



Assessing hazards, protecting employees

How safe is your workplace? Do your employees have protective equipment? Do they use it? Under state regulations every community that has at least one employee is required to:

- Review jobs, equipment and processes
- Identify and mitigate hazards
- Provide personal protective equipment
- Train employees
- Keep records

With budget constraints and staff shortages, it can be tempting to put the safety process on a back burner. But accidents can really put a crimp in things. Your employee is hurt; his family disrupted. You lose productivity and may shell out for worker's compensation costs.

"Every community needs a good safety program, but it is particularly important for smaller ones," says Dave Vriezen, Section Chief for Public Sector Safety Bureau of Field Operations in the Wisconsin Department of Commerce. "The guy who is driving the snowplow today, may be digging a trench tomorrow, and fixing the backhoe the next day. If he gets hurt there is a major impact." Commerce does safety inspections and enforcement of public sector employers. OSHA oversees the private sector.

Jobs, checklists, walk-through

"Start with a list of tasks and work processes then identify related equipment, hazards and the personal protective equipment (PPE) in use," says David Wepking, Safety Coordinator for the City of West Allis. For example, if the task is sealing cracks and filling potholes, traffic is the most obvious hazard; the PPE is reflective safety vests, along with proper work zone signing. Other hazards might be exposure to chemicals in the asphalt or crack-filling material, noise from equipment and traffic, lifting materials

into the equipment, or possible flying debris when using high pressure hoses. Ideally the supervisor should develop the lists and review them with employees. In larger organizations the risk manager or safety coordinator will do it, consulting with workers and management.



It is also important to walk through the work place looking specifically at layout and facilities, worker locations and operations, and hazards. Think in terms of hazard categories: impact (falling/flying objects), penetration (sharp objects piercing foot/hand), chemical exposure, heat, cold, dust, light, water, vibration, electrical. Not all hazards are task-related, either. Common problems include unguarded bandsaws, lathes and grinders; stored materials blocking aisles; and improper handrails or guardrails.

Review, improve, protect

Some hazards will be obvious; others will surface as you analyze lists and accident reports (OSHA 300 form). You will want to develop a budget and time line for safety improvements, along with safety policies. Consider, for example, whether employees will face discipline if they don't use safety equipment.

Before you buy new goggles and hard hats, though, you are required to look for engineering or work practice solutions to hazards. Install ventilation, substitute less harmful materials, isolate or enclose the process, or use other methods to prevent employee exposure. Alternatively, consider how to get employees away from exposure: job rotation, personal hygiene, housekeeping and maintenance, for example.

Now, look into PPE. With so much available, consider getting help. Ask safety experts which helmets, safety glasses, shields, or other equipment work best for your situation and people, advises Dave Wepking of West Allis.

Get input from the user, too. "Before you buy more of the safety glasses you've been using for years, shop around and get employee feedback," says Dave Kodel, Loss Control Specialist with Cities & Villages Mutual Insurance Company (CVMIC). "If you get comfortable safety glasses that the employees like to wear, then they will wear them."

continued on page 3

Inside

Idea Exchange Slick idea for stopping sign thieves; Small municipalities and GASB 34	2
Calendar	2
New names for road segments	3
Ditch maintenance protects roads	4
New erosion rules in effect 3/10/03 .	4
Ditching regulated in wetlands	5
Silt fence fails in channels	5
Update on work zone signing rules ...	6
Crossroads Index Sp01–W03	7
Resources	8

Idea Exchange



Slick idea for stopping sign thieves

From Don Schumacher, Town Chairman in Town of Rush River, St. Croix County, comes this inexpensive idea for foiling sign vandals.

"We had one street that was being vandalized regularly. It happened four times in one year

and it was costing us \$200 or more to replace them each time. The last time it happened, we decided to weld an extra section on the sign post to make it taller and then we greased it.

"We used the messiest, dirtiest black axle grease we could find. We figured if they did it again all we'd have to do is look for someone with a black streak down the front of their jacket. Six months later we haven't lost a single sign on that road."

Small municipalities and GASB 34

Most towns and villages are not required to meet GASB 34 accounting standards, advises Richard Stadelman, Executive Director of the Wisconsin Towns Association "This is a private accounting industry standard. The state Department of Revenue does not require it for towns that use cash accounting," he says.

