formal hearings this summer. The rules would be applied only in case of a complaint by the utility and address such issues as:

- Requiring public utility facilities be placed underground.
- Discriminating among utilities regarding access to the right-of-way (ROW).

- Fees municipalities may collect from public utilities for using ROWs.
- Bonding, indemnification, and insurance requirements.
- ROW restoration requirements and degradation fees.
- Who should pay for relocating utility facilities.
- Public utility facilities that have been abandoned in the ROW.

In general, under current state law, municipalities are entitled to develop "reasonable" regulations to manage right-of-ways. This means that regulations protect the health, safety, and general welfare of the community; and fees recover the costs of regulation and are not intended to raise revenue.

Allowed costs covered by fees would include:

- Registering, permitting and inspecting the work.
- Maintaining, supporting, protecting, or moving user equipment during work.

- Restoring work inadequately performed.
- Maintaining databases used to manage highway, street, and right-of-way work.
- Scheduling and coordinating highway, street, and right-of-way work.

In the current draft the rules permit charging fees for decreased pavement life, saying: *It is not unreasonable for a municipality to charge a utility for right-of-way degradation, if the degradation costs are reasonably ascertainable.*

You will need documentation to justify all fees. A good source for roadway information would be pavement condition and costs available through using the PASER or other pavement rating system.

The T.I.C. has information and sample right-of-way ordinances. See the form on page 7 for contact information. For background and the status of PSC rule-making contact Curt Witynski at the League of Wisconsin Municipalities, 608/267-2380 or witynski@lwm-info.org.

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