The GASB 34 national accounting standard for municipalities is supposed to make their financial reports easier for investors and citizens to understand. Among other things it requires a systematic inventory, valuing, and depreciation of all government assets. It was phased in for larger municipalities over the last couple years and will apply beginning in June 2003 to small communities with annual revenues under \$10 million. (See Fall 2002 *Crossroads*.)

Very few towns or villages use general obligation bonds to raise revenue, which is one situation where they might be required to use the standard, Stadelman points out. Also, local roads are the primary asset for many of them. "If you take all the towns in the state, they spend an average 53% of their budgets on roads," says Stadelman. "The PASER system is just as good a means for finding out how money is spent and doing life cycle planning, and it has more relevant tools."

"PASER and PASERWARE have proven themselves effective and are the key to the WISLR system for 99% of our members," he continues. "They are simple and adaptable. GASB 34 is a make-work project related to determining the value of our highways."

Stadelman expressed his opinion in detail in a recent Wisconsin Towns Association newsletter. For a copy, contact WTA at: 715/526-3157 or on the Web at: <http://www.wisctowns.com>

Calendar

T.I.C. workshops

Specific details, locations and registration forms are sent to all *Crossroads* recipients nearer the date of each workshop. **Registration begins after announcements are sent.**

Road Maintenance This workshop presents maintenance, repair and reconstruction options for your local roads and streets—including asphalt, concrete and gravel pavements. The workshop will also emphasize good practices for maintaining and improving drainage to extend pavement life.

Mar 13 Mineral Point	Mar 19 Hayward
Mar 14 Brookfield	Mar 20 Eau Claire
Mar 17 DePere	Mar 21 Tomah
Mar 18 Rhineland	

Solving Subgrade Problems (ETN) Mar 13 Often pavement problems are caused by poor subgrades. There are a variety of solutions to soft subgrades, but selecting the most cost effective requires an understanding of soil mechanics and available options. Learn basic soils concepts and review ways to solve subgrade problems—soil stabilizers, undercutting and back filling with select material, geotextiles, and improving drainage. Call 608/262-9960 for registration information.

Learn basic surveying Do you need to set culvert and ditch grades or determine crown and slopes, but don't have surveying

experience? Highway workers and foremen can learn to use a tape and hand level to make fast, reliable measurements for these and other projects. T.I.C. offers a one-day workshop in Basic Surveying for Local Highway Departments with both classroom instruction and outdoor field exercises.

Where? At your site. **When?** You schedule it. T.I.C. will bring the program to you at a cost of \$500 for up to 20 participants. On-site training is economical, efficient and minimizes disruption to your work. For more information or to schedule a session, contact Susanna Fuerstenberg, 800/442-4615 or email tic@epd.engr.wisc.edu

UW-Madison courses

Local government officials are eligible for a limited number of scholarships for the following Engineering Professional Development courses in Madison.

Designing Best Management Practices for Stormwater Quality Improvement Phase II Implementation Mar 24-26

Culvert Construction & Repair Mar 26-28

Soil Engineering for Non-Soils Engineers and Technicians Apr 9-10

Design of Pedestrian and Bicycle Facilities Jun 2-3

Effective Roadway Lighting Jun 11-13

Crossroads

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Assessing hazards from page 1

Fit the device to the wearer. Inform the employee about its limitations and demonstrate its use and care. Cleaning is particularly important for eye and face protection, for example, where dirty or fogged lenses could impair vision.

Finally, have your hazard assessment verified with a written certification, and plan for the next round of safety reviews.

“That’s the big challenge,” says Boyd Garey, state risk control manager with the Wisconsin Department of Administration. “It’s a process. You don’t just sit down one day and put it in place and expect it to be there forever. It’s really important to include in the way you do business.”

Help?

Help is available through many municipal insurers, workshops, consultants, and on the Web in the form of checklists and publications (see listing). “We offer our members regional and on-site training, checklists, and an information packet,” says Kodel of CVMIC.

You can also call your Department of Commerce inspector for help. “I’ve found them very informative,” says Wepking. “They are there to help and can give you sample policies as well.”

“I want everybody to know that just because you call up and ask a question doesn’t mean you’re going to get inspected,” says Dave Vriezen of Commerce. “If somebody is asking a question—to me that is saying you’re being proactive and we want to support that.”

Help with hazard assessments

Department of Commerce, Safety and Buildings Division, Dave Vriezen, Public Sector Safety Field Operations Section Chief, 608/266-3151. <http://www.commerce.state.wi.us>. Look under Safety & Buildings, then Programs for administrative rules that apply to public sector: “Comm 32 Public Employee Safety and Health”.

Department of Administration, Boyd Garey, State Risk Control Manager, <http://www.doa.state.wi.us>. Search for “state risk management” then click on safety and loss control program for many useful checklists.

Wisconsin Safety Council of Wisconsin Manufacturers and Commerce, Bryan Roessler, Director, 1-800-236-3400, <http://www.wcs.wmc.org/>

OSHA, <http://www.osha.gov/SLTC>. Click on Personal Protective Equipment.

New names for road segments

Many folks drive their roads in the spring to make condition ratings. Before you start this year, though, you might want to check in with the Wisconsin Local Roads Information System (WISLR) at WisDOT. Ratings segments have been “renamed.”

“WISLR will no longer be using segment numbers. We are moving to an on/at based system,” says Joe Nestler, WisDOT Chief of Data Management. The system will create logical segments for rating pavement, but it’s likely that they will be somewhat different than the old segments, Nestler notes. “People would be well served to get a download that has segments defined in on/at terminology,” he says. WISLR has a procedure for you to modify the state-generated segments if they don’t work in the field, Nestler says. Just enter the correct on/at information to identify and locate the segment.

The new on/at naming method’s big advantage is that it readily supports entering condition data into geographical information system (GIS) software. WISLR users will be able to print out maps that show their roadway conditions.

“We’re hoping the new system can help folks get more value for their improvement dollars,” says Nestler. “A map of pavement ratings might help you see trends and make more informed decisions. It will certainly help us at WisDOT better understand our pavement needs statewide.” Maps will also make it easier to explain your roadway improvement plans to elected officials and citizens.

Every community will be reporting its local pavement conditions to the state

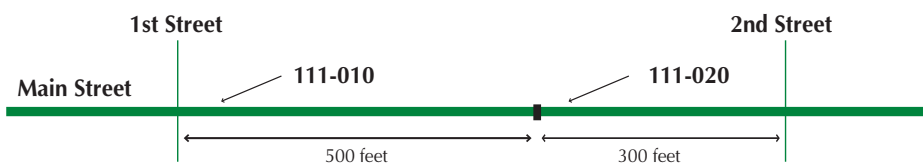
again this year, as in December 2001. The good news is that, whether you use WISLR spreadsheets or PASERWARE, the new on/at segment descriptors will be automatically generated for you when you obtain a data download from WisDOT. The bad news is that the new version of PASERWARE (3.0) that uses this on/at segment naming won’t be distributed until late spring or early summer.

For those early birds who want to get their pavement ratings done right away, WISLR can help. “PASERWARE users can obtain their segment information from us in a spreadsheet format. They can use that to rate their roads and then enter the ratings into PASERWARE when it is ready,” says Nestler.

Others can obtain a spreadsheet from WisDOT, rate their roads, enter the ratings into the spreadsheet, and send it back to WISLR. “If the information comes in electronically, it will be a very quick upload, if they made no changes to the segment descriptions, or if changes are defined correctly with on/at terminology,” says Nestler. If WISLR staff need to review and enter changes, the process will take considerably longer.

On-line entry and editing directly in the WISLR database will be available by summer. Users will be authorized after they complete training programs to be held around the state.

To request an “on/at” segment listing download, contact Crystal Van Woelderen 608/266-7135 or e-mail downloadinfo@dot.state.wi.us



On/At Location (New Method) • NEED JUST STREET SIGNS, NO DIRECTION

Location of Road	On Route	Start At	At Offset	Towards Route	Length of Section	Towards Offset
Segment 111-010	Main St	1st St	0 feet	2nd St	500 feet	
Segment 111-020 (Option 1)	Main St	1st St	500 feet	2nd St		0 feet
Segment 111-020 (Option 2)	Main St	1st St	500 feet	2nd St	300 feet	

Segment Location (Old Method) • NEED TO KNOW DIRECTION & ROAD NUMBER

Location of Road	Road Number	Segment Number	From	To
Segment 111-010	111 (Main St)	010	1st St	500 ft east of 1st St
Segment 111-020	111 (Main St)	020	500 ft east of 1st St	2nd St

Ditch maintenance protects roads

Spring's gushing melt waters can really put roadway drainage systems to the test. Flooding, washouts, and potholes will show you where ditches and culverts are not working. This is the season to identify critical drainage maintenance needs, especially for stretches of road scheduled for surface repair or rehabilitation.

Begin with an inspection. You can use the examples and rating system in the T.I.C.'s *Drainage Manual* (see Resources on page 8). Check ditches for:

- Obstructions
- Free flowing outlets
- Depth – adequate to drain subgrade
- Width – accommodates flow, minimizes erosion
- Slope – minimal ponding
- Erosion
- Erosion control systems needing repair

Inspect culverts as well. Look for sediment buildup and cracks or corrosion that might lead to failure.

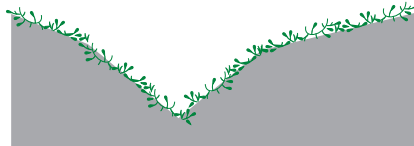
The most efficient ditches have round or flat bottoms. These shapes can be more difficult and expensive to make, but the sides accommodate vegetation better and the shape slows water, reduces erosion, and requires less maintenance. Triangular or V bottom ditches are most easily made and use the least roadside area. However, they require the most maintenance, have the least capacity, and are most susceptible to erosion.



A parabolic or round bottom ditch.



A trapezoidal or flat bottom ditch.



A triangular or V bottom ditch.

The cross or side slope of a ditch should ideally have a drop-to-run ratio of 4:1, that is a drop of 1 foot for every 4 feet of cross section. The maximum slope should be 2½:1. A gentle slope makes mowing and ditch cleaning easier, faster and cheaper. It is also safer for vehicles that may run off the road. A ditch slope of 2½:1 in the clear zone next to a roadway is too steep for safe recovery by errant vehicles.

To keep water out of the road base and subgrade, the ditch bottom should be one foot below the base course. It may have to be deeper if the adjacent right-of-way

and nearby terrain are shedding water into the ditch.

For good flow, the lengthwise slope of the ditch should be 1%—about one foot in every 100 feet. It should not be less than ½%. The maximum longitudinal slope for an unlined ditch is 5%. If a steeper slope is necessary, the ditch should be lined to prevent erosion.

Vegetation in ditches is necessary to help keep the soil in place and minimize erosion. Use rubble, riprap, or fabric to slow water flow on steep slopes. You may also consider installing a short section of storm sewer.

Planning maintenance

Erosion—the source of sediment that clogs ditches—can come from ditch sides and channels, runoff from gravel roads and winter sanding, and material deposited from adjacent land. Vegetation or linings are the most common methods for preventing erosion.

You can stabilize sides and channels with soils, stone, turf, plants, asphalt, or concrete. Turf reinforcement mats can help reinforce natural materials. Choose the materials based on the velocity of flow the ditch must accommodate. The WisDOT Erosion Control Matrix will help you select the appropriate method.

Larger ditch maintenance projects that affect 5 acres or more must be managed according to the erosion control rules in TRANS 401 or NR 151. Small projects that disturb soils must employ erosion control Best Management Practices (BMPs). Emergency maintenance projects are completely exempt.

WisDOT has tested erosion control products and listed those that meet its performance criteria on the WisDOT Product Acceptability List. Projects that fall under TRANS 401 and NR 151 are required to use approved products from that list.

Before you begin ditch maintenance, check to see if the area is in a protected wetland or close to a waterway. Special rules apply to these areas, including restrictions on depositing or side-casting ditch spoils onto the adjacent land. Wetlands are identified on maps available from your local DNR office or county zoning administrator. (See related story on next page.)

Reminder: New erosion rules in effect March 10, 2003

Three new rules take effect March 10, 2003 for new construction sites. They are NR 151 which sets performance standards, NR 216 which covers stormwater discharge permits, and TRANS 201, the DOT's version of NR 151.

TRANS 201 covers any project directed and supervised by DOT. NR 151 covers locally funded projects and some local projects with federal money. Before construction begins, local projects must secure permits through DNR under NR 216, while DOT projects are covered under a blanket permit. Both rules require written erosion control plans and weekly inspections. WisDOT-managed projects also require inspections after a rainfall of a half-inch.

These rules now require construction

sites of one acre or more to control 80% of the sediment load. Previously the size was five or more acres. On transportation projects they also specifically address such concerns as minimizing tracking; proper use and storage of chemicals, cement and other compounds; minimizing sediment discharge from de-watering; sediment clean up; and sewer inlet protection.

Routine ditch cleaning projects "to maintain the original line and grade, hydraulic capacity, or original purpose of the facility" are exempted according to Federal regulation (40 CFR 122.26 (b)(15)(i)).

For more details see the winter 2003 issue of Crossroads and the DNR web page <http://www.dnr.state.wi.us/org/water/flp/waterfront.htm>

Vegetation

Plants and grasses do an excellent job of minimizing erosion, slowing flow velocities, and filtering out pollutants from runoff. Guidelines for vegetation in ditches include:

- Disturb vegetation as little as possible.
- Seed, sod, mulch, and/or place fiber mats immediately. Don't let erosion get started.
- Fertilize, if needed, to speed growth, but do it sparingly. Too much fertilizer can negatively affect the quality of both runoff and infiltration water.
- Mow to control weeds and woody vegetation, but leave vegetation six inches or longer so plants stay healthy and control water velocity and erosion more effectively.

Road rehabilitation and reconstruction are expensive. Don't let poor drainage undermine your investment. Be sure to include drainage improvements as part of roadway upgrade projects and schedule routine repairs every five years.

Parts of this article are adapted from information that originally appeared in the winter 2000 issue of the New Hampshire LTAP center newsletter. The WisDOT Product Acceptability List is on the Web at: <http://www.dot.wisconsin.gov/business/engrserv/pal.htm>.

Details of DNR stormwater rules and descriptive fact sheets are on the Web at: <http://www.dnr.state.wi.us/org/water/wm/nps/admrules.html>.

Copies of the erosion control matrix and the Drainage Manual are available from T.I.C. See page 8.

Ditching regulated in wetlands

Wetlands have special protections because of their environmental benefits. Local road agencies should be familiar with areas where wetlands border their roads before they start ditching operations.

"They should contact the DNR if they suspect they will be working in a wetland area," says Dan Houston, DNR Water Regulation and Zoning Specialist based in Park Falls.

"Ditching wetlands along roadsides is one of the activities we deal with. Maintaining the existing ditch contours is generally not regulated, as long as spoils are not side-cast into the wetland. Mechanized land clearing, grading, or side-casting in wetlands for new or enlarged ditches is regulated."

You can't always tell by looking whether an area is wetland. They are defined by having specific types of wet soils and water-loving plants. However wetland areas are shown on special wetland maps which can be reviewed at the county zoning, Land Conservation Department, or local DNR office.

If it looks like there are wetlands near your planned project or if you find a lot of dark organic matter in the soil, contact the DNR. A trained person can verify the wetlands and assess whether a permit is needed. Permit turnaround can be quite fast



Side-casting ditch spoils into wetlands, as shown in these photos, is regulated by DNR.

during the growing season, Houston says, but they can't make the determination when the ground is frozen or snow-covered.

Furthermore, ditching in a wetland may not help protect your road. "Once you get to the wetland level you're generally at the water table," says Houston. "The best thing to do is leave the wetland soils and wetland vegetation intact. They act as a sponge and a filter to improve the water quality as it runs off."

So, check before you ditch. If you don't, you may face enforcement action.

To obtain copies of wetland maps for your locality contact Lois Simon, DNR, P.O. Box 7921, Madison, WI 53707-7921. lois.simon@dnr.state.wi.us Wetland maps are at a scale of 1" = 2000' or 1:24,000, detailed enough to show where a town road crosses through a wetland.

Details of DNR waterway and wetland rules and descriptive fact sheets are on the Web at: <http://www.dnr.state.wi.us/org/water/fhp/waterfront.htm> for how to contact us.

Silt fence fails in channels

In the last issue of *Crossroads*, this photo appeared with an article on preventing soil erosion, incorrectly implying that it was an appropriate use of silt fence. We were wrong.

"WisDOT does not allow silt fence across a channel, regardless of slope," says Gil Layton Erosion Control Storm Water Specialist, WisDOT District 4. "The reason is that silt fence is not made to be a ditch check. It fails because it can't withstand any heavy load of sediment against it." What you should be using are erosion bales or WisDOT-approved, manufactured temporary ditch checks.

The restriction is included in the new TRANS 401 and DNR 151 erosion control rules which are now in effect.

For a list of approved erosion control products check the WisDOT Product Acceptability List (PAL) on the Web at: <http://www.dot.wisconsin.gov/business/engrserv/pal.htm>



Update on work zone signing rules

There are several changes for work zone signing in the federal *MUTCD* and Wisconsin's Supplement to it. These two manuals offer guidance on traffic control devices so that they are used uniformly throughout the state.

"The changes are fairly minor," says Tom Notbohm, Traffic Operations Engineer with the WisDOT Bureau of Highway Operations. Sign spacing and sign mountings have been modified. Also, there are new standards regarding coordinating workzone traffic control with nearby railroad crossings, and using Yield signs at one-lane, two-way work sites. Other items address shoulder drop-off signs, street names with detour arrows, and trailer devices.

Sign spacing On urban roadways with 25-30 mph speed limits, the *MUTCD* continues to recommend 200-ft spacing for advance warning signs. However, a new provision permits spacing as short as 100 ft if needed because of conditions at the site—existing signs, trees in the terrace, closely spaced intersections, or driveways that might make it more difficult to maintain a 200-ft sign spacing and still have good visibility of the sign.

"This just gives a little bit more flexibility in where to place a sign," says Notbohm. "People should remember that the sign spacings in the *MUTCD* are just guidelines. We encourage anyone setting up the signs to use judgment in the field in determining the best place to set up a sign so it will be visible and give drivers time to react."

Sign mounting The minimum mounting height of signs placed on posts has been changed. The *Wisconsin Supplement* now says that signs should be post mounted rather than on a portable stand if they will be in place for more than 7 continuous days and nights. Signs on posts should be a minimum height of 5 feet to bottom of the sign in rural areas. The height remains 7 feet in urban areas and commercial/residential districts. Previously, the *MUTCD* called for 7 feet regardless of the location.

Crashworthiness Sign supports and channelizing devices are to be crashworthy according to language in the *MUTCD*. However, agencies can use existing devices through their normal

service life. WisDOT has set an end date of January 2005 for fully phasing in crashworthy sign supports on its projects. "We suggest that as agencies are purchasing new sign supports and devices, they should get devices that meet the standards," says Notbohm.

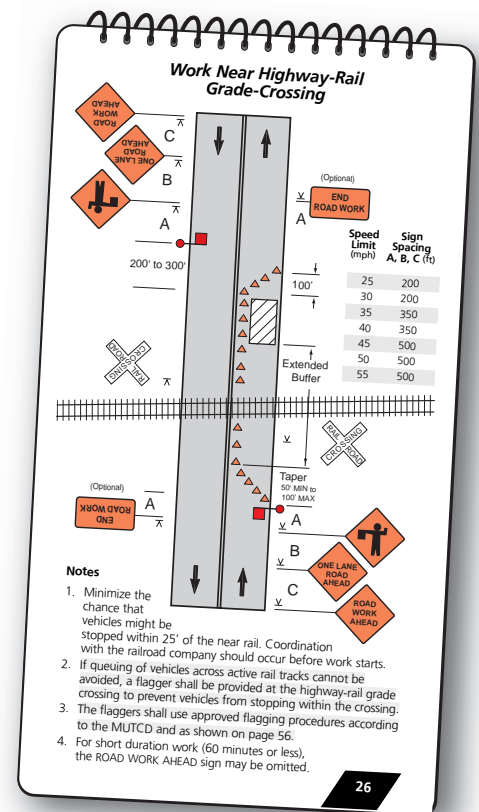
RR X-ings "There have been some serious crashes in other states with trains hitting vehicles stopped on the tracks in a line of cars waiting to go through a work zone," says Notbohm. As a result, the *MUTCD* has a new standard that temporary work operations shall not create conditions where vehicles can be stopped on the RR tracks with no means of escape.

To address this situation, place the lane closure taper and flagger before the RR tracks. If this setup would cause lane closures to be too long for effective flagging operations, the Manual requires a law enforcement officer or a flagger be provided at the crossing to prevent vehicles from stopping on the tracks.

Yield signs On some low-volume two-lane roads a Yield sign is useful for controlling traffic when one lane is closed. The *MUTCD* has a typical application drawing for it and the *Wisconsin Supplement* has clarified the conditions under which it may be used. It is applicable only when traffic volumes are low (typically 400 ADT), and for a short work area with good sight distance so that traffic can see beyond the work area.

This method shall not be used on a state trunk highway or other officially designated through highway since state Statutes do not allow yield signs on those roadways. Also, the Yield sign shall only be used with permission from the agency having jurisdiction over the roadway. "Previously this Yield sign control method was discouraged by the *Wisconsin Supplement*," says Notbohm. "Now we do recognize that there may be some conditions where this is a good alternative to flagging or some other means of traffic control."

Shoulder drop-offs A new standard in the *MUTCD* requires a sign for shoulder drop-offs more than 3 inches deep. The FHWA recommends using a word message sign saying: "Shoulder drop-off." A



low shoulder sign is only allowed if the drop-off is 3 inches deep or less.

Detour signs When a local road is detoured onto a state trunk highway, and an arrow is part of the detour sign, the *Wisconsin Supplement* now requires placing a street name sign with the detour arrow sign. "The goal is to make it clear to drivers that state highway traffic is not being detoured," says Notbohm. "In fact, it's a good idea to use name signs on any type of street, not just state highways, to minimize confusion."

Trailer devices/PCMS A trailer with a device such as an arrow panel or portable changeable message sign (PCMS) should be delineated with reflective cones or drums, unless it's behind a barrier or beam guard. Messages on the PCMS should be brief and convey the complete message in no more than two different screens. This is Wisconsin's interpretation of the *MUTCD* statement that the entire message should be readable by drivers at least twice as they approach at the posted speeds.

The Wisconsin Supplement to the MUTCD is accessible on the WisDOT website: www.dot.state.wi.us. If you cannot access the Wisconsin DOT website contact: Matt Rauch, 608/266-0150, matt.rauch@dot.state.wi.us

Crossroads Index

Spring 2001–Winter 2003

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

Administration

- New law, study on vehicle load limits W03
- On-site training: your shop, your schedule F01
- Phone system speeds snow removal W03
- Plowing private driveways too costly so town ends service Sp01
- Signing on with inventory programs Sp01
- Supervisors hone skills at Public Works Supervisory Academy F02
- Watch out, GASB 34 is gaining on you F02

Concrete

- Adding water to ready mixed concrete Sp02
- Concrete cylinders are roadway "insurance" Su02
- Good techniques for concrete repair F01
- Strong concrete needs proper finishing, curing F02

Erosion control

- Erosion control rules, aids developed W03

Maintenance

- Fly ash stabilizes road base Su02
- Maintenance basics—potholes and cracks Su01
- Sharpen your grader operations F01
- Ultra-thin asphalt overlay a maintenance option F01

Pavement management

- Great job done on road ratings Su02
- PASERWARE 2.5 out now; more training in July Su01
- PASERWARE for Windows available in Spring Sp01
- Pavement condition ratings due in December Su01
- Rating unimproved roads F01

Pedestrian/bicycle

- Bikeways are bustin' out all over Sp02
- How are your pedestrian facilities? Su01
- Truncated domes required on curb ramps F02

Road construction

- Demonstration day shows asphalt how-tos F01
- Good bid documents help road projects W02
- More ways to improve bids Su02
- Paving the way for warranties Su02
- Roundabout use grows in Wisconsin W02
- Superpave mix designs offer more options Sp01
- Superpave use now common Sp02
- Weaving geotextiles into road projects Sp01

Roadsides

- Diversity is the way to go with mowing equipment Sp02
- Mow-Ho! Managing roadside vegetation Sp02

Safety

- Don't overlook safety W02
- Flaggers should use proper tools, technique Su02
- Halogen Stop/Slow paddle outshines the rest W02
- Making streets and highways safer W03
- Remind drivers of safety around snowplows W02

Safety-worker

- Winter survival basics W02
- WisDOT adopts new safety vests Su02

Signs/signals

- Checking signs for retroreflectivity Su02
- New sign manual to arrive soon Sp01
- Q&A about signing and the new MUTCD F01
- Rebates cut LED signal costs Su02
- Signing, marking, and the new MUTCD Su01
- Wisconsin adopts sign rules Sp02

T.I.C.

- Knapp to teach Highway Safety W02
- T.I.C. welcomes Ben Jordan Sp01

Winter maintenance

- Think snow. Update your winter maintenance plans F02
- Tips for winter maintenance equipment W03
- Winter Concept Vehicles test gadgets Su01
- Winter equipment ideas ready to go Su01

Work zones

- Work zone signing W03

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:

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Resources

The following publications are available free from the T.I.C. while supplies last.

REVISED Signing for Local Roads, Wis. Transportation Bulletin No. 7, T.I.C., 2003, 12 pp. Helps local officials understand national and state signing standards. Addresses responsibility, principles, placement, and types of signs. Conforms to the 2000 MUTCD and Wisconsin Supplement.

REVISED Work Zone Safety: Guidelines for Construction, Maintenance, and Utility Operations, T.I.C., Jan. 2003, pocket-sized guide, 58 pp. A handy reference for setting up work zone signing updated from the 2000 MUTCD and Wisconsin Supplement. Includes new typical drawings for work zones near railroad crossings.

Drainage Manual, Local Road Assessment and Improvement, T.I.C., 2000, 16 pp. Photos and a simple rating system help you understand and evaluate drainage on roadways. Complements PASERWARE and the PASER manuals.

WisDOT's Channel Erosion Control Matrix, and Slope Erosion Control Matrix are available via e-mail or as print copies.

Assessing the Need for Personal Protective Equipment: A Guide for Small Business Employers, OSHA. Practical information to evaluate the need for Personal Protective Equipment (PPE) and establish a PPE program. Includes checklists. Request from T.I.C. or download: <http://www.osha.gov/Publications/osha3151.pdf>.

Websites

Signs and traffic The Institute of Transportation Engineers has 22 "TIPS" fact sheets on subjects including Stop Signs, Speed Limits, Speed Humps; basic information on traffic-related subjects. <http://www.ite.org/councils/tengineering.asp#tips>

Safety and PPE OSHA has information on personal protective equipment (PPE) at: <http://www.osha.gov/SLTC/personalprotectiveequipment/index.html>. There is information on establishing a PPE program, PPE selection guidelines and training resources.

Erosion control WisDOT Product Acceptability List: <http://www.dot.wisconsin.gov/business/engrserv/pal.htm>. DNR storm-water rules and fact sheets: <http://www.dnr.state.wi.us/org/water/wm/nps/admrules.html> DNR waterway/wetland rules: <http://www.dnr.state.wi.us/org/water/fhp/waterfront.htm>

Videotapes

A catalog of the TIC Video Lending library is available at <http://tic.engr.wisc.edu/>. The following TIC videos are available from your county extension office:

Ditch Maintenance, FHWA, 17 min. #16657 Discusses need for proper drainage and shows two methods for cleaning ditches.

Erosion and Sedimentation Control for Highway Construction, PennDOT, 15 min. #16370 Erosion control devices during and after construction and for permanent installations. Larger projects are shown, but methods can be used for smaller ones.

Maintaining the Ditch and Surface Cross Drains, The Forest Service, 16 min. #18556 Shows techniques for constructing and maintaining ditches and culverts. Demonstrates good practice and equipment operating techniques. Intended for equipment operators.


Summer Roads Maintenance-Roadside Drainage (Rural), Ontario Ministry of Transportation, 53 min. #17793 Drainage fundamentals: theory, inspection, culvert installation, and ditch maintenance.

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